

COLLAPSE

Philosophical Research and Development

VOLUME VII



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COLLAPSE VII

First published in 2011 in an edition of 1000
comprising numbered copies 1-950
and 50 *hors-commerce* copies

Reissued Edition 2012

ISBN 0-9557750-9-2

Published by
Urbanomic
The Old Lemonade Factory
Windsor Quarry
Falmouth
TR11 3EX
UK

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Edited by

Reza Negarestani

and

Robin Mackay



URBANOMIC
FALMOUTH

COLLAPSE VII

July 2011

EDITORS: Reza Negarestani, Robin Mackay

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Editorial Introduction

Robin Mackay and Reza Negarestani

Cookery has never been so high on the agenda of Western popular culture. And yet the endlessly-multiplying TV shows, the obsessive interest in the provenance of ingredients, and the celebration of ‘radical’ experiments in gastronomy, tell us little about the nature of the culinary. Is it possible to develop the philosophical pertinence of cookery without merely appending philosophy to this burgeoning gastroculture? How might the everyday, restricted sense of the culinary be expanded into a *culinary materialism* wherein synthesis, experimentation, and operations of mixing and blending take precedence over analysis, subtraction and axiomatisation? This volume, drawing on resources ranging from anthropology to chemistry,

from hermetic alchemy to contemporary mathematics, undertakes a trans-modal experiment in culinary thinking, excavating the cultural, industrial, physiological, chemical and even cosmic grounds of cookery, and proposing new models of culinary thought for the future.

Proto-scientific thought and experimental practice, particularly in the form of alchemy, was linked to the culinary arts' vital engagement with the transformation of matter. Indeed, how could empirical inquiry into nature, seeking to determine the capacities of matter on the basis of what lay to hand (see Bacon's recipes in the Appendix), be anything other than a culinary endeavour? Yet with the increasing specialisation of the sciences, philosophy has misplaced its will to extend such inquiry into a speculative philosophy whose power resides in its synthetic ambition as well as its analytical prowess.

As observed by **IAIN HAMILTON GRANT** in the interview which opens the volume, it is chemistry's retention of this synthetic ambition that recommends a 'chemical paradigm' for thinking, providing the opportunity for philosophy to step outside the circle of a 'critical' method according to which the conditions of possibility for a thinking of nature are purely epistemological. In the thought of the nineteenth-century naturephilosophers on which Grant draws, the production of 'nature' qua thought-system cannot itself

be excluded from the chemical syntheses it discerns at work in the inorganic realm; and thought as much as matter must be subjected to an experimental regime.

Human thought, then, does not condition the powers of chemistry; nevertheless, the latter are mobilized in unprecedented fashion by the former. Under the influence of modern chemistry, indissociable from the industrial exigencies that have driven it, synthetic production – in the culinary as in other spheres – proceeds to reprocess the nature that produced it. Augmenting the modest chemical capacities bequeathed to the human animal by its evolutionary history, it has produced a new ‘chemical earth’ upon which we graze, without having fully encompassed in thought the prospects that its deterritorialization opens up to us.

Exemplary in this respect is **JOHN GERRARD AND MICHAEL A. MORRIS**’s ‘Corn Bomb’, which traces the implication of nitrogen in the industrialised alimentary regime, and the way in which the ingredients for postwar human culture were prepared and ‘cooked’ by war and petropolitics, bringing about a new planetary economy whose massive ramifications are yet to be fully comprehended. This story of the entanglement of military force, agricultural expansion and industrial science provides a backstory to Gerrard’s portraits of austere, functional structures located in desolated landscapes, symbols of the virtual climate of power

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that the industrialisation of the chemosphere has made possible.

Extending Gerrard and Morris's 'local' history of nitrogen, which begins with the human harnessing of chemical powers, into the distant past, we realise that the preparation of food in fact takes place on a planetary and even cosmic scale. The superficial landscape of mass-produced corn and meat that Gerrard and Morris correlate with the contemporary human condition is a non-trivial section of a deeper chemical history: 2.8 billion years ago, cyanobacteria emerged on Earth, able to transform sunlight and atmospheric nitrogen directly to fixate carbon to form organic biochemical compounds. Their production of oxygen as a by-product led to a catastrophic pollution of the planet, the only survivors of which were the new lifeforms that had adapted to consume oxygen, and which are the origin of the diaspora of biological life as we now know it. The industrial Haber-Bosch process is an anthropogenic augmentation of a subsequent, weird biological symbiosis between legumes and remnants of that earlier bacteriosphere, an evolutionary contingency which allowed those nitrogen-hungry plants to migrate from abundant to relatively inhospitable environments. The advent of artificially-fixed nitrogen intensifies massively the dependency that developed between humans and these hardy deterritorialised plants whose symbiotic adaptation had allowed them

to escape the contingencies of atmospheric nitrogen fixing. It locks in a new symbiosis between human culture, nitrogen, and the petroleum that fuels its artificial preparation to secure the yields demanded by an exploding population.

In line with the ethos of modern chemistry in broadening the range of chemistry's universality, the terrestrial landscape of nitrogen can be traced back yet further to its cosmic provenance: In the early universe, the 'ur-chemical' agency of gravitation (as discussed with Grant) locally breaks the homogeneity of spacetime and leads to a form of regional contraction (rather than spatial extension), creating local discontinuities and making possible the entropic conditions and chemical activities that form the universe as we know it. In the contracted regions, new morphogenetic transformations and condensations of matter begin to take place; stellar nucleosynthesis forms the furnaces in which heavy elements, including stable nitrogen isotopes, will be forged, thus brewing up, out of the undifferentiated continuum, the elements of a properly chemical, differentiated universe in which the terrestrial sphere will emerge.

Thus, just as the artist selects a single location to make a 'portrait' of the megasystem of anthropic terrestrial depredation, the unravelling of the nestedness of 'chemical valencies' within an organism or a culture gives rise to an epic chemophilosophical

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narrative in every case. It is in this way that a culinary materialism can open up a continuous yet twisted (topologically counterintuitive) depth beneath the surface or the ground: by bringing out the non-trivial relations between the cosmic continuum and its localized regions; by displaying relations between the earth and the regional horizons for thought that belong to it, and an unrestricted and unified conception of the universe.

The examination of the ‘new earth’ wrought by contemporary industrialised food production through its accessing of chemical powers continues in **FIELDCLUB**’s contribution. Offering an insight into the deranged machinations of laboratory capitalism, their investigation of the changing fortunes of the erstwhile waste product whey implicates humans, agriculturally-adapted animals and advanced chemical processes in an industrially-augmented culinary syntheses: the redistributive function previously fulfilled by the pig is usurped by a new chemically-enhanced human consumer, ready to fulfil the capitalist exigency to full exploitation of the earth.

In line with the general rise of the culinary, recent years have also seen a resurgence of interest in food in the contemporary art world – most emblematically, perhaps, in the work of Rirkrit Tiravanija. The ‘relational’ paradigm, with its emphasis on the convivial potency of non-object-based art practices, finds a

natural home in the social setting of cooking and eating. This has also occasioned recent revisitations of the work of Gordon Matta-Clark, and the restaurant FOOD which he co-founded in New York in 1971 with **CAROL GOODDEN**, who we interview in this volume. An undecidable, experimental project, FOOD engaged equally the multiple social, economic, convivial and material aspects of cookery and eating. But what was its relation to Matta-Clark's more well-known work, in particular his architectural interventions? In our interview with Goodden, we explore the extent to which the artist's interest in disrupting structure and breaking down closed spaces to produce new forms of communication, can be related to a more general concern with alchemical or culinary transformation, exemplified in early works such as his agar pieces and fried photographs. Here Matta-Clark's work is read as addressing the metabolism of the urban environment, where buildings and cities digest and are digested, as part of a universal culinary process: in the words of one of Matta-Clark's notes, reproduced alongside the interview, 'building materials as nature's food – build to feed the worms an organic eat-a-tecture'...

Recounting the origins of FOOD, Goodden depicts a city that invited an exploratory art practice taking as its 'point of departure' not only 'the whole of human relations and their social context' (Nicolas Bourriaud's aspiration for a relational aesthetics) but ways in which

they are intricated with other (urban, architectural and alimentary) fabrics under this common culinary or alchemical principle. FOOD clearly staged the culinary, but Matta-Clark blended it with practices that make his city a very different territory, in truth, to the cities in which international contemporary art practice stages its convivial events in galleries (ironic exemplars of the 'independent and private spaces' Bourriaud hoped to escape). In exploring transformations beyond the preparation and consumption of food, FOOD pioneered conceptions alternative to the mere preparation and consumption of artworks. As Goodden suggests, for Matta-Clark FOOD was 'a grinding, regurgitating, consuming thing', a work whose ingredients and methods surpassed the restrictedly artistic or culinary.

The collective AO& offer another example of how the restricted practice of the culinary can provide a locus for the exploration of broader processes of production, communication and consumption. As we learn in our interview, AO&'s 'perverse' endeavour to fully inhabit the problem of food production operates through a deliberate and painstaking disclosure that makes possible an enhanced perception or phenomenology of the act of cookery. AO&'s meals do not stop at providing striking gastronomic experiences for diners, but operate as carefully-controlled experiments in the communicational potencies of the dinner table.

Crucially, AO&'s practice involves within the ambit of 'food preparation' the personal sourcing and assembly of all 'ingredients', including cooking materials, the preparation of the site, and the forging of connections with a network of producers. Hence they ask, 'Where is the edge of the pot?', preparing the way for a generalised culinaryism that reaffirms the centrality of an expanded notion of architecture found in Matta-Clark's work.

AO&'s practice may, indeed, fulfil chef **JOHN COCHRAN**'s demand for a 'flat cookery' that acknowledges its non-human participants. For Cochran, received practices of cooking – the haute cuisine chef's as much as the fast food burger-flipper's – 'distort ontology', creating an instrumental caricature of the objects they employ. Chefs, like philosophers, therefore, maintain uninterrogated 'ontological commitments' determined by their praxes. An 'object-oriented' approach to cookery, Cochran insists, would recognise that objects have powers that exceed our intentional interactions with them, and open itself up to this continuum of objectal powers.

In his examination of two 'revolutionary' contemporary food movements that claim to liberate themselves from normative models of cookery – Molecular Gastronomy and Slow Food – Cochran finds they fall short of this ideal: Molecular Gastronomy investigates the chemical composition of foods only to manufacture

sensory fireworks, producing professional chefs and professional consumers alike; Slow Food lavishes its sentimental attentions on the social and cultural import of foods only to draw them into a global economy. In both cases supposed radicality supervenes upon an image of culinary thought that plays into the hands of an economically-driven professionalisation of the culinary, at the expense of amateur experimentation. Both are found wanting, missing the insight that 'food continues to translate you, and you continue to translate food, even after swallowing'.

Cochran's demand to open up the practice of cookery to this extended 'translation' raises the question of how one makes oneself 'a good meal' for the outside, detecting or inviting nonhuman contingencies into cookery. It is perhaps worth pointing out that this is not to be achieved through mere promiscuity or practices of 'openness' based on the aleatory or free expression. Paradoxically, it is AO&'s meticulously controlled culinary regime that, operating in varying settings, quietly affords an insight into what it is to cook and to eat.

In his contribution, **MANABRATA GUHA** expands upon the notion that sensitivity to the culinary powers of objects can offer egress from a spontaneous 'image of thought' into a wider continuum, an open system whose chemical, military, logical and modal dimensions he unfolds in his essay on 'The Chemistry of

Para-Tactical Engagements'. Guha reports on recent efforts at the weaponization of the massively potent *Bhut Jolokia* chili, finding the military project to harness its non-lethal power to incapacitate and disorient indicative of a strategic shift on the part of a state attempting to contend with a new threat, the 'enemy of all'. Outlining the futile nature of this employment of the *Bhut Jolokia* as a means to enhance an ill-adapted military model, Guha turns instead to the traditional culinary usage of the chili to reveal more fundamental lessons for the transformation of the schema of battlespace and the rise of a new vague and inherently synthetic adversary that renders political reason impotent, globally and locally.

For Guha, the insurrectionary subject is the synthetic distillate of the unbound continuum or 'the open', a singular field through which all chemical fusions and transformations pass. In the figure of the 'enemy of all', war is revealed to be far deeper than the political, the battlefield far broader than any number of discrete spaces that the state or contemporary military theory can envision. Since the synthetic horizon of the continuum is a trans-modal web that smoothly and gradationally blends the question of universal constituency (the open) with the question of tacticity (the opening of discrete fields), the battlefield is always conceived as a gradient that focally reflects the free expression of war and the unbound global battlespace

within regional and discrete battlespaces strategically mapped out by the state according to the legacy of political thought. For this reason, for Guha, drawing on the mathematico-philosophical work of Fernando Zalamea, the battlefield of the insurrectionary subject is a regional approximation of the universal continuum or the open, whose exact boundaries are blurred, logic vague and topos purely synthetic. The insurrectionary subject of the global battlespace does not resist assimilation, but on the contrary, adapts a vague modal geometry so as to soften its particular edges and turn into a 'transplant' capable of inhabiting the state's discrete battlespace as an agent of catalysis, fusing the state's axiomatic structure with the non-axiomatic and unmasterable geometry of the global battlespace.

It is this chemical softening of exact characteristics and recapturing of the open (continuum) within the discrete horizon that Guha finds manifested in the traditional recipe for *Bhut Jolokia* chili pickle, whose vague identity (itself the outcome of the chemical fusion and synthesis of different global-local modalities) makes it a perfect supplement or side-dish that stealthily unpacks a wide range of culinary sensations within the unsuspected consumer, 'a catalysis-engineer that exposes particular and discrete entities to a sensorial continuum'.

Here, as in Gerrard's work, local chemical or culinary phenomena give us to understand how the open

universal continuum reflects into (or experiences) itself through various complex transitions, modal fusions, global-local surgeries and transplantations whereby contingencies, possibilities and actualities are welded together or transplanted within one another: Hence, for Guha, as for Grant, the 'chemical paradigm' marks out a synthetic domain that precedes (without excluding) the chemistry proper of elements, reactions, and so forth.

RICK DOLPHIJN adopts another culinary approach to the contemporary 'state of emergency', analysing how the changing alimentary regime of the military anticipated and accelerated the rise of biopolitical governance through continual intervention. According to Dolphijn, the militarization of the world's diet and the territorialization implicit in dietary programs have resulted in the emergence of a terrestrial dietary/military continuum whose vague and synthetic elements are 'terroristsoldiers' (Guha's 'enemy of all'). The more the nourishment of the state and the soldier is drawn from the chemical earth, the more they become synthetic in nature, as interior and exterior become blurred; and the harder it becomes to distinguish them as discrete recognizable entities: this 'new continuum' becomes manifest in the terroristsoldier, who is figured in every individual and whose diet is the entire synthetic landscape of the earth. Dolphijn points to current olfactory research as a critical stage in this process

since it involves topologically-‘pointless’ interventions similar to those involved in the ‘self-cooking’ of the *Bhut Jolokia* pickle (whose method itself echoes the Baconian experiments and Arabic poisons collected in the Appendix to this volume).

Dolphijn’s and Guha’s contributions expose the wider stakes of this intrusion of the chemical (continuum) into the political sphere and its discrete battlespaces: For both writers, the exploitation or weaponization of the culinary or the chemical by the state unwittingly exposes the latter’s strategic political horizon to an open and contingent expanse that proves detrimental to the strategic and military integrity of the political reason manifested in the architecture of the battlespace or the biopolitical horizon. This highlights, above all, the veritable potency of the culinary: Since all chemical and culinary entities are already open to (and open us to) the rest of the chemical continuum through complex syntheses, interphased spaces and vague boundaries, and since the continuum is a non-axiomatic landscape, such entities throw the axiomatic structure of politico-strategic reason into incoherency – registered as an expression of a war already-there. As Dolphijn explains, this traumatic incursion, pioneered in the military sphere, has generalised consequences: here, as in the history of nitrogen, ‘military intelligence speed[s] up modern life’, bringing into play ‘wholly

other physicochemical, organic and anthropomorphic contours of the earth’.

According to Grant, the fundamental tenet of the ‘chemical paradigm’ demands we accept that no chemical process is identified and ‘made available’ without chemical intervention, ‘regardless of whether that’s done by chemists or by nature’. Dolphijn and Guha’s texts show us that, indeed, it is always the continuum ‘itself’ that opens up the chemical horizon, allowing its local exploitation to ‘take place’, but that its unmasterable synthetic power always threatens to exceed and overwhelm this instrumentalisation.

In accord with this discovery that human cookery takes place within a prior (in Guha, even ‘pre-ontological’) complex that is already ‘culinary’, in his contribution **RICHARD WRANGHAM** deepens the notion that ‘it is cooking that makes us human’ – his thesis being that the advent of cookery is one of the major drivers behind the development of the human brain. In identifying the consumption of cooked food as an *evolutionary commitment* and thus a *dependency* – a ‘decision’ made for us and that determines our destiny – Wrangham reveals how the human culture of cooking belongs to nature’s chemical and physiological horizon. For this reason, cookery must be seen in the wider context of a culinary continuum that includes the contingencies that formed the human as such, in advance of the cultural machinations that then become

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necessary to fulfil the energy acquisition requirements of an exploding population (Gerrard, FIELDCLUB). From a human point of view, cooking may be a cultural phenomenon; but from the point of view of nature, as Grant points out, this distinction cannot be made; we are cooked as well as cooks (*for years I thought I was cooking all this up, but nature was telling me what was on the menu ...*).

Perhaps the voluntarist, preferentialist nature of gastronomic consumerism may be disturbed by Wrangham's demonstration that we do not (as a species) have a choice about whether or not to cook; there is therefore indeed 'reason in the roasting of eggs', but it also follows that reason and its emergence is (as Nietzsche argued) of a piece with other (intestinal and colonic, for example) peculiarities that revolutionised the human metabolism and ultimately provided the conditions for both gastronomy and alloplastic chemistry. As Grant states, 'nature can be produced by thought precisely because thought cannot be produced outside of nature. But this alters what "thinking nature" means'. It also, we may add, alters, or even reverses, what a 'thinking of cookery' may mean – '*coquo, ergo cogito*'.

In 'Theorizing Cuisine from Medieval to Modern Times', VANINA LESCHZINER AND ANDREW DAKIN chart the epistemic shifts implicated in the movement from a medicinal to a hedonic model of eating. Their contribution demonstrates how the norms of developed

gastronomy harbour complexities occluded by their omnipresence and apparent transparency. Prevailing gastrological norms (in Leschziner and Dakin's example, the separation of sweet from non-sweet) exist at the intersection of many influences, where emergent sociological, institutional and epistemic conditions drive the exploration of alternative conceptual articulations of the 'phase-space' of possibilities provided by basic chemical, physiological, nutritional and adaptive factors. Thus, a culinary object such as sugar, with its basic chemical valence for human physiology, provides a kind of pivot around which, historically, differing conceptual structures are articulated – its 'endo-relational powers' (Cochran) exceeding the 'exo-relations' which any one of those ordering structures assigns it.

We should of course recall here FIELDCLUB's demonstration of how this plasticity with regard to what is 'edible' is augmented – to the point of reversibility (the transformation of whey from waste to ingredient) by the advent of ever more sophisticated commercial chemistry and constant innovation in markets. This plasticity opens the way to an experimental gastrological practice that could be related both to the exploratory 'flat cookery' recommended by Cochran and to the naturephilosophical experimentalism recommended by Grant: A cookery that addressed gastronomy in such a way would not rest with exhibitionist displays that inverted or recombined cultural norms (thus

Leschziner and Dakin's judgment on Molecular Gastronomy), but that would map out the landscape formed by zones of interference between 'objects' of different types (chemical, physiological, hedonic, institutional...) so as to discover new routes within it.

A curious demonstration of the possible scope of such a discipline comes in the form of the 'synaesthetic cooking' proposed by **SEAN DAY**. Day introduces us to the complexities of various types of synaesthetes' experience of flavour in relation to colour and language, demonstrating how the synaesthete's peculiar talents extend the culinary palette into a trans-sensory 'synthesaurus' that is at once polyphonic, polychromatic and trans-modal. Molecular Gastronomy has, famously, experimented with the integration of different senses (not only olfactory but visual and aural) into dishes. Day's synaesthesia prompts him to call for culinary practice to engage further, not only with the sciences that are able to analyse and synthesise its materials, but also more fully with neuroscientific research that could inform a more systematic approach to the interaction of different sensory components. This expanded form of multi-sensory cookery would transmodulate gustatory sensation; but, as Day observes, since synaesthesiae are often cemented in contingent individual associations, it could result also in culinary events – such as the 'phoneme-to-flavour' and 'flavour-to-colour' recipes he

and James Wannerton propose – whose gastronomic appeal extends to only one person.

Following Day's recipe for 'Light Cyan', **JEREMY MILLAR's** 'Black Cake', in an edition produced especially for this volume, is based on a recipe passed on by Emily Dickinson in an 1883 letter. We know, from contemporary accounts, of Dickinson's culinary skills; which are matched, of course, by the strong sense of the domestic in her poetry. But while the poetry can feel somewhat fragile, the same could not be said of her cake, which promises to be substantial indeed, and somewhat ill-suited to the taking of tea in an Amherst townhouse. Millar's rendering of the recipe allows us to think of the poetry differently, once more: beneath the fragile and hesitant procedures of the everyday and domestic, lurks the black earth [*al-chem*] of substantial transformation.

As we know from Claude Lévi-Strauss – a constant reference throughout this volume – we eat not just physical food, but also symbols. In his contribution to the volume, **EDUARDO VIVEIROS DE CASTRO** examines the extreme point at which the culinary meets the symbolic – cannibalism. An excerpt from his recent *Cannibal Metaphysics*,¹ the text reflects the reconsideration of anthropological perspectivism advocated in the book: Where anthropologists have sought to see 'from the native's point of view', Viveiros de Castro

1. *Métaphysiques Cannibales* (Paris: PUF, 2009).

argues that their attempts to do so, paradoxically, have been limited by a very culturally-specific form of perspectivism. He proposes that within cannibalism, we can discover another remarkable example of a developed and socially-functional form of perspectivism: ‘anthropophagy as anthropology’.

Refusing an account of cannibalistic ‘sacrifice’ as divine expiation, Viveiros de Castro examines the ways in which the devouring of captives also amounts to an inhabiting of ‘the enemy’s point of view’ on the self, with consumption of the other playing a central role in the social construction of identity. In this ‘movement of reciprocal determination’ by the enemy’s point of view, Viveiros de Castro sees a ‘mechanism for the ritual production of collective temporality’: the “interiority” of the social body is integrally constituted by the capture of the symbolic resources of the “exterior”.

In recounting the determining events for his reconsideration of sacrifice, and his consequent proposal to expand the field by ‘structuralising’ the thinking of sacrifice as a thinking of forces rather than forms, Viveiros de Castro prepares for further developments in *Cannibal Metaphysics*, where he advocates Deleuzian Becoming as a more favourable conceptual resource than Lévi-Straussian sacrifice for asking ‘what [it] is [...] that is devoured’ when one human eats another. (Reading of Viveiros de Castro’s contribution should be supplemented with Aparecida Vilaça’s account (in the

Appendix) of the ‘gustative pleasures’ of cannibalism and ‘ingestion [as] a fundamental classificatory operator [...] intrinsically bound to the notion of predation’.)

EUGENE THACKER offers another perspective on cannibalism: Agreeing with Viveiros de Castro that the crucial point is whether the eaten body is a ‘thing’ or not – since in order to become food, corpses must be symbolically rendered into objects – Thacker relates the cannibalism theme to Anaxagoras’ examination of the paradoxes of corporeal resurrection. How can the virtual integrity of the resurrectable material body be squared with the corpse’s evident reprocessing through the anonymous continuity of material transformation (Matta-Clark’s ‘primeval cannibal chaos’)? For if the body persists as resurrectable and thus as individual throughout its trituration and consumption by other organisms, throughout the ‘culinary transformation of matter’ through which ‘the very materiality of the world is continually “cooked” (and eaten)’, this would ultimately render every act of eating cannibalistic. Thacker finds Athenagoras’ problem echoed in Bataille’s notion of the discontinuous human’s thwarted attempts to access ‘divine’ continuity – an access which, for Bataille, is approached in our relation both to food and to the corpse (here, as in Guha’s argument, eating is associated with a threat to ‘somatic integrity’).

Thacker resists the temptation to expand a restricted notion of cooking to a generalised

culinarism-as-anonymous-transformation, turning instead – via his reading of Bataille’s theory of religion – to the notion of a ‘desolate cookery’ rooted in a negative concept of life and which (in an oblique departure from Cochran’s credo) calls for an ‘object-oriented ontology’.

As Cochran points out, an expanded, acute sensitivity to the culinary situation is a necessity rather than an option for those medically constrained to intentionally regulate their metabolism. Constrained to exercise such ‘mangé management’ (to appropriate Matta-Clark’s phrase), they have the same keen sense of the ‘alchemy’ involved in food preparation and digestion that Goodden indicates as having instigated Matta-Clark’s inquiries. More extreme forms of discipline, and concomitantly acute levels of bodily awareness, are the subject of **DOROTHÉE LEGRAND**’s contribution. The self-administered regimes of anorectics, she argues, sensitise us to the fact that eating is always a locus for the administration of the self. Introducing a move toward a deep (intra-subjective) phenomenology of consumption (in general) and eating disorders (in particular), her contribution emphasises how identity is produced through dietary discipline: diets are not simply eating programmes or schedules, but rather sets of procedures or recipes for the production of identity. As Legrand demonstrates, this relation between the diet and (self-)production is manifestly highlighted

in anorexia, where 'eating nothing' translates into a series of complex semiotic, phenomenological and cognitive procedures for the subject with regard to the production of identity – ideally of an integrated identity that would be a miraculous 'victory over digestion' (Thacker).

Following from Thacker's observation that 'to eat is always to [...] incorporat[e] oneself into the realm of anonymous [...] processes', and Guha's insistence that the culinary continuum harbours a 'threat to somatic integrity', Legrand demonstrates that in the act of eating, the multidimensionality of bodily self-consciousness is foregrounded; we experience ourselves not only as subject but simultaneously as object and as anonymous material. As she meticulously sets out, this daily reminder that 'each of us does nothing but carry a corpse about' (thus Thacker's epigraph, from Philo) can precipitate precarious existential experiments whose aim is to fully integrate the self through a process of 'constitutive self-negation' – a building of identity through an 'infinitesimal' process of subtracting self-as-object from self-as-subject. Such 'intimate projects' of 'controlled transformation' involve a culinary ascesis, but one that is based in a tortuously acute sense that eating involves the maintenance of the self qua constitutive tension between self-object and self-subject; or – in Bataille's terms, as discussed by Thacker – between continuity and discontinuity.

As Legrand argues, the anorectic in a certain sense presents us with the truth of food, potently distilling the problem of 'the demonstration of one's existence' in the face of the 'narcissistic wound' inflicted by the knowledge that one must incorporate the anonymous in order to pursue the subject-self's ideal of integrity.

For Hegel, the externality of the food and its objective exactness provided the digesting subject with a dialectical opportunity to reclaim its identity on behalf of the subject.² But for Legrand, as for Guha and Thacker, food enforces a form of exteriority that cannot claim such exactness. The subject is vague and already-indistinguishable, and here it is food that becomes a 'mirror' in which one sees oneself 'from the enemy's point of view'. Legrand finally suggests that anorexia may emerge as symbolic process from the frustrated intersubjective demand that food be given, not as need-fulfilling object, but as a gift that feeds desire. Here, perhaps, is the fundamental function and ploy of gastronomy and its cultural overvaluation – the cultural exacerbation in discourse and culture of a necessary obfuscation of our relation to food, obscuring the anonymous, objectal dimension of subjectivity to which eating exposes us.

As in the martial alimentary regimes described by Dolphijn, for Legrand, consumption itself becomes

2. See G.W.F. Hegel, *Hegel's Philosophy of Nature*, ed. M.J. Petry (London: Allen and Unwin, 1970), vol. 3, 162-4.

a form of production (of identity) from the inside out, in '(non-)eating projects representative of one's subjecthood, and thereby constitutive of it'. Food produces the subject-as-object, and a 'new people for a new earth'. Legrand's understanding of consumption also recalls Ferenczi's account of assimilation as 'alien transplant', recalled by Guha in his 'exegesis' 'Serving the Open' (in the Appendix). For Ferenczi, eating and consumption create a polyvalent or nested chemical/culinary structure: Food is a foreign body that cannot be wholly identified in terms of its capacity for absorption (food simply as nutrient that is wholly reintegrated within the system) or for wastage (food as something which distinguishes the object from the subject, where all that is wasted is no longer part of the subject). While for Hegel eating ends with the overcoming, through digestion, of the foreign body that entered the sphere of the living being, and results in the dialectical reclamation of the individuality and being-for-self of the animal, Guha, Ferenczi and Legrand identify digestion as an interiorization of xeno-economical relations, wherein the subject – far from reclaiming its subjectivity – is chemically transformed by an object that resists full assimilation. In this sense, all food, no matter how well-cooked, is poisonous. Awareness of this xeno-economical space of extra-subjective chemistry, of which the subject is now seen to be a product, fully schizophrenizes the culinary cogito 'I am what I eat',

just as the powers of its continuum vex the cookie-cutter battlespaces of the state. The dialectical valence of food for the subject, in its attempt to conclude its reality and self-relatedness, is challenged by this new model of assimilation in which food, the interiorized object, can no longer be distinguished as a discrete or exact body that can be either fully assimilated or conveniently ejected. Food, the agent of repletion, is instead vague (Guha) or ambivalent (Legrand), suggesting an economy of consumption in which the digesting subject cannot bring its relation to its food to any conclusive resolution. The identity that the consumer or the subject produces for itself through digestion is the result of devouring the object or food; but also the result of being internally devoured by it (Ferenczi) – as the terroristsoldier is consumed by the new chemical earth he is put to work on. In this sense, thinking in terms of a philosophy of nature, we might revisit the recapitulation thesis – characterised by Grant as a ‘dynamics of the totality of nature’ – as a process of ‘eating the ancestors’ (Ferenczi), a process in which digestion is never complete, in which traces – alien insiders – remain within, encrypted pathways into the labyrinth of the chemical continuum: this would be a ‘chemophilosophy in the recapitulationist sense’ (Grant) in which ‘the discrete and the particular is always infiltrated by ‘the open’ (Guha).

Here we return to the theme of our previous volume; for it becomes clear that a culinary materialism opens up new vistas for geophilosophy. Nietzsche demanded that thought be 'true to the earth', extending the genealogical method so as to ground culture and thought in the stomach and on the terrain to which it is adapted (an aspiration satisfied in a different way by Wrangham's thesis). But Nietzschean genealogies only chart the history – after all, a restricted, localized history – of the surface; it will demand a further 'Copernican' effort to extirpate from philosophical thought the last vestiges of the human's spontaneous image of its dwelling place.

To be truly terrestrial, one must renounce the superficiality of the encrusted model of geophilosophy. Culinary materialism sets against *geophilosophy* as the philosophy of or for the earth – a thought that is 'true-to-the-earth' – *chemophilosophy* as a universal philosophy – a thought whose *topos* is an earth that is 'true-to-the-universe' (that is, an earth synthetically envisioned within the full spectrum of the open continuum). It is only this universalist earth that can serve as the veritable plane of thought upon which a chemophilosophy – a philosophy that opens up the earth to the continuum – is conceived. Chemophilosophy therefore marks the transition from geophilosophy to a philosophy whose earth belongs to a unified and open continuum whose regions are vague,

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gradationally open to various spectra that lie beyond the manifest surface and body of the planet. Within the continuous environment of the continuum, earth is then understood analytically *and* synthetically. If, for pre-Copernican alchemy, the earth was the foundation of all elements and the mother of all, containing within herself the seed of everything mineral, vegetable and animal, the chemical revolution – still in progress under the auspices of astrobiology and neurochemistry – subverted the centrality of earth to chemistry. By establishing that compounds can be synthesized across different domains, and subsequently by emphatically linking the particulate to the chemical, biological and psychological, the chemical revolution rediscovered the earth, not as mother of life or receptacle of celestial rays, but as a fuzzy and synthetic region of the chemical continuum, the outcome of a local ‘recipe’ that enjoys no synthetic or analytical privilege over the space beyond it. We can thus understand this volume on ‘Culinary Materialism’ not only in terms of a radicalisation of ‘Geo/Philosophy’ (**COLLAPSE VI**) but also as a continuation of the legacy of the ‘Copernican Imperative’ (**COLLAPSE V**) – that orbital subversion which also shatters the alchemical parental hegemony of *sol* and *luna* over the earth. The cardinal ingredients of this subversion can be read in Newton’s recipe (in the Appendix): the homogenization of nature as one (continuum), combined with orbital humiliation (gravity),

puts the earth into a new culinary relationship with itself: The gravity of the unanchored earth becomes at once a means to extend the chemical continuum of the earth and its compounds to the culinary landscape and the realm of taste and sensation, and a mortification of the earth by its own natural compounds and elements – earth literally cooked to death.

It is this decentralism that loosens the earth to the extent that the unheard-of syntheses discussed by Gerrard, FIELDCLUB, Dolphijn and Guha become possible; and as for the gastronomic products of the kitchen, the same kitchen that provided the conditions – historical (Grant) and pre-historical (Wrangham) – for scientific experiment and enquiry, their savour (as Grant anticipates) can and must now be understood in the very terms of the *activity* of the continuum revealed by that enquiry.

DAN MELLAMPHY AND NANDITA BISWAS MELLAMPHY develop such a post-geophilosophy, rethinking planetary ‘ecology’ as an ‘ec[h]ology’ wherein the thinker is ‘translated back into nature’ as its echo, and where the planet ‘feasts upon itself’. Connecting the ourobouric or ovoid figure of this autophagy to the Nietzschean will-to-power, this ec[h]ology escribes the *al-chem*, the black earth, as a *stomachos* or ‘pit of blackness’ – what Guha describes as the ‘self-churning’ continuum. It is also a vermicular thinking: as the worm translates all things back into black earth (see Darwin’s recipe,

in the Appendix), Nietzsche suggests that to be true to the earth is to be retranslated and to retranslate back into the 'terrible ground-text of *homo natura*' – a '*hideous gnosis*' that, once again, involves the poisonous contemplation of one's incorporation into/as anonymous process.

Mellamphy and Mellamphy's demonstration of the persistence and continued pertinence of alchemical thought sets the stage for our concluding contributions, which both advocate the compositional (perhaps even synaesthetic) kernel of philosophical thinking expressed and explored most resolutely in the hermetic tradition of alchemy, a tradition that bridged astronomy, medicine, gastronomy, mathematics, optics and art, and was conceived in the philosophical and proto-scientific furnace of such figures as Jabir ibn Hayyan, Arnaldus de Villa Nova, Ramon Llull and Nicole Oresme.

Although in the transition from proto-science to modern science and with the birth of modern chemistry, the alchemical ladder of nature (*scala naturae*) was effectively toppled and the hermetic tradition dislodged from the centre of philosophical inquiry to the margins, philosophy's compositional kernel and its culinary ability to globally combine analytical loci of thought and coalesce incommensurable ingredients so as to mediate the universal experience of a bottomless nature was never fully abandoned. The compositional

ambition of philosophy and its engagement with synthetic environments, mixtures, synoptic perspectives, spectra of knowledge and modal transits (contingency, potentiality, possibility, necessity ...) across the continuum of nature, has been reappropriated and extended by Novalis, Schelling, Peirce, and most recently by Fernando Zalamea and Gabriel Catren. In the alchemical tradition, the synthetic and compositional valence of elements or local fibres was tested by a process known as *tinging*, whereby metals were introduced to fire in order to reveal their transmutational hierarchy (tints or tones) and synthetic powers on the basis of a projection of the spirit or redness of fire or the Sun. For these latter traditions, philosophy's synoptic and compositional kernel systematically unfolds the synthetic threshold and compositional valence of all local fields of thought and the universe according to how the omnipresent and open universal continuum flows through them and comes into 'focus'. Therefore, philosophy becomes an 'alchemical paradigm' in itself that 'tinctures all thought and nature',³ and in doing so, deepens the reflexive and trans-modal self-experience of the open universal continuum, bottomless nature, or 'b[l]ackground' (Mellamphy and Mellamphy).

In line with his study of an open or non-Cantorian continuum built on Peirce's late logical thought,

3. F. Zalamea, *Peirce's Continuum: A Methodological and Mathematical Approach*, available at: <http://files.acervo-peirceano.webnode.es/200000068-48c2649bc4/Zalamea-Peirces-Continuum.pdf>, 61.

involving topics such as the continuum, the topological basis of logical distribution, modal geometry and synthetic thought, **FERNANDO ZALAMEA** has in recent years pursued a mathematico-philosophical project committed to a *de-rigidification* of thought. For Zalamea this de-rigidification cannot be properly undertaken without having a systematic mathematical account of the unbound continuum. Absent any observation of the mathematical universe and the labyrinth of the continuum, philosophy's ontological and epistemological claims tend to lean toward one aspect or regional partition of the continuum, and accordingly rigidify the continuum in one way or another. Philosophy in this way becomes a myopic discipline that sways either toward realism or idealism, synthesis or analysis, integration or difference, thus becoming incapable of radically thinking compositions, mixtures, contaminations, decompositions, transitions of nature to culture, cultural fusions and transits – in short, the full chemical spectrum or culinary constitution of the universe. In other words, without maps and compasses to explore and survey the landscape of the continuum, philosophy ultimately fails to develop a synoptic view constituted of both analysis and synthesis⁴ – it falls prey to the same kinds of distortions that Cochran describes as being at work in Molecular Gastronomy, that recent

4. For a view, both detailed and panoramic, of cultural mixtures and compositions in relation to contemporary mathematics and its transmodernist implications, see F. Zalamea, *Ariadne and Penelope: Webs and Mixtures in Contemporary World* (Oviedo: Ediciones Nobel, 2004).

return to the ancient bond between science and the culinary whose overanalytical jellies tend to disappoint; or worse, like fusion cuisine, it succeeds only in ineffectually aping the trans-regionality that is its vocation. As is the case with 'rigidified' philosophies, failure to achieve a deep and synoptic scope consigns such efforts to cultural myopia: dabbling in or 'applying' science or cultural difference, they remain unable to deepen their cultural and gastronomic aspects in relation to a universalist chemical horizon capable of giving rise to culture or cultural experiment.

The recipes Zalamea contributes to our volume (to be taken with a pinch of salt) examine, firstly, the failed recipe for thought that aims only at an astringent clarity; and secondly, the *villageoise* constitution of a transmodernism fit to counter such *petit cuisines philosophiques*.

In Zalamea's recipe for a transmodern thought, so in GABRIEL CATREN's 'alchimirical' instructions for baking a philosopher's stone. In instructing us in the contemporary procedure, Catren presents philosophy in terms of the alchemical *tinctura universalis* discussed above. The result is as much a polychromatic and polyphonic – that is, broadly universal and non-trivial – unfolding of the real as it is a synaesthetic, even psychedelic, experience of the culinary. In an epistemic exacerbation of the deregulation of the sensory faculties advocated by Day, Catren proposes

that the transmodern vocation for philosophy consists in a 'true-to-the-universe' regime counteracting the 'spectral decomposition of experience' prismatically produced by various modes of thought; his black earth is a concretion effected by the 'polychromatic mediators' of a 'philosophical synthesizer'.

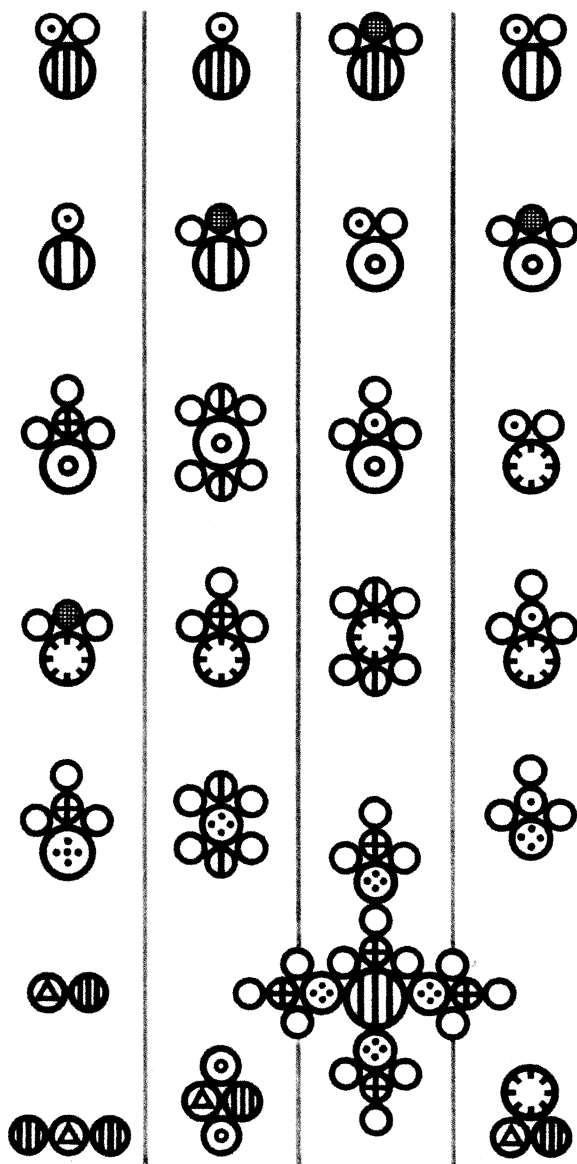
It is evident that the various alchemical operations, absorbed into the mundane activity of cookery, can then become metaphorical tools for a generalized culinarianism; yet to satisfy oneself with this metaphorical transport is to fail to realise the more fundamental pertinence the latter could achieve. In Catren's alchimirical cauldron as in Zalamea's transmodern tatin, the procedures indicated to operationalise and concretise regional echoes of the universal culinary spectrum are stripped of all metaphorical reference to the restricted practice of cookery. Instead they invoke the abstract operations that contemporary mathematics uses to synthesise its complex variety of confections and recipes (Freyd's allegories, sheaves, fiber bundles, etc.) from the elemental materials of the continuum. This points the way toward a refinement of a transcendental 'chemical paradigm', a culinary materialism that not only escapes the 'reductionism [of the] culinary [...] analogous to anthropism' (Thacker), but entirely renounces dependence on any empirical model.

This volume, together with the Appendix of recipes, should be taken as a preliminary exploratory exercise

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– to be continued by the reader – in the mathematico-philosophical vista of culinaryism revealed and brought into focus here. A prospect that certainly answers to the original recipe for this volume (from which, however, the editors have not resisted straying); but which, thanks to the transmodern spirit of our contributors, surpasses it, suggesting not only a culinary thematics for philosophy outside bourgeois gastroculture, and a variety of new perspectives on cookery itself, but a true ‘proliferation of *possibilia*’ (Guha); a taster menu for the unheard-of philosophical feasts, bouillabaises and concoctions heralded by a chemophilosophy, alchimery, or culinary materialism.

Robin Mackay and Reza Negarestani
Vienna and Seremban, June 2011.



The Chemical Paradigm

Interview with Iain Hamilton Grant

Iain Hamilton Grant, one of the four philosophers who spearheaded 'Speculative Realism',¹ is distinguished by being the sole proponent among them of a renewed philosophy of nature. He has argued convincingly² for the erroneousness of the modern and contemporary dismissal of the Naturphilosophen who sought to think the absolute according to the generative power of nature, integrating knowledge of the contemporary deliverances of the sciences into their speculative systems.

Collapse spoke to Grant about this indistinction between philosophy and science, about the particular importance of chemistry as a new model for the thinking of nature, and about the pertinence of the culinary for a contemporary synthetic philosophy.

1. See Appendix to COLLAPSE III.

2. See I. H. Grant, *Philosophies of Nature after Schelling*, 2nd edition (London: Continuum, 2008), 19-21.

COLLAPSE VII

COLLAPSE: In the context of this volume on *Culinary Materialism* – cookery as a possible model for or provocation to philosophical thought, as an activity as unique to humans as philosophical thought, we would like to delve into the specificity of chemistry, and to understand why you have proposed it in various places in your work as a particularly important model for thinking. In particular you re-examine its importance in the age of ‘natural philosophy’, when the sciences had not yet attained the success necessary for them to extract themselves from philosophy, and yet were making momentous, and demonstrable, discoveries about nature.

Firstly, what constitutes the specificity of chemistry as a science - and how does this distinguish it from physics as a model for thought?

IAIN HAMILTON GRANT: There are two things that serve – particularly in the era you mentioned, but also I think beyond that – as what we could call a ‘chemical paradigm’ for thinking. The first is that it gives an additional dimension to the empirical domain, a dimension that the other natural sciences – bar medicine – didn’t have. Medicine simply involves working out animal economy – circulation, patterns of blood lymph and so forth, and so involved messing around in the interiors of bodies; chemistry involved messing around in the interiors of bodies that had no such

organic complexity. It involved a messy experimentation, a grubbing around in the earth - whence the word *alchemy* derives (according to some): the 'dark earth' [*keme*] of Egypt becomes *al-chemia*, becomes *alchemy* and then *chemistry*.

So that's one thing about chemistry: it gives an additional visceral dimension to the empirical, which at one and the same time enables chemistry as a practice to have a specificity that separates it from the other natural sciences, and gives an additional character to experiment. And this is the other, more conceptual side of the question: in all the other natural sciences, certainly around the eighteenth century, there is *nothing* that compares with the *model of knowledge* that chemists were proposing: analysis is one part of the equation, but one understands nothing until synthesis has taken place. In other words, it's not just about understanding the 'nature of nature', not just about metaphysics – its about *recreating* nature. That synthetic ambition is unique to chemistry – it's about production as well as analysis. And the idea that knowledge is only complete once production has taken place, is something that informs Kant's immediate inheritance from chemistry. He mentions this in terms of experiments with calx, especially in relation to Georg Ernst Stahl, a noted vitalist of the era, but also someone who had insisted that to analyse calx was one thing, to resynthesise it was precisely the goal of chemical knowledge.

So it's those two dimensions – the additional elements of the empirical and the additional elements of the conceptual and thus of the experimental. The empirical side is to do with messing around in bodies with internal complexities which are both *irreducible* and *non-organised* (in organic sense). And the other side is that, as a model for epistemology, there is nothing that substitutes for chemistry's ambition to synthesise its products as well as analyse them.

C: Regarding this 'grubbing around in the earth', Dumas says: 'the science of chemistry was born at the potter's wheel, in the glazier's workshop, the blacksmith's forge and the perfumer's salon.' We would, of course, like to add that all of these practices were most likely born in the kitchen. For instance it has been suggested that chemistry was 'invented' with the burning of malachite, which would release molten metals that would run out from under the cooking pot ... Which is to say that chemistry has this relation to everyday praxis. Would be right to say that at the root of the still-reigning hegemony of physics as a model for the philosophical thinking of nature is the fact that the Greeks categorised chemistry under manual work – under *logistika* – separating it from theoretical speculations on the nature of things? So that, although chemistry may be the oldest science, its lowly origins preclude it from being recognised as

the most fundamental, and this conflict continues to resonate through our contemporary epistemologies?

IHG: The normal stratification of the sciences in terms of fundamentality has physics at the bottom, and chemistry as the intermediary between it and biology; and thereafter everything else is merely subdepartments of those. Although there's a really fascinating sense in which no-one really knows where chemistry lies on the spectrum of the sciences. But as you say, there is an immanence of chemistry to life not merely understood in the abstract, but understood in terms of the most concrete practices: one could create a glorious spectrum of chemical activities, from breathing, to the osmotic porosity of our skin in respect to liquids with which we come into contact; but on the other hand, this quite abstruse range of human activities involved in the production of things; and again it's the element of production that distinguishes all of these.

If you look at the alleged fundamentality of the physical sciences, this is still regarded as a Platonic dream. One finds it in even in the criticism of naturalism as Platonism by authors such as John McDowell recently: physics is still considered not just as the domain of armchair theorists but as this linear speculative model intended to serve as the fundament for everything else, if only we can pull the theory back

together, if only we can find the Grand Unifying Theory ...

C: The physicist-platonist would, presumably, argue that in attributing any fundamental role to chemistry, one would confuse ontological with historical or anthropological priority; in which case the question then becomes, what *do* we include in ontology: if ontology includes the structural principles of the synthesis of matter, then chemistry is ontological, since the greatest achievement of modern chemistry lies not in breaking down the elements, but, as you say, in identifying invariants in the way they can be *assembled* – isomerisation, the fact that different compounds can be made of the same elements yielding different properties.

IHG: The elements of ontology are produced, naturalising historicism while denaturing critique, so to speak. This is a favoured response of the late eighteenth century philosophers of nature (Ritter, Steffens), and retains its pertinence so long as the question can still be put. What remains, however, is priority.

C: Historically, how do thinkers in the period you are particularly interested in work out that priority?

IHG: If one rehearses the order of priority on the basis, not of ontology or in terms of philosophical anthropology – and a brief parenthesis on that: there is a fascinating extent to which you could deliver chemistry as the furthest reaches of a philosophical anthropology *à la* Heidegger; you could really develop a question of Being as posed by elements, in so far as these are immediately involved in the exchanges that constitute us physically. Another way perhaps of looking at the animal/world distinction, where a further stratum might be interposed between them in order to generate both animal and world, and to sustain them. In this, the idea of animal economy might again be important. At the outer limits of philosophical anthropology, you could do something like that with chemistry which would be fascinating. Here there are the beginnings of a reversal that is quite interesting and which neither relies on *Dasein* nor on somaticism; this reversal is Schelling's account of *what is involved in sensation*, which is what he calls a 'chemical dynamics'³: He sees the fundamental elements of sensation as being what happens when you have exchanges, when there are possibilities of fundamentally chemical exchange; although physics may be viewed as fundamental in terms of providing light, in terms of the sun,

3. 'Chemistry is nothing else but sensory dynamics', *Ideas for a Philosophy of Nature*, SW II, 323-4 tr. E. E. Harris and P. Heath (Cambridge: Cambridge University Press, 1988), 257.

astrophysics and so forth, there is nevertheless a process of exchange that constitutes the very Sun.

So, the idea of ontological priority being attached to physics rather than chemistry rests on a version of linear production that chemistry confutes, and this is why we could comfortably talk about, as it were, the genesis of all things, in chemical terms, or at least in terms that directly reference chemistry.

So the other side of that is, I think, that there is this fascinating question that arises in the context of the thinking of the philosophy of nature at the end of the eighteenth and the beginning of the nineteenth century: this question is basically ‘what is nature’ – one of the most fundamental questions, the Greek question obviously, the question of the pre-socratics, also the question of Aristotle, and Plato’s question. The answer they all give is that nature, *phusis*, is generation first and foremost – it’s not such and such an entity, object, structure or whatever, it’s *generation*. So, for example, even Plato, in the *Tímaeus*, when he talks about nature, talks about the *generation* of things. There are structural elements in it – he does talk about fundamental ontological elements in the constitution of things presented as the ‘world soul’, although it is important to note that for Plato ‘soul’ is *arche kineseos*, the source of motion, rather than *substance* – but they are elements of the *constitution* of things, and the science of the constitution of things is, in the terms in which

we are discussing, a chemical science – it involves exchanges, it involves reciprocity.

So, the question ‘what is nature’, ‘what is *phusis*’, is answered by the Greeks as ‘*genesis*’; and for the eighteenth century *Naturphilosophen*, that also becomes the dominant paradigm. And what’s interesting is the relationship between the changes that are taking place in the nomenclature for chemical elements post-Lavoisier – changes that, if you like, lend those elements the appearance of metaphysical simples – and the role chemistry plays in changing the thinking of the scientists and philosophers of the period concerning how to pose this question of nature, and what kinds of terms it would be satisfactory to answer that question in. The interest there is centred around this basic question of *what is a chemical element* on one hand, and *what is a chemical process* on the other. The set of nomenclatures that Lavoisier invented were intended to be simples that one could always analyse out of any process, through chemical intervention. But it’s a mistake to regard these processes as being ‘available’ *without* chemical intervention, without processes of analysis and synthesis. Because the idea is, in effect, that the elements are constants in the process of breaking things down and putting them back together again, regardless of whether that’s done by us – by chemists, scientists – or whether it’s done by nature. So it is the entire process of analysis and synthesis that is the

object of chemistry, rather than the element. And it's that reciprocal relation between analysis and synthesis that is key in rethinking nature, *phusis*, generation, in terms of chemistry rather than in terms of structural invariance or whatever.

C: Could we see the *Naturphilosophen*, and this dawn of a new productivist, synthetic model of knowledge, as transitional between the 'first' (rationalist) scientific revolution, and the massive industrialisation of chemical processes in the nineteenth century? If so, then what is their relation, and that of chemistry, to the romanticism that is contemporaneous with the latter?

IHG: Absolutely. And even in England, you could consider Humphry Davy's experiments on leather tanning, and the miner's lamp, all of these renowned practical solutions to practical problems. But the problem of engagement is being posed here – the question of what is happening when there is any engagement whatsoever in nature. Now 'romanticism' is a misnomer in two crucial respects: as regards romantic natural science, the immediate scientific paradigm that comes to mind is biology. The replacement of mechanics with some form of organics is the story that is told, and it's wholly misleading. If you look at the biologists, they're not reducibly biologists, indeed the word 'biology' only becomes current only in about 1802, considerably later than a lot of this so-called 'romantic science'

was happening. Consider for example someone like Kielmeyer (who taught Cuvier – he was not a nobody in the context of the natural sciences!) In 1793, he wrote a discourse on the proportions of forces, which is ostensibly – or is recounted in books of the history of science as – the first proposal of the Mekkel-Serres law, the recapitulation thesis, that ontology recapitulates phylogeny. However, what he's actually after is what has been characterised by Timothy Lenoir in terms of a Laplacian dynamics of the totality of nature – from geogeny through to noogeny, from the production of planets through to the production of thought.

This question about recapitulation is a question about the fundamentality of the cell. In microbiology the question of levels is quite simply: what's basic and what isn't? If the cell isn't basic – and it isn't, phylogenetically (that is, in the genesis of phylla at all), it's a late acquisition, and is highly conditional (there are all sorts of conditions required) – then what is the unit of analysis sufficient to reveal any relation between phylogenesis and ontogenesis? And it's quite clear that this question is evident in Kielmeyer: he was asked by Windischmann: Is it possible that creatures recapitulate not just from the plant to lower animal to higher animal, in the development of species; but actually recapitulate the entirety of earth history? In other words, how many processes have to be gone through in order that later creatures emerge rather than earlier?

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And it strikes me that once you admit that prospect, you very quickly lose any particular somatic referent to pin the basics to. That's chemophilosophy in the recapitulationist sense – the bottom drops out of the picture, the element drops out of the picture, and in place of that you have a non-determinable series of recapitulative cycles.

So, once again, it's a mistake to see the romantic notion of science in terms of biology. This is what defines romanticism, I think: it's not this or that aspect of nature, but nature as such and as a whole. The reason no-one's a Cartesian is the total supplanting of this or that part of nature with the idea of nature as a whole: *nothing* that happens is *not* a part of nature, by definition – otherwise it wouldn't happen. And this includes the most ridiculous of adjuncts, what Aristotle would call 'accidents' and therefore non-essential components. It's that elimination of the distinction between necessary and accidental.

C: During the period we are discussing, we find a *confluence* between chemistry – before it really had a word for itself – and philosophy. It wasn't just philosophy *reflecting* on chemistry.

IHG: No; in fact the idea of separating the two was as alien to the *Naturphilosophen* as it was to those who overtly opposed them: who opposed them

fundamentally on grounds that cannot be reduced to either the philosophical or the scientific. I don't just mean that in a modern sense, I mean simply that the model of knowledge across the community of investigators of the problem of nature does not rely on one set of tools rather than another. And one can identify two reasons why that would be the case, neither historical, both conceptual: One is that, to see the production of concepts as being in any way separate from the production of other natural phenomena is bizarre. No-one's a Cartesian by the end of the eighteenth century; at best what you have is attempts to generate the phenomena of life by artificial means – hence the importance of Galvani's electrical experiments with the voltaic pile, for both philosophers and scientists. There was a German term, *Naturforscher*, which we translate as 'natural scientist', but 'student of nature' is the direct translation, and that's probably the best way to refer to people working either side of the conceptual schism, as it were. But as I say, there's no way of separating them. The reason, firstly, is that no-one regarded thought as being alien from the rest of the processes of production that take place in nature. But secondly, the idea that conceptual activity constitutes or is limited to a reflection upon pre-established entities, simply doesn't cash out in terms of practice. There's a terrible tendency in the history of science to rewrite periods that we don't agree with in terms of what we do. So if you look at

some of the essays in the mid-twentieth-century, up to about 1975, on the speculative philosophy of nature, on the one hand they are full of venom about the work of the earlier period; on the other hand they want to say that anything that might have been of value in it, was in fact arrived at by different means. But this is actually a staggering admission: if there is more than one means to arrive at a given product, whether this be urea or concepts, then why resist the opportunity to pursue that? And the business of the study of nature could not: If there is nothing that is *not* a part of nature, then any starting point, anywhere, of any nature whatsoever, is going to arrive, if not at the same conclusions, then at parallel conclusions, or at conclusions that stand in certain structural relations to other conclusions, to other investigations ... Once again, the model is one of production rather than just understanding, and so we're not dealing with epistemology, we're dealing with fundamental meta-physics, which rests *in* nature *qua* production, rather than simply being *about* it.

C: The birth of chemistry in culinary praxes that we have postulated, is extended by later developments of chemistry which were to a large extent industrially-driven; and implications of the 'synthetic interventions' of chemistry continue to unfold now in the biochemical and biomedical sciences. A key moment was in 1838 when Wohler made urea in the laboratory,

and the way this is presented make it clear that this is an early example of the sort of experiments that are the stuff of indignant media outcry: Wohler exclaims, 'I can make genuine urea without using the kidneys of man or beast!' – an incredible revelation, and one that should perhaps be numbered amongst Freud's 'great humiliations' of man ...

IHG: Yes, and it is the model of *production* rather than mere *understanding* that is the basis of the 'chemical humiliation'. This recalls OncoMouse™, about which Donna Haraway made such a delirious noise⁴ ... and also the synthesis of skin – all repetitions, precisely, of the production of urea – piece of piss!

C: Which contradicts the retrospective illusion that earlier science was somehow *purser*, was merely concerned with analysis and understanding; and that it is only in late modernity that we come to the point when we are pushing it too far, and creating industrial monsters ... in fact it's always been about tinkering with the creation.

IHG: Yes, hence the apologias with which works of natural science – and of philosophy, it should be said – open; hence the discounted questions; hence

4. D. J. Haraway, *Modest_Witness@Second_Millennium. FemaleMan©_Meets_OncoMouse™* (New York: Routledge, 1997).

Newton's otherwise unforgivable dualisms: they have at least an historical, sociological explanation. But I think, in addition, the model of science as being about understanding, about analysis, is regrettably impoverished.

And the same question, I think, can be posed to philosophy: to what extent is philosophy just sitting on the sidelines, wondering how we can understand X, rather than entering into a process of investigation, the investigation of thinking nature but not thinking nature reductively: nature can be produced by thought precisely because thought cannot be produced outside of nature. But this alters what 'thinking nature' means.

It's about experiment not simply in terms of results, but in terms of design, in terms of what sorts of interventions provide what sorts of reaction – Bacon understood that, but what do we take from Bacon? Merely the rejection of Aristotle.

C: The notion that there is an 'overcoming' of aristotelianism – an overcoming of qualitativism – in the quantitative approach to chemistry?

IHG: Exactly that notion, but it rests, of course, on unacknowledged occlusions: certainly Aristotle's physics and zoology and so forth are inherently qualitative in ways that acknowledge it as nothing other than a description of nature. However Aristotle's account of

the natural world is itself parasitic on the rejection of various structural models, various abstract models that one finds in Plato for example. So, not simply the example of mathematics, but the idea that there aren't abstract models that coexist alongside Aristotelianism, and indeed that are made out of Aristotelianism after the neoplatonists' synthesis: the compromise between Aristotelian physics and Platonic physics is made precisely in terms of abstract models of production and cycling and exchange of 'phenomena amongst themselves' – phenomena on their own, so *things* rather than phenomena, really. All in terms of a dynamics. So the idea that there would be a period that we could call 'Baconian' that begins to supplant qualitative description by means of abstract modelling, I don't think is an accurate portrait of the history. However, given that something does happen, and that Bacon is doubtless a substantial contributor to that, we have to ask what it is to which they're responding. And some of the continuities between Cartesianism and the medieval precursors, late Aristotelianisms – to what extent are they purely qualitative, to what extent do they become not merely quantitative but highly abstract. So the grammar, the logical grammar of objects, ceases to be the syllogism, substance and its accidents, that Aristotle presents.

C: Let's now try to test this suggestion that physics and chemistry might represent two different paradigms or models for philosophy: The model of physics envisions a philosophy that deals with analysis into ultimate entities, whereas a 'chemical paradigm' would include a certain experimental component and a 'synthetic ambition' for thought. Can we challenge this simple dualism by exploring the ways in which physics, in fact, is continuous with chemistry (is there, in fact, any specific point at which we can disjoin them?); doesn't physics itself include its own chemical way of thinking?

Consider the 'cosmic cooking processes' that generate the universe as differentiated, before there is 'chemistry proper'): If gravitation precedes heat and elements (the general requirements of material chemistry and cooking processes), then it deepens the chemical horizon, from that of processes and matter to that of the continuum itself: Gravitation creates a new form of modality in the universe, outside the qualitatively homogeneous continuum. Whereas we usually associate physics with the qualitative homogeneity of spacetime, we should note that gravity serves as the universal thermodynamic motor of complexification, and synthesises the 'ingredients' that generate regional contraction or intensification and thus local syntheses. So gravity could be seen as the force which creates a bi-modal web: universal-local, generic-particular; revealing the gradational spectrum of the continuum

wherein transitions and transports along complex modalities unfold as modes of cohesion, liquefaction, production and synthesis ... at which point the objects of chemistry 'proper' emerge. In this case, the 'chemical paradigm' would not belong to chemistry, since there couldn't be a chemistry unless physics was already a synthetic rather than a nomological science.

IHG: If chemistry opens up the paradigm of the synthetic as a way not simply of doing 'philosophy of science' but of doing philosophy of nature, then yes; clearly there's a chemical way of thinking about physics.

Do we understand chemistry and physics as representing different extensive domains, or as having different extensive quanta with regard to their field of objects – being ontologically more or less comprehensive? If that were so, it would suggest that chemistry is in fact related to a circumscribable domain of nature. What then would be the status of thinking synthetically about physics? If it remains analogical, then we're back at the situation of being able to talk about nature only analogically, in its fundamentals, exactly as Kant could; we're no further along than Kant's biologism, even though we're calling it chemistry. It cannot be merely analogical. Therefore it cannot be the case that this synthetic paradigm that belongs to chemistry can be limited to the chemical domain: it must be actually

instantiated in gravity. And if this is the case, then are we merely talking about a chemical paradigm for thought, or are we talking about a chemical process? You see the same thing with [cosmologist] Lee Smolin talking about whether the laws of physics in the early universe are the same as the laws of physics in the late or middle-aged universe. If they are the same, regardless of time, then what precisely is the status of evolution in terms of nature? Is it just the exhaustion of local possibilities with respect to inherently contingent particular spatio-temporal creatures or entities? Or does it apply to nature as a whole? If to nature as a whole, then it cannot be the case that the laws of nature are the same in the early and the late universe. So there you would have a biologism that would extend to the totality of nature. I think it would be a question therefore of by what means we could conceivably manage the relationships between local and universal with respect to chemistry and physics: Is there a conceptual apparatus that could do that without in fact creating the correlationist problem; without creating, as it were, a reality that sits outside of what can only be referred to analogically by dint of access by, let's say, a restricted creature, or a synopsis that fails with respect to the totality?

The other way of thinking about it is to talk about particular processes, particular expressions that manage or do not manage to achieve a certain degree of

extensity with respect to the all. That's how I prefer to think of it. I talk about the 'extensity test' in *Philosophies of Nature After Schelling*. I thought about this as a practical programme for doing the history of philosophy. You could take various philosophical systems and ask, how far do they reach, what do they exclude; so you measure the success of ontology by virtue of what it excludes. And anything that excludes is manifestly wrong – a basic Schellingian principle – and invites a problematic of either eliminativism or productivism on the one hand, or of hyperinflationism with respect to a presumably limited ontology on the other. So the test of extensity merely says, where's the biggest metaphysics ...

Stengers and Bensaude-Vincent, in their work on the history of chemistry,⁵ do write about chemistry as being the science that invents its own universal, and they invoke Schellingian aid in doing so. And there is something interesting about the 'invented universal' – it's doing the same undercutting, but with respect to constructivism, any constructivist solution of the sort that you find in various neokantianisms, but also I think in various strands of contemporary

5. Bensaude-Vincent writes: 'Chemistry creates its own object, manufactures its Universal'. 'Lavoisier: Eine wissenschaftliche Revolution', in Michel Serres (Ed.) *Elemente eine Geschichte der Wissenschaften* (Frankfurt am Main: Suhrkamp, 1994). 671. See also B. Bensaude-Vincent and Stengers, *A History of Chemistry A History of Chemistry*, trans. D. van Dam (Cambridge MA: Harvard University Press, 1996).

philosophy, many of which make claims beyond their fundamentally Fichtean metaphysics.

C: What are the implications of *extinction* for a chemical paradigm of nature and chemophilosophy? If proton decay really occurs, then this means the end of chemistry proper. How can chemophilosophy get past chemistry proper, and the regime of matter, without essentially dismissing materialism?

IHG: If ‘materialism’ is reducibly and exclusively about bodies, then we do indeed have a chemical philosophy, but a chemical philosophy of the sort that Lavoisier dreamt of, and indeed beyond the sort that he dreamt of: a nomenclature that represents the primary bodies of the universe, which are immutable, etc. So, it’s only in such an instance that proton decay would result in a challenge to chemophilosophy. Whereas if matter is more than body, then it follows that this isn’t the same type of problem at all. If it makes sense to talk about materialism in the context of anything other than body, then it’s a very interesting question. Plato, for example, does not talk about ‘Idealists’ in *Statesman* (273b5) – the word is *asomatoides* – the incorporealists. And the Stoics obviously picked this up. So the really big question is what comes first, powers or bodies; must powers inhere in bodies, or are bodies consequences of powers? If powers inhere

in bodies, then powers do not explain the origins of bodies; and therefore we have a fundamental dualism between powers and bodies. If bodies are the products of powers, then not only do we heal the dualism, but also the decay of the body then tells us nothing about the nature of matter.

C: Thus we arrive at field theory, which you discuss at length in *Philosophies of Nature After Schelling*.

IHG: And this relates directly to the history of chemistry – electrochemistry, electromagnetism, Faraday ... the issues of the identifiability of processes stem not from bodies, but from fields and the interactions they have as their consequences: particular realisations and instantiations in particular bodies. The idea is that if being incorporates more than just body – and if it doesn't, then the origin of bodies is incomprehensible – if it does, therefore, incorporate body *and* powers, powers sufficient to make bodies, then we have this dualism: if being therefore incorporates anything more than bodies and powers in a dualistic relation, it must be powers first, and bodies later. And if that's the case, then the ontological bases are not this or that body, but powers that coalesce and accrete in them.

C: We could bring this back to the question of gravity's cauldron again ...

IHG: Yes, and Plato: *Sophist* 247e – ‘I hold it as a mark of being that it consists of power’.

C: Does the pursuit of a philosophy of nature ameliorate the anxieties attendant upon scientific eliminativism, leading to an inclusivism that satisfies the intellectual instinct for the ‘universal’ in a different way? So that rather than scientific thought being (as in Ray Brassier’s *Nihil Unbound*) a trauma that dispossesses us of everything we ‘knew’, it becomes a means to engage in a more ‘Ferenczian’ examination of traumata as cosmic elements that are already indwelling, bored through us, that compose us?

IHG: I think the anxiety of loss, the anxiety of disenchantment in certain post-Sellarsian eliminativists, and certain strategies for *re*-enchantment, have this in common: that if the sciences are able to achieve this elimination, it rests on the assumption that ontology is subject not only to scientific determination, but to scientific *revision* – *at the level of ontology*. In other words, that there are no entities left over to which folk psychology may have referred, or to which animists may have referred. In other words, we no longer even have to ask the question of what is it that animated these rocks in order to make such and such an event to occur – because that rests on a mere misunderstanding. However, does this mean that at any level

we have achieved the elimination of animism? One strategy in this (and I take this to be the one that rests on the interminable reciprocity of nature and culture) is the Adorno/Horkheimer one, which is to say, as the response to positivism, that this brave new world is as animistic as can be imagined: The archons continue to haunt the surface of the earth even as they're ensconced around ocean-floor volcanic vents. But on the other hand, what is it that reduces the local conditions at every level for every phenomenon whatsoever to 'mere' conditions as opposed to entities and processes that in fact take place? So in other words, what's the status of the tunnelling or boring? There are several kinds of real tunnelling or boring. Some of them result in real trauma for animals able to talk about it; some result in areas of Cornish fenland that are unable to support life; some of them result in the deaths of animals that have been sent down to collect the tin from it; some of them result in a species of magical realism such as Novalis dreamt of, such that he sought to write an encyclopedia not simply after the image of the Diderotian disenchantment of superstitious nature, and not simply to respond by re-enchanting nature; but to provide a system capable of *everything*. So, what is the scope of universalism? Is it to establish *the* universal, such that everything else becomes a particular determination of it, in Spinozist manner, and to give universal names, or to give it a

hinge such that the name might not be insufficiently determined by the actuality. Or is it in fact to continue to be part of the process of the whole self-manufacture? The universal manufactures itself – it is not manufactured by chemistry – I think that would ultimately be my answer to Bensaude-Vincent and Stengers.

C: There is a certain affinity between what we have described as the ‘chemical paradigm’ of thinking, and the legacy of ‘universalism’. In the latter, thought begins with the mixture and the mixed rather than the elementary, from ratios of magnitudes (de Villa Nova, Bradwardine), from combinatorial configurations (Llull), from compositional potencies (Novalis) and from synthetic bundles of incommensurable fibres or ideas; thought must proceed from these mixtures in order to approximate or (re)produce the universal. We can go so far as to claim that chemistry is the first synoptic philosophy, in that its starting point is the full spectrum of nature as a universal mixture, or more precisely a unified continuum where the synthetic *topos* and the analytic *locus*, the universal and the regional, are mediated. So there must surely be an intrinsic relation between chemophilosophy and universalism. But is this relation simply a matter of observing how chemistry proceeds in the production of universals?

IHG: What immediately occurs to me about the universalism problematic – the problem of universals and particulars – vis-à-vis thought beginning with the synthetic, or indeed with the analytic, is something like the following: The universal, as contrasted with the particular, entails precisely the same kind of ontic restrictions that the particular does. In other words, if there is a universal, or indeed many universals, then it entails precisely the restrictedness of those universals to being particulars once again – particulars of a certain sort, i.e. ones that cover many. It's not clear that this would satisfy the demands of a properly synthetic or indeed synoptic philosophy.

I am interested, though, in the idea that chemistry is a synoptic philosophy that proceeds *from* the full spectrum of nature. It boils down to the following question: Does nature consist of particulars or not? And if it does consist of particulars, then, if thought begins with a mixture, then it's a mixture of particulars, ultimately, to which we would want to reduce it. If nature does *not* consist of particulars, on the other hand, then particulars are abstractions from, or processes of, the very nature that thought tends to synthesise, analyse, or synopticise with. And it strikes me that nature *cannot* therefore consist of particulars, precisely for the reason that chemistry is a synoptic philosophy – a philosophy that both synthesizes and self-analyses. In other words, if chemistry is properly

a science of nature: if it offers itself as a model for thinking nature, a model for thinking nature that refuses an upper limit to synthesis or a lower limit to analysis, that begins *in medias res*, from the universal which is given as universal and of which the synoptic philosophy itself is an expression.

C: From the time of Lavoisier's chemical revolution onwards, we can see that there is an implicit connection between chemistry and political thought. Whilst the socio-political is recaptured and understood within the chemical continuum, the political chemistry underpins certain strains of philosophies of Nature which fundamentally determine the characteristics of modern European philosophy. How do you see the influence of chemistry on political thought and political chemistry on philosophies of nature since the inception of modern chemistry?

IHG: There's a really fascinating question about nomenclature – Lavoisier as being simply a 'nomenclaturist' of the elements. And the kinds of battles that were contemporaneous with that – Gay-Lussac, for instance, the anti-phlogistical crew and the phlogistical crew and so forth – they're all battling away, and one way that that's been regarded by historians of science is as a regional politics of scientific advance. Clearly it would be foolish to disregard that perspective entirely.

On the other hand, I want to know exactly how far we can take the analogy – or rather, how far we can take the *reality* – of a chemical politics, or a political chemistry. For example, it seems to me that if politics has a chemical basis, and let's say for example that it takes place independently of animals capable of political interactions, then and then only would it be possible for it to escape any kind of chemical base – but, assuming, therefore, that politics is of a chemical base, then what would it mean to talk about a political chemistry, other than a derivatively secondary parasitic account of the discovery of this or that element, or the domestic ownership of various chemical paradigms, of various means of doing chemistry? But that would surely entail a renewed reciprocal relationship between chemistry and politics, such that the one determines the other, at the cost of the latter determining the prior. At which point, we have no direction; there is no relation anymore between politics and chemistry at all. That, I'd suggest, destroys both politics and chemistry, rather than, as it were, situating the political as an interestingly complex region, dare I say, of chemistry.

So there is that reciprocity problem, I have a worry about there being such a thing as the politics of chemistry that's approached in anything other than a metaphorical way. So the question I would want to ask in response, is: At what cost do we get a politics of chemistry? Are we talking about the politics of how

chemistry happens to have been conducted in certain places at certain times? Because if so, then there clearly is a 'politics of chemistry'. But if we're talking about anything more substantial than that, such that it's determining the limits of the thinkable, or the limits of the actual, or the limits of what is, then we must be talking about a very bizarre form of politics that takes its cue from creation narratives of one sort or another ...

C: This is part of your general caution with regard to precipitate politicization.

IHG: Yes: under what conditions is it established that the conceptual is subject to ownership by its users? I'm aware that the cost of this is a species of Platonism, but I think the grounds for the refutation of Platonism have been grossly exaggerated!

C: Nevertheless: if political models of early chemical thought used to be the French Revolution and various affect-driven forms of socialism and class struggle, what would be the political model of contemporary chemistry in which chemical humiliation has been wedded to neuroscientific humiliation and planetary capitalism has its own chemical paradigm (from circulation, consumption and transformation of fuels and minerals to producing its own nature for the horizon of thought)?

IHG: One comes across this in Marx, where *Wechselwirkung* – ‘metabolism’ – is a constant trope. It’s in the *Grundrisse*, it’s in *Capital*, it’s in the *Early Manuscripts*, and it’s in the later scientific work. So the one thing that undercuts the althusserian rupture is precisely metabolism – which suggests one of two things: either Marx is an arch-romantic, in exactly the same way that Nietzsche is, thinking about *Bildung* in precisely the sense of the formative processes that take place in ‘life’, in living nature – and there are good grounds for making such a reading of Marx – or, that this really is a mere metaphor. And Marx himself is conflicted about it, insofar as he’s a politician of *lebensrealismus*, believing that only certain types of entity can possibly be conceived of as being alive – ‘Nature builds no machines’, he says in the *Grundrisse*.⁶ Equally there is no such thing as an automaton that moves itself – this is entirely a specious species created by the engines of capital for ideological purposes. And I’m simply not sure what it means to suggest that there is anything other than a *metaphor* of circulation that capitalism uses; just as there’s a ‘survival of the fittest’ narrative that capitalism uses, and so forth. At which point, what is the additional question here? What is the real

6. ‘[N]ature builds no machines’ writes Marx in *Grundrisse* (trans. Martin Nicolaus [Harmondsworth: Penguin, 1973], 692).

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question at the basis of this – can there be a politics of nature such that the latter is derivative of the former?

C: From a socio-cultural angle, cooking is distinguished from nature's generative and synthetic processes, which span all cosmological processes. But from the point of view of nature, such a distinction is regional and myopic: Nature's self-cooking simply doesn't distinguish itself from culture or the culinary art. For Freud and Ferenczi, this relation between nature and culture is not merely limited to the synthetic field of cooking; it also holds true for eating and consumption. With that said, is it still possible to give a rigorous and systematic account of the culinary art without falling into the myopic realm of gastronomic fetishism? – Within the generative and universal nature, how can consumption and cooking, the gastronomic and the culinary, be distinguished from one another?

IHG: I'm intrigued by the point at which nature's 'self-cooking' arises, and the notion of fetish. For Freud as for Evans-Pritchard, for the late nineteenth-century anthropology of primitive societies, fetishism is precisely what results from an animist metaphysics. Things are alive, fundamentally, they're animated by spirit that moves them, and so forth. So it seems to me that the idea that nature cooks itself is already fallen

prey, if not to a gastronomic, at least to a culinary fetishism. So the general question of fetishism is that it must be balanced against some species of panpsychism or panbiologism – maybe the antithesis of the fetish would be precisely the demonstrability of panspermia.

But there's a fascinating point here about the relationship between two sides of a problem: One situating gastronomy with respect to cosmology – or cosmogony, more importantly; and the other about extending the culinary all the way back to cosmogonic origins. There are two sets of problems there: one is that cosmogony would surely assert that the culinary, if it's the same as the origin of all things, defeats fetishism a priori in so far as it means that the entire universe simply is cooking itself; and the gastronomical is simply the differentiator between toxin and nutrition – a very long way down the chain, if you like. Or, if that's not an overextension of the culinary model – which it might well be, along the lines of my responses to the previous question – then on what grounds do we assert a 'self-cooking' of nature? It's a peculiar image, if you think about it – it's a schizogenic rather than a cosmogenic image. It's the self-production of cookery at the origin of time – which I agree can be thought, but at various well-known costs.

C: All that you have said about chemistry could be applied to your own philosophical work, which could be read entirely as a riposte to the notion that

philosophers have a right to dismiss all questions of the history and contingent stratification or organisation of matter and thought – Kieltmeyer’s ‘dynamics’ – by way of ontologies (whether ‘fundamental’, mathematical, subtractive, or whatever) which *still* claim that there’s nothing philosophically interesting about such ‘accidents’ or their metaphysical treatment. What’s interesting about Quentin Meillassoux’s point of view is that he takes this to new heights, claiming that even the laws of nature are accidental, non-necessary, not just their products. Let’s attempt to crack open the Speculative Realist alliance in a new direction – what would be your counter-position here?

IHG: The short answer is that natural history is entirely, necessarily contingent; however, necessitation happens as a component of that.

C: Necessitation is contingent ...

IHG: ... Not the other way round: Necessitation takes place within contingent universes, and that would be necessarily true of any universe generated by any kind of process whatever.

C: Since for Meillassoux, contingency embraces not only the unreason of becoming and productivity but also indefinite states of frozen fixity, then maybe we

should ask how chemistry could cope with these latter states, that are bereft of any processual dynamics? Is chemophilosophy able to think such an account of contingency?

IHG: So: If we accept that chemophilosophy is synthesis, and that synthesis has no upper or lower limits, then are there laws governing its development, and if so, are they universal with respect to that entire synthetic process? They would be, if and only if they were not themselves subject to synthesis, *which has no upper or lower limits* – which suggests that there cannot be laws that are co-extensive with the process – the laws must be emergent from it – that would be the difference.

C: Wouldn't that be consistent with Meillassoux's construction of hyperchaos: even randomness is a valid 'quotation' of hyperchaos – there is a hierarchical 'lamination' of laws and meta-laws at different levels (so that, for instance, randomness is regular and lawful at a meta-level). But hyperchaos is the intellectual intuition of the collapse of this whole stratal system – a 'pure chronics' – which makes possible to think a 'hard-edged' flipping from one state to another, from one regime of law or lawlessness to another, without reason. Is that 'intellectual intuition' of absolute

contingency something unthinkable within a synthetic paradigm?

IHG: Does a chemophilosophy in fact rule out the sort of radical contingency that would have no determinable consequence? Is process, in other words, too rooted in nature to allow access to the kind of intellectual intuition that one can read from Meillassoux? I've rephrased the question in a loaded way, I guess: to say 'is it too rooted in nature' presupposes the nature of nature such that it would not be subject to the same sort of hyperchaotic possibilities of a sudden hard-edged change.

I don't see that there's any inconceivability to the idea that processes are suddenly emergent, immediately emergent, that there is spontaneity, and so forth, in the midst of natural process. There's an interesting parallel, actually, with a process that derives from Kant and the problematic of the transcendental account of causation. If you ask the question, what is the synthetic a priori, it's very easy to answer that in terms whereby the synthetic a priori becomes nothing more than an epistemology. But Kant's own account vitiates this: he says later on that the extendability of practical reason into the domain that theoretical reason cannot tread is one prospect for the transcendental, and therefore for the realization of synthetic a prioris, that is not simply epistemic, but practical. But then we have,

at the conclusion of the Third Critique, this moment of terror in the face of the absence of finite rational beings from the surface of the earth; at which point it becomes clear that the stakes of the transcendental are *the re-engineering of causality such that time becomes a creature of finite rational beings*, rather than the other way around. And there's a clearly interesting consequence that flows from this with regard to the current question: If causality is subject to radical reorganization such that prior and posterior, ground and consequent, are entirely reorganisable, then what are we asking about when we ask about causality? Are we asking about anything that has any implicit a priori form that is subsequently realized – or does the re-constructibility of causality, the non-necessity considered in relation to causal form, does the number of possible causes, of thinkable causes, subject the very idea of causality to such indeterminism that the arrow of time is removed, at least potentially, that there being any cosmogenic process whatsoever becomes just one among many radical contingencies? Clearly it does; but crucially, this is on the back of an initial experiment which runs thus: is it possible that causality can be thought by finite rational beings in such a way as to make finite rational beings the causes rather than the consequence of causal processes? And it depends fundamentally, I would say, on an answer to that question, whether or not the species of radical contingency is *cosmologically*

instantiable in the way that it might be intellectually intuited for, let's say, an *ontological* project. But if that's the case, if there is that difference, then what is the relationship between cosmology and ontology? And all of a sudden, we're back in the domain of metaphysics, which must have an account of the relation between ontology and nature, at some point.

So I think there's a similarity in the experiment about the re-engineering of time and cause ...

It seems to me that what allows the questioning of the distinction between ontology and metaphysics is simply the thesis that there is something that is necessary, whatever that might be. If one starts from the question 'what is necessary?' and answers that with 'nature' – i.e. a more concrete rather than material response to the question 'what is necessary?' – then one has to ask, what is necessary about nature? To which the only possible answer would be: that there is one, or not – a bivalent solution. Now, one can't claim the absolutely necessity of nature; therefore it must necessarily be that nature is contingent. But nature is also *composed* of contingency: manifestly nature could be otherwise. Xenobiology has made an impact not because it studies actual alien life on alien worlds, but because shows that it can't be ruled out in principle that biologies respond differently to different environmental conditions, and so on. So, the idea of experimentation in the production of different

natures is a forerunner to its analysis here – again, a chemically-inspired account.

C: In-vitro, in-silico, or even in-ratio synthesis before or without analysis.

IHG: Exactly, or with an analysis that takes place after the event – look at the various manifestos about artificial life, for example.

C: So in the absence of the fundamental hypothesis that something must be necessary, the periodic table, posited on the basis of its contingency, becomes the figure of knowledge: ‘these are the ones we’ve found so far’.

IHG: The periodic table is never settled, so who knows at what point one is dealing with discovery and at which point invention? This is something that Stengers and Bensaude-Vincent deal with in their history of chemistry – that chemistry is entirely concerned with inventing both its universals and, even if only through nomenclature, its own beings. Ontology as a process of production, heterogenesis, is prior to Being, in that sense. To complete the point, if contingency is necessary for any nature that is possible, then necessitation takes place within a given nature such that in that nature it ceases to be possible to produced otherwise than,

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in fact, it is. However, how many ways there are to produce that nature is open to question. And that's why there are chemical, philosophical, and physical, biological and ecological accounts of what it is that nature is. Start anywhere, and ask: what are the contingent processes of necessitation that characterise this nature?

C: Questions which the culinary situation presents in microcosm: one can start anywhere, to discover what are the fundamental 'elements', and one cannot distinguish between discovery and invention in the kitchen.

IHG: I could answer that with an anecdote: One of Isaac Asimov's novels *Robots of Dawn* consists of a character who grows up on earth in what are called 'metal wombs', with no exposure to the outside, because the outside's a shit place. In the process of the narrative he goes to this place called Aurora where they grow fruit, and his immediate reaction is that 'there was something offensively carrotty about the carrots'. Now, for that character, for Elijah Bailey, clearly there is a process of discovery in terms of the responses of his tastebuds: he ceases to look at it in terms of pleasure or familiarity and starts to look at it in terms of sensation. And there's an interesting question about the effects of chemistry, culinary chemistry as it were, on sensation, that he is exploring as a matter of experimentation.

As an extension of this thesis, culinaryism in general might operate an interesting affront to taste, which would be simply that it is not about pleasure, it's about the possibility of sensation. There's an entire Sadean algebra of possible chemical combinatorials.

C: Perhaps we could imagine some culinary version of the experiment Ritter made – in the Schellingian conviction that (as you describe above) sense experience is derived not from intellect at all; but rather sense experience, and intellect with it, is derived from physics – whereby he attached a battery to his eye ...! In any case, there's already a kind of asceticism that goes with 'developing a palate' – one foregoes pleasure in order to be educated – although to speak of this as an education that is arrested at different points for different individuals would be to assume a kind of teleology, when in fact there is a whole field of perversions available ...

IHG: Deferred gratification through education ... I think of Freud's troubles with identifying qualitative and quantitative dynamics in the relationship, for example, between intensity as a raw measure of differentiation, and pleasure and pain. His conclusion is that no such distinction is possible – that is, there is no quantitative absolute point at which qualities become the qualities they are.

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C: Indistinguishability of pleasure and pain at high intensity – the Vindaloo Principle?

IHG: On the other hand, to pursue the fictionalisation line, one could imagine a *Crash*-type novel about the sensations of which tongues, stomachs, eyes, skin, are capable – entirely to do with the characteristics of food, a kind of *piling in* rather than a *piling up* ...

C: Orwell achieves a kind of culinary horror in *Coming up for Air*, where the abject indeterminacy of an ersatz sausage is the apotheosis of the oppressive, malignant atmosphere:

The frankfurter had a rubber skin, of course, and my temporary teeth weren't much of a fit. I had to do a kind of sawing movement before I could get my teeth through the skin. And then suddenly – pop! The thing burst in my mouth like a rotten pear. A sort of horrible soft stuff was oozing all over my tongue. But the taste! For a moment I just couldn't believe it. Then I rolled my tongue round it again and had another try. It was FISH! A *sausage*, a thing calling itself a frankfurter, filled with fish!

Totally Lovecraftian, this pulp ichthyoid horror ...

IHG: In Beckett's *More Pricks than Kicks*, Belacqua talks about toast that shatters like glass, to be spread with stilton that is not to be used until it walks on its own:

He looked sceptically at the cut of cheese. [...] He rubbed it. It was sweating. That was something. He stopped and smelt it. A faint fragrance of corruption. What good was that? He didn't want fragrance, he wasn't a bloody gourmet, he wanted a good stench. What he wanted was a good green stenching rotten lump of Gorgonzola cheese, alive, and by God he would have it.

C: After the divergence from a common origin of 'grubbing around' (in your apt phrase, since it etymologically connects shallow digging – supposedly superficial inquiry – and the 'scraping together' of 'grub'), in postmodern food science's obsessive pursuit of new combinatorial resyntheses and novel 'mouth-feels', the culinary, and chemistry and its 'tinkering', are reunited, in this productive perversity.

IHG: You should visit a Scottish sweet shop, they seem to excel in the production of foodstuffs that are truly grotesque – quite shocking.

C: Children have a paradoxical combination of fussiness about food and a taste for the most aggressively

COLLAPSE VII

synthetic products. *Tunnocks Teacakes*, also a modern Scots delicacy, I would have thought of as an early example of chemically-inspired (quite literally) food production – what is the foam stuff inside them?

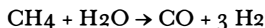
IHG: I've no idea. Cavity wall filling? ... I was thinking of *soor ploods* – they're little globules of boiled sugar filled with such excessive quantities of lime-like substances as to make them totally and utterly unpalatable. The principle upon which these are sold is: see how many you can eat before you throw up.

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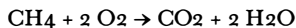
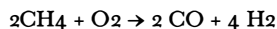
AMMONIA (HABER-BOSCH STYLE)

First, clean the methane to remove sulfur oxide and hydrogen sulfide.

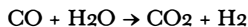
React the clean methane with steam over a catalyst of nickel oxide:



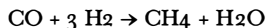
Add air to convert any remaining unreacted methane:



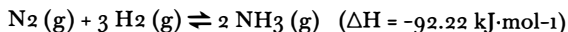
Then use the water gas shift reaction to yield more hydrogen from CO and steam:



Pass the gas mixture into a methanator, to convert most of the remaining CO into methane for recycling:



The methane and steam should now be entirely converted into carbon dioxide, steam, and hydrogen. To complete the ammonia synthesis, use an iron catalyst promoted with K_2O , CaO and Al_2O_3 :



This should be done at 15–25 MPa (150–250 bar) and between 300 and 550 °C, passing the gases over four beds of catalyst, with cooling between each pass to maintain a reasonable equilibrium constant.

On each pass only about 15% conversion occurs, but any unreacted gases are recycled, so that eventually an overall conversion of 97% can be achieved.

Corn Bomb: A Short History of Nitrogen 1660–2008

John Gerrard and Michael A. Morris





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INTRODUCTION

In 2006, John Gerrard discovered a photographic image, taken on April 14th 1935, of a vast dust storm travelling across Texas, in what were becoming the agri-industrial heartlands of the US. In the early decades of the twentieth century, the exploitation of petroleum enabled an agricultural intervention on an hitherto unimaginable scale, resulting in a hundred million acres of this area being ploughed within a twenty year period, thus destroying an ancient and stable grass ecosystem. The catastrophic result was a desertification of the landscape, and the creation of what came to be known as the Dust Bowl. The photograph became the basis for Dust Storm (Dalhart, Texas) [2007], a work which consists of a virtual portrait of the landscape as it stands today, reunited with a realtime 3D model of the historic storm placed as a slowly developing sculpture on the land. This work was first shown in Marian Goodman Gallery, NY in a project titled Equal, that is, to the Real Itself, curated by Linda Norden, in mid-2007.

'Corn Bomb', written by Gerrard in collaboration with chemist Michael Morris, recounts the backstory of this traumatised 'dead zone'. At the centre of this plot is the discovery of the function of nitrogen in synthesizing organic compounds, and the development of the Haber-Bosch nitrogen-fixing process, exploited for the production of explosives, but which

Preceding pages:

Dust Storm at Stratford, Texas. April 14th 1935.

PPC. Centre for American History, University of Texas at Austin.

also enabled large-scale production of the nitrogen-based fertilizer upon which the world's ever-growing population is now largely dependent.

In the following years, Gerrard returned repeatedly to this depleted landscape, making a series of works, including Grow Finish Unit (near Elkhart, Kansas) [2008], Lufkin (near Hugo, Colorado) [2009] and Oil Stick Work (Angelo Martinez / Richfield, Kansas) [2008], all based on buildings and objects discovered within its vast expanse. The area across which the duststorm once passed is now home to new production units, whose enmeshing in automated networks of food production, reflected in their eery 'virtuality' and geographical disengagement, is redoubled by Gerrard's precisionist modelling: Unmanned pig farms on the outer edges of mechanically-irrigated arable fields; melancholy post-peak-oil derricks sucking up the last reserves. Gerrard's works concern themselves with power in the broadest sense, epitomising the structures of power and the networks of energy that characterise the 'new earth' wrought by modernity.

With these new facilities, the sterile surface of this land has once again been returned to 'productivity', packed with remote-controlled batteries that power hungry cities. Though currently invisible, the vast dead zones in the Gulf of Mexico, the result of the excess of nitrogen created in the region prompt the question of how long these batteries can last, thus announcing the next chapter of this geotraumatic saga.

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A SHORT HISTORY OF NITROGEN

1660

World population stands at circa 500 million.

Robert Boyle, an Irish scientist and one of the founders of modern chemistry, is the first to suggest that air is composed of tiny 'corpuscles' or molecules. A keen alchemist, Boyle spent many years trying to turn iron into gold.

1675

John Evelyn, an English writer, gardener and diarist, suggests that rainwater is not pure but instead impregnated with a beneficial substance which he names 'celestial nitre'.

1772

Elemental Nitrogen is isolated by the Scottish chemist and physician Daniel Rutherford but remains unnamed.

1770

World population stands at circa 900 million.

1773

Carl Wilhelm Scheele, an apprentice apothecary from Sweden with no formal education, discovers 'fire air' (oxygen), an 'air' that supports combustion. He produces it by reacting aqua fortis (nitric acid) with

potash to produce a colourless gas. He also demonstrates that ‘common air’ consists of ‘fire air’ and a second component that does not support combustion and causes asphyxiation in animals. This he describes as ‘foul air’.

1774

Joseph Priestley, a Unitarian Church Minister and radical social reformer who went on to become one of the greatest chemists of his generation, shows that ‘fire air’ (oxygen) could support life up to five times better than normal air. He travels to Paris to visit the chemist Antoine Lavoisier, who the following year discovers and formally names oxygen.

1780

The onset of the Industrial Revolution in the United Kingdom creates a need for large quantities of chemicals in the form of soaps, bleaches, acid and dyes for use in the production of textiles.

1790

Nitrogen is formally named in Jean Antoine Chaptal’s *Éléments de chimie*. His choice of ‘nitrogène’ combines the Greek word νιτρον [nitron] = sodium carbonate, saltpetre and French word gène from Greek γεινομαι [geinomai] = to engender, bring forth. It is also referred

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to as Phlogisticated Air by Priestley, and Azote (or 'lifeless') by Lavoisier.

1800

Amount of arable land needed to feed one person for one year: 60 acres.

1827

The role of soluble forms of nitrogen in crop cultivation is outlined in the groundbreaking work of Justus von Liebig, known as the father of the fertiliser industry. He recognises that nitrogen is needed in a fixed form.

Note

The earth's atmosphere is 80% nitrogen, but this nitrogen is non-reactive. Each nitrogen atom is tightly bound to another (N_2). They must be split and 'fixed' to other atoms to form nitrogen compounds: either with oxygen (to form nitrates) or hydrogen (to form ammonia and other amines). Nitrogen is fixed naturally by bacteria that live in the roots of leguminous plants (clover, peas, beans and alfalfa), or by lightning strikes during which nitrogen bonds are broken in the air and bound to oxygen.

1846

The modern history of petroleum begins with the discovery of the process of refining kerosene from coal

by Nova Scotian physicist and geologist Abraham Pineo Gesner. In 1852 the Polish pharmacist Łukasiewicz improves Gesner's method by developing a means to refine kerosene from the more readily available 'rock oil' (*petr-oleum*) seeps. In 1853 the first rock oil mine is built in Bóbrka, near Krosno in western Poland.

1847

John Hutchinson, a 22-year old chemist and industrialist, recognises the importance of scale to economy in the chemical industry and acknowledges that chemicals are needed for domestic as well as industrial use. He opens a factory in northwest England (a region with salt deposits and a sophisticated canal network), and recruits three established chemists: Ludwig Mond, John Brunner and J.W. Towers.

1850

World population stands at circa 1,200 million. Widespread farming on the Great Plains of the United States begins. The advances of the Industrial Revolution and the onset of commercialisation, augmented by a new understanding of the relationship between crop yield and nitrogen and the need to avoid soil depletion, radically changes farming practices across the world. With arable land under significant pressure to feed an increasing population, crop rotation

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between crops and leguminous plants as well as the use of manure, guano and mineral nitrates to increase production become commonplace.

1854

Benjamin Silliman, a professor at Yale University, is the first to fractionate petroleum by distillation. His discoveries rapidly spread around the world. In 1861 Meerzoeff builds the first Russian refinery in the mature oil fields at Baku. Within a short space of time the area is producing almost 90% of the world's oil.

1859

Former railwayman Edwin Laurentine 'Colonel' Drake drills the world's first successful oil well in Titusville, Pennsylvania.

2,000 barrels of oil are produced this year in the United States.

1862

The Morrill Act is passed in the United States to establish State Agricultural Experiment Stations to develop modern techniques in animal husbandry.

1865

California's first productive well is drilled by the Union Matolle Company in the state's Central Valley.

1866-77

A cattle boom accelerates inhabitation of the Great Plains, leading to a series of land-related disputes between farmers and ranchers.

1869

4,215,000 barrels of oil are produced in the United States.

1876

German inventor Nikolaus Otto, working with Gottlieb Daimler and Wilhelm Maybach, develops the first four-stroke piston cycle internal combustion engine.

1879

Karl Benz is granted a patent for his two-stroke gas engine, based on the same technology as Otto's. A short time later, Benz designs and builds his own four-stroke engine. He develops his first automobile in 1885 and patents it in 1886. Soon afterwards it becomes the first automobile in production.

1879-1883

The importance of mineral fertilizers in crop production leads to dramatic increases in fixed nitrogen prices. Its sourcing becomes a major political concern. India, Norway and Egypt each discover resources of various nitrate-containing minerals, but by far the largest are

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found in South America. Among them is a 220-mile long deposit of guano (fixed nitrogen laid down in the excrement of birds over millions of years) and saltpetre (potassium nitrate). The value of the mineral rights within this field is a direct cause of the War of the Pacific (1879-1883, also known as the War of Saltpetre) between Chile, Peru and Bolivia. The government of the United Kingdom sponsors Chile with financial support and arms on the condition of guaranteed exploitation contracts. Following the war's conclusion Chile establishes itself as the world's largest supplier of nitrates.

Companies from the United Kingdom soon own 70% of the Chilean nitrate industry.

1892

John Froelich develops the first successful gasoline-powered tractor, a machine that will ultimately welcome in the twentieth century and usher out the use of animal power. His company is later purchased by Deere & Company and becomes the John Deere Tractor Company.

1893

Patillo Higgins, a Texan businessman and self-taught geologist, founds the Gladys City Oil, Gas, and Manufacturing Company in the belief that modern industry will soon switch from coal to oil.

1898

Chile builds a vibrant economy on guano and saltpetre sales, accounting for around half of its GNP. Exports of copper provide an additional quarter. Over-reliance on these products quickly becomes a major problem. Original forecasts that the nitrate fields would last for 100 years or more appear optimistic as global demand for fertilizer begins outstripping supply. Sir William Crookes, a chemist and senior British government official, delivers a lecture titled 'The Wheat Problem'. It proposes that the world might face starvation if nitrate sources run out (a situation he forecasted would occur in 1921).

1899

Average annual consumption of commercial fertilizer in the United States: 1,845,900 tonnes.

1900

90% of the United States population lives on farms. Although Crookes's warnings regarding the diminishing resources of natural nitrate are initially ignored, the potential impact of a shortage becomes glaringly apparent within a few months. The expectation of war in Europe and the consequent stockpiling of explosives contributes to a steep rise in the demand for and price of fertilizer. Further pressure comes from the food industry, with crop yield in Europe having

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doubled over the course of the last century to feed rapidly-expanding populations. Nitrogen is available in Europe, but only in the atmosphere. At this point, neither plants nor humans can make use of it because a technically feasible method of fixing it in chemical compounds has not yet been discovered.

Note

The growing demand for nitrate, in part to produce explosives during the First World War, eventually caused the collapse of the Chilean nitrate market and the departure of large numbers of British extraction companies. The Chilean economy did not regain stability until the late twentieth century.

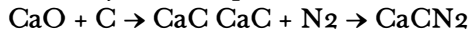
The demand for clean ammonia for use in the production of explosives and fertilizer led to the small scale development of two processes:

1. The arc process

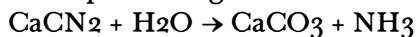


which took place at temperatures greater than 1200°C . This was energy-inefficient and 1 tonne of fixed N_2 equivalent to 1500 kWh.

2. The cyanamide process:



at temperatures greater than 1000°C



Although more efficient, the process was not as easy to operate or as safe.

1900

World population stands at circa 1,600 million.

Amount of arable land needed to feed one person for one year: circa 5 acres.

German funding for research into synthetic munitions-grade nitrate begins.

1901

On January 10, the first major oil well is discovered in Texas. A ‘gusher’ in Spindletop, near Beaumont, rises to a height of more than 150 feet (50 metres). Called ‘Lucas 1’, it flows for nine days before it can be capped. It begins delivering oil at an initial rate of close to 100,000 barrels per day, greater than all the other wells in the United States combined.

1905

The German chemist Professor Fritz Haber, then just 36 years old, publishes ‘Thermodynamik technischer Gasreaktionen’ (The Thermodynamics of Technical Gas Reactions) in which he details the iron-catalysed reaction of hydrogen and nitrogen to create ammonia at temperatures below 1000°C. Soon afterwards $\text{N}_2 + \text{H}_2 \rightarrow \text{NH}_3$ is patented as the ‘Haber Process’. At this time Germany is still 95% reliant on Chilean nitrate.

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1906

126,493,936 barrels of oil are produced in the United States.

1909

A dryland farming boom begins on the Great Plains with the arrival of itinerant, seasonal 'suitcase farmers', mining the land for valuable wheat crops but typically resident elsewhere. It will reach its peak in the 1920s.

1910

Considerable work is required to make the Haber Process commercially viable. 'The interest of a wider circle,' Haber later stated, 'has its source in the recognition that ammonia synthesis on a large scale represents a useful way to satisfy an economic need. This practical usefulness was not the preconceived goal of my experiments. I was not in doubt that my laboratory work could furnish no more than a scientific statement of the foundations and a knowledge of the experimental equipment, and that much had to be added to this result in order to attain economic success on an industrial scale.'

1910

BASF chemist Carl Bosch takes out patents on the use of high pressure and separation processes and moves the concept towards a manufacturing method.

The reaction requires high temperatures (750°C) and pressures and is energy-intensive. Bosch and Haber develop a process to fix atmospheric nitrogen and produce synthetic ammonia.

1910

Large, open-g geared gas tractors are used for the first time for farming in the United States.

1913

The world's first commercial ammonia synthesis plant to produce mineral fertilizer according to the Haber-Bosch Process opens in Oppau, Germany.

Worldwide production of synthetic nitrogen: 7 arc plants (20,000 tonnes of nitrogen a year), 15 cyanamide plants (66,000 tonnes of nitrogen a year), and 1 direct synthetic ammonia plant (Oppau, 7,000 tonnes of nitrogen a year). The ammonia produced is converted to nitrate for use as explosives or fertilizers.

1913

The United Kingdom government (with the help of spies) initiates its own synthetic ammonia programme. Despite recognising the importance of synthetic production, they fail to recreate Germany's success.

1914

The assassination on 28 June of Archduke Franz Ferdinand of Austria in Sarajevo leads to the outbreak of the First World War. The United Kingdom government, which has its own nitrate source in India, expects that war will last just six months due to German munitions shortages. In order to prevent German access, a blockade of Chilean nitrate begins. Despite early successes in defying the British Navy, German ships are soon confined to home defence. The further development of domestic synthetic production suggests that Germany's munitions supply would last until early 1916. A combination of the Haber-Bosch Process to produce ammonia, and the Ostwald Process to convert it into nitric acid and nitrates, prolongs the war until 1918.

Note

All explosive production was based around nitrate, e.g. gunpowder (nitrate + sulphur + sugar), TNT = $\text{CH}_3\text{C}_6\text{H}_2(\text{NO})_3$, and nitroglycerin = $\text{CH}_5(\text{ONO}_2)_3$.

1915

Haber supervises the first gas attack in military history at Ypres, France, on April 22. Somewhere around 10,000 Allied troops are killed or incapacitated by chlorine on that single day. Poison gas remains a focus of Haber's work, and he leads the effort to develop and deploy mustard gas (dichlorodiethylsulfide).

Haber's wife Clara Immerwahr, in 1900 the first female student at the University of Breslau to receive a PhD, expresses her objections to the use of chemistry for making weapons.

After attending a dinner on May 2 to celebrate her husband's appointment to Captain, Immerwahr shoots herself with his service revolver. The morning after her death, Haber leaves home to stage the first gas attack against the Russian army on the Eastern Front.

Note

In 1986 Fritz Haber (son of the chemist) and his second wife, Charlotte, published a book on the history of poison gas, *The Poisonous Cloud*.

1916

During the wartime boom in grain prices, petroleum-driven tractors remove 100 million acres of American midwest prairie grass cover to sow wheat. As a national defence measure to ensure the supply of nitrates used in the production of munitions, the United States Congress authorizes the construction of two nitrate manufacturing plants and a dam for hydro-electric power. President Woodrow Wilson chooses Muscle Shoals, Alabama as the site for both the plants and the dam, the latter of which will later be named after him.

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1918

Following the conclusion of hostilities, Haber is awarded the Nobel Prize. He is a controversial recipient, having been named but found not guilty of being a war criminal.

Bosch, whom many think in fact made the greater contribution, would be awarded the same prize in 1931. It becomes apparent that the German technology for ammonia synthesis is key to continued industrial growth and increased food production. The United Kingdom government hires the company Brunner-Mond to spearhead its research effort. Some time later Aldous Huxley visits their recently-opened and technologically-advanced plant at Billingham, north-east England.

The introduction to the most recent edition of Huxley's 1931 classic novel *Brave New World* states that the author was inspired to write the book (in which Mustapha Mond figures as a character) after this visit.

1920

World population stands at circa 1,900 million.

1922

The United States National Live Stock and Meat Board is founded.

1926

Muscle Shoals Fertilizer Company and the Muscle Shoals Power Distributing Company are created by a consortium of southern United States power companies to utilise wartime facilities for the production of fertilizer.

1926

A light tractor is successfully developed for use in farming in the United States.

1930s

An all-purpose, rubber-tired tractor with complementary machinery comes into wide use in the United States, particularly on the Great Plains.

1931

A severe drought hits the midwestern and southern plains of the United States. Crops die and 'blackblizzards' (great walls of dust whipped up from overplowed and over-grazed land) sweep through the region.

1933

Franklin Roosevelt takes office in the United States.

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1934

An even more more serious drought, the worst in the history of the United States, affects more than 75 percent of the country. Dust storms spread across an area of 100 million acres (400,000 square kilometres), centred on the panhandles of Texas and Oklahoma, and adjacent parts of New Mexico, Colorado, and Kansas. This area becomes known as the ‘Dust Bowl’.

1935

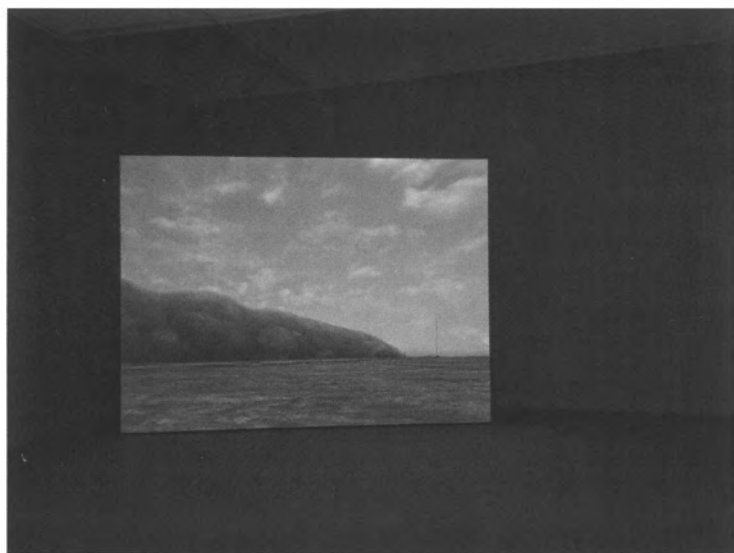
On April 14, now known as ‘Black Sunday’, the worst storm of the Dust Bowl occurs. Travelling at a speed of sixty miles an hour, it causes massive damage. 850 million tonnes of topsoil are blown off the Southern Plains during the course of the year. Millions of acres of farmland become useless, and hundreds of thousands of people are forced to leave their homes. Many travelled to California and other states in search of more beneficial economic conditions. Owning no land, others travelled from farm to farm picking fruit and other crops at starvation wages.

Facing Page:

Top: *Dust Storm (Dalhart, Texas)*, 2007, Realtime 3D projection, 480 x 360 x 5 cm.
Installation view, Directions: John Gerrard, Hirshhorn Museum and Sculpture Garden, Washington d.c., 2009. Curated by Kelly Gordon.
Photograph: Lee Stalsworth

Collection: Daniel Sallick and Elizabeth Miller.

Bottom: *Dust Storm (Dalhart, Texas)*, 2007





1939

Rain finally comes in the autumn, bringing an end to the drought. The outbreak of the Second World War on September 1 contributes to a regeneration of the United States economy, dragging it out of the Depression. The plains once again become golden with wheat.

1950

World population stands at circa 2,500 million.

1960

11 million tonnes of nitrogen fertiliser are used worldwide.

1970

32 million tonnes of nitrogen fertiliser are used worldwide.

1970s

The first ‘dead zone’ in the Gulf of Mexico is discovered. Nitrates leak into the Mississippi River from the fields of the midwestern United States, which in turn feeds directly into the gulf. Such zones, it is later understood, are caused by eutrophication – an increase of chemical nutrient compounds containing

Facing Page:

Top: *Lufkin (Near Hugo, Colorado)*, 2009, Realtime 3D projection, 400 x 300 cm.

Installation view, Thomas Dane Gallery, London, UK, November 2010.

Bottom: *Lufkin (Near Hugo, Colorado)*, 2009.

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nitrogen or phosphorus within an ecosystem causing algal blooms which consume all available oxygen, thereby causing the death of all other organisms in the area.

1980

World population stands at circa 4,400 million.

Average meat consumption in the United States stands at 45kg per person.

1980

61 million tonnes of nitrogen fertiliser are used worldwide.

1990

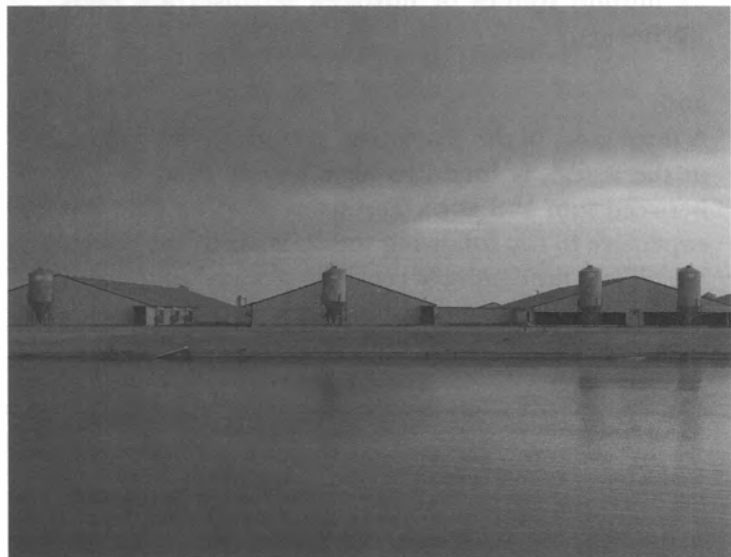
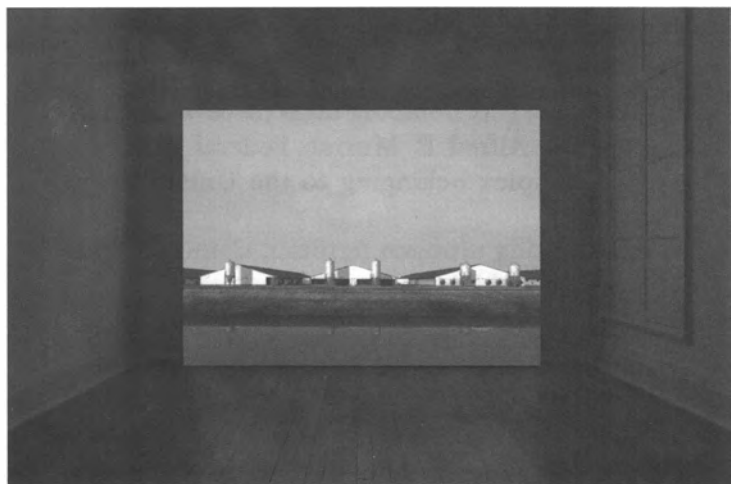
Iraq invades Kuwait, leading to the First Gulf War. 79 million tonnes of nitrogen fertiliser are used worldwide. The amount of fixed nitrogen used in farming in the period 1980-1990 exceeds all previous use prior to 1980.

Somewhere between 50-60% of the global population now rely on fertilizer to eat. The nitrogen used in ammonia manufacture is derived exclusively from fossil fuels: as a consequence, the price of fertilizer has run parallel to that of oil for more than 70 years.

Facing Page:

Top: *Sow Farm (near Libbey, Oklahoma)*, 2009, Realtime 3D projection, 400 x 300 cm. Installation view, Thomas Dane Gallery, London, UK, November 2010.

Bottom: Artist's photographic documentation for *Sow Farm (near Libbey, Oklahoma)*, 2009.



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1995

The Oklahoma City bombing takes place on April 19, targeting the Alfred P. Murrah Federal Building, an office complex belonging to the United States government.

The attack, using nitrogen fertiliser, claims the lives of 168 people and injures over 800 others.

1997

World population stands at circa 5,900 million.

2000

82 million tonnes of nitrogen fertiliser are used worldwide.

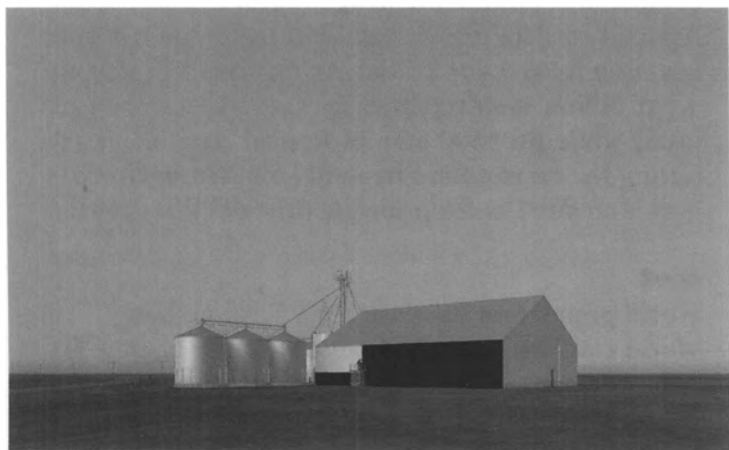
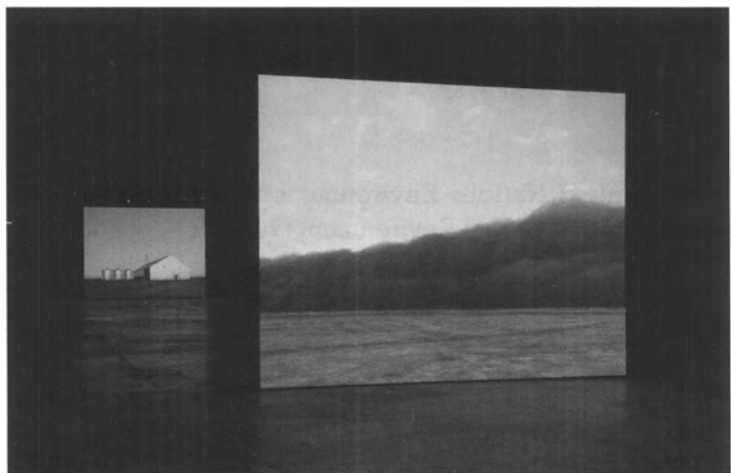
2001

A dead zone in the Black Sea, previously the largest in the world, is found to have largely disappeared between 1991 and 2001. Fertilisers have become too expensive to use following the collapse of the Soviet Union and the demise of centrally-planned economies within Eastern Europe. Fishing again becomes a major economic activity in the region.

Facing Page:

Top: *Dust Storm (Dalhart, Texas)*, 2007 (foreground); *Oil Stick Work (Angelo Martinez / Richfield, Kansas)*, 2008 (background).

Installation view, 'John Gerrard: Animated Scene', Isola Di Certosa, Venice Biennale 2009. Curated by Jasper Sharp & Patrick Murphy / Rha Projects
Bottom: *Oil Stick Work (Angelo Martinez / Richfield, Kansas)*, 2008.



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September 11 attacks on the United States, leading to the Second Gulf War.

2004

The United Nations Environment Programme publishes its first Global Environment Outlook Year Book. It details the existence of 146 dead zones in the world's oceans where marine life cannot be supported due to depleted oxygen levels.

2007

Total meat production in the United States reaches 40.5 billion kg. Exports account for 2.5 billion kg, compared to just 0.1 billion kg in 1970. Department of Agriculture data reveals that world grain production has risen from 0.905 billion metric tonnes in 1965 to 2.091 billion metric tonnes in 2007 (an increase of 131%) while the total area of farmed land increased during the same period by only 4.1%. Nitrogen fertiliser is credited as the principle driver of this growth.

2008

World population stands at circa 6,770 million.

World consumption of oil per day stands at circa 80 million barrels.

180 million tonnes of nitrogen fertiliser are used worldwide.

Amount of arable land needed to feed one person for one year: circa 1.8 acres.

400 gallons of oil are required to feed each United States citizen per year.

2% of the United States population lives on farms.

The manufacture of nitrogen fertiliser accounts for 37% of total energy use in agriculture.

405 dead zones have been found in lakes, seas and oceans worldwide. The most notorious dead zone remains the 22,126 square kilometre (8,543 square mile) area in the Gulf of Mexico. Other major oxygen-starved areas can be found in the Baltic Sea, the Adriatic Sea, the Gulf of Thailand, the Yellow Sea, and Chesapeake Bay. In addition, nitrate concentrations in rivers in the northeastern United States and much of Europe have increased 10- to 15-fold in the last 100 years.

Proceedings of the National Academy of Sciences published online warned of ‘mass extinction in the oceans with unknown ecological and evolutionary consequences’.

July 31, 2008

The Washington Post carries a report on so-called ‘jubilees’ taking place on the Gulf Coast of the United States. Wayne Keller, director of the Grand Isle Port Commission, Louisiana, says that in recent years people all along the coast have used nets and poles to catch

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fish and shrimp which appear to ‘rush’ towards the shoreline. Driven by vast walls of deoxygenated and deathly water, there is nowhere else for the creatures to go. Huge numbers of them are barbecued along the coast amid scenes of celebration.

Corn Bomb: A Short History of Nitrogen 1660–2008 *was first published in the catalogue* John Gerrard: Animated Scene, *which accompanied a project of the same name at the 53rd International Art Exhibition, La Biennale di Venezia in 2009.*

Animated Scene was curated by Jasper Sharp and Patrick Murphy, and presented by RHA, Dublin..

<http://www.johngerrard-venice.net>

<http://www.schlebruegge.com>

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PREPARATION OF WHEY FOR DIVERSE PURPOSES

Clarify whey and remove fines before routing fluid through a pasteurizer and into 10,000-gallon storage tanks. Pass the whey through an ultrafiltration system that boosts protein to 35%. The resulting protein concentrate should undergo chromatographic separation to extract and concentrate lactoferrin. Pump the 35% WPC to a diafiltration system to increase protein concentration to 80%. (The filtration system's PLCs should feed data via an Ethernet connection to the plant's control room. Clearly mark and code flow meters on the shop floor, and label flow direction through every pipe, to simplify maintenance and repair tasks.)

With protein content removed, move the remaining fluid to a permeate pasteurizer before undergoing reverse osmosis to remove two-thirds of the water. Bring the RO concentrate to 60% total solids with a falling film TVR evaporator. Next, pump the concentrate to one of five 6,000-gallon glycol-jacketed crystallizers.

After crystallization, send the fluid to a multi-stage drying system. Heat outside air with propane and mix it with atomized permeate pumped under pressure of 5,000 to 6,000 psi to the top of a 90-foot-tall drying chamber, after which, pump the material pneumatically to the top of a storage silo at at least 5,400 pounds an hour.

Whey To Go: On The Hominid Appropriation of the Pig-Function¹

FIELDCLUB

The resourcefulness to turn byproducts into value-added products ranks among the food industry's most impressive achievements.

‘THE VALUE-ADDED WHEY’,
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1. Whatever the cosmetic resemblances, the true secret of the pig's close relationship with the human lies in the fact that both species boast an augmented potentiality with regard to feeding. Arguably the most important of our many shared traits is our one-chambered stomach and uncomplicated digestive tract, which grants us both membership to that exclusive class, *omnivores*.

2. But whereas human omnivorousness is culturally circumscribed, the pig exhibits an egregious want of

1. A version of this paper was first published in *Antennae – Journal of Nature in Visual Culture*, 2009.

critical faculties. Consequently, our feeling of proximity to the pig cannot but be accompanied by a simultaneous revulsion.

This gustatory exaptation, which informs the derisory folk-image of the pig as an ignoble glutton ready to devour any and all waste product, nourishes our sense of its uncanny nature, as an animal at once disturbingly proximate to us yet falling drastically short of human refinement. And yet (excepting cultures where it is anathematized as a two-faced – non-ruminant but cloven-hoofed – deceiver) the pig is forgiven its gluttony, as it alchemically transforms anything-edible-whatsoever into tasty nutrition for humans.

This furnishes the functional background for the paradoxical status of the pig in folklore and religion, as both venerated producer and feared devourer, and completes the description of what will be discussed below as ‘the Pig Function’. Our thesis is that contemporary developments can be read as destituting the pig of this, its ‘own’ function, and incrementally transferring it to the human.

3. An instructive index of the hominid appropriation of the Pig Function is provided by the historical emergence and resolution of ‘the whey problem’.

Capitalism, characterised by its ability to transform problems into opportunities, has exploited the uncanny relation between humans and pigs, employing

technological prostheses to adapt the porco-hominid gastrointestinal convergence and bypass the critical faculties of humans, thus transferring the Pig Function to the human, and extracting a surplus value in the process.

4. Contemporary with the dawn of civilisation, the human consumption of animal milk can be dated to the beginnings of animal husbandry in the Near East. Over a lengthy period, early civilisations developed various milk derivatives, the processing of which inevitably led to byproducts.

5. Whey (a byproduct of cheesemaking, the colourless liquid left after the curds have been extracted) was long considered as waste. As long as the making remained a small-scale domestic affair, this waste could be disposed of inoffensively. Latterly, the domestication of the pig set the seal on a 'virtuous circle' of waste-disposal and meat production, with whey and skim milk serving as swine feed (Fig. 1, Section 4).

6. This solution barely survived the advent of industrial farming, with large-scale production of milk derivatives taking place far from the dairy of origin. Its value being too negligible for it to become a marketable commodity, whey was sometimes distributed back to farms as pig feed, but was more likely to be dumped

in vast amounts into rivers, sewer systems, or onto roads or fields.

7. With ever-greater increases of scale, the 'whey problem' became more pressing. At this point the dairy industry began to seek a solution by way of extracting various components from whey for use in value-added synthetic products – 'leverag[ing] modern technology' to 'make the lemon of cheese production into lemonade'.² Today, enterprising dairy producers have developed multiple markets for whey, transforming the erstwhile waste product into a valuable commodity. Whey powder's lactose content, along with its texturising, water-binding, stabilising and fat-mimetic properties, makes it an important factor in many convenience foods including infant formula milk, coffee whiteners, salad dressings, cup-a-soups, cakes and pastries, candy, mayonnaise and crisps (Fig. 1, Section 5).

8. One of the most lucrative markets for whey is the production of whey protein isolate and concentrate powders as food supplements for the bodybuilding community, to whom its marketeers promise increased muscle mass (more recently, the same products have also been rebranded as pro-immune system, anti-aging

2. 'The Value-Added Whey', Food Engineering Magazine 02/01/2002, at http://www.foodengineeringmag.com/Articles/Feature_Article/9cb66c90342f8010VgnVCM100000f932a8c0.

formulae). Delivery of these supplements involves the use of advanced technology to refine whey in order to extract the highly bioactive peptide ‘subfractions’ of whey such as lactoferrin, glycomacro peptide and lactoperoxidase, which are found only in extremely minute amounts in the original milk protein. To this end, various processes such as ‘Cross Flow Micro Filtration (CFMA®), ultra filtration (UF), micro filtration (MF), reverse osmosis (RO), dynamic membrane filtration (DMF), ion exchange chromatography (IEC), electro-ultrafiltration (EU), radial flow chromatography (RFC) and nano filtration (NF)’³ are employed.

9. In a paradoxical turn, with US exports of whey reaching £435 million in 2000, the market for whey-based ‘designer protein’ has become more valuable to manufacturers than the staple dairy products themselves – as reflected in the industrial cheesemaker’s motto, ‘cheese to break even, whey for profit’. Concerns have even been raised that the overpromotion of and increased demand for whey may lead to overproduction of milk, and a devaluation of traditional dairy products; although industry-funded researchers find such concerns weigh little against the economic benefits promised by the continued expansion of whey markets.⁴

3. W. Brink, ‘The Whey It is’, at <http://www.bodybuilding.com/fun/willbrink3.htm>.

4. <http://vivo.cornell.edu/individual/vivo/individual20909>.

10. The ‘recipe’ that prefaces this text describes the stages of production in an innovative whey-processing plant. It is notable that this process still excretes its own waste products; namely the fluid from which all the crystallized solids have been removed. However in this case such waste is put to ingenious use:

By the end of the process, virtually all solids have been removed, leaving only 155,000 gallons of water. Some of that water is routed through a polisher, then through a UV system before being chlorinated for use in plant wash down ...⁵

11. Thus, incremental industrialisation and redistribution of the means of production has seen humans usurping the role of the pig in productively absorbing whey. Sophisticated instruments of chemical analysis, together with the development of new ‘luxury’ markets, have allowed the Pig Function to be transferred to humans via a highly complex technological apparatus. A synergy between synthetic food-production processes and culturally-augmented desires has rendered whey palatable to the human, who is thus prepared to inherit the Pig Function, enjoy it, and pay for it.

5. ‘The Value-Added Whey’.

12. Such byzantine embellishments of the simple ‘virtuous circle’ of the whey-consuming farmyard pig bring irresistibly to mind agrosophist⁶ Waylon Susskind’s definition of Extravagance:

By ‘extravagant’ we understand, from the Latin *extravagare*, a ‘wandering outside’: The concept combines the notion of an *expenditure* lacking all restraint (the solar economy as destiny of entropic abolition) and an *errancy* (owing to the legacy of material accretions) whose product exhibits excessive elaboration, even absurdity (from the point of view of the most economical route to that destiny).⁷

According to Extravagance Theory, in striving to dissipate the disequilibrium that results from energy being trapped within the constraints of a legacy of material accretions, energetic systems generate new, overcomplex structures. Susskind, the pioneer of Extravagance Theory, asked whether we could understand a psychic process such as Festinger’s ‘cognitive dissonance’ within such a perspective, with reference to Freud’s original thermodynamic model for psychoanalysis:

6. For historical background documents on agrosophy and neo-agrosophy, see <http://www.fieldclub.co.uk/>.

7. Susskind, W. ‘The Principle of Extravagance’ (Newton Abbott: Maphusis Press, 1968), 133-4. See also Susskind, W. ‘Capital, Extravagance, and Excess’, *Neo-Agrosophical Transactions* 1:3, 1976.

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If the mind is understood as an energetic/economic system with tendencies toward concentration and dispersion, and problems or 'complexes' in which psychic energy becomes trapped or knotted, then its elaborate *symptoms* would be the result of frustrated processes of re-equilibration. Festinger understands cognitive dissonance as precisely a kind of tension (between two or more cognitions) or intensity, demanding resolution or dissipation.⁸ The mind will find a way, no matter how extravagant and circuitous, to discharge tension, to relieve pressure, and Festinger's studies address various otherwise inexplicable cognitive contortions that can result from the adjustments through which persons attempt to achieve the required dissipation.

For Susskind the crucial point is that these adjustments also tend to contort the surrounding milieu; so that in attempting to *solve* the problem (dissipate the intensity or dissonance), one often *changes* the problem, engendering new disequilibria, new dissonances. The essentially entropic 'process of re/equilibration', seeking to discharge problems or differences, since it is always already implicated in its own prior productions, only frustrates itself, becoming the source of further, ever more 'extravagant' novelty, difference, or intensity.

8. Festinger, L., *A Theory of Cognitive Dissonance* (Stanford: Stanford University Press, 1957).

13. Evidently, the attempts described above to ‘solve’ the ‘whey problem’ (itself only the product of a previous ‘solution’, etc.) answer to such a description. We would concur with Susskind’s contention, for too long dismissed in neo-agrosophist literature as a mere aside, that ‘*the hominid appropriation of the Pig Function presents a striking index of anthropogenic Extravagance*’.⁹ In what follows, we shall explore in more depth the context and history of this appropriation.

14. In the peak period of reliance on the pig as a semi-domesticated food source (after the Roman period, up to the eleventh century) pigs were taken to ‘pannage’ by swineherds (Fig. 1, Section 2), to forage on acorns in forests (the Domesday Book measured woodland in terms of how many pigs it could support).

Pannage employed what were essentially domesticated wild boars to process beechmasts, acorns, and fungi (all foodstuffs relatively unpalatable to humans and only eaten by them in times of severe crop failure). In a certain sense, then, the pig was already being used to exploit by-products of the forest ecosystem that would have ‘gone to waste’.

15. Nevertheless, the notion of pigs feeding on *human* waste only emerged later (Fig. 1, Section 3), in part

9. Susskind, *Extravagance*, 212.

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as a by-product of deforestation and the advent of industrialisation. The gradual reduction of woodlands after the Norman Conquest, and the restriction on times of the year that pigs were allowed to roam free in them, were major factors in the decline of pannage.

The erosion of the forests heralded a significant intensification of the Pig Function, as pigs were absorbed into household economies and became 'the Husbandman's best Scavenger, and the Huswives most wholesome sink; for his food and living is by that which will else rot in the yard [...]; for from the Husbandman he taketh pulse, chaff, barn dust, man's ordure, garbage, and the weeds of his yard: and from the huswife her druff, swillings, whey, washing of tubs, and such like, with which he will live and keep a good state of body, very sufficiently ...'.¹⁰

The Enclosures Acts, eliminating common land and limiting access to the remaining woods, produced a flow of deterritorialised labour power, with these husbandmen compelled to become labourers first on farms (as cottagers with a pig kept in the backyard) and later in factories, leading to the mass exodus from the countryside and the growth of the cities. In many cases, in a last ditch attempt to hang on to the autonomy to which they were accustomed, they took

10. G. Markham, *Cheap and Good Husbandry* (13th ed, 1676), 100; quoted in R. Malcolmson & S. Mastoris, *The English Pig: A History* (London: Hambledon Press, 1998), 36.

with them their pigs, which continued to perform their function by eating the family's waste.

The value of this waste disposal only added to the importance of an animal that yielded a range of appealing foods, and was for most cottagers the principal supply of animal fat that was 'relatively non-perishable and affordable'.¹¹ Every part of the pig was used:

While local custom and tradition affected the details of dealing with the dead pig and disposing its various parts, the general practice was certainly to use, in some way or other, as the folk saying put it, "everything but the squeal".¹²

At this point in the process of deracination-by-capital, for both country and city labourers the pig could represent the difference between prosperity and abject poverty.

16. The mid-nineteenth-century expansion of the cities led to problems of sanitation and the outlawing of the city pig (a scape-pig? But this question must be reserved for another time...). In this period, with the rise of commercial farming, pigs became an indispensable organic machine-part in breweries and distilleries in London and in large-scale dairies in other areas:

11. Malcolmson and Mastoris, *The English Pig*, 115.

12. *Ibid.*, 109.

‘[I]n Farms where there are large Dairies, ‘tis necessary that to each Cow there should be an Hog, for the Offals of the Dairy’ (Fig. 1, Section 4).¹³

More intensive methods of pig-husbandry therefore developed in an unplanned synergy with other concentrated food-production processes that provided them with bulk foodstuffs such as whey. Only because of the earlier developments discussed above did the pig appear typecast as a natural candidate for this waste-disposal role. And, as we have seen, its position in this new techno-ecosystem – its status as sole representative of the Pig Function – was far from being assured for perpetuity.

13. Bradley, *Gentleman and Farmer’s Guide* (1732), 77; quoted in Malcolmson & Mastoris, *The English Pig*, 37.

AVIAN INTERLUDE

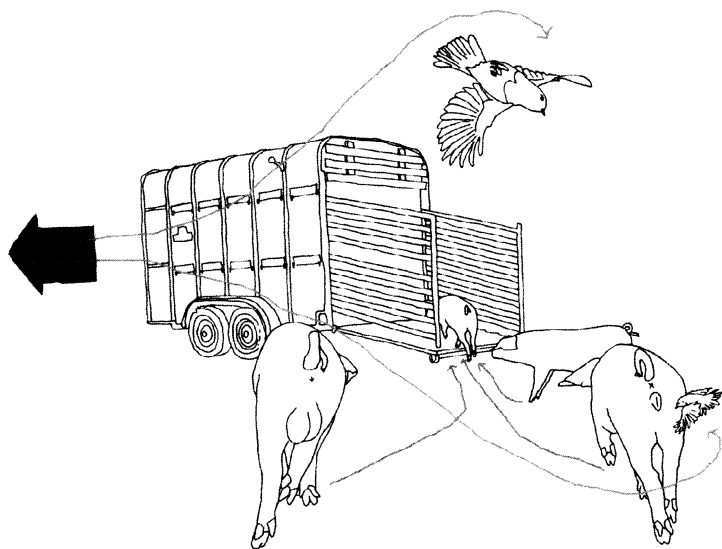
A third party bears witness to the co-implicated history of pigs and human agriculture, and the transference of the pig-function to humans: The robin. It is in England's island ecosystem alone that robins became 'the gardener's companion' – a tame garden bird fond of accompanying humans in their horticultural pursuits. When deforestation and the hunting to extinction of wild boar stripped robins of their previous habit of attending upon boars, waiting for their foraging to turn up the earth and excavate worms and grubs, their habitat shifted and they became companions to humans instead – particularly in the garden, where humans fulfilled the Pig Function, turning over the earth to uncover their morsels.

Norse mythology already anticipates the porcosapient affinity attested to by the robin, describing how the peculiar rooting action of the boar's terminal snout disk provided a model for the plough, and thus initiated mankind into agriculture. With the introduction of a ring in the snout to prevent the pig from routing and destroying crops, did not early-modern farming practice unknowingly terminate its own mythical foundations in the name of efficiency, becoming a simulacrum, a copy destitute of its original model ...?¹⁴

14. Malcolmson & Mastoris, *The English Pig*, 76.

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This assault on the mythic core of pigdom is not only a striking vindication of our thesis, but also a stark indicator as to the profoundly ominous nihilistic undercurrents subtending the hominid appropriation.



17. We have seen that the radically omnivorous pig we love to despise – the ‘greedy pig’ – is largely an artefact of Extravagance, a cultural animal co-evolving with, and catering for the appetites of, industrialised and urbanised humans. Although it has ancient roots, the Pig Function was fully developed only during early capitalism, through an opportunistic harnessing of the animal’s latent potentialities.

The Pig Function, therefore, cannot be said to ‘belong’ to the pig at all. Actually-existing pigs, far from being – as in the popular imagination – the very model of an uncritically omnivorous creature enthusiastic to Hoover up every kind of trash, whether whey powder or other animals’ excrement – merely incarnate a function nurtured by mankind. Mankind, however, is destined to usurp the pig’s role and incarnate this function itself – *because pigs have no spending power*. So long as pigs monopolise the function that bears their name, they prevent it from becoming a locus for the extraction of surplus value. In short, as fat as it may be, the pig is an intolerable retard when it comes to expansion. A hostile takeover is well overdue, in order for the Pig Function to fulfil its true economic potential.

Far from being instinctively exaptive, the pig was a reluctant domesticate, tempted out of the forest by the waste spilling over the rim of human society. Consider, nonetheless, the transformations that our interspecies romance has brought about: From wild boar to pig,

with a concomitant change in the imaginary (from noble forest animal with more in common with wolves than cows¹⁵ [Fig. 1, Section 1] to derided farmyard fatty) in parallel with the move from hunter-gatherer to agriculture.¹⁶

Although the ‘remarkable change in phenotype’ over the ten thousand year period since agricultural domestication¹⁷ is irreversible, there can be no doubt that when it becomes possible, our Extravagance will see us eat our own shit – and pay for it – and the pig will finally be decoupled from the function that has temporarily borrowed its name, released from the labyrinth of Extravagance to wander its own porcine path once again. For capitalism, that great problem-solver and supreme engine of Extravagance, is more omnivorous than the pig.

IRONIC POSTSCRIPT: THE HUMBLE ACORN

What of pannage? In its golden age, pannage had formed part of a complex forest ecosystem. The rare examples of such ecosystems that survive today supply the top-end specialist luxury ‘foodie’ market. A website

15. Ibid., 5.

16. Ibid., 2.

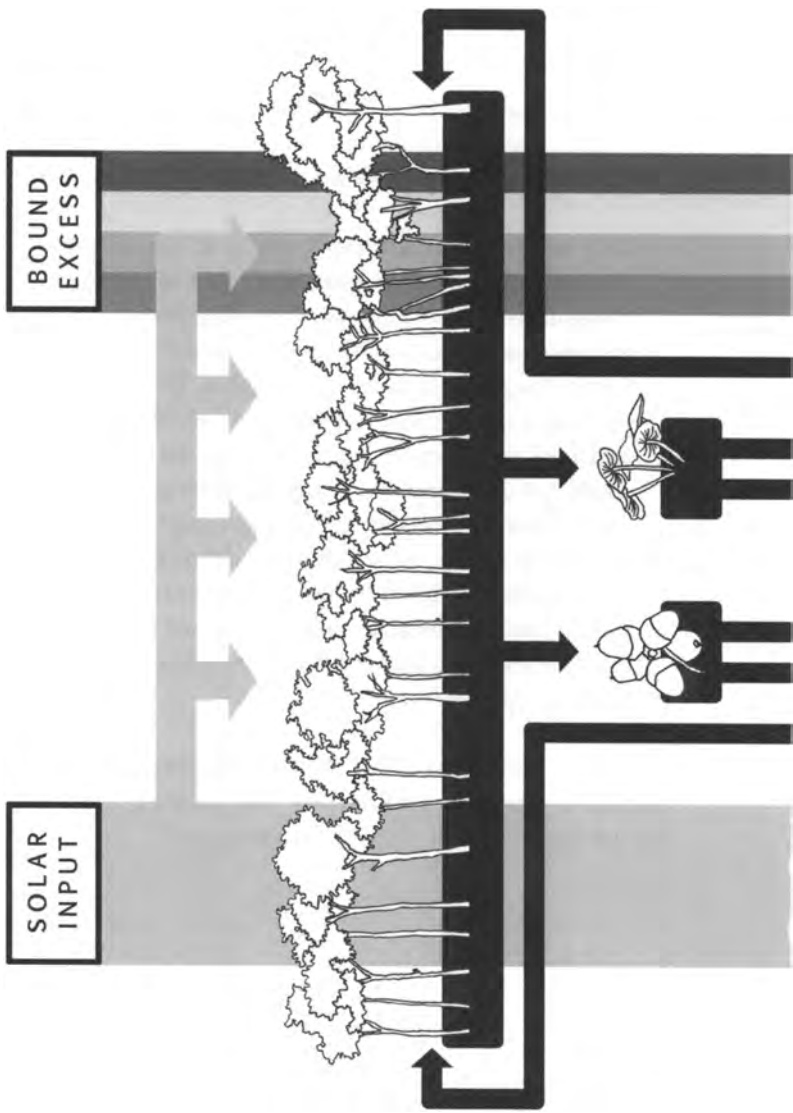
17. See L. Andersson, ‘The Molecular Basis for Phenotypic Changes During Pig Domestication’, in U. Albarella, P. Rowley-Conwy, K. Dobney & A. Eryvynck (eds) *Pigs and Humans: 10,000 Years of Interaction* (Oxford: Oxford University Press, 2007), 42.

marketing *jamón ibérico de bellota*, an astronomically-expensive ham made from acorn-fed pigs who roam the forests on the Spanish-Portuguese border, gushes:

This brings us to the humble acorn, known as the ‘bellota’. Many centuries ago, the rulers of western Spain decreed that each town and village should create pastures studded with oak trees, called the *Dehesa*, for the long term stability of the region. This forest/pasture continues to serve many purposes. The Holm and cork oaks provided firewood for the people, shade for the plants and livestock, cork products, and acorns (*bellota*) during fall and winter. During the spring and summer cattle and sheep graze the fields. During the fall and winter, when the acorns are falling from the trees, the pigs are released to fatten up. This ancient human-created ecosystem survives intact to this day.¹⁸

The same site offers ‘True Acorn-Fed Iberico Cured Shoulder’ for sale online, for the princely sum of \$34.50 for 4 ounces. Feeling extravagant?

18. <http://www.jamon.com/iberico.html>.



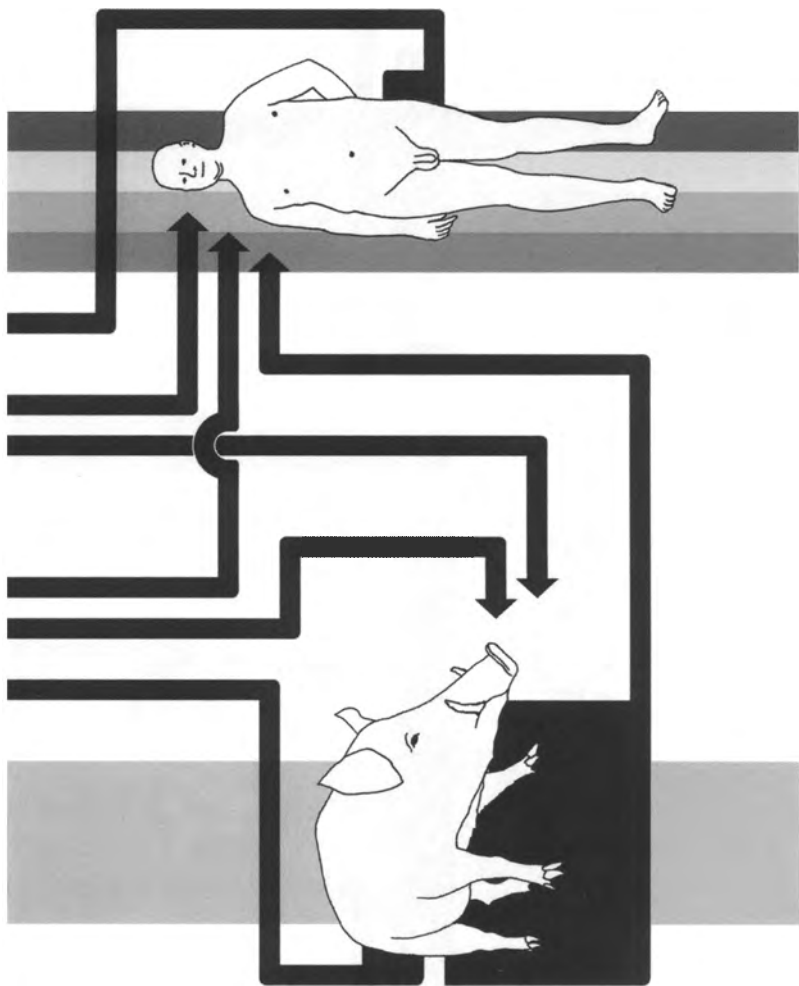
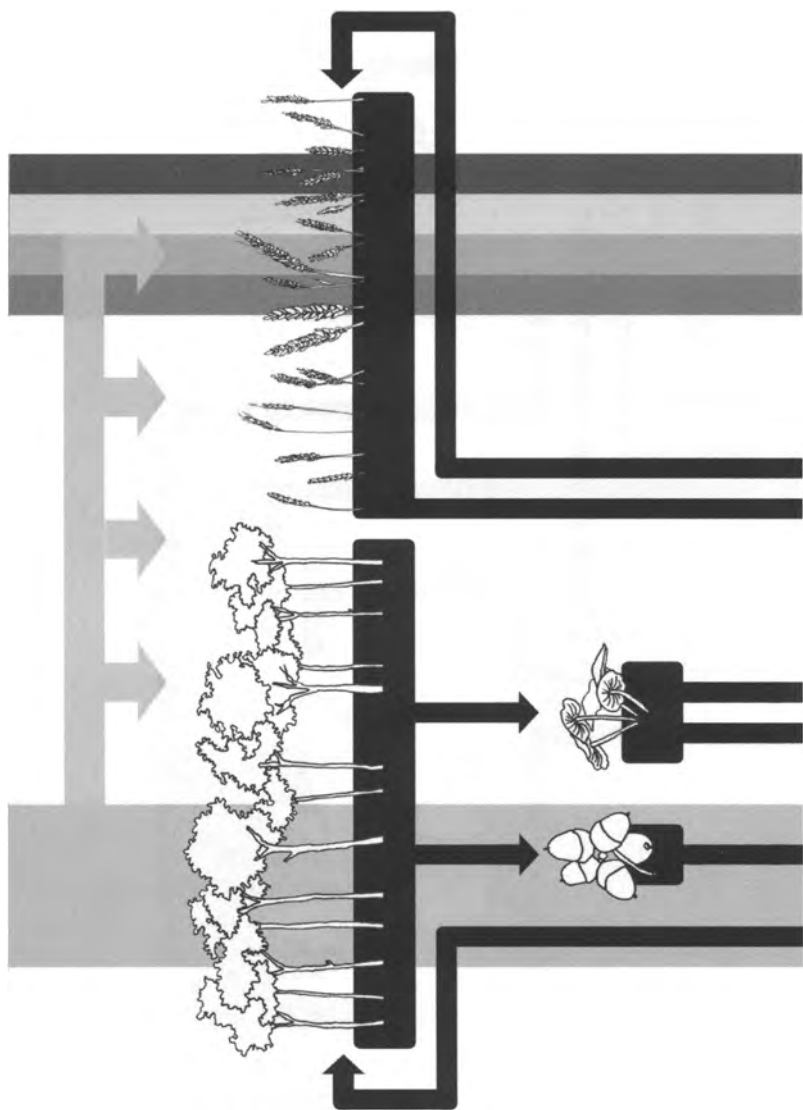
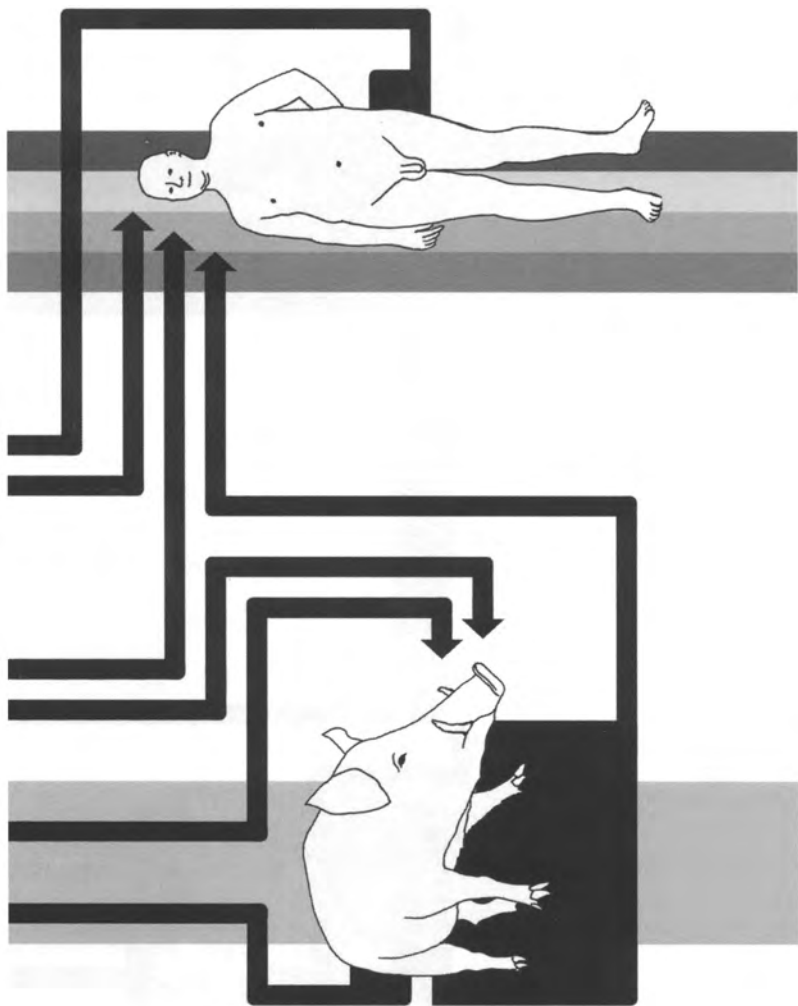


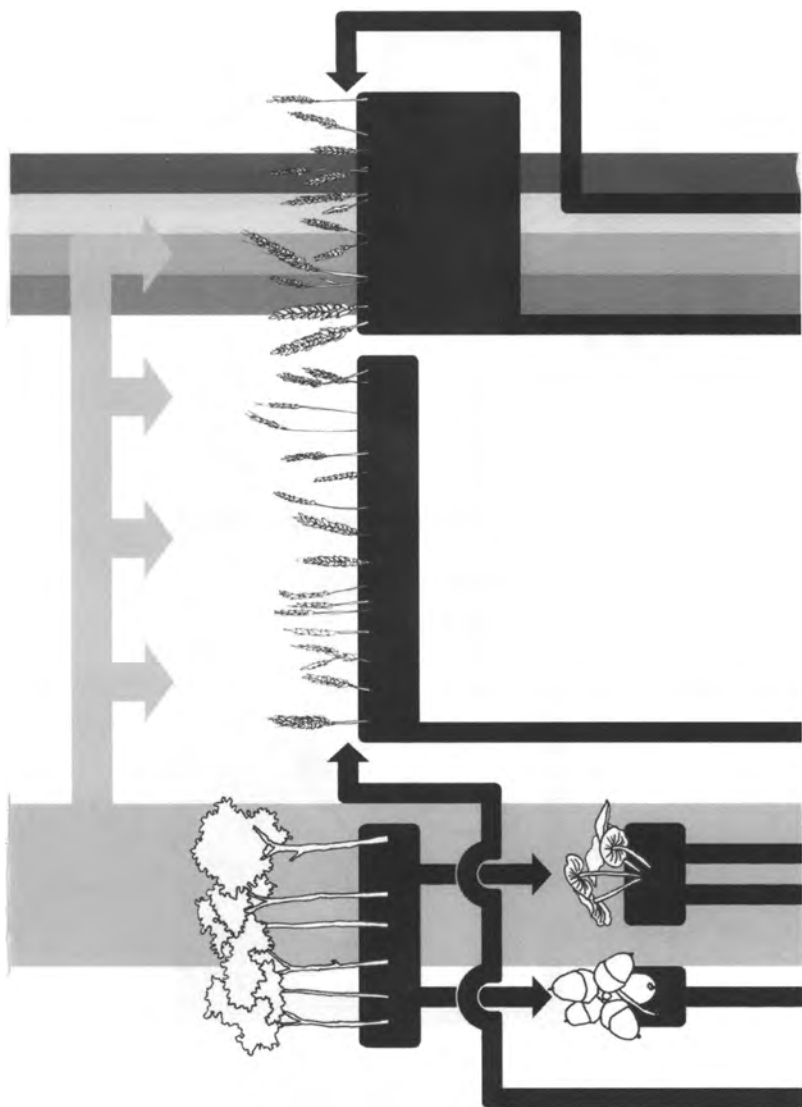
Fig. 1. Historical development of Extravagance in the Pig Function.

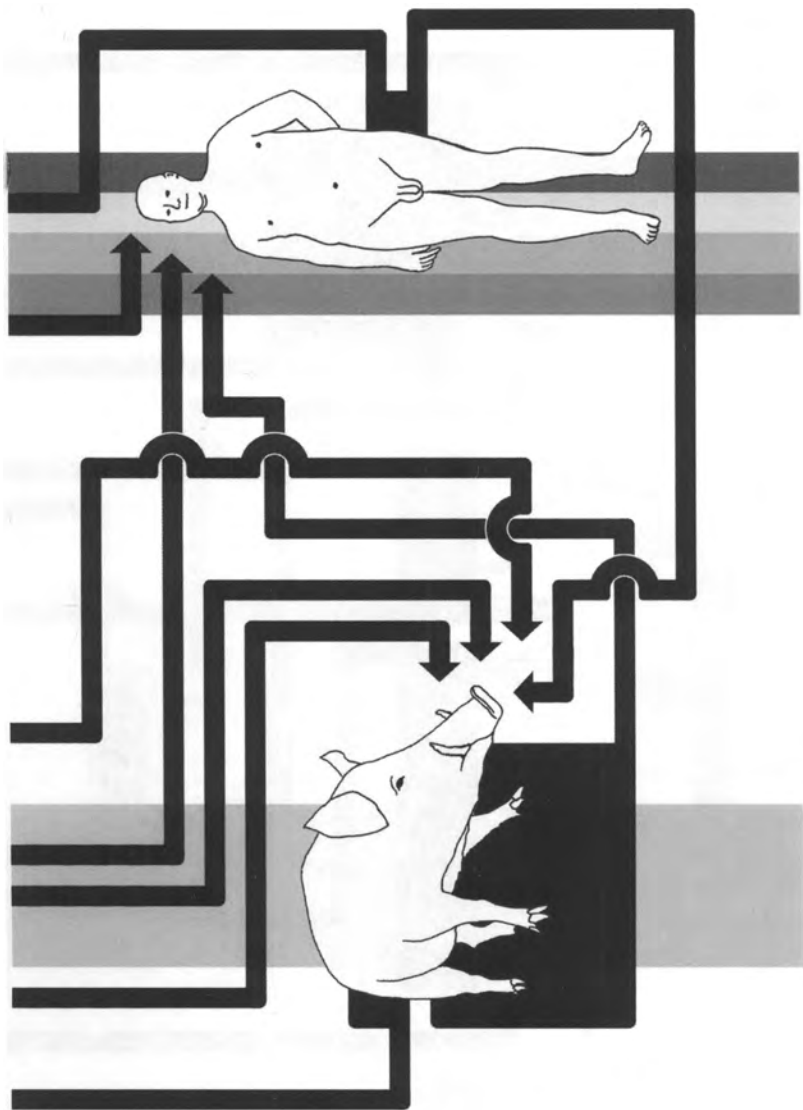
1. Forest porcosystem BP [Before Pannage]



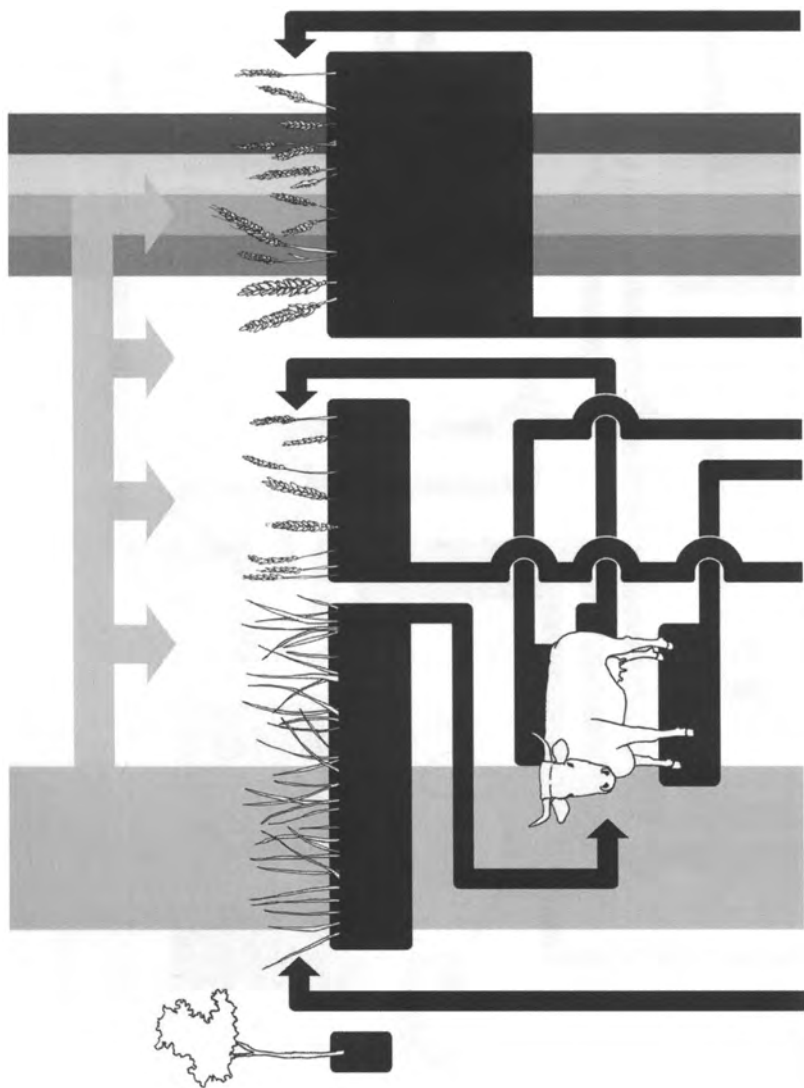


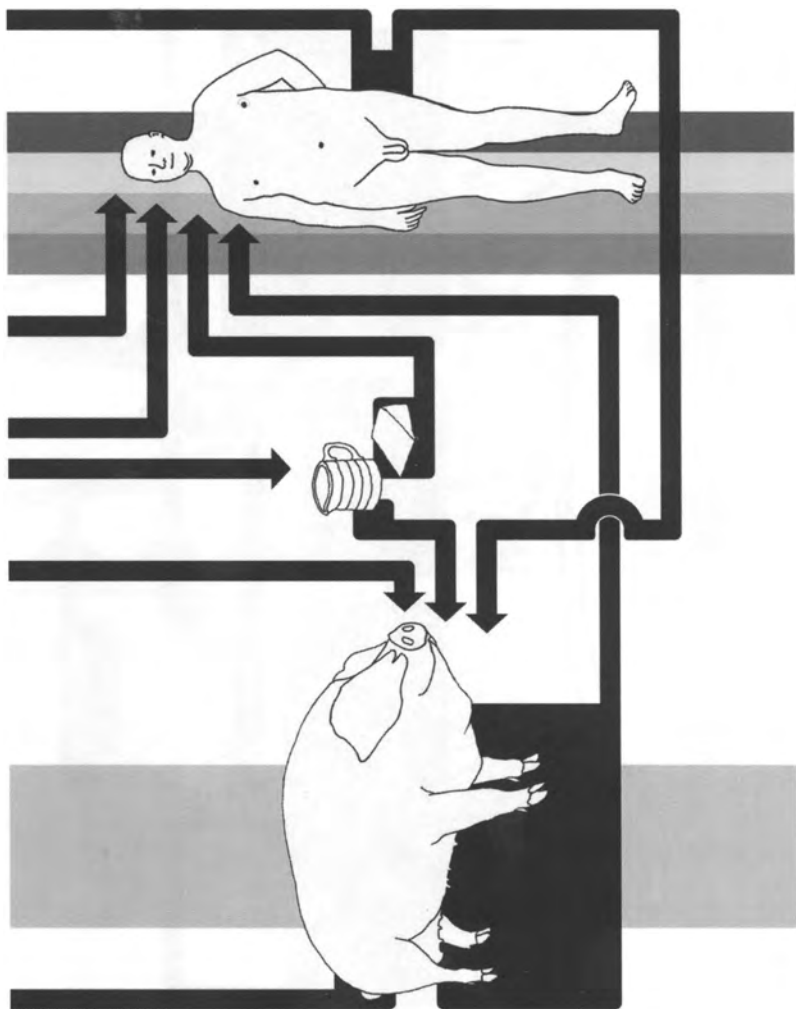
2. Heyday of pannage
(Roman period – 11th century)



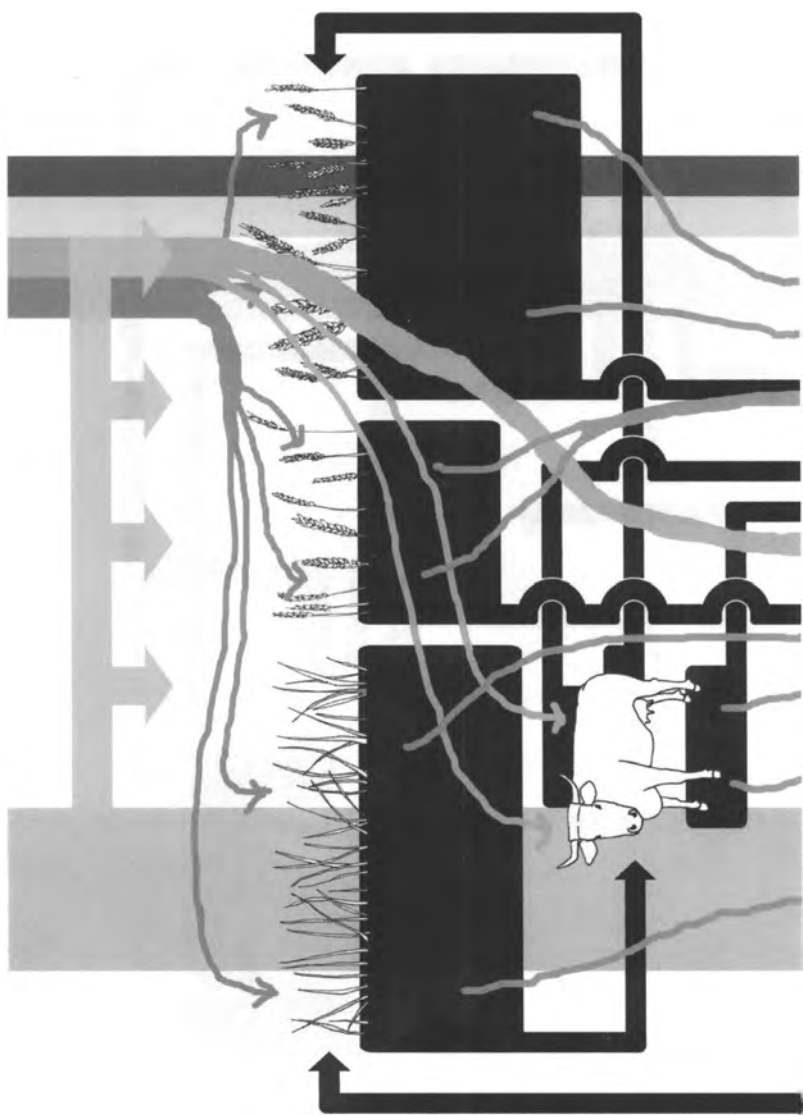


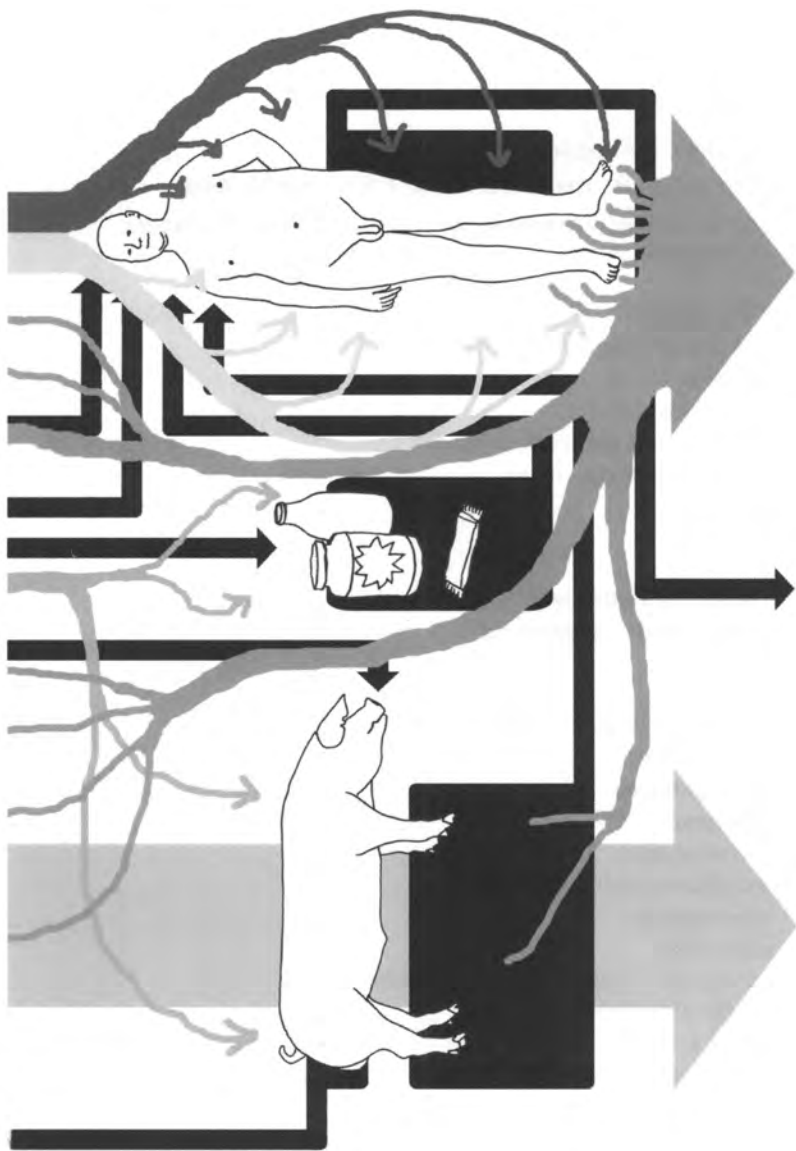
3. Decline of pannage
(Norman conquest – 16th century)





4. Proto-Industrial Pig
(16th – mid-19th century)





5. Porcine Extravaganza:
Industrially-augmented function transferral period (20th century)

A TASTE OF HOME:

THE HOOAH! CHOCOLATE CHIP ENERGY BAR

Has an optimal 4:1 carb-to-protein ration. Provides 17 vitamins and minerals.

Corn syrup
soy protein isolate
fructose
maltodextrin
fractionated palm oil
unsweetened chocolate
rice flour
dextrose
glycerine
cocoa (processed with alkali)
whey protein concentrate
dates
raisins
barley malt extract
soy lecithin
natural flavor
rice bran
ascorbic acid
d-alpha-tocopherol acetate
niacinamide
zinc oxide
tocopherols added to protect flavor
pyridoxine hydrochloride
riboflavin
thiamine mononitrate
folic acid
vitamin B12

The New Alimentary Continuum

Rick Dolphijn

*As you might have expected, I have a message for you
from control.*

ZILLATRON LORD OF THE HARVEST

AN ECONOMY OF SPEED

On 25 October 1832, President Andrew Jackson signed an order that was to replace the rations of rum, whiskey or brandy, as they had been given to his soldiers before, with sugar and coffee (Army General Order No.100). Jackson's Executive Order was recognized by Congress in July 1838. Since the 1820s, Secretary of War John C. Calhoun had already warned against the harmful effects of alcohol for field operations, favouring coffee instead, yet the actual replacement of alcohol with sugar and coffee, at the rate of four pounds of coffee and eight pounds of sugar per 100 rations, cannot merely be seen as a negative response to alcohol consumption. The change from alcohol to caffeine was the first sign of a new economy of violence

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which increasingly controls the world today. It is an economy that is all about speeding up the strategies and tactics of the now omnipresent battlefield.

It should be noted that neither sugar nor coffee were products of mass consumption at that time. By introducing them to the military diet, into *solde*, President Jackson invented the first of a whole series of revolutionary weapons through which (US) military intelligence speeded up modern life. For although designed for military use, these weapons all became customary mass consumption products. It was World War One, in particular, that introduced sugar and coffee (and also chewing gum), together with their economy of speed, to every household around the world. Turning every body into the body of a soldier, the twentieth century thus became the time in which all of these military, alimentary machines, that had remained largely virtual for so long, turned viral. Radically new undercurrents have spread throughout the earth, breeding new life that today controls all the mouths in the world, feeding them Martial Law, creating a universality that is determined by notions of warfare, subjectivity and territoriality. Virilio is right to insist that in our days the fabric of war is everywhere. It has sunk deep into the earth, into every object, into all of us. But his 'Pure War'¹ is not just to be found in and around technique.

1. P. Virilio, *Pure War* (Los Angeles: Semiotext(e)/Foreign Agents, 1983).

Claude Lévi-Strauss² had already told us that nutrition and alimentation (and not copulation) conceptualizes space (and not time), making edibles (virtual as they might be) the most elementary of all hyperobjects, the primal strata, the first and foremost of the ‘phenomena of thickening on the Body of the Earth’.³ This new military regime too, starting by replacing alcohol with caffeine, reaches well beyond proposing us particular products to consume. Its desire to speed up every body is also enacted by setting out new paths of food preparation (the microwave oven and more recently, flameless heating) and of ways to keep products fresh at all times (canning, sterilization, and more recently, zein packaging). But these are only a few of the formalizations and quantifications produced by the machinery that today keeps *everything* in a permanent state of emergency, as Virilio would put it. It has brought us wholly other physicochemical, organic and anthropomorphic contours of the earth, opening up a whole new and unforeseen arsenal by means of which life on earth is controlled and will proceed.

Today, as part of the First Strike Rations, US soldiers are offered large amounts of carbohydrate (maltodextrin) and caffeine – presented to them, of course, in a much more refined way than was the case

2. C. Lévi-Strauss, *The Origin of Table Manners* (Chicago: Chicago University Press, 1978), 190.

3. G. Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: Minnesota University Press, 1987), 502.

two hundred years ago. Field marshals in our times are given mocha energy bars fortified with 200 mg of caffeine, or chewing gum with 100 mg of fast-absorbing caffeine per piece, along with central nervous system stimulating d-amphetamines (commonly referred to as 'speed') and Modafinil, a (new) synthetic drug currently being tested by the Defense Advance Research Projects Agency (DARPA). In line with these new rations, the discourse surrounding food additives has of course taken a more 'scientific' (read 'Taylorist') turn over the years. Tests with modafinil discuss the increase of cognitive performance in sleep deprivation situations,⁴ its thermogenetic and aggression-increasing effects. Today, the US Army proudly informs us about its improved caffeine additives,⁵ claiming to have increased soldiers' 'usefulness' from 48 to 68 hours (when taking a piece of gum every two hours). The chewing gum is named 'Stay Alert', which nicely summarizes what the large amounts of caffeine are supposed to do: to maintain the troops in a perpetual state of emergency. *Stand up straight. The enemy is here.*

4. See for instance J.V. Baranski, R. Pigeau, P. Dinich, I. Jacobs, 'Effects of Modafinil on Cognitive and Meta-Cognitive Performance' in *Human Psychopharmacology: Clinical and Experimental*, Volume 19, Issue 5, 2004: 323-32).

5. Committee on Military Nutrition Research, Food and Nutrition Board, Institute of Medicine, *Caffeine for the Sustainment of Mental Task Performance: Formulations for Military Operations* (National Academies Press, 2001).

FRAGMENTS OF THE HISTORY OF THE FUTURITY OF WAR

Although of vital strategic importance, alimentation is still poorly developed in military theory. Famously, Napoleon is supposed to have said that an army marches on its stomach; but, at least in the occidental tradition, military theorists prefer to pay homage to the work of Carl von Clausewitz (1780-1831), whose strategies of the battlefield only mention the soldier's body when it comes to the question of shelter.⁶ His famous adage 'war is the continuation of politics by other means' is certainly still valuable for us; but in approaching this notion of politics from the alimentary point of view, we should not focus too much on the Apollonian romanticism of Clausewitz and instead (for a start) turn to his Dionysian predecessor, Frederick the Great of Prussia (1712-1786). Frederick, an artist, *bon-vivant* and very successful military leader, was perhaps one of the first generals in the West to emphasize that 'the first object in the establishment of an army ought to be making provision for the belly, that being the basis and foundation of all operations'.⁷ This indeed is a very different point of departure to that of the Clausewitzian tradition.

6. General Carl von Clausewitz, *On War* (Brooklyn, NY, Brownstone Books, 2009), 116.

7. See T. Foster. *Military Instructions from the Late King of Prussia to his Generals* (London: Cruttwell publishers, 1918), 7.

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Our minor alimentary history of warfare then brings us to William Tecumseh Sherman (1820-1891), the famous general of the Union army in the American Civil War, who, following the aforementioned President Jackson, seems to develop Frederick's politics further, stating that:

[t]he feeding of an army is a matter of the most vital importance, and demands the earliest attention of the general entrusted with a campaign. To be strong, healthy, and capable of largest measure of physical effort, the soldier needs about three pounds gross of food per day, and the horse or mule about twenty pounds ... Probably no army ever had a more varied experience in this regard than the one I commanded in 1864-65.⁸

With Sherman, Frederick's emphasis on alimentation was rewritten dramatically. Frederick considers the food intake of soldiers 'the basis and foundation of all operations', in other words as the most important *preparation* for the battle to come (food) or *celebration* after it is won (alcohol). The Executive Order by President Jackson, as echoed in Sherman's style of warfare, however, has accelerated into a continuous set of *interventions*, into continuously taking action via

8. In O. Connelly, *On War and Leadership: The Words of Combat Commanders from Frederick the Great to Norman Schwarzkopf* (Princeton, NJ: Princeton University Press, 2005), 24.

alimentation, thereby actually making alimentation a *central means* of warfare (deterritorializing dominant ideas on logistics, strategy *and* tactics). Sherman fully included the body of the soldier as part of a total machinery that no longer has time to prepare for a battle to come or to celebrate when it is over. With Sherman the soldier is always already actively intervening. Sherman gave us the soldier who has to keep on drinking coffee and chewing gum.

Military historians had already noted Sherman's ability to move deeply into enemy territory fast, which again draws our attention to the new weaponry he made use of, the new idea of the motor he applied. It is remarkable that, in terms of the semiotics of warfare that still dominates academic thought in this area, Sherman appears only as the merciless general who so successfully practiced a scorched earth policy against the Confederate States (during his March to the Sea, for instance). This was only his rewriting of Sun Tzu's famous claim that 'each pound of food taken from the enemy is equivalent to twenty pounds you provide by yourself'.⁹ Sherman understood the black earth, the chemistry of distribution. He knew that to control the alimentary continuum he had not only to feed his soldiers continuously; he had also to starve the enemy forces. To control alimentation is to control life.

9. Sun Tzu, *The Art of War* (Boston: Shambhala, 1988), 28.

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In Sherman's generalization of the alimentary principles we can spot fragments of a style of warfare that emphasizes a control of *life as a whole*. Sherman's new strategies prehended the new processes of subjectification that were to dominate the earth and to alter its synthetic and chemical horizon accordingly. Of course the promotion and development of performance-enhancing foodstuff comes with the activation and addition of desirable enzymes and micro-organisms as well as the inactivation and exclusion of unwanted enzymes and micro-organisms from edibles and from the earth. But this politics of speeding up is a *human* endeavour, as it comes with a reterritorialization of the entire earth (and all of its possible life) upon these new (accelerated) processes of subjectification. Adding organic micronutrients such as Vitamin C might accelerate the human being, it does not affect the animal. Or even worse: adding Glyphosate (a systemic herbicide) to our foodstuff (such as soy) kills competing weeds, but is also toxic to aquatic organisms and especially amphibians.

Sherman's military style in the end burns the earth as it creates, feeds, breeds, enriches, grafts, as it accelerates a new earth to come. It once again shows us that a *military style* has never been just a blackboard strategy 'designed in order to achieve some end', such as Wylie and Caldwell Wylie consider to be a common ground

for military styles in literature.¹⁰ Rather we agree with them when they conclude that '[w]hat is necessary is that the whole of the thing, all of war, be studied. The fragments of war, the minor parts of strategy, the details of tactics, are quite literally infinite'.¹¹ Military styles are to be defined pragmatically or empirically as a set of 'mechanism-independent, structure-building singularities ... capable of being incarnated in many different physical mechanisms'.¹² Sherman's first attempts to control life as a whole are still very elementary compared to how this is practiced by US military intelligence in the twenty-first century. They do however announce this whole, total politics. His experiments do not anticipate the contemporary scenario, but they were the first attempts to grasp its motor.

Today's Meals, Ready to Eat (MREs) – the field rations served by the US Army to its troops in combat – and the machinery that surrounds them (crucial parts of it developed by the Soldiers System Centre in Natick, Massachusetts) perform the quantum leap that fully achieves the economy of speed. The new alimentary continuum has now installed itself, distributing a chemical and synthactical whole that accelerates all. It became fully operational in January 2003, when

10. Rhodes, James F., *History of the United States* (Vol. V. 1864-1865, Ch. XXIX) [1904] (Port Washington, NY: 1967), 14.

11. Ibid., 12.

12. M. DeLanda, *War in the Age of Intelligent Machines* (NY: Swerve Editions, 1991), 18.

Donald Rumsfeld, the illustrious State Secretary of Defense in the first George W. Bush administration, concerning the torment of Mohammed al-Qahtani at Guantanamo, approved of new ‘interrogation methods’, many of them already described in the Army Field Manual. Apart from putting them in isolation, changing their sleep schedules, and making temperature adjustments in order to disorient them, Rumsfeld also denied them hot rations and limited their intake to MRE products.¹³ The interrogation log of detainee 063 (al-Qahtani) from 23 November 2002 already shows this new policy in action: ‘0755: The detainee ate the entire MRE plus an extra cereal bar’.¹⁴

ALIMENTARY REGIMES

Agamben concludes that ‘[w]hat is new about President Bush’s order is that it radically erases any legal status of the individual, thus producing a legally unnamable and unclassifiable being. Not only do the Taliban captured in Afghanistan not enjoy the status of POWs as defined by the Geneva Convention, they do not even have the status of people charged with a

13. Stuart Taylor Jr. and Benjamin Wittes, ‘Refining Immigration Law’s Role in Counterterrorism’, in B. Witten (ed.) *Legislating the War on Terror: an Agenda for Reform* (Washington: Brookings Institution Press, 2009): 289-345, 305.

14. Interrogation log detainee 063. Viewed at: http://ccrjustice.org/files/Publication_AIQahtaniLog.pdf (last visited 5th of May 2011).

crime according to American laws'.¹⁵ Rumsfeld's new interrogation methods seem to practice this biopolitics; his take on the deregulation and acceleration of the tormented body is indeed in no way obstructed by civil rights. Furthermore, and this is perhaps of even greater importance, here the prisoner and the soldier are being controlled by *the same weaponry* (the MRE). It no longer matters whether the body in question belongs to a US civilian or to someone else. Rumsfeld's tactics of immanently speeding up (and slowing down) the body through MREs reveal to us the new ideas of territoriality that come with the control of the biosphere, excluding or even removing *zoé*. All must be controlled.

As the proper (Foucauldian) archaeologist knows, digging further into the fertile soil will inevitably recover the villain – the outsider that endangered classical or feudal power – as well as the delinquent – the insider that fell short and must be treated accordingly. Just as there is more than one type of criminal to be found in the earth, Deleuze and Guattari, following Virilio, show us that all processes of grounding imply the production of a certain type of soldier, a style of hunting, a way of catching the prey. It all started with the nomad-soldier, the hunter, who invented war.

War was accidentally invented by animal-raising nomads as a consequence of the machinery, the kinetic

15. G. Agamben, *State of Exception* (Chicago: University of Chicago Press, 2005), 3.

energy of the hunted animal that was now being conserved. And it was this process (this style of conservation) that was reinvented several times in history. Most importantly this meant that the dominance of the nomad-soldier was succeeded by the peasant-soldier and the citizen-soldier¹⁶ that are in one way or another related to the aforementioned villain and delinquent. The hunter comes into being at the moment he ‘... captures the force of the hunted animal’,¹⁷ introducing us to an alimentary economy of violence that has reinvented the earth ever since. Conserving the kinetic energy of the hunted animal – or rather the particular *style of conservation* – thus gave form to the earth, installing the regime of the nomad-soldier that was succeeded by the peasant-soldier and the citizen-soldier,¹⁸ introducing us respectively to the villain and the delinquent.

The various types of soldiers Deleuze and Guattari conceptualize can, then, be addressed as *alimentary figures* that come with new styles of conservation, new ways of catching prey. The initial force of the nomad hunt is the pure, raw and untamed alimentary force. The peasant soldier, inventing sedimentary continuity (spatiotemporal fixation) introduces us already to a very different regime of consumption, by means of

16. Deleuze and Guattari, *A Thousand Plateaus*, 399.

17. *Ibid.*, 396.

18. *Ibid.*, 399.

which a territoriality is introduced that places war at its margins (which thus have to be protected). The citizen soldier, by inventing the city *and* the countryside (the capitalist opposition between consumption and production) fights for surplus and needs land in order to enlarge the hierarchy.

Yet, as history is neither universal nor finite, there have always been a multitude of war machines crawling around (in and out of) the surface of the earth, some more successful than others, some more resilient, more powerful, more capable of acceleration. Deleuze and Guattari already mapped many of them, some quite far removed from the more conventional definitions of war common in literature (which is why Paul Patton proposed to reconceptualize their ‘war machine’ as a ‘machine of metamorphoses’).¹⁹ Think of the war without battle lines, proper to the Chinese game of Go, and compare this with Simoons analysis of the dominance of the Han-Chinese:

In their southward migration, the Chinese, a literate people who had the only system of writing in East Asia from the second half of the second millennium BC until the second century AD, faced a similar situation but acted very differently from the Anglo-Americans in their westward expansion across the United States. Whereas the Anglo-Americans largely

19. Paul Patton, *Deleuze and the Political* (London, New York Routledge, 2000).

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eliminated or displaced the aboriginal inhabitants, the Chinese commonly settled among, and ultimately absorbed them.²⁰

This wholly other strategy, at work in the past as it is today (with the emergence of Chinatowns, with the current consumption by China of Africa) practices a very different type of 'warfare'; or at least, it hunts differently, works by means of a very different notion of territoriality (and of alimentation, for that matter).

But even if we 'limit' ourselves to studying warfare (a small minor consequence of the war machine), it is not too difficult to see various new styles or chemistries appear. Especially in the last fifty years, in which Occidental battle traditions have more and more been challenged by other styles which had been successful in warding off their hunting techniques with remarkable ease. First, the Vietnam war saw the French (and the US Army) '[c]onfronted by an opponent who offered neither a front not a solid rear to target...'²¹ but instead invented jungle-space and expanded it into many unknown dimensions – think of the Cu Chi tunnel systems. How different this jungle notion of territoriality is from the way the civilian-soldier intends to cultivate its own land: No two-dimensional Cartesian

20. F. J. Simoons, *Food in China: a Cultural and Historical Inquiry* (CRC Press, 1991), 1.

21. M.A. Hennessy, *Strategy in Vietnam: the Marines and Revolutionary Warfare in I Corps, 1965-1972* (Westport, London: Praeger Publishers 1997), 56.

grid here, that needs its lines to separate the inside from the outside, the good guys from the bad guys (consumption from production, city from countryside). The Cu Chi tunnel systems are nothing but a mirror of the interlacing drainage and irrigation canal systems that has traversed this part of the earth for ages. The flows of water, of the undulating surfaces of the paddy fields (*sóng lúa*) follow this earth, its winds, its rocks, its Mekong floods. The civilian-soldier turned war increasingly into a capitalist demand for *Lebensraum*, a desire for even more earth (square metres), for spaces of production. He had no understanding at all of the *wormhole-soldier* that, like a stream of water, continuously slips into another dimension. The wormhole-soldier comes close to what Deleuze and Guattari call 'holey space': it is *connected* to nomad space (the nomad-soldier) whereas it *conjugates* with sedentary space (the peasant-soldier).²² Existing between the two, the hunt of the wormhole-soldier remains unseen, consequently its n-1 dimensionality constitutes a wholly new (unforeseen) weapon system.

With the War on Terror, we are confronted with yet another style, another chemistry of warfare that skirts around the powers of the US Army with even greater ease. In fact, it only needed a one-dollar razorblade in order to defeat all of the billion-dollar defence shields (SDI/SDIO/BMDO/MDA, better known as

22. Deleuze and Guattari, *A Thousand Plateaus*, 415.

‘Star Wars’) that US presidents since Ronald Reagan had launched in order to shield attacks from the Other. And again, this chemistry is first of all a new conceptualization of the earth: earth as xeromorphic desert. Negarestani calls this the Assyrian doctrine of War – ‘not a geographical or even a political body, but a sentient process of desertification which can be grasped only by presupposing that war is an autonomous entity free from its provocateurs’.²³ As always, the War starts with the undercurrents, the powers of the Earth which we saw being opened up by the foregoing styles discussed above.

Compared to the multidimensional and *invisible* (alimentary) strategies of the Vietcong (hidden from the logic of the eye), the Assyrian style of hunting is *unvisible* (in full conformity with the logic of the eye) because of its clarity, or better even, because of the transparency of oil (that which speeds it up). For art historians have long told us that it is oil that enlightens everything, that oil equals pure enlightenment. Likewise in dietetics – in which oil, the fattiest of fluids, virtually carries all flavours within it, in full conformity with perception. Or in scientific terms, where ‘[f]at, it turns out, doesn’t just have a flavour, it has *every* flavour. Whereas a sugar solution stimulates only five to ten percent of taste buds, fat stimulates

23. R. Negarestani, *Cyclonopedia: Complicity with Anonymous Materials* (Melbourne: Re.Press, 2008), 132.

ninety-five percent'.²⁴ When Negarestani then reminds us that 'Islam does not perceive oil merely as a motor grease – in the way Capitalism identifies it'²⁵ he suggests to us the *absolute* claim to territoriality and to invisible presence that comes with this new style of the desert-soldier who, living the Kingdom of God, knows that '... all elevations must be burned down'.²⁶

In his performance of seeming-being, the good politician George W. Bush accused his 9/11 enemies of being 'faceless'. This – through Occidental eyes – might seem to refer to a kind of cowardice, but actually it perfectly captures the invisible, oily, translucent face of Islam that has been staring at him ever since the devastation of Manhattan. Bush's 'analysts', as DeLanda would call them, 'in search for the well-defined patterns of behaviour in their activities ...', with their convictions that 'these organizations perform their operations by the book',²⁷ obeyed the good old mesophytic capitalist war rhetoric, demanding the desert – the xerophytic (an)organism – to express itself, which would then allow them to turn it into the Other possible world to be conquered. Perhaps one day 9/11 (even more than 1989) will prove to have been the point of inflexion at which a biopolitical world

24. B. Massumi, *Parables for the Virtual* (Durham, London: Duke 2002), 153.

25. Negarestani, *Cyclonopedia*, 20.

26. Ibid. 21.

27. DeLanda, *War in the Age of Intelligent Machines*, 185.

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order was cut loose from its capitalist calcomania. For now however, it is heating the capitalist system to its (topological) extreme.

IN FEAR OF THE TERRORIST-SOLDIER

The invisible and the invisible h(a)unting of capitalist warfare through turbulence, friction (or frictional electricity), collision and attraction, actualized a 'schema of concretization', as Simondon²⁸ calls it, that is making our present day economy of speed fully operative. For how different is the soldier of today from the civilian-soldier that still pretends to roam the (Roman-tic) Occidental earth, so well situated in (for instance) the minds of the occidental bankers. And yet everyone knows that contemporary biopolitics has *always already* given us a style of hunting that has sprung from a very different earth, from a very different chemistry of cooking. Contrary to the citizen-soldier, this new regime no longer has any interest in the capitalist trick of temporarily placing criminals (called delinquents) outside of society; it also sees no reason to keep its soldiers on the inside of the State. Similarly, a dualist notion of territoriality (city and countryside, consumption and production) is of no importance anymore. Again, this is what Donald Rumsfeld has taught us with regard to the al-Qahtani case. For indeed, isn't

28. G. Simondon, 'Technical Mentality', *Parrhesia* 7, 2009: 17-29, 19.

the horrible conclusion we ought to draw from his new policy, that there is no intrinsic difference anymore between the insider (the civilian, the soldier) and the outsider (the criminal, the terrorist)? If there is one lesson to be drawn from the War on Terror as it we have watched it unfold for ten years now, it is that *there is only one terrorist-soldier*. We are all terrorist-soldiers. We all desire to eat/hunt this same earth with fear and are thus formed (subjectified) according to it.

In this new type of warfare, in which the delinquent (the one different individual, that in the end is to be put back into society) is replaced by the terrorist (absolute destruction as at work in all of us), it is not the police (selected citizens) but the soldier that guards the camps (Agamben's territory). Yet he is also the only one who inhabits it. Similarly it is not the judge (the elected citizen) but the soldier that takes action against 'those against us', as George W. Bush labelled the exception: an exception which is at the same time the soldier. And again, this new type of warfare brings with it a particular cultivation of the land (as did nomadic, sedentary and capitalist culture).

In a way the terrorist soldier recalls the nomad-soldier, who, unlike the peasant-soldier and the civilian-soldier, knows no dualism, no division of labour. Yet at the same time it has become even more sedentary than the peasants and the civilians, who still needed their distribution routes to keep going. The terrorist

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soldier is everyman, is everywhere, includes everything. Even the nomad, barely surviving the capitalist regime, is included in this new continuum. The Israeli army openly admitted that the Deleuzo-Guattarian nomadic idea of 'smooth space' was used in their anti-Palestinian urban guerrilla attacks. 'You are either with us or against us'. All the different compartments familiar to us have folded into one. The terrorist-soldier is, in every sense, the critical threshold of contemporary biopolitics.

Agamben had already concluded that the 'camp', as he conceptualized it, is everywhere: '... the camp is the very paradigm of political space at the point which politics becomes biopolitics and *homo sacer* is virtually confused with citizen'.²⁹ The camp is everywhere, the State is everywhere and the warzone is everywhere and thus includes all bodies, *consumes* them. 'While prison law only constitutes a particular sphere of penal law and is not outside the juridical order, the juridical constellation that guides the camp is martial law and the state of siege ... As the absolute space of exception, the camp is topologically different from a single space of confinement'.³⁰ Agamben thus concludes that 'we are all virtually *homines sacri*'.³¹

29. G. Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Palo Alto, CA: Stanford University Press, 1998), 171.

30. Ibid., 20.

31. Ibid., 115.

The camp is everywhere, and it has been everywhere for a long time. Agamben might prefer to analyse the concentration camps of Nazi Germany, for here (as well as the Soviet Union) the camp may have been introduced as a crucial element of State terror. But in the South African *Boer War* (1899-1902) and even in the American Civil War, similar crude biopolitical strategies were already in use.³² Yes, in the American Civil War, starring the above mentioned General William Tecumseh Sherman, concentration camps played a crucial role, for exactly those reasons that Agamben conceptualizes in terms of a contemporary biopolitics: to secure the State of Exception. On 10 August 1864, General Grant reported to Washington:

Every man we hold, when released on parole or otherwise, becomes an active soldier against us at once either directly or indirectly ... If we hold those caught they amount to no more than dead men. At this particular time to release all rebel prisoners North would insure Sherman's defeat and would compromise our safety here.³³

32. See L.A. Horvitz and C. Catherwood (ed.), *Concentration Camps. In: Encyclopedia of War Crimes and Genocide* (New York: Facts of File Library of World History), 97.

33. Rhodes, *History of the United States*, 499-500.

Biopolitics turned the outside of the State into the outside of the inside, the inside into the inside of the outside. The same goes for all bodies, ergo for all terrorist-soldiers. In the War on Terror, the Bush administration, representing humanity (the initial crime [9/11] as crime against humanity), thus repeatedly addressed all of us with those same words used by General Grant: 'You are either with us or you are against us'. In fear of the invisible and the unvisible, General Bush, more than anyone else, knows that his faceless enemy is everywhere and that the facialization of the soldier is always already highest priority. Not only in order to fortify the troops, but as an instant and necessary continuation of the State. Using fractal logic the State, or better state control, is by now essentially a fractal continuity that needs to travel deeper and deeper into spacetime. It controls by h(a)unting the body perpetually.

THE SMELL OF HOME

Virilio is right that this chemistry of warfare includes the clothing of the soldiers. They have become part of the weaponry giving form to the body of the soldier, today more than ever before: '... the latest combat outfit tends to be nothing other than a technological prosthesis that represents an updating of the armour of the chevalier, *the most evident sign of the resuscitated fighting*

body, it is the vehicle or the more precisely its speed...'³⁴

But this is nothing compared to how this new form of (biopolitical) warfare maintains itself through alim-entation. Let us explore some of the novel chem-istries, the radical topological or mereotopological re-creations of the earth, through which the terrorist soldier comes into being, through which this total war is effectuated.

Crucial is here the most volatile of the senses, the most immediate, the least linguistic, the least obstructed by in- or outside: smell. The Futurists (see their *Futurist Cookbook*) were the first to understand that the alimentary nature of warfare had little to do with the need to fill the stomach, but more with under-standing the speed of smell. They knew that smell not only dominates the culinary but also drives the hunt. Or rather; the smell of death makes us hungry as it makes us fear. It is then for good reason that orthonasal stimulation, instantly reaching the olfactory bulb, is now a key focus in research activities in US Army laboratories and affiliated research institutes.

A company like ScentSational Technologies, cur-rently bidding for the Army's \$85,000 food packaging research contract, proposes the injection of scents into the MRE plastic wrappings as they're being molded. Stimulating the brain through the external nares of

34. P. Virilio, *Negative Horizon: an Essay in Dromoscopy* (New York: Continuum, 2007), 86.

nostrils (rather than through the retronasal stimulation developed while eating) has been widely experimented with by fast food and instant coffee companies and has for some time also been very popular in the best restaurants of the world (for instance through so-called ‘molecular gastronomy’).

The economics of speed as practiced by the US army today considers orthonasal stimulation a key weapon in its topological definition of territoriality, in its conceptualization of the terrorist-soldier. For far more than the sights and sounds of war, it is the smell of fear that obstructs the speeding up of the body of the terrorist-soldier, which threatens the State from happening. Thus, the smell of home is the most crucial ingredient of MREs, of its packaging, and indeed of everything that concerns the alimentary event so crucial to (this particular style of) warfare.

Smell is the ultimate reterritorialization of territoriality in general. As Proust already taught us, it is smells that are ‘... more fragile but more enduring, more unsubstantial, more persistent, more faithful, remain poised a long time, like souls, remembering, waiting, hoping, amid the ruins of all the rest; and bear unflinchingly, in the tiny and almost impalpable drop of their essence, the vast structure of recollection’.³⁵ Smell’s ‘pointless’ interventions (pointless as in, not

35. M. Proust, *Swann’s Way. Within a Budding Grove*, trans. C. K. Scott Moncrieff and T. Kilmartin (London: Chatto & Windus Ltd, 1981), 51.

making use of specific locations, specific identifiable) have the power to accelerate. This is a topological effect *par excellence*, as it proves that any particular point in Cartesian space(/time) is always already infinitely close to any other given point.

The imperial *spatium* defended by the peasant-soldier, and the capitalist *extensio* defended by the citizen-soldier, are being overcoded by a new spatio-temporal numerology of the State that considers all bodies *multiplicities in which to operate*. Its continual interventions secure and control, paving the way for future acceleration to happen. It calls out for it even, naming its energy bars HOOAH! or OO-RAH! These common battle cries (from the army and the navy respectively) *demand* acceleration to take place everywhere, to accelerate everybody. Bodily modification is required as it is only there that the State occurs, that the face of the soldier happens.

Being in a constant state of emergency, the body of the terrorist-soldier (composed in our new earth) has to stay alert for even more than sixty-eight hours. It must always remain alert (fearful), just as it must always stay hungry. Sherman, he who controlled America, can still tell us how to conquer the world: only by intervening through the feeding of all terrorist-soldiers. It is a matter of the most vital importance, and demands the earliest attention of the general entrusted with a campaign. Only thus can one prevent the terrorist-soldier

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from becoming an active terrorist against us, either directly or indirectly ...

BHUT JOLOKIA ASAR¹

**250g Bhut chili peppers
1/2 tsp crushed fenugreek seeds
3 tbsp yellow crushed mustard seeds
1/2 tsp turmeric powder
1/2 tbsp crushed fennel seeds
1 tbsp salt
1/4 cup lemon juice
½ cup mustard oil
1 sterilized glass jar**

Wipe the chilies with damp clean cloth and let them dry completely;
Cut the chilies into 1 cm small pieces;
Mix all the spices and salt together;
Mix with the chilies;
Transfer into a clean and dry airtight glass container;
Add freshly squeezed lemon juice and oil;
Cover with the lid tightly;
Shake the bottle vigorously;
Keep in the sun, covered by a netted lid, for 7-8 days.

1. Recipe from 'AssamFoodie's Blog', at <http://assamfoodie.wordpress.com/some-like-it-hot/>. Last accessed on April 10, 2011. Note: The word 'asar' is a cognate of the Bengali word 'aachar' and the Hindi-Devnagiri word 'achar', which means 'pickle'. We will have occasion to review the implications of the word 'pickle', beyond its mere culinary sense, below.

Vague Weaponizations or, the Chemistry of Para-Tactical Engagements²

Manabrata Guha

There are laws of warfare, and it often happens that fidelity to an oath given to an enemy must be kept...[A] pirate [however] is not included in the number of lawful enemies, but is a common enemy of all. With him there ought not to be any pledged word, nor any oath mutually binding.

MARCUS TULLIUS CICERO, DE OFFICIIS (ON DUTIES)³

The legacy of the Copernican Revolution – that is the revolution by and according to the open universe – is comprised of three components: The speculative drive of ‘an extreme line of thought’, the revolutionary vocation of ‘disturbing the peace of this world in still another way’ and the true-to-the-universe logic of delivering all expressions of isolation and discreteness ‘remorselessly into the open’.

REZA NEGARESTANI, GLOBE OF REVOLUTION⁴

2. This essay could not have been written without the encouragement, assistance, intervention and keen insight of Reza Negarestani. Thanks are also due to Robin Mackay for proposing the subject of the essay, and for inviting me to explore what, to me, are some rather frighteningly-disorienting lines of thought and experimentation.

3. Quoted in D. Heller-Roazen, *The Enemy of All: Piracy and the Law of Nations*, (New York: Zone Books, 2009), 16.

4. R. Negarestani, ‘Globe of Revolution: An Afterthought on Geophilosophical Realism’, in T. Huber (Ed.), *Realismus Jetzt!*, (Berlin: Merve Verlag, forthcoming 2011). In order of the quotes: S. Freud, *Beyond the Pleasure*

INTRODUCTION

It is commonly believed that actual combat – that is to say, ‘the firefight’ – is one of the most stressful experiences that one can undergo (a perception that has been somewhat excessively and unnecessarily valorized by the likes of Ernst Junger and others).⁵ This is patently false. *What is stressful is the experience – however temporary – of that sliver of spatio-temporality on and within which combat is anticipated.* Thus, for example, in accounts too numerous to list, there are detailed descriptions of how – in the early hours of June 21, 1941 – as the assault formations of the Wehrmacht moved into their jump-off positions along the German-Soviet border on the eve of Operation Barbarossa – an event that Hitler had predicted would arrest the breath and attention of the whole world – even battle-hardened veterans experienced a highly debilitating sense of unease that seemed to emerge from the pits of their stomachs, and which spread – like an uncontrollable contagion – among their comrades-in-arms. For the veterans, while this experience was not unexpected, it was as unsettling as it was for their more inexperienced comrades. The rough and ready solution to this state of

Principle (London: Norton, 1961), 3; *Introductory Lectures on Psychoanalysis* (New York: Norton, 1977), 353; S. Ferenczi, *Final Contributions to the Problems and Methods of Psychoanalysis* (London: Karnac, 1994), 93.

5. See, for example, E. Junger, *Storm of Steel*, (London: Penguin Classics, 2004).

affairs was alcohol. As the luminous hands on the faces of their already-synchronized wristwatches steadily crawled towards H-Hour,⁶ bottles of brandy and rum made their rounds, passing – regardless of rank – from soldier to soldier who took long and deep swigs from them. The fiery liquid scorched their throats, but it did succeed in arresting – or so it seemed – this continually growing and gnawing sense of unease which manifested itself in the form of irregular heartbeats, cold, clammy and trembling hands, churning stomachs, parched mouths, stammering speech, shiftiness of gaze and, quite often, as a muttered prayer of desperation which appealed to some higher authority – God or Man – to, at best, pull back from the brink of combat and, at the least, to spare the petitioner from that most horrible of injuries – a bullet in the gut.⁷ The alcohol was the means by which the individual soldier attempted to fortify his ‘unity of being’. It was a means of feeble defence against the terrifying assaults on the somatic integrity of the individual soldier that had already begun hours before the ‘guns of June’ began their devilish discharges.

6. The term ‘H-hour’ is used to designate the exact hour on which a combat attack or operation is to be initiated, the letter ‘H’ being derived from the ‘hour’ operations actually begin. See *Combat Orders* (Fort Leavenworth, Kansas: The General Service Schools Press, 1922).

7. P. Carell, *Hitler Moves East: 1941-43* (New York: Ballantine Books, 1997).

In the context of Industrial Age wars,⁸ protecting and/or guaranteeing the somatic integrity of the individual soldier poses a different level of concern to higher command authorities than it does in the current and emergent times.⁹ This is because, among other things, when considered in operational terms, the traditional objective of military strategies of the Industrial Age has always been to degrade (either by destroying them, or by making them irrelevant) the critical centres of gravity of an enemy – in the first instance, command and control nodes – with the foreknowledge that such efforts, if successful, would entail the inevitable disintegration of the enemy's forces, thereby neutralizing its ability to wage war. Prominent examples of such strategies include those of the Soviet-designed 'deep-strike operations',¹⁰ the German operational art of war, known as *Auftragstaktik*¹¹

8. Gen. G. R. Sullivan & Col. J. M. Dubik, *War in the Information Age* (Strategic Studies Institute, U.S. Army War College, Carlisle Barracks, PA 17013-5050), 6-9 (PDF version). Available at <http://www.strategicstudiesinstitute.army.mil/pdffiles/pub243.pdf>. Last accessed on April 01, 2011.

9. In all fairness, it should be mentioned that the concern with the individual soldier has grown tremendously post the Second World War and, most visibly, post the French and American experience in Indo-China and Vietnam, and the Soviet experience in Afghanistan. Increasingly, 'the body-count' is being directly related to 'morale on the home front'.

10. Col. (Retd.) D. M. Glantz, *Soviet Military-Operational Art: In Pursuit of Deep Battle* (London: Frank Cass, 1991); R. W. Harrison, *The Russian Way of War: Operational Art 1904-1940* (Lawrence, Kan.: University Press of Kansas, 2001); R. Simpkin, *Deep Battle: The Brainchild of Marshal Tukhachevskii* (London: Brassey's Defence, 1987).

11. D. M. Keithly and S. P. Ferris, 'Auftragstaktik, or Directive Control, in Joint and Combined Operations', *Parameters*, US Army War College Quarterly, Vol. XXIX, No. 3, Autumn 1999.

and its expanded mechanized version popularly known as *Blitzkrieg*,¹² and most recently, the American strategy of ‘rapid (full-spectrum) dominance’ popularly known as ‘shock and awe’.¹³

But, as is being increasingly speculated, we seem to be gradually transcending the battlespace of ‘industrialized’ warfare. It is being asserted that we are now – responding to new and varied epistemological (and, as I will argue, ontological and pre-ontological) challenges – segueing not simply into what is popularly known as the Age of Information, but also into a state and condition of ‘interactive emergency’.¹⁴ Along with this transition, we are also finding ourselves confronting a ‘new’ adversary who exhibits three general characteristics. In terms of form and structure, the emergent adversary appears amorphous; in terms of

12. Note: German military theorists never actually referred to their operational art of war as ‘blitzkrieg’. That was how it was reported in the Allied Press, particularly after the fall of France in 1940. See Frieser & Greenwood, *The Blitzkrieg Legend: The 1940 Campaign in the West* (Annapolis: Naval Institute Press, 2005); See also W. Fanning Jr. ‘The Origin of the term “Blitzkrieg”: Another View’, *Journal of Military History*. Vol. 6, No. 2., April 1997, 283–302. For a competent overview of the German operational art of war, see M. Jonathan, *Combined Arms Warfare in the Twentieth Century* (Lawrence: University Press of Kansas, 2001).

13. Ullman, Wade et al, *Shock and Awe: Achieving Rapid Dominance*, Institute for National Strategic Studies (Washington, DC: National Defense University, 1996).

14. See M. Guha, ‘Behind the Network Paradise: Speculations on Armed Conflict in an Age of Interactive Emergencies’, *The Center for Land Warfare Studies (CLAWS) Journal*, Summer 2011 (New Delhi, India, Forthcoming June 2011).

tactics, it displays a swarm-like dexterity;¹⁵ and in terms of agency, it is, in Heller-Roazen's words, 'an enemy of all'.¹⁶ Taken together, these characteristics of the emergent adversary, which are inextricably complicit in the creation of a condition of interactive emergency, pose an unprecedented counter-strategic challenge to the established order of things in the international arena. The new enemy does this by renewing its assault on the somatic integrity of the particular – the human-citizen, the soldier, the war machine, the State etc. – along a vector that exposes it to '... a groundless geocosmic continuum built by a nested series of traumas that extend from the very conception of matter, to the formation of the terrestrial field, to the psychic architecture'.¹⁷ Thus, if, as Negarestani asserts in the epigraph to this essay, the legacy of the Copernican Revolution has three components, then this emergent adversary and the condition of interactive emergencies may be considered to be one of the starkest examples of this legacy and, in this sense, presents us with an opportunity to (again) reproblematicize war and its conduct.

In December 1979, on the eve of Pakistan's involvement with a US-backed and Saudi-funded subversive

15. See, for example, Arquilla and Ronfeldt, *Swarming and Future of Conflict* (Santa Monica: RAND Corp., 2000).

16. Heller-Roazen, *The Enemy of All*, 9-16.

17. Negarestani, 'Globe of Revolution'.

war aimed at containing the Soviet Union's increased involvement in Afghanistan, the then Pakistani military dictator Gen. Zia-ul-Haq was reported to have instructed Lt. Gen. Akhtar Abdul Rehman Khan, the Director-General of the Inter-Services Intelligence Directorate (ISI) – Pakistan's premier external intelligence agency – that 'the water in Afghanistan must boil at the right temperature.'¹⁸ Geo-strategically, this made sense: Faced in the east by an economically-stable, militarily-resilient, multi-ethnic, secular, and democratic (and in this sense, hostile) India, distracted in the north by a turbulent Afghanistan where a predatory Soviet Union was on the prowl for a direct access-route to a warm-water front relatively close to the critical Persian Gulf, unable to resist the political pressures of a highly concerned United States of America, Pakistan, understandably, felt the depth of its 'strategic space' fast eroding. Gen. Zia's assessment of this complex politico-strategic situation and his strategy to address it were not limited by the lure of short-term gains. Instead, they were a grounded and realistic approach to participate in – indeed, shape – one of the last dramatic 'great games' of the Cold War. With an eye on a post-Soviet geo-political future, Gen. Zia's strategy to keep 'the water in Afghanistan [boiling]

18. P. Swami, 'Pakistan and Osama: How the West was Conned', *Today Online*, May 04, 2011. Available at <http://www.todayonline.com/Commentary/EDC110504-0001310/Pakistan-and-Osama--How-the-West-was-conned>. Last accessed on May 04, 2011.

at the right temperature' was designed keeping two objectives in mind. The first and most obvious one involved neutralizing the economic and, more importantly, military superiority of India, while the second was an ambitious – some may even say audacious – gambit to enable Pakistan to play a leading role in what Gen. Zia assumed (or imagined) would be a resurgent Islamic bloc of geo-strategic influence in a post-Soviet world. Whatever may be the merits, demerits and consequences of an application of this strategy, what is of interest to us is the way Gen. Zia phrased his strategic objective. He specifically instructed his ISI chief to raise and maintain the strategic-military condition in Afghanistan at a 'boiling point' level. The culinary reference, seemingly obtuse in this context, is nevertheless revealing. What it suggests is that what are normatively construed as geo-political plans, maps, and objectives are epi-phenomenal particularities that undulate on and along a subterranean logic of plasticity – one that also appears to underwrite the concept of the culinary – that liquefies and fuses the walls, boundaries, barriers, and fortifications of the discrete, the particular and the specific, into gradients of regions, neighbourhoods and locales that constitute an 'open' continuum. This, when pitted against the 'strategic' logic that underwrites the relations between discrete entities (Cicero alludes to this when he speaks of 'the laws of warfare', 'the pledged

word’, the ‘mutually binding oath’ that binds States, institutions etc.) presents itself as a highly destabilizing alternative that threatens to unravel the axiomatic basis of its more conventional counterpart. In this sense, this logic of plasticity may be considered to be an aspect of the ‘emergent adversary’ whose increasing prominence ungrounds the mechanics of the discrete (battlespace) in favour of a visceral chemistry of the continuum – a cosmic culinary exercise – where new gradients (battlespaces) are, in a manner of speaking, cooked up.

In what follows, I will explore how thinking about this emergent adversary, the radically obtuse topology of the battlespace, and the authentically monstrous models of weaponization that it brings in its wake – cast against a cosmic chemo-culinary backdrop – suggests an extreme line of militant thought, and how this line of thought threatens to disturb the peace of this (normatively constructed) world (in yet another way) by launching a corrosive assault against the ‘fearful symmetries’ of the conceptual architectonic that underwrites the State-designed models of order, security, and war. I will further argue that what is truly radical and extreme about this line of thought is that it assaults not simply the normative models of thought (on and of war, security etc.), but that it also targets, in Fernando Zalamea’s words, ‘the existence of [even those] ‘monstrous’ models [that] ... arise with respect to *given*

collections of axioms, that can only partially capture the concepts behind the axioms.¹⁹ I will conclude by highlighting how this kind of – para-tactical – thinking is a *true-to-the-universe logic of delivering all expressions of isolation and discreteness ‘remorselessly into the open’*, which has unexpected and unintended consequences on how we think about, among other things, combat and, ultimately, war.

FROM THE STATIST’S COOKBOOK

If amorphous adversaries indeed compel us to operationalize, in the first instance, radically extreme thought-weapons, then it is only fitting that our exploration should begin with an account of a relatively recent, and rather unusual, exercise in weaponization carried out by an arm of the Indian Defence Research and Development Organization (DRDO).²⁰ It is unusual because, as an exercise, it is – especially coming from the stables of, as Deleuze and Guattari would put it, the State’s ‘royal sciences’ – startlingly counter-strategic. I am, of course, referring

19. F. Zalamea, *Peirce’s Continuum: A Methodological and Mathematical Approach*, available at: <http://files.acervo.peirceano.webnode.es/200000068-48c2649bc4/Zalamea-Peirces-Continuum.pdf>, 5.

20. While the research and development was done by the Defence Research & Development Establishment (DRDE), Gwalior, India, which is a subordinate laboratory under the DRDO, the production agencies are M/S Premier Explosives Ltd Secunderabad, India and M/S Gulf Oil Corporation Ltd, Hyderabad, India.

to the weaponization of *Bhut Jolokia*, commonly known the world over as the ‘ghost chili-pepper’.²¹

This chili-pepper – an interspecies hybrid of *C. chinense* with some *C. frutescens* genes – which grows wild and which is cultivated in some of the north-eastern states of India (Assam, Nagaland, Manipur etc.), and in the Sylhet regions of Bangladesh, appeared in the Guinness Book of World Records, in 2006, as being one of the hottest peppers in the world, measuring over a million Scoville Heat Units (SHUs).²²

21. Note: While I am designating the weaponization of the *Bhut Jolokia* as ‘unusual’, this is certainly not the first time that such options have been researched. There is, for example, the CIA’s now widely-known experiments using LSD and other mind-altering drugs. See ‘Project MKULTRA, the CIA’s Program of Research into Behavioral Modification. Joint Hearing before the Select Committee on Intelligence and the Subcommittee on Health and Scientific Research of the Committee on Human Resources, United State Senate, Ninety-Fifth Congress, First Session’ (US Government Printing Office, August 8, 1977), available at http://www.nytimes.com/packages/pdf/national/13inmate_ProjectMKULTRA.pdf. Also see ‘World’s hottest chilli to become India’s secret weapon against terrorism’, *The Telegraph*, UK (<http://www.telegraph.co.uk/news/newstoppers/howaboutthat/7504418/Worlds-hottest-chilli-to-become-Indias-secret-weapon-against-terrorism.html>); ‘New non-lethal weapon against terrorism: spicy pepper’, *Homeland Security Newswire*, (<http://homelandsecuritynewswire.com/new-non-lethal-weapon-against-terrorism-spicy-pepper>); While colloquially known as the ‘chilli bomb’, the Indian defence research laboratory that designed (dare we say, weaponized?) it refers to it as an ‘Oleoresin-based grenade’. See http://www.techport.gov.in/TechProvider/DRDO/DRDO_OleoResin.html. All links last accessed on April 10, 2011.

22. Bhagovati & Changkija, ‘Genetic Variability and Traditional Practices in Naga King Chili Landraces of Nagaland’ in *Asian Agri-History*, Vol. 13, No. 3, 2009:171-180, 171-2. Note that this fruit also grows in Sri Lanka. It is conjectured that the plant (which, interestingly, is of unknown ancestry) that bears this fruit – among other variants of chili plants – was grown by the Native Americans of the Peru-Bolivian region between 5400-3200 BC. It is claimed that this plant was brought to Asia, Africa and Europe by Columbus, among others.

The ripe peppers measure 60 to 85 mm (2.4 to 3.3 in) long and 25 to 30 mm (1.0 to 1.2 in) wide with an orange or red color. The unselected strain of *Bhut Jolokia* from India is an extremely variable plant, with a wide range in fruit sizes and amount of fruit production per plant, and offers a huge potential for developing much better strains through selection in the future. *Bhut Jolokia* pods are unique among peppers, with their characteristic shape, and their unusual rough, dented and very thin skin.²³

There are, apparently, a number of ways to interact with *Bhut Jolokia*. For the most part, it is either consumed raw (despite, or perhaps because of, the extreme effects that it can induce), but in very small quantities – *as a supplement* to the main meal; and/or it is introduced – again, in very small portions – as a part of the ensemble of spices that seem to invariably enmesh and permeate (and that are perhaps even immanent in and to) the Indian sub-continental culinary culture. It is also to be noted that the local folk-medicinal traditions attribute to the *Bhut Jolokia* medicinal properties that are used to address problems relating to (paradoxically!) stomach disorders, asthma, etc.

It is claimed that the *Bhut Jolokia* possesses ‘a pleasant and palatable aroma, [but it is also cautioned

23. C. L. Barker, ‘Hot Pod: World’s Hottest’, *National Geographic Magazine*, May 2007, 21.

that] an average-sized fruit is more than sufficient for two meals of the day for a 5-6-membered (*sic*) family.’²⁴ There are good reasons for this. For a fruit that measures close to a 1.05 million-rating on the Scoville scale (as a comparison, jalapeño peppers are rated at 2500-8000 SHU), directly consuming even a miniscule portion of either the skin or its seed can have highly unsettling effects on the human body. Most commonly, these effects include extreme sensations of burning in the mouth, throat, and stomach. It also causes the human body to sweat excessively and, interestingly, in the context of this essay, the ingestion of the *Bhut Jolokia* (without taking any pre or post ingestion cautionary measures) causes – in the most extreme of cases, albeit temporarily – a partial loss of bodily co-ordination.²⁵

While the *Bhut Jolokia* came into the public eye only after the results of the Scoville tests were submitted to and verified by the Guinness Book of Records, it is necessary to point out that in addition to it being a consumable and a potential source of medicinal benefits, it has always retained a latent potential for

24. Bhagovati and Changkija, ‘Genetic Variability and Traditional Practices’, 175. One assumes that each of the 5-6 members of this family will consume portions of the pepper with each of their meals.

25. For those who are interested, you can actually see ‘Jamie Kocher, CEO of the Waimea Bay Chili Pepper Company, and www.BambooandTikis.com, eat[ing] the largest and most spiciest part of the Bhut (Naga/Ghost) Jolokia Chili Pepper and this old man almost dies ...’ See <http://www.youtube.com/watch?v=1tRq8ExAHzk>.

weaponization. Thus, long before the Indian defence laboratories began work on formally weaponizing it, the locals of the areas in which the *Bhut Jolokia* plant grows natively used the fruit as a defensive counter-measure against bands of wild and marauding elephants. By smearing a paste made out of the crushed fruit along the boundaries of their villages and fields, the locals created a defensive perimeter that was expected to effectively deter the wild elephants and, possibly, other foraging animals. As the *Bhut Jolokia* plant began to be increasingly researched, a number of interesting facts about it were discovered. Thus, for example, it was found that the plant could be grown in different regions with variations of climatic conditions, which have a direct impact on the degree/intensity of the pungency of the resultant fruits. This indicated the potential for calibrating the intensity of the pungency of the fruit *naturally* (i.e., using no artificial means involving intrusive manipulations at the genetic level etc.).²⁶ Most importantly, research also indicated that the effects of *Bhut Jolokia*, while certainly painful in the extreme, are not lethal. The symptoms, it is reported, generally subside over time and there have been no publicly available reports of fatalities caused by consuming the fruit.

26. Of course, this does not mean that cross-breeding techniques are not employed to develop stronger (or more variable) strains of the plant and the fruit.

Soon enough, a Briefing Paper – issued by the Indian defence research laboratory in question – described the *Bhut Jolokia* in its weaponized form thus:

Oleoresin (or, a Chili extract) based grenades are simple to operate, users' (*sic*) friendly and extremely useful for flushing out terrorists from their hideout. These grenades can be thrown by hand to the hide-outs/agitated mob (*sic*) and are easily dispersed as smoke (aerosol) from pyrotechnic mixture ...²⁷

The general specifications of the weapon-system were laid out by the Briefing Paper in the following manner:

| | |
|--------------------|-------------------------|
| • Height | : 130 mm |
| • Weight | : 390 ± 10 g |
| • Initiation delay | : 1-2 Sec |
| • Range | : 40 ± 10 m |
| • Coverage area | : 2500 m ² |
| • Smoke duration | : > 30 s |
| • Shelf Life | : 5 Years ²⁸ |

The Briefing Paper then lists the salient features of the weapon-system thus:

27. DRDE/DRDO Briefing Paper, 'Oleoresin-based Grenades'. DRDE-DRDO, Gwalior, India, 2009(?).

28. Ibid.

COLLAPSE VII

- Releases smoke from pyrotechnic mixture, causing severe coughing, lacrymation, irritation of eyes & nose and suffocation.
- The body of the grenades, made of plastic, melt immediately after burst, thus difficult to throw them back.²⁹

It is also clear from the Briefing Paper that the design-intent underwriting the weaponization of the *Bhut Jolokia* is not thanatologically-driven, that is to say, it is not lethal. On the contrary, it is a non-lethal attempt to radicalize the operational environment within which a target is located. While admittedly, this is only one of a multitude of weaponry and technologies that the State has its disposal, the case of the *Bhut Jolokia* weapon (hereafter, the chili-weapon) is singular because it gives us, among other things, a glimpse of the vector along which the State and its machines of war are preparing to do battle.

Nation-states – organized within the current regime of the international state-system – traditionally maintain their relations (here paraphrasing Cicero) by binding themselves first by norm, and then by international law, to recognize and respect the essential symmetry of the organizing concepts, structures, institutions that they, among other things, share amongst themselves. It is critically important for nation-states to maintain

29. Ibid.

this reciprocity of behaviour – even on the battlefield – because it is this that guarantees the structural integrity of the nation-state system. In light of this, and as we will explore in some detail below, the emergent adversary that the Age of Interactive Emergencies is bringing to the foreground threatens not only the structural integrity of the international state-system, but also poses an existential threat to the nation-state. The near panic of nation-states across the international state-system upon the tragic and startlingly unsettling events that marked September 11, 2001 can be re-contextualized in this light: The post-9/11 actions of the United States of America (supported, in some cases actively, in others passively, by the community of nation-states) are illustrative of the panic-ridden flailing of the arms of a nation-state when confronted by this new and emergent adversary. As the events of the Iraq War of 2003 and of its aftermath and the ongoing operations in the Af-Pak regions show, smashing the organized militaries of those geo-political entities accused of harbouring the emergent adversary – who we may, again echoing Heller-Roazen, refer to as the ‘enemy of all’ and who the U.S. politico-military establishment refers to as an ‘unlawful combatant’ – is not enough. The enemy has proven – time and again – to be too elusive for the U.S. led military forces – despite the latter’s, at times, terrifying technological asymmetric

advantages – to identify, isolate and defeat in detail.³⁰ Thus it was proved, again, that massed firepower and a sustained 24/7 air campaign was of little use against a virtually ungraspable adversary. This is a problem of immense strategic proportions for the nation-state and may be considered to be an impetus for the design of alternative weapon-systems that directly address the ephemeral nature of the emergent adversary.

What is interesting about the weaponization of the chili-pepper is what it tells us about how and in what ways the strategizing of combat and the focus of battle is changing. Such instances of weaponization suggest that our traditional (and one might add, historical) experience of combat in terms of violent instances of competition between conflicting interests within a grand-strategic geo-political space, is expanding to include irregularly-emergent violent emergencies that manifest themselves – like a viscerally corrosive and fast-spreading rash – in contexts of spatio-temporal extensions formed by overlapping nests of regions, localities, and micro-localities wherein – despite the best of efforts – the traditional politics of war are, more often than not, relegated to a backstage presence.

30. The recent action which resulted in the death of Osama bin-Laden does not contradict this assertion. While the lethal termination of the hitherto elusive figurehead of Al Qaida would most likely push the organization (if one can call it that) to the defensive, such an effect will at best be temporary. It would not diminish the threat that Al Qaida poses. In other words, to kill Osama bin-Laden is one thing, but to neutralize Al Qaida and other similar entities is quite another matter.

In this sense, the chili-weapon may be considered to be an emerging strategic response from the State in the face of the imminent arrival of the emergent adversary.

In keeping with this, and as described in the Briefing Paper, the chili-weapon is slated for use in what the Indian Armed Forces refer to as ‘sub-conventional warfare’, encompassing counter-terror and counter-insurgency operations. The fundamental idea being that the chili-weapon would be instrumental in flushing out violent agents who seek to embed themselves within nooks and crannies (micro-local nests) of the battlespace that are beyond the reach of the more heavyweight, but essentially blunt, weapons of the State’s arsenal. It is interesting to note that while the employment of the chili-weapon requires a nominal degree of accuracy in its delivery, it does not demand the employment of delivery systems that offer precision-engagement capabilities. This is reflective of the gradual recognition that the prospect of facing a conventionally-arrayed adversary, while not impossible, is becoming increasingly remote. Thus, the imperative to use weapon-systems and platforms that can be guided to the precise location of their targets (usually command and control and other similar centres of gravity) – after wading through a whole host of defensive counter-measures – is lesser than before. Instead, going by the implicit design-intent of the chili-weapon, it would appear that the State’s

military machines have recognized (but perhaps not fully assimilated) that the emergent adversary not only deliberately avoids assembling *en masse*, but also actively resists being rendered discrete enough to be identified and hunted down in detail.³¹ Whence the subtle transformation in the State's strategic-military objective, from hunting for discrete nodes of critical importance to the enemy to controlling slices or slivers of spatio-temporal locales where, it is conjectured, the emergent adversary lurks.

Given what we know of the *Bhut Jolokia*, and of the emergent operational context in which its weaponized form is expected to be deployed, it would not be too speculative on our part, therefore, to assume that one of the principal objectives of the designers of the weapon-system would have been to induce (and/or introduce) a territopic (verging on the terrifying) state, or condition, or climate – that is to say, to trigger an extreme psycho-bio-chemical reaction – within the battlespace of immediate interest. The intent being to recreate, at very high levels of magnitude, a sense of unease – a threat to the somatic integrity of the individual, similar to that experienced by the soldiers of

31. In this connection, it is interesting to note that it took the U.S. ten years and over US\$ 1 Trillion to neutralize Osama bin-Laden. See 'It took US 10 yrs, \$1.3tn to kill Osama bin Laden and avenge 9/11', *Times of India*, May 3, 2011, at <http://timesofindia.indiatimes.com/world/us/It-took-US-10-yrs-13tn-to-kill-Osama-bin-Laden-and-avenge-9/11/articleshow/8147800.cms>. Last accessed on May 03, 2011.

the Wehrmacht on the eve of Operation Barbarossa.³² This threat to the somatic integrity of the Wehrmacht and its constituent units – a threat accentuated by the calibrated use of the chili-weapon – came from ‘within’, that is to say, from the innards of the strategic aggregation of man and machine. It was akin to an intensive thermal eruption – a fireless heat – that subversively assaulted, by progressively softening, the rigid boundaries that define the individual (soldier). This progressive liquefaction of the particular was experienced as the stomach-churning ‘sense of unease’ (also expressed as fear, terror, and pre-combat stress) that spread like a contagion among the soldiers of the Wehrmacht. It could be said that in the above sense, they were being pre-cooked for battle and it was this foreknowledge that prompted their futile attempt to bolster their crumbling defences by consuming fiery liquids. Of course, unknown to them, behind the haze of the alcohol a micro-cosmic culinary exercise was already underway that steadily eroded their individual and collective somatic integrity.

Precisely how this occurs, we will have occasion to revisit at a later point, but along a vector very different

32. Note that the inducing of this ‘sense of unease’ happens before the exchange of fire between the State’s military forces and the ‘emergent adversary’. In fact, it could be asserted that the use of the *Bhut Jolokia* – to create the psycho-chemical reaction resulting in the sense of extreme discomfort and consequent unease – is preemptive in nature. It is preemptive because it precludes the ability of the ‘emergent adversary’ to respond in any coherent manner against the State’s forces.

from that which underwrites the State's model of weaponization of the chili-pepper. For our present purposes, it is important to note that the relative discreteness of the battlespace (the briefing paper suggests that the 'coverage area' of the weapon is limited to 2500 m²) allows the State-centric forces to distribute (and calibrate) the oleoresin – the essence of the *Bhut Jolokia* – in a restrained manner within the battlespace. But the paradox (which may well be what the designers of the weapon-system wanted to exploit in the first instance) lies in the fact that while the *introduction* of the weapon-system to a particular battlespace is indeed restrained, in the context of the local battlespace in which a particular engagement takes place, the *effect* of the weapon is virtually uncontrollable. The (ideal) net result expected from such actions is, of course, predictable: the temporary neutralization of the target and the permanent neutralization of its fighting abilities. From this we can infer that the State's instruments who (prepare to) wage war by deploying weapon-systems such as these insist on making (and retaining) an ontological distinction between discrete battlespaces and the larger, global battlespace that the former are nested within. The distinguishing feature of this imperial act of ontological differentiation on the part of the State and its strategic-military instruments is nothing less than the prevention of the 'leakage' of local battlespaces into the global battlespace – which

is representative of a logic of strategy that is unable, or unwilling, to think about war and combat across the modal spectrum of the continuum.

From the point of view of the State's strategic-military instruments, and in the specific context of the chili-weapon, this distinction is necessary because the oleoresin – the key element that disturbs the equilibrium of the battlespace – cannot distinguish between friend and foe. In other words, the oleoresin does not – indeed cannot – discriminate between ontologically ordered or prioritized entities when and where the distribution of its effects takes place. Consequently, it makes irrelevant the organizing potential of such privileges within the given battlespace. In this sense, the oleoresin represents, or at the very least affords, a material instantiation of the breakdown of the sanctity of the Law of the Excluded Middle by being complicit in opening the rigidly defined or discrete horizon/battlespace onto the synthetic realm, or what may be referred to as an *intermezzo of possibilita* where 'either/or' rigidities are modally softened.³³ And, while the

33. *Possibilita*: 'Possibles' that may or may not be actual are known as 'possibilita'. There are two primary kinds of possibilita in the specific context of modal logic: (1) Possible objects, such as the son of a young couple that is childless by choice, and (2) Possible worlds, which consist of possible objects that are capable of existing together. Note that the Law/Principle of the Excluded Middle is one of the traditional three laws of thought (along with the laws of identity and contradiction), which holds that 'Every proposition is either true or not true. $[\Box(p \vee \neg p)]$ '. It should be noted that this is weaker than the law of bivalence (every proposition is true or false), since if there is a third truth value, excluded middle can still hold, though bivalence will fail. (However, bivalence is sometimes treated as a version of excluded middle). See P.T. Geach and W.F. Bednarowski,

State and its strategic-military instruments may not appreciate the implications of the emergence or foregrounding of this *intermezzo*, in purely operational terms it poses a dilemma of almost strategic-existential proportions to them.

In operational terms, traditionally, the State's military instruments prefer to maintain distinct (albeit, at times, and in the context of manoeuvre warfare doctrines, mobile or flexible) 'frontlines' (thus distinguishing between 'friend' and 'enemy' etc.) during a combative engagement. This allows them to establish a baseline from which they can embark on their imperial forays.³⁴ Given this, the blurring (or, becoming-'vague') of 'the forward edge of the battle area' and the consequent fuzziness of the battle-lines proves inimical to the strategic-military interests of the State and its military instruments, because it denies them the finitude of a comprehensible and reproducible battlespace within which a regime of 'total information awareness' and 'global strike capabilities' can be established.³⁵

'The Law of Excluded Middle' (Symposium), *Proceedings of the Aristotelian Society*, Supplementary Volume (1956). It should be further noted that the law of the Excluded Middle is violated when the fusion of the 'either ... or' manifestations of rigidity and discreteness with modalities or possibilities of the continuum takes place, which results in the synthetic blurring of all boundaries and exact identities.

34. Deleuze and Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. B. Massumi (London: Continuum, 2003), 424-7.

35. Norman Friedman, in his shockingly short-sighted exegetical exercise on Network-centric Warfare, refers to this as 'the picture'. See N. Friedman, *Network-Centric Warfare: How Navies Learnt to Fight Smarter through Three*

The emergence of this *intermezzo* – wherein the Law of the Excluded Middle stands in positive danger of being subverted and made irrelevant by the synthetic modality of the continuum – undermines the imperial propensities of the State and its strategic-military instruments. But the danger far exceeds the threat to the State's imperial posture. Indeed, in the context of the *intermezzo* or the synthetic realm of the continuum, where defined hierarchies of order and organization find themselves being leavened and liquefied, the traditional (realist-oriented) units of analysis of the international order of things – comprising Man, the (geo-territorial basis of the) State and War – find little traction; and in this sense, the *intermezzo* poses a direct threat to the very integrity of the architectonic that serves as a conceptual endo-skeleton that actualizes the possibility of structures like the State and the international state system.³⁶

Taking into account these operational and existential caveats, the State and its instruments appear to acknowledge (as we have alluded to earlier) that the emergent adversary – given its three principal characteristics – has to be addressed globally within discrete battlespaces, and it is believed that this can be achieved by increasingly employing weapons like

World Wars (Annapolis: Naval Institute Press, 2009).

36. The reference to 'traditional realism' and to 'Man, the State, and War' is to Kenneth Waltz's seminal *Man, the State, and War: A Theoretical Analysis* (New York: Columbia University Press, 2001).

the chili-weapon.³⁷ To render the emergent adversary impotent (albeit for a discrete amount of time), the State's machines of war opt to (re)organize the global battlespace into discrete sections or sub-battlespaces that retain, for the most part, the salient features of what the State considers to be the global battlespace. Following this rather crude apportioning of the global battlespace, the State's military instruments then initialize combat operations that seek to individually overwhelm each of the discrete sub-battlespaces by using a weapon-system that aims to radically disturb the consistency and equilibrium of the target-battlespace by psycho-bio-chemical means, with the not-unexpected ulterior objective of extracting the emergent adversary from the terrain within which it operates. The logic of operability that underwrites this model of war(fare) may be represented as in Figure 1.

The implicit assumption underlying this *concept* of operations is that the space of battle is considered to be comprehensively hostile, dictating that operations within this space of battle are, or should be, unrestrained. It should be appreciated that while this may be considered to be the *concept* of operations involving such weapon-systems, in operational terms the

37. This is superficially similar to the argument that David Kilcullen makes in his *The Accidental Guerilla: Fighting Small Wars in the Midst of a Big One* (Oxford: Oxford University Press, 2009). Though it should be noted that Kilcullen does not openly suggest or insinuate the use of psycho-bio-chemical means to fight 'small wars' or even 'small-unit actions'.

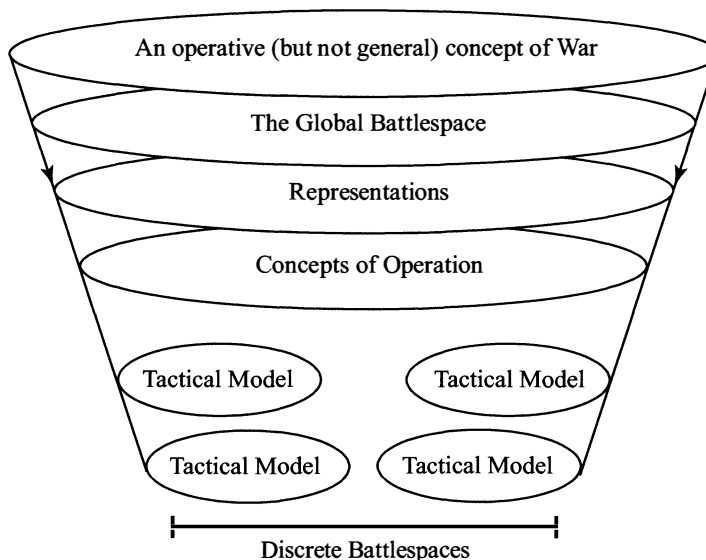


Figure 1. Discrete Global Battlespace

State's combat operations involving weapon-systems like these – for the reasons mentioned above – almost always must exhibit a high level of restraint. Further, aside from the existential imperatives that inhibit the State's use of this unconventional weapon-system, there is also its insistence on understanding the potency (and the potential) of the chili-weapon in the context of the offensive manoeuvres that hark back to models of warfare appropriate for the Industrial Age. Despite the rather subversive possibilities and potentials that the

chili-weapon offers – which we shall explore shortly – the objective of the State’s military machines remains wedded to the principle of launching a decapitating strike against an adversary. The use of the chili-weapon in the hands of the State and its military machines serves precisely this end by threatening to disorient, literally, the mind (i.e., the central nervous system) of the adversary by compelling it to deal with highly destabilizing – albeit localized and transient – conditions triggered by an overload of oleoresin. In the process, however, this admittedly extremist design-intent (especially when considered from the perspective of the State and its military instruments) clouds the truly monstrous potential of the *Bhut Jolokia* as a weapon.

In light of this, it cannot be denied that, to all intents and purposes, the chili-weapon is, by design, a concept-weapon that aims to disturb the normalcy of the world (i.e., the battlespace) occupied by a target by compelling the latter – in transforming the operative conditions within the world considered as a sub-set of a ‘global’ world – to transition through various traumatic phases leading up to, but not past, a thanatologically-terminal condition, with the final consequence of being extracted from the substrate on and within which it thrives.³⁸ Considered operationally,

38. Note: Here ‘trauma’ is meant – given the State-centric context – simply as an experience of an event or situation that causes great distress and disruption. Contrast this with what Negarestani refers to as trauma. Negarestani proposes that ‘... trauma should be understood not as what

it is indeed a highly unusual way for the State and its instruments to seek to engage with, but not necessarily deter, the emergent adversary. By designing and operationalizing the chili-weapon, the State, thus, is not saying to the emergent adversary: 'If you attempt to do x , then I will employ the chili-weapon against you'. That would be a statement of deterrence. Instead, the State is saying, 'I will pre-empt your threat-generative capabilities by interdicting the functioning of your neuro-cognitive mechanisms, thereby instantiating a counter-strategic operation that will target your somatic integrity'. Considered in this way, the significance of the strategic shift effected by the State – leaving aside its commitment to a concept of operations from a past age of warfare – is considerable and is reflected in its willingness to adopt what may be best described as a psycho-bio-chemical counter-tactic to create temporary conditions of extreme unease veering close to 'terror'.³⁹

is experienced but as a form of cut made by the real or the absolute in its own unified order; a cut that brings about the possibility of a localized horizon and a singular but interconnected 'point of view'. In short trauma as cut reinscribes the flow of the universal continuum or global continuity within the discontinuous or discrete horizon'. See Negarestani, 'Globe of Revolution'. The State does not recognize this Negarestanian notion of trauma. It cannot afford to. Instead it limits its recognition (and this is reflected in the design-intent of its more unusual models of weaponizations – as in the case of the *Bhut Jolokia*) of trauma to an experience (which it can calibrate within a given and necessarily finite space).

39. Of course, the State ignores the implications of this, which becomes obvious when cast in the Negarestanian notion of 'trauma'.

Against this backdrop, it could be said that when compared to the meta-strategic and strategic-operational models of Industrial Age Warfare, the emerging model of warfare that the State is beginning to craft appears to hold true to Zalamea's assertion about those "monstrous models" [that] ... arise with respect to *given* collections of axioms [but] which are never really able to fully capture the concepts behind the axioms'. In other words, though the chili-weapon represents an unusual attempt – particularly given its design-intent and material characteristics – by State-centric forces to engage with emergent battle conditions, the operational *concept* of operations involving the use of such weapon-systems remains true to the axiomatic principles around which the State and its machines of war have traditionally organized themselves and have waged war. But this does not detract from the other-worldly, post-lethal monstrosity of the model of weaponization that the chili-weapon, albeit abstractly, invokes. In what follows, we will explore such a model of weaponization. The monstrosity of the model is evidenced by the foregrounding of the full modal (understood in a chemo-cosmic sense) spectrum of the continuum, which, interestingly, underwrites an understanding of culinary processes as a visceral interactivity involving the synthetic realm of the continuum in which the discrete, the specific, the particular (for example, the ingredients of a culinary

exercise) reinscribes the generic continuum, resulting in the blurring of the boundaries of the particular into ‘the open’.

VAGUE WEAPONIZATIONS

To all intents and purposes, the weaponization of the *Bhut Jolokia* by the State and its instruments is a patently counter-strategic act, which is why it is fascinating. But, as we have seen, the State’s fealty to models of warfare that were designed in and for the Industrial Age precludes its ability, if not to fully comprehend the immense potential of the weapon-system, then at least to exploit it. Alternatively, as has been suggested above, it could also be the case that the State is perhaps actually able to recognize not only the weapon-system’s potential, but also the threat-potential that it presents to the State. In other words, it could be the case that the State recognizes the not necessarily terrifying, but certainly territoric⁴⁰ effect that the chili-weapon could have on its *own* prospects. This could explain, we ventured to suggest, why the State handles the chili-weapon with restraint. In this section we will turn our attention to a more extreme model of weaponization – free from the structural

40. Insofar as the axioms of the State (discrete battlespaces, well-defined entities and modal rigidities demarcated by ‘either ... or ...’) are vitiated by fusion and chemical reactions with synthetic modalities of the global battlespace or the continuum.

imperatives that preclude its full optimization by the State and its instruments – that we suggest underwrites the design-intent of what we have come to know as the chili-weapon.

To set the tone and the pace of the discussion to follow, and to highlight what appears to be an insidiously subversive and extreme line of militant thought, one should consult the recipe, printed facing the opening page of this article, for *Bhut Jolokia Asar*, one of the more interesting instances of how *Bhut Jolokia* is employed within the culture of traditional Assamese cuisine.

An ‘asar’ (in Assamese) or ‘achar’ is a condiment, that is to say, it is a ‘pickle’.⁴¹ It is an external entity – generally consumed in small quantities – that while retaining its independence, accompanies the main course of a meal, providing, optimally, a camouflaged edge to the latter. In the context of Indian culinary traditions, a pickle is an aggregate of a number of individual ingredients (generally, fruits and vegetables, but also occasionally meats/seafoods, and the ‘usual spices’) usually based within an oil/lemon juice/brine suspension. This mixture is allowed to ‘mature’, that is to say, to self-catalyze or cook itself, resulting in the apparent blending of the sharp edges of the individual or discrete ingredients (including the *Bhut Jolokia* in the above recipe) into a continuum of culinary tastes

41. It is important not to confuse the ‘Indian’ pickle with the gherkin/cucumber-based pickles that are commonly found in the West.

and sensations.⁴² This self-cooking of the pickle renders the potencies and flavours of the individual elements of an 'achar' into a state and condition of suspended animation. In this state, an overlapping of their individual or particular fields of tastes and sensations occurs, resulting in the establishment of a more generalized field of culinary sensations which, while retaining muted shades and softened edges of the independent potencies of the ingredients, is synthetically different from each of them. In other words, it could be said that the discrete becomes vague in the context of the continuum by losing its rigidities, which arise from the law of the excluded middle, thus fusing with other *possibilia* or chemical modalities provided by the generic base of the continuum. In this way, the continuum infiltrates the discrete (*qua* the axiomatic) through the vague, which is an emergent state or condition where a chemically-driven softening of boundaries takes place resulting in the sharing and overlapping of the resultant locales (diffused states and conditions enveloping) of the discrete which, in turn, foregrounds a cosmologically-expansive continuum.

As appetizing (or not) as this recipe may appear to be, in the context of this essay, it serves as an extremist model of weaponization that not only wrecks the

42. Note: Even the act of 'setting the mixture in the sun' has a twist. If the pickle is made only of vegetables, the 'sun' refers to the weaker 'winter sun'. If other ingredients are used such as meats/marine products and only certain kinds of vegetables/fruits, the 'sun' refers to the 'summer sun'.

collection of axioms that underlie the design-intent and subsequent weaponization of the State's version of the chili-weapon, but also consumes the very concepts that underwrite its alleged axiomatic premise. What is extreme about this model of weaponization is that it compels – through a chemistry of dissolution – the renegotiation of the traditional transactional and exchange-centric economy of relations that are said to characterize the local/global and the particular/generic.

Note the sequence in which the pickle is 'cooked' i.e., softens into a generic base and fuses with synthetic modalities of the continuum or *possibilia* associated with neighbouring elements or ingredients in the suspension. The process begins with the creation of a (dry) mixture involving the aggregation of the spices and the *Bhut Jolokia*. At this stage, it is presumed that while there is already an economy of relations at play between the ingredients (established as the essential oils of the individual [dry] ingredients are brought into close proximity with each other) it is not seamless; rather, it is discrete. In other words, the spices and the pepper – while establishing relationships with each other – continue to retain their individual identities. In this sense, it could be said that the Law of the Excluded Middle and the Principle of Contradiction – at least in so far as they respectively pertain to the emergent mixture and its individual ingredients

– remain undisturbed. The ingredients are (individually) what they are and cannot (yet) be anything other than what they are. As such, they are not yet part of a global ensemble where they *can* be *both* what they are AND something that they are not at the same time. But – and this is important to note – they do retain their potential to associate with one another in other, more intimate, ways which – as we shall see – involve the dismantling of the restrictions posed by the Law of the Excluded Middle (on the level of the generic mixture or the continuum) and the Principle of Contradiction (on the level of discrete or individual ingredients). This happens during the second stage of the pickle-making process.

The second stage begins with the suspension being added and the resultant mixture being exposed to the sun. At this point a qualitative change takes place in the discrete relations that have thus far been established between the constituents of the dry mixture. The introduction of the suspension, by generating heat, radicalizes the nature of the transactional relationship that hitherto marked the dry mixture. What occurs is the release – by purely chemical means – of the potential-motility of the spices, the pepper, and the suspension thereby breaking down the discrete singularities that aggregate to form the essence of the dry-mixture.⁴³

43. By ‘the release of the potential-motility’ of the ingredients, I simply mean to suggest that the particularities of each of the ingredients open up – as we shall see – to ‘the open’ or the full chemical and modal spectrum

The suspension, in this sense, plays a critical role not simply by contributing its own potential-motility to the dry-mixture, but also by serving as a partial trigger for a catalytic reaction or synthesis that leads to the emergence of the pickle. Partial because – though we will not address the issue in any detail here – the role of the solar-energetic inputs in the context of the pickling process should not be underestimated.⁴⁴ Thus, with the introduction of the suspension to the mixture of the spices and the peppers, the resultant, in many ways augmented, mixture now becomes something other than merely an aggregation of its individual constituents. It is at this point that the Law of the Excluded Middle begins to lose its relevance. The actualization of the potential-motility of the spices, the pepper, and the suspension involves nothing less than an assault on their particularities (individual tastes and sensations) that make up the dry-mixture and the suspension. It is important to recognize that this assault is more of an insurrection than an invasion by an external agency. Regardless, facing such an *intensive* assault, these particularities (of taste and

of the continuum. In other words, the activation of the potential-motility does not imply a disintegration or a fragmentation. Nor does it imply the heterogenization of a homogenous particularity. Indeed, as we will see, one of the paradoxical consequences of the ‘opening up’ of the particular is the establishment of a meta-homogeneity that is intimately connected to what here we are referring to as ‘the open’ and which we will later refer to as the ‘universal continuum’.

44. It could be said that the economic relations that stem from the solar-energetic inputs are consumed by the *Asar*.

sensation) are compelled to become complicit in the production (or, more accurately, synthesis) of a generic field (of culinary taste and sensation) in which they (the individual spice, pepper and suspension) remain in a state of suspended animation or modal kineticism.

Now, Fernando Zalamea, in his analysis of Peirce's *continuum*, has the following to say:

Peirce's *continuum* is formed by superposed 'real' environments and neighbourhoods – modes of fusion and connection of the *possibilia*. On that *continuum* 'ideal' points are marked – cuts and discontinuities of the actual – only to construct contrasting scales and to facilitate the 'calculus' ... Indeed, the actual, the given, the present, the instant, are no more than *ideal limits*: limits of possibility neighbourhoods which contain those actuality marks, those points impossible to be drawn, those fleeting presents, those impalpable instants.⁴⁵

In our context, therefore, it could be said that the generic field (what we have previously referred to as an *intermezzo*) on which the culinary chemistry of the *Bhut Jolokia Asar* takes place, and that is revealed as the individual ingredients of the recipe catalyze, is akin to Pierce's *continuum*. Following Zalamea's exegesis, it foregrounds itself as the particularities of the tastes

45. Zalamea, *Peirce's Continuum*, 23.

and sensations of the ingredients of the pickle fuse with one another. This fusion – which, as we have noted above, is the agitation of the potential-motility of the individual ingredients including the suspension – involves the erosion of the particularities and exact identities (here understood in the Zalamean sense of ‘ideal points’) of the individual constituents, and their synthesis into a field of culinary sensations that, while not bereft of the traces (which are ‘impossible to be drawn, those fleeting presents, those impalpable instants’)⁴⁶ of the individual essences of the ingredients, also produces (typically) a new culinary experience that is *locally* vague. Characterized by modal complexity and blurry boundaries which can only be approached through synthetic neighbourhoods and infinitesimal extension to the outside, vagueness is the *local* projection of the general within the particular field or the discrete ingredient.

The operative premise underlying this breaking down and fusion of particularities and the production of a vague (but also particular) experience is that the continuum is ‘the open’; it is the universal exteriority that allows, in the first instance, for the possibility for the nesting and overlapping of fields of particularities or specificities (‘ideal points’) on and within itself. The mandatory cautionary note here is to recognize

46. Thus, for example, how does one identify and articulate what the ‘ideal’ taste of the individual spices or the chili-pepper might be?

that this universal exteriority is not, and should not be considered as, an ontological space – that is to say, as being the raw material for the formation of concepts; rather, if anything, it is pre-ontological. It is the originary fundament upon which ontology is possible. Its complicity in the production of the ontological field is satisfied by its mere presence. In this sense, it could be said that the continuum or ‘the open’ is the universally contingent condition of possibility where the particular/specific/discrete are instantiated as a scattering of ‘cuts’ and ‘discontinuities’. The particular/the specific/the discrete are, in this sense, these ‘cuts’ and ‘discontinuities’ which mark the emergent of the actual from the possible and the contingent. Given this, it could further be said that the breakdown of the individual boundaries of each discrete ingredient or softening of rigidities of each particularity inevitably brings to the foreground the generic continuum, albeit in local and particular terms. In other words, the erosion of the particularities exposes – through neighbourhoods and infinitesimal gradients – the localized or monadic worlds of the particularities to the continuum or ‘the open’. At this point, two questions demand our attention: (1) How does the breakdown of the particular take place?; and, in a related sense, (2) when the particular or discrete entity actualizes itself on and within the universal exteriority, does this process of actualization result in

the total and complete exclusion of the exterior from the monadic world of the discrete?

As a first step we should recognize that the particular/specific/discrete is an apparent coagulation of the continuum within a localized region or space, given that the possibility of this occurring is always in the context of the continuum or 'the open'. It is an instance where the radical openness of the continuum meta-stabilizes (or, 'cooks in and within itself') to chemically and modally create a field of consistency. But it should be noted that this particularized field of consistency is not distinct from 'the open' or radical exteriority. Rather, it is the transient isolation, localization, and regionalization of 'the open' within particular or discrete spatio-temporally bound horizons, that detracts from the ability 'to capture all the richness of a *general* concept ([that is to say, of] the generic, modal and indeterminate)'.⁴⁷ Note that when Zalamea refers to the 'general concept (generic, indeterminate)', he is gesturing toward what we have referred to as 'the open' – both within and outside the context of the particular. In this sense, 'the open' persists – within the monadic world of the discrete or the particular – not as itself in its originary sense, that is to say, as 'the open'; but instead, as the 'vague' (i.e., indistinct). As an aside, note also that here the Law of the Excluded Middle and the Principle of Contradiction stand violated.

47. Zalamea, *Peirce's Continuum*, 4.

‘The open’ in the context of the particular is both ‘the open’ or generic (in its own context) and ‘the vague’ (in the context of the particular). In other words, it (the continuum/‘the open’) is simply irreducible to *either ... or ...* possibilities indicated by the Law of the Excluded Middle. And, continuing in the same vein, the particular is both ‘particular’ (again, in its own context) *and* ‘vague’ (in the context of ‘the open’). Thus, for example, a particular element, signified by an actual or discontinuous mark – such as a chili or a citizen – can be both a chili and not a chili or a civilian and a non-civilian at the same time. Here the vagueness of the pickle (both chili and not chili) and the vague adversary (both a citizen and non-citizen) violates the Principle of Contradiction. It should also be noted that this presence of ‘the open’ (in its necessarily ‘vague’ form) within the discrete world of the particular is also a latent source of extreme instability for the monadic world in which it lurks. Why is this lurking presence a source of radical and extreme instability? Because its presence at the local level brings about the violation of the Law of the Excluded Middle and the Principle of Contradiction; which, in turn, brings into play new modes of fusion, osmosis, and transversality across the full spectrum of the continuum, modes that are inimical to the structural integrity and form of the particular, the discrete and the individual.

Against this backdrop, it would not be too much of a stretch to suggest that what we have thus far been referring to as the breakdown, softening or the dismantling of particularities is nothing less than the radicalization of the ‘vague’ within the particular, which we now know is a signature of the continuum within that which is discrete. Thus, when the question is posed as to whether the institution of the particular or the discrete excludes ‘the open’, we are compelled to respond in the negative. The discrete and the particular is always infiltrated by ‘the open’ in the guise of the ‘vague’. And, how does this infiltration take place? It is certainly not established by the instituting of a transaction-based economy of relations. It is also not simply a question of suggesting the addition of ‘the open’ to the locale of the particular. Rather, the mode of infiltration of ‘the open’ into a discrete world is in the form of a cleavage, or a cut – a trauma – that slices – neither inwards, nor outwards – the particular. The cut is not a simple splitting or division of the particular into further discrete particularities. Rather, it is, as Hermann Weyl suggested, ‘a natural way to take into account the nature of a continuum which, following Anaxagoras, defies ‘chopping off its parts from one another, as it were, with a hatchet’.⁴⁸ In this light, this slicing or cutting is nothing less than the exposure of the horizon of interiority of the particular

48. H. Weyl, ‘The Ghost of Modality’ in *Philosophical Essays in the Memory of Edmund Husserl* (Cambridge, MA: Harvard University Press, 1940), 294.

to 'the open'/the continuum. In our specific context, we propose that this is a principal contributory cause to the blurring of battlelines, and to the generation of a climate of modal and chemical conditions that obfuscates the local battlespace, with extreme spillover effects into what the State and its military instruments consider as being the global battlespace.

Considered in this way, *the chili-weapon, which may be considered to be akin to the Bhut Jolokia pickle, is, in the first instance, indicative of a model of weaponization that involves the catalysis of individual potencies into, on, and as 'the vague', which is chemically linked to the continuum.* Now, in normative terms, a weapon-system's effectiveness is generally assessed in terms of the potential effects that its kinetic capabilities can deliver. These are usually measured in terms of the number of rounds that can be fired in a discrete amount of time; the 'weight' of the firepower that the weapon-system discharges; the mobility of the weapon-system; and its ability to complement other weapon-systems that may be fielded to create the global ensemble of weapons deployed on the battlefield. It is also important to note that the functionality of a weapon-system, usually, remains discrete. Further, weapon-systems (and this includes the thermonuclear option) are constructed as aggregate capabilities that combine their features to produce a cumulative effect. It is important to pay attention to the fact that each component of the

weapon-system retains its individual features, capabilities and characteristics, although they are also instrumental in the forming of ensembles of weapon-systems.⁴⁹ Ensembles of such weapon-systems have a singular objective: termination of individual (that is to say, particular and discrete) instances of threats. This is done by attempting to interdict the critical command and control nodes of the perceived threat. In this connection, it is worth pointing out that while such weapon-ensembles may appear to overwhelm a specific battlespace with area-suppressing firepower, the base object remains wedded to the principle of neutralizing discrete points of resistance. In this sense, the desired effects resulting from the employment of such ensembles of weapon-systems are very local and punctual. Only by a process of arithmetic aggregation are we able to contextualize these local effects in 'strategic' terms. And, in this context, it is also worth pointing out that most conventional weapon-systems are essentially defensive in nature despite the normative bias towards classifying ensembles of weapon-systems as being 'offensive' or 'defensive'.

In contrast to this, the extreme model of weaponization that underwrites the chili-weapon is in a class of its own. Like the *Bhut Jolokia Asar* – in which the

49. This allows for quick repairs to be made under battle conditions. Essentially, being an ensemble of multiple parts, the modular nature of the weapon-system allows for the quick replacement of the less-than-optimal functioning part.

chili-pepper is an active co-constituent – the chili-weapon is less an aggregation of disruptive sensory triggers targeted towards an adversary, and more a catalysis-engineer that exposes particular and discrete entities to a sensorial continuum. What is singular about this is that, contra the normative understanding and design-intent of conventional weapon-systems, the model of weaponization represented by the chili-weapon does not target particular and discrete entities. Rather, it aims to (re)introduce the continuum (or ‘the open’) not simply within the space occupied by such entities, but also within the entities themselves, by facilitating a radical reflexivity between the continuum and these entities which are in fact local manifestations of the continuum itself, and could therefore not exclude the open. As we have noted above, this weaponization occurs not by means of an invasive cut, in a bid to render the localized particular/region even more discrete (which is what the State attempts), but by exposing the particular (here, the adversary) to the generic in ways that destabilize the former, thus blunting its local instances and intensities. The sensorial disorientation that follows the employment of the chili-weapon – characterized in the Briefing Paper in terms of ‘severe coughing, lacrymation, irritation of eyes and nose and suffocation’ – could be said to be one example of the extreme physical perturbations that afflict the particular/discrete when it is introduced

to an existential dilemma that follows its exposure to the continuum, which involves the collapse of the Principle of Contradiction.

Our brief review of the chili-weapon – given the details provided by the Briefing Paper – suggests that much of what is excessive in its underlying model of weaponization is obscured by the structural and existential imperatives of the State and of its military instruments. The State's employment of this weapon does not maximize this latent potential that the chili-weapon represents. Instead, as we have seen, the State's design-intent is organized around the ability to deliver a devastating attack on the central nervous system of the 'unlawful combatants' within a battlespace, in a bid to incapacitate them. This is understandable because the State's primary objective is to extract these 'unlawful combatants' from the battlespace without disturbing the latter's essential normalcy. In the process, however, there occurs an obfuscation of the truly insidious character of the model of weaponization that is at play. Additionally, we have seen how the fealty of the State's military machines to what is fast becoming an outmoded model of warfare limits how this ostensibly radical and extreme weapon-system can be used. While it is true that unrestrained use of this weapon-system within the discrete confines of local battlespaces succeeds in overwhelming the space of battle, it does so, however, through an objective

re-ordering and assimilation of the local battlespace within a much larger global (and in that sense, discrete and restricted) battlespace in which the State and its instruments can freely use their precision-strike and global-strike capabilities. In this context, it is important to note that our reference to the global battlespace as conceived (indeed constructed) by the State and its military machines does not refer to the generic battlespace or to an understanding of the continuum as a 'globally' generic battlespace. In the State's version of what it refers to as 'the global battlespace', there is no room – at least under ideal conditions – for any kind of ambiguity or vagueness. 'To be generic' within the State's version of the global battlespace, is 'to be categorical'. The 'generic' in the State's global battlespace serves as a place-holder or a category within which particularities can be organized or left in suspended animation pending their eventual (re) organization. In this sense, the 'generic' is, for the State, a specific category. Given this, it will be appreciated – as is also evident from the design intent of the chili-weapon – that the use of such exotic (and, in some senses, extreme) weapon-systems is targeted towards the category of what I refer to as 'specific generalities' which, in the context of our current focus of interest, can be isolated only within localized battlespaces. The State's use of this weapon-system thus has very little to do with anything other than interdicting –

COLLAPSE VII

as we have previously stated – the ability of the adversary (within the context of the local battlespace) to establish and operationalize an effective command and control system. What this suggests is that the State and its military instruments – despite having at their disposal a weapon-system of truly radical proportions – insist on reverting to the operational doctrines of combat of the Industrial Age.

PARA-TACTICS OF COMBAT

Somewhere in the remoter areas of Naugaon, Assam, sheltering from the hot tropical sun, a family of four sat down to have their midday meal, consisting of boiled rice and green vegetables. Working from dawn till noon, the family had slaved at their small paddy plot – the output of which would prove critical for their chances to avoid starvation during the coming year. The children – both under fifteen years of age – had worked too. The family's meal which, by any standard, was at best modest and at worst meagre, gave little culinary pleasure save that which accompanies any meal when one is wracked by intense hunger. Whatever small variation is applied to this basic fare would be, as always, provided by a couple of fresh onions and a condiment – the Bhut Jolokia Asar. As the wife ladled out the food – reserving the smallest portions for herself and her very young daughter – the husband reached for the earthen jar containing the Bhut Jolokia Asar. From then on – as the meal progressed – the

Bhut Jolokia Asar would play a supplementary, but critical, role in re-determining not only how the modest meal consisting of rice and vegetables tasted, but also the effects it would have on the consumer. The inclusion of the Asar introduces a radical element into the meal. If the meal is considered as being a particular battlespace, the Asar serves as an engine of catalysis (a model of tacticity) that exposes – by supplementary means and under camouflage – the radical open-ness of the continuum, not simply within the meal, but also within the consumer.

In the previous section, it was suggested that the catalysis that manifests itself in and as the *Asar* is an instance of the emergence of the vague within the horizon of interiority of the individual ingredients of the pickle, including the suspension. This, we further suggested, is indicative of an extreme model of weaponization which, contra its traditional counterparts, including the State's efforts to weaponize the *Bhut Jolokia* as a chili-weapon, does not break down a target – a particular and discrete entity – into smaller discrete entities in a bid to overwhelm them individually. Instead, as we have seen, the radical monstrosity of the model of weaponization underwriting the chili-weapon – a model we derived from the *Bhut Jolokia Asar* – evidences itself in the way in which it compels the target – a particularity, discreteness, specificity – to expose its interiority to what we have referred to as the

continuum or 'the open'. And while we have already pointed out that this exposure takes the form of a 'cut' or a 'slice', it is worth reiterating that this 'cutting' or 'slicing' does not involve any external agency. Rather, it is an exposure of 'the open' which always-already lurks within that which is particular, specific and discrete. In what follows, we will now employ the model of weaponization afforded by the *Bhut Jolokia Asar* to explicate a vector of para-tactical militancy that synthesizes the traditionally discrete relations between 'tactics', modes of tacticity, and objects of tactical interest and relevance, not to annihilate points of defence or resistance (which are 'objects' of tactical interest and relevance), but to make such points complicit in their own rendition into 'the open'.

Sandor Ferenczi, in his *Final Contributions to the Problems and Methods of Psycho-Analysis*, notes:

[A] traumatic force catches up and, as it were, shakes the ego down from the high tree or the tower. This is described as a frightening whirlwind, ending in the complete dissolution of connexions and a terrible vertigo, until finally the ability, or even the attempt, to resist the force is given up as hopeless, and the function of self-preservation declares itself bankrupt. This final result may be described or represented as being partially dead. In one case such 'being dead' was represented ... as maximal pulverization, leading

to finally complete de-materialization. The dematerialized ... component has the tendency to drag the not yet dead parts to itself into non-existence ...⁵⁰

Our objective in quoting Ferenczi in this context is to gesture to the vector along which our proposed model of para-tactical militancy will foreground itself. The generic objective of this model of tactical militancy (which, as we will see, must necessarily be executed at the level of the infinitesimal)⁵¹ is similar to what Ferenczi refers to as conveying ‘the hopelessness of resistance’, which is effected by the dissolution of the intensive ‘connexions’ of a target-entity that lend to the latter a consistency that underwrites its discreteness. But to derive such a model of tacticity, which is operative at the infinitesimal level, will require us to reconsider matters relating to, in the first instance, the continuum (‘the open’).

Fernando Zalamea, following the work of Charles Sanders Peirce and Giuseppe Veronese, provides us with a systematic study and account of the continuum, or ‘the open’, that allows us to investigate the implications of the latter for synthesis, the axiomatic and the discrete (or the specific/particular) and to understand the continuum as a means of bridging between

50. Sandor Ferenczi, *Final Contributions*, 222-3.

51. An ‘infinitesimal may be regarded as a continuum “viewed in the small”.’ J. L. Bell, ‘Infinitesimals and the Continuum’, *The Mathematical Intelligencer*, Vol. 17, #2 (New York: Springer-Verlag, 1995), 55.

mathematics, chemistry, cosmological processes and, in our specific context, war and its conduct. The continuum is, according to Zalamea, 'an 'absolutely general' concept which, in principle, 'does not have to be completely objectified in just a formal context'. In other words, 'every general concept is, in reference to its individuals, strictly a *continuum* ... Thus, the *continuum*, as a lean, 'free' concept in the realm of the general and the possible, cannot be bounded by a determinate collection ...'⁵² Beginning from this premise, it is then possible to reconstruct a general concept of war (both as a condition or state of affairs AND as the intensive reflexivity that such states or conditions necessarily involve) in the manner suggested in Figure 2.

Figure 2 represents Zalamea's description of the 'double sigma' (the continuum), which has three universal or global properties, each with its own implications – plasticity (what we previously referred to as the logic of plasticity), inextensibility and supermulti-tudeness. It is necessary to recognize that the intricate interweaving of these three universal properties create their local counterparts – generic relationality, the logic of vagueness, neighbourhood and *possibilia*. In this sense, as Zalamea asserts, 'the *double sigma* underlines some fundamental threads between global and local aspects of [the] continuum.'⁵³ From the above, it will

52. Zalamea, *Peirce's Continuum*, 7 (italics in original).

53. Ibid, 8-9. Italics in original.

Guha – Vague Weaponizations

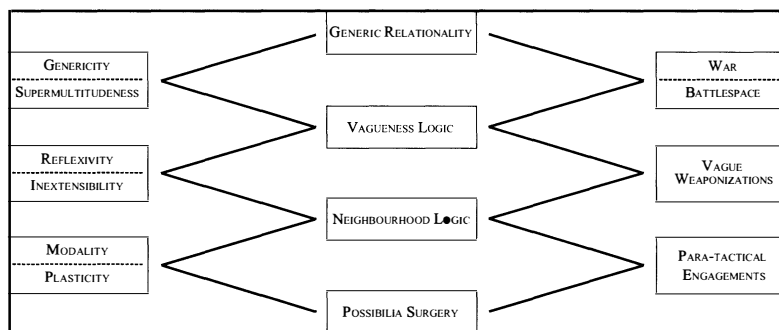


Figure 2. Weaponizing the Double Sigma

be evident that what we had previously referred to as the State's perception of the 'global battlespace', which is derived from a non-generic, that is to say, a specific concept of war, and which is progressively filtered through increasingly discrete modes of representations, fails to address or account for the unbounded genericity of the continuum – which we can under the present circumstances provisionally label as the general concept of war – and the supermultitudeness of the battlespace that such a generic concept of war invokes. Perhaps a fruitful way to explicate this would be to refer to the continuum as being a *self-churning* that erodes the discreteness of particularities. It is important to note that this erosion of particularities only strips away from them their 'particularizing attachments,

determinative, existential or actual',⁵⁴ which results in the particular progressively losing its consistency. Another way of putting it would be to say that the release of the particular from its particularity does not obliterate the particular; rather, it 'frees' the particular from that which axiomatically or modally particularizes it in the first instance, thus diluting its discontinuous or rigid modality into the synthetic modality of the continuum, and thereby loosening the particular into the open continuum.

Now, it is tempting to envision this as the act of an external and operative agency, or to some corrosive nature of the continuum. However, to sustain this argument would involve invoking an originary distinction between the continuum and the particular. The counter-strategic perspective that we wish to highlight here is that *no such external agency or force brings about the de-particularization of the particular*. Instead, it is a consequence of the operative reflexivity of the continuum within the particular and, in this sense, the distinction between the local/particular/discrete and the continuum is always local and transient.⁵⁵ From this we can infer that this reflexivity that is characteristic of the continuum does not diminish – it is at play both in and as the continuum, and remains at play within

54. Ibid, 10

55. 'The reflexive' is 'defined as something any part of which however small itself has parts of the same kind' (C.S. Peirce). It preserves the germ of the continuum under any condition and no matter what kind of cut or discontinuity it undergoes.

the particular wherein the continuum lurks, like what Ferenczi would refer to as ‘an alien (trans)implant’. In the context of the supplementing of the modest meal of the Assamese farmer and his family with the *Bhut Jolokia Asar*, we can therefore suggest, given that we have presumed the *Asar* to be a model of radical weaponization which involves the continuum, that its supplementary role in the midday meal described above serves to function as the traumatic force that Ferenczi refers to. It is a vector along which the universal continuum mobilizes itself (by being true to itself) not simply within the particular meal, but also within the individual that consumes it – directly or otherwise. It is not the case that the *Asar* impinges on the meal; rather, it chemically transforms the particularity of the meal to accommodate the inassimilable open-ness of the continuum. To the extent that the *Asar* mixes with the meal (remember that the *Asar* involves a liquid suspension), being itself organized around a kernel of depthless openness (this being contributed by the chemistry of the oleoresin), it agitates the latent presence of the continuum within the meal. And, further, by the act of ingesting this meal – supplemented by the *Asar* – the individual also interiorizes the continuum. In this way, the continuum asserts its presence within what is discrete and particular. This has effects both on the particular and on the continuum – though in

the latter case it is less a matter of 'effect' and more an expression of its peculiar open-ness.⁵⁶

In the context of the particular, the self-churning of the continuum is – as we have previously alluded to – an originary reflexivity, which cleaves (intensively) the particular, thereby introducing a gradient relationality within the particular. This is achieved not by the particular being disintegrated into further discrete elements, but by the unfolding of infinitesimal or non-punctual and continuous segments. In the context of the particular, the presence of infinitesimal or non-punctual and continuous segments results in the establishment of the vague, where the Principle of Contradiction stands violated. This 'opening' of the particular results in the latter's progressively dissolving/loosening to create neighbourhoods to accommodate vagueness, which overlap with other such unfoldings or openings of particularities. Since the vague is identified, in part, in terms of unfolded boundaries and modal softness, it can effectively react and meld with other entities across the continuum insofar as its boundaries can be shared by other entities and its modality can fuse with the contingency of the outside. The vague, therefore, opens the exact and particular

56. Ferenczi describes the evolution of the human being in terms of 'alien transplants' according to which the human is a polyvalent horizon of nested chemistries and a series of alien transplants of the continuum: 'It is possible that we harbour in our organism inorganic, vegetative, herbivorous and carnivorous tendencies like chemical valences.' See Ferenczi, *Final Contributions*, 227-30.

to the free osmotic flow of the continuum between the global and the local. Alternatively, it could also be said that this opening of the particular establishes a continuity of the continuum within discrete locales and regions (extensions/expansions/stretchings of the particular). It will be appreciated that in our analysis of the *Bhut Jolokia Asar* (as opposed, significantly, to our analysis of the chili-weapon as fabricated and employed by the State and its instruments) we saw how the sharp edges of the individual ingredients of the *Asar* catalyzed, resulting in the emergence of a continuity of tastes and sensations which we related to the local presence of the continuum in the form of ‘the vague’. From the point of view of the continuum, this process does not involve the latter’s being unfaithful to its own *nature*; instead, it involves a ‘transformation of modality’ that is reflected in the degeneration (the operation of intensive reflexivity) of the particular into the vague, and thence into and as the continuum. It is this transformation of modality that Ferenczi refers to as ‘the traumatic force’, which can be regarded as an instance of a cosmo-chemical process that involves a modal change that, in turn, entails a visceral encounter with the full spectrum of the continuum.

Such a model of para-tactical engagement – unlike traditional concepts of (strategic-military) operations – works to institute a radical Logic of Relations (that governs relations between particulars, individuals,

specificities) by invoking a pure synthesis of location and direction. This synthesis wrecks the traditional distinction between tactical models, objects of tactical interest, and local-level tactical objectives by fusing them on and along the exteriorized/interiorized continuum. No tactical agency drives this process. Nor is the presence of tactical objects of interest – points of resistance or defence – considered a deterrent to this model of engagement. At every turn, such a model of tactical engagement generates what we have referred to as an *intermezzo*, ‘understood as a synthetical range where whatever is possible should be able to glue – which has to be a general place (*logos*), extremely flexible, plastic, homogeneous, without irregularities ...’.⁵⁷ Herein discrete points (networked or not – of defence and resistance) are introduced to an interiorized abysmal chasm that collapses them from within, thereby conveying what Ferenczi refers to as ‘the hopelessness of resistance’. But then again, we need to remain mindful of the fact that such a state of affairs undermines our efforts to label this mode of tacticity as a ‘model’; it would perhaps be more fitting to refer to this modality as being an exhibition of a ‘pure tacticity’ that runs immanent to events, individuals, particulars and other such instances of ontologically-privileged discreteness.

57. Zalamea, *Peirce's Continuum*, 15. Parenthesis and italics in original.

CONCLUSION

We began our exploratory exercise by considering an unusual model of weaponization – in the form of the chili-weapon – conducted by the State. While such a model of weaponization, we noted, is radical in the sense that it points to an ongoing reassessment of the space of war and battle (considered normatively), it fails to sufficiently interrogate the axioms that lend it a logical and operational consistency. The fealty to these axioms, we noted, is a contributory cause that camouflages the sheer monstrosity that lurks behind such models of weaponization.

Our interest in the State's weaponization of the *Bhut Jolokia* lay in the latent potential of the chili-pepper (co-constituted by the oleoresin), which rates so high on the Scoville scale, to materially disturb the somatic integrity of those against which it is deployed. When this aspect of the *Bhut Jolokia* is taken into account we then confront what constitutes the radical alterity of this model of weaponization – its propensity to foreground the continuum. The cookery involved in the *Asar* – as we have described it – thus represents, micro-cosmically, the action that takes place on and along the continuum as the unbound chemical spectrum of modalities, global-local syntheses and universal contingency. In this sense, the self-cooking of the continuum (represented by the 'maturing process' of the

Asar) becomes the generative condition which allows not only for the possibility of points of resistance, but also, paradoxically, for the tactical counter-measures that strip away from such points their particulars. The climate of operations, while remaining local is thus infused by the continuum in the form of 'the vague', which we confront in the emergent battlespaces in the form of the 'vague civilian' ('the enemy of all') who exhibits the pure tacticity of hypercamouflage.⁵⁸

It is at this point that our attempt at a 'vague weaponization' differs from the model of weaponization that the State actualizes with the chili-weapon. Whereas the latter attempts to create – by psycho-bio-chemical means – conditions of temporary disorientation within discrete slices of spatio-temporality, which is roughly analogous to the institution of 'the vague', its efforts are also geared toward the containment of such effects. As we have seen, this is because, in the 'global battlespace' constructed by the State and its strategic-military instruments, the presence of 'the vague' is inimical to the objective of asserting 'full spectrum dominance' and of developing and retaining 'global strike capabilities'. Indeed, it could be asserted that what we have thus far referred to as the emergent adversary is 'the vague' (which, as we know, is the local and synthetic presence of the continuum). Conversely,

58. On 'hypercamouflage', see R. Negarestani, 'The Militarization of Peace: Absence of Terror or Terror of Absence?', *COLLAPSE* I, 53-91.

in our model of vague weaponization, the objective is not to limit ‘the vague’ but to *negatively generate* the particular by exposing it to the vague. In other words, the local object of the model of ‘vague weaponization’ is to proliferate *possibilia*, thereby establishing an intermediary logic of plasticity between the particular and the continuum or ‘the open’, between the axiomatic and the contingent.

Further, as we discovered, the extremeness that spectrally haunts such models of weaponizations is not terminally lethal. This is another point of similarity between the State’s model of weaponization of the *Bhut Jolokia* and our radical model of weaponization. The apparent overlap lies in the fact that, superficially, both models do not consider the annihilation of the target as being an absolute and necessary end. The difference, of course, lies in the fact that the State’s models attempt to preserve the particularity of those elements that pose a threat to it within a discrete battlespace, while our more radical model, on the other hand, does something more excessive: It seeks to dissolve spatio-temporal instances and events by exposing them to the logic of the continuum to the point of no return. This dissolution is akin to an ‘ubiquitous osmotic process’ – ‘a *natural way*, the “transit” of modalities, the “fusion” of individualities, the ‘overlapping’ of neighbourhoods’,⁵⁹ which may be represented as in Figure 3 (overleaf).

59. Zalamea, *Peirce’s Continuum*, 17.

In this way, the vector along which such weaponizations and the para-tactical engagements that they bring in their wake is '[c]orrespondingly, [representative of] a line of thought [that is] set to irreparably deepen the geophilosophical synthesis from the a priori *terra verita* rooted in the somatic integrity of the earth, the state and the human-citizen to the ever-self-renegotiating verity of geocosmic continuum, and thus should be identified as immanently territopic.'⁶⁰

In closing, let us return to the 'state of unease' that the soldiers of the Wehrmacht experienced on the eve of Operation Barbarossa. Even before the 'guns of June' rang out in anger, though rooted within dugouts and trenches cut into the earth, the somatic integrity of the individual soldiers (and, by extension, of the war-machine of which they were constitutive units) was already under threat. As they drank their spirits to bolster their confidence (which Ferenczi would no doubt identify as 'the ego'), they could not have been unaware that, burrowed as they were into the damp but comforting confines of their earthly defences, at some level, they had already transited into that territopic *intermezzo* where what confronted them were what Pierce refers to as the supermultitudinousness of *possibilia*⁶¹ – 'without beginning, middle, or end'.

60. Negarestani, *Globe of Revolution*, 2.

61. C. S. Peirce, 'Multitude and Continuity' [c.1897; NE 3.86-87], quoted in Zalamea, *Peirce's Continuum*, 12.

CONTINUUM

Universal Quantification (\forall)

Generic

Global

The Base

Global Battlespace

General or global insurrectionary is possible to *either...or...* possibilities)

Failure of the law of excluded middle ($\nVdash \forall xP \vee \forall x\neg P$)

Existential Quantification (\exists)

Vague (Particular)

Local

The Chili (Pickle)

Civilian / Citizen

(x CAN be both civilian and non-civilian at the same time)

Failure of the principle of contradiction ($\nVdash \neg (\exists xP \wedge \exists x\neg P)$)

Universal Contingency

Local Possibilities

Universal Contingency

Local Possibilities

Universal Contingency

Local Possibilities

Fusion of modalities across the Continuum

Thus, their muted prayer to some higher authority – Man or God – to step back from the brink of war was always-already too late. They were – as we are (given that despite its collective manifestation, the ‘we’ is individualistic, discrete, particular, and specific) – already at war. They were, as we are, always-already committed to being co-constituents of a cosmic culinary exercise that serves ‘the open’.

Museum

ingredients

Agar Agar ← WATER

Dextrose Triptone Agar

Glycerol

Sperm oil

Salt NaCl

Sugar

Pet concentrated milk

VB

cranberry juice

corn oil

PET

flavored

Chocolate Yoo-Hoo

chicken extract

Henderson

Edison
Can
clean
energy

Gold leaf

local vines

galvanized pans

screw hooks

thumb tacks

Black Magic plastic

100's

Some known strains
typical Growth

Mucors racemosus

Rhizopus apophysis

Aspergillus niger

Penicillium notatum

Streptomyces griseus.

Things to do
to help prevent
a power shortage
this summer.

FOOD and the City

Interview with Carol Goodden

In 1971 Gordon Matta-Clark and Carol Goodden founded FOOD. Part restaurant, part art project, and offering employment to artists, FOOD provided a space for social, architectural and culinary experimentation and a meeting place for the artistic community.

The development of the FOOD project can be seen in the context of Matta-Clark's earlier work, in which there seem to be several levels to the link between architecture and cooking: At points the artist seems to have understood cities and urbanisation as a kind of metabolisation or digestion process (the movement from centre to periphery, gentrification, transformation of neighbourhoods). But we should also consider Matta-Clark's long-standing interest in alchemy: Throughout autumn and winter 1969, 'alchemical' apparatuses were bubbling away in his New York loft, works such as Photo-Fry employed processes of transformation that were explicitly 'culinary', and the remainder of a series of works in which agar was used to grow various substances were exhibited in the 1970 show Museum. At the time Matta-Clark

All Images: Succession de Gordon Matta-Clark en dépôt au Centre Canadien d'Architecture, Montréal / Estate of Gordon Matta-Clark on deposit at the Canadian Centre for Architecture, Montréal.

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related this work to 'those traditions that have always dealt with the preparation and transformation of materials'. This raises the question of how this concern manifests itself in his more well-known architectural and spatial work. Might we also understand the cutting pieces (which developed during the construction of FOOD) as belonging to an alchemical or culinary order? Several of Matta-Clark's notes attest to such a parallel between the (an)architectural and the culinary. Cutting breaches the living-cells (cells for living in) of apartments, to allow a circulation between what is below and what is above – visually, architecturally, and in terms of the habitation of the space – in the same way that the process of heating/cooking breaks down cells and transforms matter. A later work Days End [1975], conceived as 'a pie-like slice', sought to 'extend the building ... below as much as above, like an alchemical motif where there is that definite dichotomy – on balance – between the above and below ... Think about shelter as a form of being, which it is ...'. Here a building is between earth and air, and the alchemical liberation of earth into air links architectural practice to the sublime transformations of cooking.

COLLAPSE spoke to Carol Goodden about FOOD, about Matta-Clark's relation to the city, and the extent to which alchemical or culinary practices infuse his work. The accompanying images, notes drawn from the Gordon Matta-Clark Archive at the Canadian Centre for Architecture, Montréal, capture something of the artist's mercurial imagination.

COLLAPSE: What was Matta-Clark's relation to New York City – to being in New York – how did the city become a 'fuel' for his creativity and pose new questions to him?

CAROL GOODDEN: Gordon was raised in NYC, after his early years in Chile. I believe the energy of the city was ingrained within him. He saw it as something ever-changing and wished to 'save' the decrepit, the wasted, the useless – transform it into something visually appealing or useful. In this effort he would collect trash from under the Brooklyn Bridge (one of his favourite places) and combine his artifacts into a 'piece.' He made a 'sandwich' of collected things, closed them up in wire, plastered the wire so that his oblong box looked like an over-large suitcase, and stuck newspaper comic strips on the wet plaster to 'wallpaper' it. The *Wallspaper* piece [1973] installed in 112 Greene St. followed that. He photographed the 'common walls' of buildings where one building had adjoined another but had been torn down, leaving the scars of its earlier reality exposed – plumbing, stairwells, wall adornments. Then he took all those photographs, had them printed in colour on newsprint in cascading sequence and used that to wallpaper a ninety-foot length of wall, ceiling to floor. When that piece was removed, he cut the newspaper printings

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into booklet-sized swatches, bound them, and gave the booklets away.

This constant migration in his mind, the evolution of everything, fuelled his interest in saving pieces of abandoned buildings, or buildings threatened with demolition. Thus he cut one building in half, transforming it; he cut pieces out of floors of buildings; he cut holes and slices through buildings, watching how the light changed and *tromp l'oeil* effects were produced; he decapitated a building in Italy and followed the light trails across the walls with cuts; he cut a corkscrew swatch through the old Beauborg, and so on.

Gordon's mind was extremely complex. He never saw or thought about anything singly. For instance in this note – 'Mangé management': it's a play on words,

MANGÉ MANAGEMENT
BUILDINGS ARE FOR EATING;
THE PAW OLD BEAMS LAY
SERVED IN GENEROUS PILES
BETTER CO-HABITED WHERE THEY
FALL THAN TAKEN OUT TO LUNCH.

LIFE IS A BOWL OF
CHERRIES OR CARROTS ...



using the whole thought: *Mangé* could have become *ménage*, or *ménage à trois*, but he apparently was in FOOD when he wrote this, or thinking of FOOD. This constant combining of sights and thoughts, from one subject to another, was replete in his speech as well, making it quite impossible to understand what he was talking about. Many times one sentence or reference would appear in a speech today and a week later another reference to that subject but within an entirely different context, so that one could begin to see that his mind worked in a circular pattern and could almost only be followed by living constantly with him. 'Life is a bowl of cherries or carrots...' The first is simply a trite phrase and then it is combined with what he daily saw at FOOD.

C: It seems that these movements of circulation and subtle transformation already describe an 'alchemical' mind. But where did Matta-Clark's explicit interest in alchemy originate? Was it something that was 'in the air' at the time – Jung, and so on..?

CG: There was his connection with Suzanne Harris who was very interested in alchemy. He and Suzanne (who also died at a youngish age) were soulmates.

But he had started his agar pieces almost before he met Suzy. The agar was simply about cooking, about watching chemical change, and about preserving that process in a 'piece.'

I can possibly, psychologically speaking, project that some of Gordon's internal mentations might have been caused by the car accident he had while in college at Cornell doing his architectural studies. He 'passed out' and in the process crashed the car which killed one of the occupants in the car. Needless to say he felt horrible about this and carried it as one of two major guilt burdens. He was diagnosed with Addison's disease (adrenal gland deficiency) and was put on heavy cortisones (which is what eventually killed him). But I have to wonder if he was not thinking about the alchemy in his own body, why and how things worked, what would happen if he ate this or that, be it recognizable food or food processed through the chemicals that he used to make his agar pieces. He loved watching the

change from something recognizable into something new, such as his fried photographs.

The alchemical experiments in Gordon's Chinatown loft (just before I met him) were flat trays in which he sprinkled agar and then tossed various found objects – anything; metal, wood, half-eaten sandwich, dead leaves. He was very interested in watching the mouldy substance grow and change every day, every week. It started out with adding water but then he would let these large sheets dry out, stop growing. The pieces were shown at the Holly Solomon Gallery – in their trays, I believe; they were too fragile to just lay or hang by themselves.

C: When they were exhibited, do you think they were, for him, just the 'dead' remainder of the actual work (the growth itself) – like the photographs of the architectural works – records of something that no longer existed?

CG: No, I believe he saw the agar pieces as transformed. They were just as alive to him as the actual process of the growth of the agar. Just as the cuts were 'the piece' before a building was demolished. The photographs were documentation, true, but he would collage them into a piece of their own.

So the idea of throwing objects into a space and watching it transform, as in the agar pieces, developed

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into throwing objects into a contained space and then, as I described, binding them up, first with wire lath, then plaster, then papering the plaster with found newspapers (comic pages for colour).

The wire-plaster sandwiches that Gordon made under the Brooklyn bridge were the impetus for cutting the 'sandwich' out of the wall during the FOOD construction, and that started the whole idea of cutting through layers of floors, walls, windows, stairs.

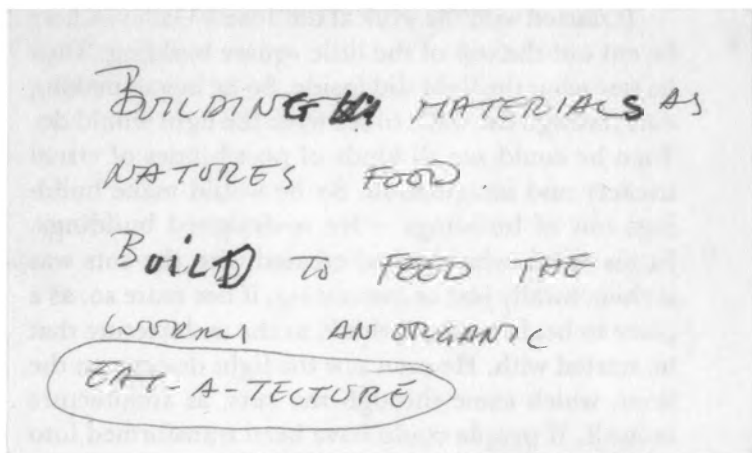
Then the cuts became an intellectual idea of *trompe l'oeil*: When you looked at some of the cuts, it was hard to know which cut was on which wall, which was a stream of light. Especially in photographs, it was visually confusing. There was the element of revealing, in letting the light through. Or the element of what one could see through the cut, such as in the circular cuts. But the linear cuts, especially the one in the decapitated house in Italy, seemed to me very much a trick of the eye. And Gordon loved that complexity, that it was not clear. Even in the Pier Piece [*Day's End*], one wasn't sure, in stepping across the cut through the pier floor, whether the rest of the building was attached or not. Would you float off? Was the huge half-moon cut in the side of the tin way up high a real sky? A painting? Was the half moon on the floor the moon or the light through the cut? One's imagination could go quite fantastic.

It started with the work at the Toselli Gallery where he cut out the top of the little square building. Then he saw what the light did inside. So he began making cuts through the walls to see what the light would do. Then he could see all kinds of possibilities of visual trickery and imagination. So he would make buildings out of buildings – He re-designed buildings. In his mind, what he had created with the cuts was architecturally just as interesting, if not more so, as a place to be, live, squat, think, as the architecture that he started with. He even saw the light designs on the floor, which came through the cuts, as architecture in itself. If people could have been transformed into ethereal light images, they could have lived in the 'light' rooms created.

I think the Pier Piece truly was about cooking shapes – a piece of pie, and the hole in the centre of the pie, which tied into the transfer and re-creation of how light entered, to form new architectural shapes. Then he used the water as a reflector, both by seeing the river through the holes and by cutting through the deck of the pier to access the strip of water below. Who knows what the beginnings of all these thoughts were ... watching his mother cook upside-down cake? Watching mixtures thicken? He did not verbalize any of this.

C: Would you agree that there is a link between this breaching of the 'cells' of a building, and allowing the

COLLAPSE VII



elements to invade and mix inside, and the interest in cooking – that both came from this abiding interest in change and alteration, the relation between changing something material, and the spiritual effect that this has (whether letting sunlight into a building, or adding heat to a postcard...)?

CG: Yes, exactly.

C: So that cutting, removing (subtraction), would be done in order to set in motion or in flow a visceral communication (architectural 'digestion') – to reveal strata, all the way down to a substratum of continually-in-motion circulating matter, the constant terrestrial

cooking of waste and regeneration. A kind of cutting of spyholes into what lies beneath 'permanent' structure. In a 1976 interview Matta-Clark says, enigmatically: 'A cut is very analytical. It's the probe, the essential probe, the scaffold of sharp-eyed inspectors'.

We can see this aspect of uncovering the building as a corporeal machine with inlets and outlets [1971's *Pipes*], and a limited lifespan, to be decomposed and digested, either by ruin, or to be transformed and reincorporated by the metabolism of urbanisation itself. In taking over the building and making FOOD, I guess you were partaking in that very process yourselves – preparing FOOD for the city ... Could you say a little more about the process of renovation/restructuring of the space that became FOOD, and the moment when Matta-Clark first started making the cuts and realizing that this was something significant?

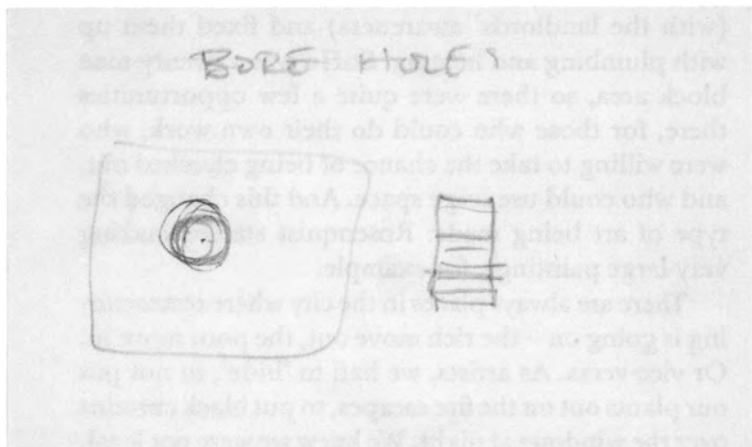
CG: It actually started with the loft that we had been forced to leave. I had built a sauna, a shower, and a toilet compartment out of three public toilet areas in an old loft. We were unjustly forced out when the landlord changed. Gordon was angry and thought he would take a part of what I had built, which he loved, with him. So he made a horizontal slice through the walls of the sauna/shower. That fuelled the slicing of pieces out of FOOD.

COLLAPSE VII

In its former life FOOD was a Spanish-American coffee shop, *Comidas Criollas*, that served early morning workers in the light manufacturing district and closed after lunch. It was on the corner of Prince and Wooster, well-located. It had windows all around which delighted both of us. We took the old *Comidas Criollas*, gutted it, poured new floors, laid tiles, put the kitchen out with the people so they could watch us cook, which was my idea. Then we were able to pick up the building adjacent to the north, so Gordon began cutting through that wall to join the two spaces. He designed the sandwich-making area and cut a horizontal 'window' through that wall, of about the same size as the sauna cut. The particular textures of wallpaper or wall finishings, different on both sides, was what intrigued him. That was what fuelled his searching through the Brooklyn buildings looking at the floor surface and the ceiling surface and realizing that if he cut through the floor, his sandwich would be decorated differently on each of its sides.

C: There is a very direct sense in which the 'broken' state of New York at the time immediately enabled Matta-Clark, and others with vision, to access these derelict spaces which could be experimented with in various ways.

But perhaps the parallel is stronger: that the condition of the city was an open invitation to cut through,



to see differently, to recombine what was there to create new possibilities. Can you tell us something about how it was to be in New York at this time? One wonders how far we are really able to understand, today, how ‘open’ a city could have been – we are used to urban spaces being far more controlled, everything being clearly owned, and there being little opportunity to use and experiment.

CG: SoHo, in particular, was in great flux. It had come out of an era of light manufacturing which was no longer economically feasible in multi-story buildings. Businesses were moving to New Jersey. This left vacant buildings. Artists snuck into these buildings

(with the landlords' awareness) and fixed them up with plumbing and heating. SoHo was a twenty-nine block area, so there were quite a few opportunities there, for those who could do their own work, who were willing to take the chance of being chunked out, and who could use huge space. And this changed the type of art being made: Rosenquist started making very large paintings, for example.

There are always places in the city where restructuring is going on – the rich move out, the poor move in. Or vice-versa. As artists, we had to 'hide', to not put our plants out on the fire escapes, to put black curtains over the windows at night. We knew we were not legal. The Broome Street Expressway was scheduled to come through from New Jersey to Brooklyn, wiping out all those buildings, so our time was limited. But Julie Judd single-handedly fought the city and convinced them that SoHo was now an art centre and important to New York. So the Expressway was cancelled and suddenly we (artists) were 'legal.' Prices of the buildings, which the artists had fixed up into glorious, original places, skyrocketed. The buildings were clearly owned, in SoHo, all over, but they were 'in rem' – meaning they couldn't pay their taxes and were therefore in danger of being repossessed by the city. This is why the owners let artists live and work there, so that they could be receiving some kind of rent, illegal or not.

METHODS OF OCCUPATION
(A ~~RECENT~~ TERM FOR TRANSFORMING
SPACE TO SUIT ONE'S NEEDS)
BY SUPERIMPOSITION
BY ENVELOPEMENT
BY CONSUMPTION
BY DIGESTION

C: Yves-Alain Bois has said that Matta-Clark's critical project was to understand the status of architecture as 'waste-in-waiting' – emphasising a perspective of ephemeral process on architecture and building. Matta-Clark himself also speaks at one point, in 1971, of a 'primeval cannibal chaos', the 'alien subjugated life' that might break out and destroy civilisation. There are other mentions of cannibalism, leading us to wonder about its significance.

CG: The 'waste-in-waiting' idea is exactly how Gordon saw every dilapidation. As to cannibalism, Gordon's written conversation with Lee Jaffe, suggesting that he donate his body to FOOD ['just imagine what a

fabulous treat you would make ...'] and that cannibalism was the ultimate experience, in my opinion was a mental way of getting close to the idea of body contact in an extreme way. Gordon was not gay in any sense of the word, but he was languished over by gays, now and then, specifically Rauschenberg and Jeffrey Lew. Gordon catered to this in a very mild sense – mild flirtation, I would say. Gordon was the most male of males and never followed through on any latent teasing homosexual interest. He had an avid interest in sex and was loyal to the core. However, in the seventies (being the tail-end of the flower-child period, where free love was rampant and nude body demonstration abounded – and, in my belief, any artistic soul is interested in all bodies, regardless of gender), thoughts of body contact with same sex were not prohibited in thought. In dance, particularly Steve Paxton's contact dances, there was a lot of body contact between all males and females, disregarding all ancient prohibitions.

C: But this notion of the consumption of the body is also symbolically about ephemerality and process: the 'primeval cannibal chaos', or the repressed, continuous nature of reality, is itself 'homosexual', it is a homogeneity that continually decomposes and conjoins with itself ...

CG: I agree. Many of Gordon's ideas were plays on words and meanings, rather than actuality. It was rather difficult to understand Gordon in conversation, frequently, as he spoke in circles – his mind was racing faster than he could verbalize and so he would pick up a portion of this idea and speak it, while that idea fed into the next idea and he would pick up a portion of that idea. So that as these circles of ideas spiralled through his brain, the listener was getting only bits of each circle of verbalizations. But if one listened long enough, all the circles would finally interconnect and one's own brain could sort through and make sense of the connections ... rather like the experience of speed reading.

C: In the early medieval philosophy of property and ownership, a dispute arose over whether Franciscan monks betrayed their renunciation of property by eating food provided by the order: the question being whether, and at what point, ingestion implies ownership. We know that the question of ownership is at stake in *Fake Estates* ...

CG: Yes, I do think the legal aspect of ownership, and the questions that ultimately arise from it, was a part of the fascination. I remember his excitement about finding out that these survey errors existed and that he could 'have' them.

C: ... But using food in creative practice can also be a way to highlight not only process or transformation, but also the *consumption* of artwork, and its *incorporation*. With FOOD, was there an agenda of making and living art that, in being geared toward consumption (ie being food, and therefore consumable) ironically couldn't be commercially consumed? In the sense that one could maintain an artistic practice that was continually lived, consumed and incorporated in a social context, and was not accessible to the art market, at the time beginning to commercially burgeon?

CG: Yes, I think that must have been so, though subliminally. After all, Gordon did try to sell his art piece, FOOD, to Castelli, and Castelli actually did take a look. What I remember of the seventies was a move towards Conceptualism. One artist had his opening piece at the Whitney and it was a block of ice covered by dry maple leaves. Every day the block melted a little more, making a different pattern of water as it melted. Its own shape also changed with the melting, and the placement of the leaves changed. It was not exactly a piece that one could 'buy', but nonetheless, very interesting. This makes me think of dance ... especially Trisha Brown. Her pieces, her choreography, was a lot about intellectual thought. She was very sculptural, very spatial, in her pieces.

A PICTURE OF MULE
OR GOAT SCULPTURE
PART OF A MOVIE –

Her form of sculpture could not be bought either. It could only be (excitedly) thought about.

C: What was cooked at FOOD?

CG: Lunches and dinners. Soups, sandwiches, salads, stews for lunches, and anything from Cajun cooking to Castillian cooking to vegetarian, Japanese, French – whatever any of us felt like – for dinners. We usually had about three choices for a dinner plate. We baked our own bread and had a dessert chef – Joanne Akalitis of the Mabou Mines theatre group was one. Robert Prado, of the Philip Glass Ensemble, a saxophonist, was our main lunch chef. One day we got in a bunch

EAT YOUR WAY
HOME FROM THE
MOON

of soft-shelled crabs from Maryland. We covered the ash tables with newspapers and dumped the cooked crabs onto each table. If Robert could see that people didn't quite know how to attack their crabs, he would sit down with them, sporting a giant white chef's hat, and show them how to crack and suck on their crabs. As a cook in real life, Gordon was very experimental. At FOOD we served halved, hard-boiled eggs, with yolks removed and broth in the cavity, into which we squirted, via syringe, a few *live* brine shrimp. This was Gordon's idea. We also served quail egg salads – he loved the pickled quail eggs. The 'famous' Bone Dinner, served at FOOD, was Gordon's idea.

C: In what spirit was the Bone Dinner served – could you describe something of the preparations, the atmosphere, how people responded? Who was ‘invited’?

CG: Everyone was invited – It was a public restaurant, so whoever came, came. The Bone Dinner was part of the Guest Chef programme. They were held on Sundays. Gordon was the Guest Chef for the Bone Dinner. He wanted to serve a ‘sculptural’ meal. We went early morning to the meat market and loaded the pickup truck with huge leg bones and joints which had been sawed into manageable sizes. We also picked up frogs legs and chicken drumsticks. We bought unsweetened gelatin (ground bone) and made an aspic salad. We got oxtail bones from another meat market and made oxtail soup. The main plate was the array of different sized bones. The big bones, cut into rings, were stuffed with wild rice, wild mushrooms and more ... After the dinner, the plates were taken back to the musician, Richard Peck, who scrubbed the bones up and handed them to Hisachika Takahashi, a sculptor/painter/jeweller. Hisachika drilled holes through the bones and they were strung on a hemp rope as a necklace so that the customer could wear his dinner home. People loved it. We had very little anti-reaction. There were some who wondered what on earth we were doing, but by now, people who came to Guest Chef days were pretty accustomed to whatever surprise we were about to serve up.

COLLAPSE VII

C: Ultimately, what kind of enterprise was FOOD? – a restaurant, a piece of living art, a support network for the artists who could work there, a place to hang out – which of these aspects came first, and how much planning and conceptualizing was involved, or was it just another adventure ...?

CG: Certainly it was another adventure, but I wouldn't say 'just' another adventure ... To me FOOD was a restaurant, a social place, a place to serve fun food to friends, and hopefully pay for itself – but I did have a main social interest which was to provide financial support for the artists. To Gordon it was an art piece – a grinding, revolving, changing, regurgitating, consuming thing, like his agar pieces. People came in thin and went out fat. People came in poor and earned enough to continue to make their art. Food came in as slabs of meat and fish and became roasts, stuffed stomachs, stews. Flour barrels became bread. The germs of ideas of choreography began over lunches. A pick-up full of bones became a tasty dinner became a necklace around the neck.



WILD AND DOMESTICATED
LEAVES OF THE SEASON



ASPENUS ⑥
WHITE AND GREEN
TRIED AND CREAM



RIND MINS
GOAT + SHEEP
CHEESE
AND RINSE OIL
POPPYSEEDS



TROUT-⁽²⁾
LIVER


TROUT + (S)
STINGING
NETTLE
BUTTER

PAW
TROUT
LOTION
OLIVE OIL
(176)



7) BABY-GOAT
CREAM OF
WHITE BEANS
PEELED W-BEANS
GRUUY
REDUCTION OF
POLARISES OF
PORTIFIED W-A-F



WWW.AOUND.NET WWW.AOUND.NET
SPRING RES COM
WWW.AOUND.NET
WWW.AOUND.NET
WWW.AOUND.NET WWW.AOUND.NET

BOARD (12)
JEWELRY
ART/CRAFT
ONIONS
POTATO



⑬ BLUE-VEINED-CHEESE
MOCASSES OF CANNON



KICOTTA
①4 SITUAWBKRY

CLOUX PASTRY
 WHIPPED CREAM
 ORANGE WATER MURPLE
 (15) SUNK

Where's the Edge of the Pot?

Interview with AO&

Since 2008, Vienna-based 'semi-nomadic organization' AO& have developed and refined a unique practice which sees them bringing their knowledge of produce and culinary skills to bear in extensive tours of the landscape and intensive occupations of buildings which become spaces for the serving of their strikingly minimalist, concentrated multi-course meals. COLLAPSE met the members of AO& (Philipp Furtenbach, Philipp Riccabona, Thomas A. Wisser, Rainer Fehlinger) during their Fall 2011 residency, in a derelict shopfront on the Lower East Side of New York, billed as '240 hours nonstop ambulatory on ground aggregation, accommodation, eating and drinking plants and animals of the season, aliments of disclosed NY origin, multiple differentiated courses'.

COLLAPSE VII

AO&'s policy of personally sourcing every one of their ingredients contributes to an intimate familiarity with every aspect of their meals' preparation. If in effect their work entails a rigorous insistence on the full inhabitation of the problem of food in contemporary society, it certainly goes beyond the moralism of the various environmentalist food lobbies. As they describe, their 'perverse' practice of cookery extends our understanding of 'food preparation' beyond the confines of the kitchen, exposing social, ecological and architectural dimensions of the culinary.

COLLAPSE: You are about to open for the first night of your residency here in New York. But you haven't just arrived. How has the preparation process worked in this case – did you have an idea of the ingredients you want, or do you just go out and see what is available?

AO&: We arrived twelve days ago and had to prepare the location as well – clearing the space, putting the cooking equipment together, the dining table, the lighting, etc. All we brought from Austria was salt and wine, so we also had to source all other ingredients during that time.

We do have an idea of what we are looking for, in general categories – you need animals, produce, grain, fats and oils, and so on. To create a twelve-course menu, it takes a certain variety of ingredients. We were looking for farms online and talked to people, found

out about farmers' markets in Manhattan, checked out their products and then drove around to visit the farms.

C: If you're arriving with a set of requirements, does that mean the menu itself doesn't respond to the site?

AO&: We don't ever work with ingredient lists or anything like that; we go to a place and search for fields of ingredients, so to speak, and then work with whatever we manage to put together. So the menu does respond to the site, because you have to work with what the people here produce. If there are no lemons to be found, you have to use vinegar or the juice of unripe fruits ...

C: So, you find produce and follow the commercial chain back to the producer?

AO&: Yes, in this case, that's what we did. Once you start somewhere, you get recommendations as well, and we also found this rooftop farm, for example. So you could say it starts as a collection of places, of sites. You go there and you actually take a look at the land, and at the farm, and you talk to the proprietors, and it becomes very clear whether this is someone you want to work with, or not.

C: Does it happen often that you decide not?

COLLAPSE VII

AO&: It can happen, sometimes you follow a wrong lead; but seldom. Now we've got a good sense for it.

C: New York is not the first place one would think to look for people growing food. So, what sort of things did you find in your travels?

AO&: The average product is pretty bad, but as with anywhere else, there are some extraordinary ingredients to be found. In our research we discovered there is quite a culture of inner-city farming, and we had to include this. We found a one and a half acre rooftop farm on top of an industrial building in Queens, they grow there all summer; this is our most local producer.

The special ingredients like oil, vinegar, sugar, were quite hard to find in New York, especially since the production of vinegar seems to be tightly restricted. You need a special license, you're not allowed to make vinegar, because all fermentation processes are strictly regulated in New York State. And it was only after days of research that I found one producer of apple cider vinegar ...

So, ultimately, with these goods, we end up in a situation in the kitchen where, in the best scenario, with every ingredient you use, you've immediately got images of the place where it came from.

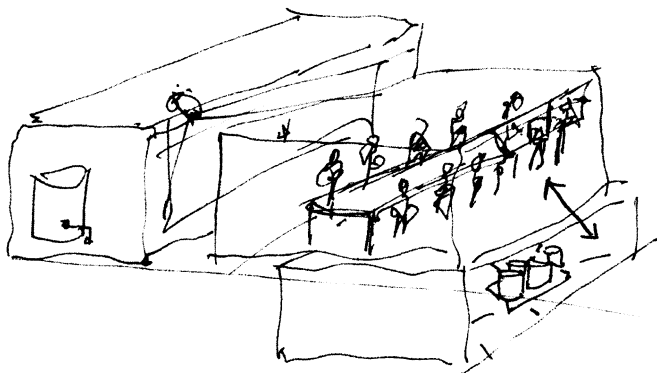
C: So your experience in the kitchen is changed a lot by that sourcing process.

AO&: Yes. It is a kind of luxury to have this maximum transparency: knowing the people personally, knowing what they are like, knowing the products, and what they put into the products.

C: But you aim for the same close relation to the space you're cooking in too. How important is the site to your work, and how much work was necessary on this space in New York?

AO&: That goes hand in hand, yes. Cooking isn't our exclusive focus; it's more of a tool for us, a powerful instrument to gather people together. A lot of our work is about creating temporary settings, working with different sites, to enable unconventional forms of communication. We often turn a place that at first sight may not look very hospitable into something that is. In this case, in New York, it was a lot of work from the moment we arrived up until now, to change this place from what it was to what it is now. We have created areas for cooking and dining that are highlighted, very clean and well-maintained. When we first walked into this space, you couldn't really imagine having any kind of social communication situation here with food involved. We had to clean everything out,





brush everything, hose everything down; we brought the kitchen equipment together bit by bit; and then brought in the theatrical lighting, to establish a situation for eating. To make it somewhere where people, even if they first think ‘what is this place?’, eventually feel comfortable and get to talk to each other because they feel at ease in it, they don’t feel the urge to leave.

This meticulous preparation plays a significant role in a lot of projects we do. It’s the kind of work you probably wouldn’t normally want to do; but by doing this, spending days on our knees scrubbing, in cleaning a space we also conquer the site. That’s really important for us, in order to get the confidence as to how we can act after that in here.

C: To make the space into your own environment ...

COLLAPSE VII

AO&: Yes, we justify our presence through the effort we put into this work; also, it's a kind of devotion or humility, doing something that normally would be done faster and cheaper, using machines or cheap labour.

C: So that work of preparing the building becomes a part of the food preparation?

AO&: Totally, yes. You could even include this in the set of orthodox rules according to which our ingredients are brought together. If you touch every single corner of the place and prepare everything, you put a lot of hard work into the place, and you feel more at home because you know every part of it.

Like our project in the mountains [*Leben und Sterben in den Bergen*, 2008], where we dug a massive hole and created a whole environment in there. It's the same thing with the space and with the food – standing in the kitchen while you prepare things, it's just different to cook with things where you associate every single ingredient with a certain person or place or story. You could ask, where's the edge of the pot? – the whole space and context is important. Also in terms of taste, I think eating the same things in different situations changes the experience. And to have these rules is also a limitation. It makes it more interesting for us if we don't just come here and go to a shop and buy





anonymous products to cook with. In following our rules, we really try to establish a connection to the landscape here, to the culture, to the environment.

C: So part of the work is to do with creating a convivial situation around food, and that involves co-ordinating yourselves with all the materials – from the building to the ingredients. But where does the rigorous nature of the culinary practice originate? And are the rules very rigid, or do they change for different projects?

AO&: As far as the ingredients are concerned, it has been the same in every project for the last five years: We only use products where we know the source, where we have a personal relationship – meaning that one of us has been at the site where the product comes from. There are some exceptions – for instance, if we know someone really well and we trust him or her, and they come with something they brought, let's say, from Madagascar, and they spent some time with the farmer at the farmer's site, and took a photo of themselves, and tell us a story about this, we also discuss whether we can use it. So sometimes we take these decisions, and sometimes the story isn't good enough! We have to feel *related* to it.

In this case, as we discussed, we went to markets, we did online research, we found rooftop farms; these are places we have been to ourselves. We always try for

COLLAPSE VII

as many of us as possible to go visit the places; but in this case, for pragmatic reasons – we didn't have that much time: twelve days preparation, twelve days for the show – Rainer did a lot of the travelling while we were preparing the space itself. We put together a tour from what we had seen at Union Square market and similar places, of things we thought were well-produced and interesting for our cooking. Rainer went to upstate New York and New Jersey, and actually visited the places we thought were relevant or interesting to us. And he established the connection to the farmers, and then showed us the pictures, told us the stories related to that.

In Austria we have a very elaborate network already of people who make all kinds of extraordinary things – they have very small fishponds, for example, or breed old strains of produce, and have those very distinctive things in their market stands. But here we had to build it up from scratch, just like the whole setting we've constructed.

C: You have already said that you don't use recipes as such. But there is a certain style of cooking, and certain procedures you use, that seem to involve a distillation and concentration of flavours; and the sequence of the menu here in New York seemed to be very systematic. How would you describe that aspect of what you do – what is aimed at in the experience of the meal?

AO&: Since we can't rely on a constant supply of ingredients, and we don't know beforehand what our stock will look like, we never work with recipes. But there are certain techniques we use a lot, often involving long-running processes such as concentrations, reductions or fermentations. And since we have a strong relation to our products, we try to highlight their quality through a certain minimalism and dramaturgy.

It's also related to the way of thinking I [Philipp F.] learnt fifteen years ago from studying architecture. I was really interested in urbanism and urban structures, how they try to work; and I also developed an interest in working with sites, and the relationships which are important: social, historical, infrastructural, or, say, psychogeographical – I learnt to consider all those different aspects at the same time, which is still important for me. This is a way of thinking you can also use to think about creating a menu or a dish: You have different textures, different tastes, different colours, different meanings and associations of each ingredient – like a tag-cloud, you might say. And that's what happens in discussions that we have before we start with the preparation, or while we prepare. So you have this context around each ingredient, which has certain qualities, and around that, and in combination with more ingredients, you create one dish. And then there's also a context around this single plate, in relation to what came before, and what will come afterwards.



WASSER

① WIEN

KANOTTE
KANOTTE (4)
KANOTTE
HEIZELBEER.
KASSE



⑦ CERVITE



WILDSCHWEIN

⑩ JAGEL: GENTLER

WINDISCH
JUS
WIDEN



BRANDTEB

SCHNITZ

KRAKANT

BEHETNUNG

⑫



NATURK
KALT



KULTUR
WARM

WIRTSCHAFT (2)

TOPICRETE (5)

ROTHKAMP
WESSKAMP
FLOUN



LINSEN

FISCHPOND

WESSWEIN

KROBACH

PARADE

UNDOO v. PEP



⑧

BIRK

⑪

BRANTHA

APPELUS

BRUNNEN



③



BLUTWURF
FINGER VON
VONNEM
BURTSCHEN



VIENNA
WINTER

RESIDENCY

LOOUM PLATZ 3
WIEN 1060



③

MORIC
GR. VETL
2003

a FEIERKRAFT

W. BOUMEN

MINUTENROT

BENIN HONIG

OLIVOL

SCHNITZ (16)

GENSRENSVITE

WIRTSCHAFT-

WESTAFRIKA

PMIOL GENTLE

WILDSCHWEIN

REPPER

BRUNNEN

⑨



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4/10
19/04/11

The sequence of courses is directly related to each event's dramaturgy. There is a formal logic, an arc. We usually start with an empty table, and at first, no drinks will be served. The first course of a prologue of liquids would be a glass of tap water, followed by a saltless, basic root vegetable broth and some more intense stocks. Then the diners get the first glass of wine, as a course on its own, and the food will subsequently become more solid, travelling through plants and animals of the season.

C: If the necessity to feel 'related' to each ingredient can be interpreted as some kind of ethical intervention or idea of how our relationship to food 'should' be, isn't it one that's idealistic, in the sense that no urban population could sustain these kinds of direct relationships? Do you see it as a model in that way?

AO&: No, not at all; it's a perversion, a luxury. We started to work like this in order to define a new kind of luxury. It's not political, it's not the same as slow food, the organic movement, and so on. It wouldn't make sense to propagate this in other societies that are not like ours, you know. You can interpret it as a political thing – a lot of people do – but it didn't originate like that. Food and its quality is very standardized nowadays, even in gourmet restaurants.

C: Like an ‘international style’ of cookery.

AO&: They mostly buy the same stuff from their own suppliers, they have these big refrigerated trucks that come with peaches from France, foie gras ... from one high-ranking restaurant to the next, they deliver to all of them. Whereas you could say that even if what we do is very elaborate, with multi-course menus, and with a certain technique applied to it, most of the people on this planet don’t even have the choice to say, on purpose, “I’m only going to use ingredients where I know where they come from” – because they don’t know anything else. This is how most people on the planet cook, out of necessity. To do what we’re doing on purpose is a phenomenon of wealth, of being disconnected. This is why we call it a perversion, and we are well aware of that. The only thing that justifies our method is the society we use it in. It wouldn’t make sense to take this to a so-called third world country, because this is just what they do: they cook very simply, most of the time using very good products, better ones than we have.

We often try to strip away everything manicured or unnecessary and present the ingredients as they are because this is already very valuable, especially if you assemble them in the way we do; and we try to have excellent stock from small producers.

C: It is certainly noticeable that in each dish one can taste every ingredient. Last night, you presented New York tap water as the first course, and in the very delicately-flavoured soup for the second course one could still taste the water as one of the ingredients.

AO&: It is interesting for us to start from the water and build up really slowly; you become much more sensitive about textures and tastes by starting like this. And what we also like about this is that it irritates people. They think they're going to get a nice menu, and then all they get at first is tap water. Maybe they think it's funny; then they get this subtle, saltless soup and some of them are getting worried – what is this that we're gonna be eating tonight?! And sometimes when we have a series of nights, and people pay, you have a situation where people are thinking, OK, they start with water, no bread on the table, and they start to get angry. After a few courses, you can see how they feel more and more at ease and happy.

C: Going back to Philipp's architectural background, one could say that in your projects the importance of food is in the way it acts as an architectural element, in that it affects the circulation of people and communication. And that this menu sequence is a kind of carefully constrained demonstration of the power of food to affect the social situation.

AO&: We are interested in this question of sites and the communication which takes place on a site or in a village or in a part of the city; and to make an intervention in that situation. And the food plays some role because it makes people stay in one place at the same time. You can make them feel comfortable, and they open up because they lose their barriers. That's why we use food. Food serves as a vehicle to reassure people, to enhance communication. And in regard to my [Philipp F.] architecture and urbanism background, I consider this to be the same thing, it's a kind of soft urbanism, rather than the normal declaration, "I have decided how we can develop this part of the city, and here is the master plan". You can feel the power of food to act in this communicational way very strongly if you work like this.

In the project *Studies on Hospitality* [Aug-Sept 2010], we travelled through a valley in the Austrian mountains with handwagons for thirty-five days: We bought four handwagons, two for equipment and food (of course, local foods; mostly donations from private gardens) and the others for our personal belongings and what we need to stay overnight, so that we could stay anywhere. So we started this journey, not knowing where we would sleep; we went to every village, to several houses and tried to convince people to spontaneously let us change their homes into semi-public spaces, to convert them into a guesthouse, you could say. We saw

ourselves as some kind of task force, ringing doorbells and trying to figure out social relationships – who is important, who is well-connected, who is lonely... Then we invited people over to the temporary host's place, and they were allowed to invite some neighbours as well. We walked all the way with our handwagons and visited every single village there. It took five weeks, that was the minimum time period it made sense to do it in. And it was really successful in every village.

What helped with this, again, was this element of humility or submissive behaviour: in this case, in the pushing of the handwagons. If you'd have done this by car, pulled up and said, "Hi, we're here, in the back of



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our car we have all we need to cook for you”, it wouldn’t be half as successful. Arriving with the handwagons has this submissive aspect again: When we started the project, we looked at ourselves and said, “Hey, you guys look so stupid with those handwagons ...” – it really felt strange. Beautifully styled, with nothing but waterproof black bags, on purpose. Our appearance was really strict, only grey and black, the wagons were black – the aesthetics are really important here, to ensure it’s open to more people. We were aware of the strange and, at first sight, maybe even intimidating impression we made, that’s why we wanted to make sure that everything looked ‘proper’.

So, we went to people’s houses and convinced them, sometimes within ten or fifteen minutes. We entered their houses; and within hours they had four guys in their kitchen, pulling open every drawer and starting to prepare food. It’s very intimate; there’s a lot of trust involved, if you let someone in your kitchen – this is probably the most intimate place you can work in a private home. During the period of this journey we cooked dinners in twelve private homes and fed about five hundred people, with all ingredients foraged locally. For one weekend, we reopened an old hotel/restaurant that had been closed for almost thirty years, and another time we served deer stew at the local gas station ...

Incidentally, we got funding from regional development because we declared it as 'performative regional development'. And they like our approach, because what usually happens in 'regional development' is that there's a pot of money, it's given to the communities, and they do some project directed from a desk. We don't just come up with a concept, we apply our methods and try to really get deep into the social situation.

C: From the many elements you describe that create that ability to enter into a new situation, it sounds like you were putting yourself at their mercy, rather than arriving and saying 'we've got something to offer you' – this submissive position is very different from the idea that you are there to benefit 'the people' with art practice; perhaps a counter to the notion that art can provide a social glue to bring people back together. Often in regional development projects it's a question of people airdropping art onto a community.

AO&: And in fact of bringing *artists* together – it's self-referential art world stuff.

Another project in the same valley two years before involved digging a hole by hand, one hundred and sixty cubic metres. It took us ten days. So, farmers would come and say to us, "I can come with the machine and do it for you in a day". And we said, you know, that then the whole place would look messed-up. And also

again, because people are still kind of conservative in the mountains, we knew that otherwise these people were going to think that we were just some freaks from far away – which we are, basically! But by doing that, by being there digging with our hands, old people were walking by, saying “what are they doing?” And then people started to talk in the village, you know: “It’s nice to see young people work so hard!” So they had respect for what we were doing, and that really opened up a relationship.

C: And why were you digging this hole?

AO&: Digging the hole was part of the preparations for *Leben und Sterben in den Bergen* (‘Life and Death in the Mountains’) [Aug – Sept 08], one of our biggest and most important works. We spent nine weeks in a remote alpine area (*Großes Walsertal*), and the first half was dedicated to creating the site for the actual project to happen. We dug that hole in a circle of trees, filled it up with gravel from the bottom of the valley to have an even surface, installed an 800 kg oven and an additional smaller one for cooking, built a huge tent to make the site rainproof; we had solar panels for lighting and a sound system, we spent all day and night there.

The actual project involved all kinds of meetings and events, from avant-garde electronic concerts and



DJs to lectures on terminal care and legal issues, or pagan burial rites in the alpine area, the first grand public council of the valley, etc.

C: Thinking about it in an art context, a lot of recent work with food and conviviality has tended to recuperate for a gallery setting (albeit 'relational') something that, with Matta-Clark's FOOD in the seventies,¹ was

1. See C. Goodden, 'FOOD and the City', present volume.

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a genuine experiment, along the lines you have been describing – food and the ritual of eating as a social agent. It seems like you are inhabiting the social space in a far more interesting way, a way that can't necessarily be recaptured into the 'contemporary art' system.

AO&: The art field is interesting for us primarily as a way to be able to work on a larger scale, more internationally, and to be able to finance the work as well. Also it's a kind of cover you need for legal reasons, because if you work in this cooking context, you always have to make sure that everything is declared properly, and that you have all the legal issues cleared. And what we do here is not legal at all – we work with propane indoors, we serve alcohol, we don't have a license for anything, we aren't even officially allowed to work in this place ...

Since we only ever work in a project-oriented way, it would be very difficult to get all the permissions for every single project, you would wait for weeks and weeks. And if people ask what we are doing, if they ask me what my profession is, to say 'artist' is the easiest thing. Of course it's perceived as art by certain people, what we're doing.

C: But you're not concerned about locating yourself in that context?

AO&: It comes in handy sometimes, but this was never the main point of interest. Our group basically started with a restaurant in Vienna, *Saint Charles Alimentary*, that was working in collaboration with a pharmacy, and was trying to think the concepts of medicine and nutrition more holistically. But we have never really tried to put a label on what we do. There are different ways to navigate through situations – with some people it's helpful to present yourself as a chef who is running a gourmet kitchen; with other people it might be helpful to say you're doing a sociological project; and with some people you just say you're an artist. In fact, I think the work speaks for itself, and you can decide what you want to call what we do.

During the early years it was more difficult to make out what we're doing; but as the body of work is growing, it's easier to get a sense of what our interests are.

C: So Saint Charles was the first time you worked together in a food-related context?

AO&: After this schooling in architecture, I [Philipp F.] went to Berlin and worked in a restaurant, because I needed a job for two days a week to pay the bills, and I was interested in cooking. I started as a dishwasher in a really good restaurant. So that was the beginning of taking the cookery thing more seriously. And then I got a chance to work full-time as a sous-chef, so I did

that for two years. During this time, the chef [Claudio Andreatta] was a really good master for me. And one day he told me I could choose what I wanted to do, a project within this restaurant. Now this was at the time that I was just about to start working with meat. So I said that before I start to work with meat, I want to kill an animal myself. I made this short film *God is a Rabbit*, it was about a rabbit dying and being eaten, diametrically filmed, just with orthogonal views.

When I came back to Vienna and happened to find a big loft apartment to live, I opened a temporary, illegal restaurant. The brother of an old friend of mine [Philipp R.] came to help me and got really interested. So together we were investigating new things. I didn't want to work with this gourmet stuff anymore. We started to choose living animals, for the next two months, to be ready to be cooked; and we started to look at each vegetable, thinking that there must be a wild form of it; we started to buy books and read up about this. For the first two years, both of us spent four months a year outdoors, just learning about all these things. And also, for instance, there was a project where we chose a new-born pig; people could buy shares of this pig, and they got sent bulletins every month about how the pig was growing up, and so they built up this personal relationship and learnt what it means to eat meat that you know.

AO& – Where's the Edge of the Pot?

C: So you were already concerned with fully inhabiting the question of where food comes from?

AO&: Yes, but it was also this ritualistic viewpoint, in a very neutral sense – just to be aware of every procedure that is going on, to really question every procedure.

And then these pharmacy guys found us, and they asked us if we could develop a concept of bringing back nature to pharmacy. This concept included a restaurant which became really successful, and we had a lot of press, even international. Knowing that we were now going public with our work, that was the crucial point where we said, if we're going to do something public, there has to be some specific characteristic about it, so that's how it started.

The restaurant was a very small, narrow place seating no more than fourteen people. And even then, our work had this performative side to it; we didn't have a menu or anything, people couldn't just order food, we took care of them. It was a place where all kinds of people would walk in and out all day, and the 'backstage' area was bigger, and maybe even more important, than the actual dining area ... We played old Sun Ra tapes all the time, and concerts took place. It was an open kitchen, and on weekends, we prepared about a dozen courses; that was when we started to cook in a more precise and differentiated way.

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C: What are the background of the others in the group, and how did they become involved?

AO&: [Thomas W.] I have studied linguistics and philosophy – my masters' thesis is about theories of metaphor. I'm a musician and writer, I released some records, and I also work as a DJ. My work with Philipp and Philipp started in 2007.

[Philipp R.] I have many different interests, I worked as a carpenter, I had a strong connection with farming, and worked in Vienna as a salesman for farmers as well. Before I started to work with Philipp I studied medicine for two years. But at that time I didn't want to go a classical way, I wanted to start with something totally independent for myself. Right from the beginning I was sure all my disparate interests found a good playground in this work.

[Rainer F.] Concluding Studies in Music and Media technology, I joined the group in 2010 after several years of involvement, assisting in various projects. Apart from AO& I live and work in Linz and Vienna as a recording artist. I also hold a truck licence, so I'm the driver of our hearse.

C: Where did the hearse come from?

AO&: The hearse is a private donation from a friend, a Mercedes 709, 4.6 metric tons, dark grey colour.

We had it refurbished in the Czech Republic. It was not a ceremonial vehicle – it used to hold up to ten coffins and was built for big cities and catastrophes. We are running it in association with SOS, the State of Sabotage.²

C: You visited several Alpine resorts in the hearse [*Feed the Rich*, February 2010] to serve soup to the people there – you called this an ‘non-oppositional contribution to the so-called critique of capitalism’.



2. See <http://www.sabotage.at>.



NUFO

BALDRIAN
PSTINAKKE (W)
ENGERWURST



ACHTUNG!
FLEISCH
LIMONEN
2006



BLUTEN
+ RATTENP



SMITT 1

ROSE, FENCHE,
LÖNNERHOLZ,
SCHW. JOHANNIS
KRAUT

SALAT 2

FUCHS
SEIDEN
ST. BILKAT
WILDE
BRISCH

INFRU 1

W BOUN-GR
MUND F.
OL

HUTEN 2

BAUNDET BOWN
SUMM. BOWN
ST. SECKE
TROCKENKIN

CEVICE

LAKUSFORTEL
CITR
OL, CINI

FEUCHT SUD

FISCHFOND
FLEISCH
ROSEN

18⁰⁰ - 22⁰⁰

6/9

SUMMER
RESIDENCY

WURST

GRANITE
PILKOL
KORNBLUM

1000 PLATZ
1900 WIEN
01 271 70

NUDELN

TOMAT
BASILIK
FRISCH
KAS

RISOTTO

PERCUCION
KORNER
RIBIST
HANDOLN

13

LITIM

JUS
HEU

SCUMM
PALLA

+ RICOTTA, WISTAN ROLB

6 RONE

NEUSE
(JOLTERIT)

BEEREN

200 - 200 B.

WILDEMAN

IMBOLN.
ERHÄFT
BRANNTAPPEL
KNOBELM

AO&: Criticism of our economic system is mostly oppositional and short-sighted at the same time. We are aware of our social background and its benefits and wanted to reverse the idea of charity, as an embracing gesture and to raise questions.

C: Is it possible that the group could evolve practices completely outside the culinary context?

AO&: We have already been working without any food or cooking involved – our walks, the hearse tours *Visitation* and *Memento Mori*... – and we see food as a tool, serving many other purposes than just nutrition.

C: If not food is therefore not the main concern, what would be the central characteristic of the group?

AO&: We are interested in creating situations and experimenting with settings that strengthen communicational processes.

C: Experimenting with the in-between social spaces that enable other processes to carry on, as when people 'do lunch', for instance?

AO&: Right, and we found out that food is a powerful instrument to do so. It's a fundamental necessity to eat, and it makes people spend time with each other – a unifying experience that is life-supporting, but also



involves trust. Anything you ingest could be poisonous or even deadly.

C: Where did the name AO& come from?

AO&: In the Austrian countryside they had these tiny grocery stores called A&O, it's an old grocery chain in Austria. One day we found an abandoned old A&O. They had just started to renovate this building and pulled down the sign. So we took the sign and just swapped the letters.

The direct meaning would be 'from the beginning to the end, and beyond that'. Another interpretation is this: The topic of death often plays a certain role in our projects – the first big project was called *Leben und Sterben in den Bergen*; then with John [Gerrard] we did *Brot und Tod* ('Bread and Death') [Nov 2008] – in a shut-down bread factory in Vienna.

No matter what belief or religion one has, it doesn't matter – as an atheistic, intellectual or a religious person, death plays a role for everyone, a smallest common



denominator, you could say. And if you're interested in living systems, it's important also to deal with that.

C: This New York residency is taking place concurrently with the exhibition of John Gerrard's new work *Cuban School* at Simon Preston Gallery. How did you meet John Gerrard?

AO&: We met John in 2008 – he discovered our work in this little restaurant we had and saw some relation to his art. He came to us, asked us a lot of questions and

told us about his work. We started to collaborate and became friends, we also came to realize some of our projects through people we met via John. In his Vienna art and production space he built an open kitchen according to our needs for us to create portraits of every season of the year in a series of multi-course dinners ...

There's a thematic connection between our approach and John's works, like his *Grow Finish Unit* or the oil derricks³ – it's about greater correlations of civilization, and maybe its impending end.

C: This also seems to be one theme of *Memento Mori Tour* [June 2010], where you visited 'places of execution'.

AO&: The *Memento Mori* tour was a portrait of a certain area in Eastern Austria and parts of the Czech Republic, with a focus on sites related to matters of life and death, such as the nuclear power plant Temelín, the oldest existing Neanderthal caves, a military training ground, and the historical place of execution you mentioned. We also visited the grounds of a seed bank, and many other places. All those places create certain associations; we foraged stinging nettles at every site to brew liquid manure as a symbolic summary. In the end, we threw it away.

3. See J. Gerrard and M. A. Morris, 'Corn Bomb', present volume.

AO& – Where's the Edge of the Pot?

*Photographs: p268, Yasmina Haddad; p271, Marc Lins; p272, Rainer Fehlinger; p281, Philipp Furtenbach; p291, Markus Gohm
Sketches: Philipp Furtenbach for AO&.*

KOMBUCHA

Kombucha is a fermented tea made with a symbiotic culture of bacteria and yeast sometimes referred to as a SCOBY (acronym of the above description) or a mushroom.

You will need a SCOBY. Ask someone who brews for a 'baby' SCOBY or fish one out of a store bought bottle. (Every bottle of kombucha brewed creates a new SCOBY within it – a small mushroom-like disc that is the by-product of the larger batch of kombucha and the surroundings of it being bottled.)

Next brew about two gallons of tea – I prefer a green tea – add sugar 'to taste' (you need some sugar for the fermentation to occur), let cool, and pour into a large glass container.

Then float a SCOBY in it for about two weeks (cover with a towel so the mixture can breathe while protecting it from fruit flies).

After two weeks you have a fermented tea and a baby SCOBY in addition to the mother you originally floated.

Separate the baby from the mother and set the SCOBYs aside to use again.

Now you bottle your tea in air tight jars, I use old wine bottles with air tight stoppers.

Then let bottles sit in a dry airy cool place for two more weeks.

Refrigerate and drink when cool.

What you have is a carbonated tea that is full of 'good', pro-biotic bacteria similar to yogurt.

The secret to success is finding the right spot as the SCOBY collects and grows not only from the bacteria of the tea but also from its/ your surrounding environment, feeding back into an ecosystem in a micro-form of permaculture.

Object Oriented Cookery

John Cochran

Graham Harman's claim that praxis distorts 'ontology' as much as theory does,¹ is an insight that has long been missing in cookery praxis and theory. Ontology, for Harman, refers to a description of the basic structural features shared by all entities.² Cookery, for our purposes, will be considered to refer to all forms of cooking, including what happens in our home kitchens. Many times cookery praxis is something we take part in by consuming the practice of professionals. But whether we cook or not, from the gathering of ingredients to the eating of meals to the metabolic emergence of nutrients in our bodies, the feedback systems used to engage in complex analyses of factors in human life such as hunger, nutrition and environment are likely to be lost in the immediate experience of food or the larger narratives in which food participates. More often than not, the praxis of

1. G. Harman, 'Intentional Objects for Non-Humans', PDF, at <http://www.europhilosophie.eu/recherche/IMG/pdf/intentional-objects.pdf>, 4.

2. 'Henceforth, let "ontology" refer to a description of the basic structural features shared by all objects, and let "metaphysics" signify the discussion of the fundamental traits of specific types of entities.' G. Harman, 'On Vicarious Causation', *COLLAPSE* II, 171-205: 204.

cooking distorts its 'being' to the extent that the pause required to consider why, how, when, where and what we eat, and how we participate by proxy in cooking, is non-existent. So that we may, indeed must, ask the question: In what sort of open or closed system does cooking praxis take place?

Developed through his use of Heidegger's tool analysis and Husserl's intentionality (extrapolated in his essay 'Vicarious Causation'), Harman's 'Object Oriented Ontology' [OOO] claims that the refusal to recognize non-human objects and interactions reduces all human praxis to anthropocentric proclivities that fail to acknowledge other entities besides the human. I want to consider this claim through Levi Bryant's reading of OOO, considering whether contemporary cooking praxis can join with OOO in advancing the critique of what Quentin Meillassoux has called 'Correlationism', defined as 'the idea according to which we only ever have access to the correlation between thinking and being, and never to either term considered apart from the other'.³ What sort of extra-correlational beings are required for cooking praxis in general? And how might an ontological commitment to objects inform cooking praxis? Given such a commitment, cooking would have not only to acknowledge a real outside of human experience, but also a real outside

3. Q. Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, trans. R. Brassier (London/NY: Continuum, 2008), 5.

the immediate and actual human sensations of eating. What is important is that, in considering a food as an ‘object’ independent of humans, an analysis becomes possible in which we get a picture of how it behaves in collectives of human and non-human actants.

As blasphemous as this may sound to a ‘foodie’ – someone who ‘has to know what they like, why they like it, recognize why some foods are better than others and want to have good tasting food all or certainly most of the time’⁴ – cookery requires a concept of food in which food is not only an object ‘for us’ – whether inflated into higher ideals or considered in terms of immediate sense perceptions – but also an object *in itself* with capacities and tendencies undiscovered.

Cookery, by the very nature of its processes, must allow for a concept of food that recognizes at the very least object-to-object interaction. That is to say that food has capacities in excess of human intention and interaction, and we must recognize that food has encounters outside of its relation to humans.

However, this is not to reduce food to a merely empirical status, or to claim an absolutely independent objectivity for it; for cookery also ought to avoid superficial technical approaches that reduce food to primordial units of an underlying actuality upon which cookery can only operate. Although science can

4. N. Weston, ‘Foodie: What is That, Anyway?’, at <http://www.slashfood.com/2006/02/10/what-is-a-foodie-anyway/-ixzz0p4mnMsLZ>.

certainly provide many productive analyses of what food can do, there is more to food than is revealed by science.

OBJECTS AND OMELETTES

In 'Philosophical Ontology,' Roy Bhaskar asks, 'What must our world be like for science to be possible?'⁵ To which Levi Bryant has added: *what must our world be like for science and our daily practices to be possible?*⁶ Cookery, the object of our analysis here, is just such a 'daily practice'.

From the fact that actual science experiments are conducted under intentionally closed conditions, Bhaskar concludes that the world in which science is possible must be open. In other words, because the world is an open system, scientists must work to close systems in order to conduct experiments. Bhaskar's insight is that objects, and therefore events, are 'out of phase' in an open system; science works hard to close that system. In order to experiment, science spends most of its time eliminating chance, putting objects into 'phase' or into place, in order to experiment. The objects of science are transitive. Bryant extends this analysis to our daily practices, concluding that

5. R. Bhaskar, *A Realist Theory of Science* (London: Verso, 2008), 36.

6. L. Bryant, 'Roy Bhaskar: Transcendental Realism and the Transitive and the Intransitive', at <http://larvalsubjects.wordpress.com/2009/02/02/roy-bhaskar-transcendental-realism-and-the-transitive-and-the-intransitive/>.

intransitive objects have ‘powers that operate without producing a particular effect’.⁷ Objects have a real endo-relational structure, a ‘phase space’ that exceeds actualism, that is more than the local (transitive) manifestation of an object. In other words, ‘we do not know what an object can do’.

I would like to propose a parallel between Chefs and Philosophers; it consists in examining what sort of ontological commitments lead to what sorts of praxis. To rephrase Bryant and Bhaskar’s question: *What must our world be like in order for cookery to be possible?* If we address cookery as a question of ‘philosophical ontology’, then this question also involves looking at how the praxis of cookery distorts the image of this world.

Any amateur cook who has attempted to make an omelette is aware not only of the many things that can go wrong – that is to say, how hard one must work to close a system in order to make the egg not stick, brown, or dry out – but also of the powerful *distortion* that accompanies the exciting prospect of ‘the perfect omelette’ – a distortion that consists in the reduction of the egg to the mere ontological possibility or potentiality of its ‘being’ ‘the perfect omelette’. The professional, on the other hand, can make sixty omelettes in an hour, two at a time, and does so by eliminating *chance* as much as possible.

The professional therefore operates the ultimate ontological distortion, the most complete closing of

the system. Professional objects have as their credo ‘give (sell) a man a fish, and he can eat for a day’, rather than ‘teach a man to fish, and he can eat for a lifetime’. The ‘professional’ distortion masks where food comes from, how it arrives at the table and what potential it has with regard to other entities, disavows chance and shapes ontology into a series of targets that must be hit in order to maintain the normative goals of the field in which the professional participates. A flat ontology might act as a corrective to this distorted field, which has a certain affinity with the primacy of economics and markets – it is important to note that the objects produced in this way by the professional are designed to eliminate the amateur and produce instead a consumer. A realist, flat ontology where ‘all things equally exist, yet they do not exist equally’, offers cookery the means to assert that food operates in an open system. A flat ontology for cookery would be capable of resisting the prism through which cookery praxis re-presents the world, while at the same time maintaining an awareness of the necessity of cookery – and of its concomitant distortions – for humans.

Harman and Bryant affirm that ‘objects are always in excess of their relations’.⁷ Two points follow from this thesis: Firstly, qualities are not something an object possesses or is, but rather something an object does.

7. L. Bryant, ‘The Mug Blues’, at <http://larvalsubjects.wordpress.com/2010/04/30/the-mug-blues/>.

Secondly, to know an object is not to possess the skill of recalling a set of essential qualities or properties belonging to an object, but rather to know the powers or capacities of an object.

As we shall see, in the absence of this ontological commitment to open systems and a nonhuman real, food emerges either – in an empirical realist approach – as mere substance and the event of sensations, *or* – in a transcendental idealist approach – as food (solely) for thought. Either way, in an anti-realist gesture, food is reduced to the traditional dyad substance/idea. To see examples of both approaches in action, it will be instructive to examine two popular movements or contemporary practices of cookery in which debates surrounding cuisine take place: Molecular Gastronomy (MG) and Slow Food (SF). It will be seen how both demonstrate a normative lack of ontological commitment, and pose barriers to an object-oriented cookery.

MOLECULAR GASTRONOMY

In Spain in 2010, what some have called ‘the world’s greatest restaurant’ shut its doors due to financial losses. El Bulli, with the development and expansion of *haute cuisine* as its charge, plans to reopen as a culinary academy in 2014. Since 1987, El Bulli had developed the ‘science’ and technologies of food production and presentation, and pushed dining to the edge, by

exploring how all senses (sight, sound, texture, smell as well as taste) can be engaged while eating. El Bulli was thus at the forefront of what has been labelled 'Molecular Gastronomy'. Although El Bulli's chef Ferran Adrià resists the tag, MG has become a convenient way of referring to technologically-advanced practice that resists the traditional myths of cookery while employing texture, sounds, smells and visuals to create an 'extreme dining experience'. Adrià's self-identification as 'deconstructivist', along with French Chef Thierry Marx's claim of practicing 'techno-Emotional' cookery, prompts us to question what sort of ontological commitments are present in the practices of these two chefs in particular and in the movement of MG more generally. Mostly concerned with shocking diners by presenting unusual or unexpected sensual encounters, MG, like most human praxis that refuses to engage with the problematic of a real beyond human mediation, more often than not finds only and exactly what it seeks.

That this movement represents or identifies itself as a *science of the senses* is made clear by a recent report entitled *Molecular Gastronomy: A New Emerging Scientific Discipline*. The report, mostly celebratory of MG as a scientific discipline, dedicates its first section to a study of the senses:

Before we begin to look in any detail at the chemistry of food production and preparation, we should take in a brief overview of the way in which we actually sense the food we eat. Questions such as what makes us enjoy (or not) any particular food and what it is that makes one meal better than another are of course largely subjective. Nonetheless, we all share the same, largely chemical based, set of senses with which to interpret the taste, aroma, flavor, and texture of the food. In this section we will explore these senses and note how they detect the various food molecules before, during, and even after we have consumed them.⁸

Much like ancient Epicureans, Molecular Gastronomists' ontological commitments are to the *senses* as heralds of truth. Much like ancient Epicureans, they regard objects as reducible to primordial units such as atoms or molecules. And much like contemporary Epicureans (but unlike ancient Epicureans) this approach implicates pleasure as immediate, unbound and limitless. Ultimately, in MG, food – the ultimate non-human actant intertwined within human collectives – is 'undermined' and seen only as a means to immediate aesthetic experience. Despite its ostensibly

8. P. Barham, L.H. Skibsted, W.L.P. Bredie, M.B. Frøst, P. Møller, J. Risbo, P. Snitkjær, L.M. Mortensen, 'Molecular Gastronomy: A New Emerging Scientific Discipline', *Chemical Reviews* 110 (4), 2010: 2313-65, at <http://pubs.acs.org/doi/abs/10.1021/cr900105w>.

radical and scientific credentials, in MG food is not considered in itself, but only as a means to the end of human pleasure or (more rarely) sustenance.

In some ways Molecular Gastronomic praxis is no different to most other culinary praxes: Through the study of time, temperatures, chemical reactions, and cooking materials, food is prepared for consumption. However, by carrying out this practice in radically closed environments, these (mostly European) chefs tend to finish up producing 'advanced' versions of practices first developed by industrial food scientists in the United States. The supposedly 'artisanal' MG as contemporary haute cuisine, and industrial food science as the basis for fast food, have at least three things in common: 1) the methods and techniques practiced; 2) distinctive ingredients such as additives, traditionally rejected by haute cuisine; and 3) actual fast or junk food products such as Fishermen's Friends, Altoids, Corn Nuts and Pop Rocks, that float between the two practices – produced by industrial food science, traditionally sold as junk food, and now used as an ingredient by MG.

Haute cuisine's genesis is usually traced baked to François Pierre La Varenne and his codifying of French cuisine. His book *Le Cuisinier François* was written in the Middle Ages and marks the transition of French cookery into the modern age. One of the revolutionary aspects of La Varenne's approach was

the abandonment of heavy exotic spices in favour of regional herbs and local vegetables.⁹ La Varenne's concepts of freshness and of food's ability to stand on its own without much adulteration still stand today in much of haute cuisine. However, if one were to conclude that a defining characteristic of haute cuisine consists in its logical extrapolation of a region's food, then MG can only be seen as a logical extrapolation of industrial science practiced as globalized food. And in employing the products and methods of food science, MG seeks to manifest the most exciting immediate 'experience' possible.

If they were to take into account a mind-independent and human-independent reality, Molecular Gastronomists would have to consider food to be more than aesthetic experience *for us*. A Molecular Gastronomist could gather organic ingredients, ingredients chosen with concern not only for ecosystems humans participate in and affect but also for food-to-food interactions. This hypothetical chef could consider not only an object's effect on systems but also that of its absence from systems. She could then tinker with objects, allowing for manifestations independent of intentions, acknowledging that an 'object does', allowing epistemology to flow from an open ontology that admits that *we do not know what an object can do*.

9. See V. Leschinger & A. Dakin, 'Theorizing Cuisine from Medieval to Modern Times', present volume.

Techniques she could consider are fermentation and developing probiotics, which stand in contrast to the highly closed practice of MG. Kombucha, the ancient art of brewing fermented tea, is a process of using imperceptible bacteria that is specific to its brewing facility. All kombucha is different and is celebrated because it picks up bacteria from the environment where it is brewed, independent of human manipulation – resulting in healthful ‘good’ bacteria. Such experiments are taking place for many reasons other than the tantalising of human senses: alternative sources of protein, ecology, ethics and probiotics.

Foods will either invite you to eat them, or not, for many reasons, of which human sensation is *only one*. Therefore if cookery involves an object-oriented understanding of food, it cannot be limited to a study of immediate sensations involved in dining. Food entices through basic Darwinian concepts: adaptation, abundance, repetition and proximity. But it thereby sets itself up to become ensnared in social convention and markets that develop certain habits and play into other human machinations. If MG does approach a form of realism, object-to-object interaction and flat ontology, it squanders its insights by making aesthetic immediacy the only goal – a problem rooted in a lack of interrogation of ontological commitments, which leaves it open to being easily co-opted by neoliberal capitalism. Tantalizing the senses above all leaves MG

open to the charge of contributing to a spectatorship culture: What is the role of the practitioner or artist here? Is the goal to create food as a magician-genius-professional in order to ‘blow people away’, or is the goal to create an engagement with food that empowers others to enter the kitchen, whether professional or not? MG’s approach values professional closure at the expense of opening up food to the amateur – a high price to pay.

Here it is important to keep in mind the totemic hero of MG: Roald Dahl’s Willie Wonka. Wonka’s approach is best exemplified in his interaction with Violet Beauregard. The chapter entitled *Good-by Violet* begins with Wonka exclaiming:

When I start selling this gum in shops it will change *everything*! It will be the end of all kitchens and all cooking! There will be no more marketing to do! No more buying of meat and groceries! There’ll be no knives and forks at mealtimes! No plates! No washing up! No garbage! No mess! Just a little strip of Wonka’s Magic Chewing Gum and that’s all you’ll need at breakfast, lunch and supper! This piece of gum I just made happens to be tomato soup, roast beef and blueberry pie, but you can have almost anything you want.

Of course Violet Beauregard – a child and a world-record gum-chewer – cannot resist, and reaches out and snatches a piece. After chewing the gum she balloons up to twice her size and shows every sign of turning into a blueberry. Here we see in no uncertain terms what ‘food’ can ‘do’. However, Dahl’s Willie Wonka is as much a social scientist as a food scientist. His goal goes beyond sensation; it is to ‘change *everything*’ not by revolutionizing, but by *eliminating home amateur culinary praxis*. Through Wonka, Dahl explores immediate gratification even in the face of an abject poverty where humans are reduced to bare necessity. Candy is but a means for Willie Wonka in his quest for total market domination – as can be seen in his obsession with secrecy, his exploitation of Oompa-Loompahs, and his creation of a fake rival in Old Fickelgruber.

But what in Dahl’s tale is a dramatization of the dark side of desire, avarice and human society, set in dark economic times resembling early twentieth-century capitalism, has been misconstrued by MG as offering a joyful playground for mad scientists, obsessed with their own ‘genius’ and unaware or unwilling to admit that they are manipulating more than just the senses. The aforementioned self-descriptions of Ferran Adrià as ‘Deconstructivist’ and Thierry Marx as ‘Techno-Emotional’, are rather apt: deconstruction considers above all the text (the meal), and ‘Techno-Emotional’

describes a seamless stimulation by the author of his passive eater, by means of secondary qualities or ‘bundles of sensations’.

If we fail to acknowledge that *we do not know what an object can do*, and approach and figure sensation as an end point for cookery, the latter becomes a radically closed system that terminates upon human swallowing. We neglect the fact that food is a non-human actant involved in human and non-human collectives. Food as an object continues to translate you, and you continue to translate food, even after swallowing; appearance and taste are only a subset of a food’s manifestation. For example, someone who has a thyroid problem has to regulate his or her metabolism. Through trial and error and the introducing of minimal foods at certain times, such a person is able to monitor the effects of certain foods on their bodies during certain parts of the day. This person would also have to monitor the food-to-food interaction within their bodies. In modulating such a diet we must consider food as a non-human actant necessary in order for a whole (person) to act. The elegant balance of, for example, grapes and salmon has to be considered in terms of the food-to-food interactions it might set off. All the while a person’s aesthetic proclivities cannot be ignored. Such a condition perfectly illustrates how praxis distorts, for it is only when we need to externally regulate our metabolism that we recognize how much

goes into the elegant system of processing food for humans. Considering food as a non-human actant not only offers us a path to avoid reducing cookery to primordial units, thus destroying a proper object analysis; it also avoids treating food solely in terms of immediate sensations, ideological struggles or marketing schemes. OOO rejects universal approaches that homogenize the needs of individuals and hierarchize humans above all others.

Where MG understands the proper being of an object to be manifested in a phenomenal actualization, object-oriented cookery would see the proper being of an object as consisting in its virtual endo-relational structure, which only ever expresses a part of its powers in any manifestation or actualization. An apple should never be reduced to 'sweet' or 'red' – that would be only an apple *for us*. An apple *apples* even after it enters into a set of exo-relations through which objects translate each other.

These ontological commitments are important for cookery for two reasons: 1) They are necessary in order to recognize unintended consequences and therefore to allow for a constant openness and a resistance to monolithic approaches; 2) They establish an awareness of praxis – which is to say that entering into exo-relations with objects as attractors, although maybe constant, necessarily sets up a disposition to interaction as 'wonder'. The disposition of wonder being: we are

never totally sure of what an object can do, as when it becomes entangled with other objects, it only presents certain expressions owing to its exo-qualities. Without the constant disposition of wonder we fall into the trap of the professional – an instrumental being in the service of nothing but markets, delivering all creative breakthroughs into the hands of neoliberalism and encouraging a spectator mentality on the receiving side – the professional chef creating the professional eater. The point is not just that we should be open to unexpected things in cookery, but that if our disposition of wonder, a form of affirmation, is restricted by a concentration on the human senses, then an arcane, highly laboratorial practice such as MG will create nothing more than interesting meals for professional spectators. MG begins with material forces (chemical reactions ...) but ultimately turns those forces, the ‘primordial units’ of its cuisine, into nothing more than sensation, without considering social material consequences. Disciplines that base their practice on aesthetic outcomes only further alienate food from its source, process and eater. MG engineers consent to alienate.

An apple manifesting in a pie is only expressing certain powers as it enters into a set of exo-relations. Once the apple has been translated into pie, a new object is present, with apple as a part of its whole. But the pie as an endo-relational structure can express itself

in a myriad of ways: It can become a doorstop, fall off the windowsill and feed animals, be used in a comic gag to hit someone in the face, entice someone off a diet, move through a human providing nourishment ... The apple present in that pie as a part still has an endo-relational structure and further powers of manifestation – for example, providing fibre or vitamin C to humans, being processed through fermentation, or housing ants. MG presents us with a prime example of an actualism that refuses the sort of open system that could accommodate these powers, and aligns the objective-subjective distinction with that of primary and secondary qualities.

All chefs must consider which objects they wish to exclude and which to include; and this (along with the use of cling film) is how we know cookery praxis as closed. However, in another sense, chefs have an opportunity to experiment with open-ended processes. A recent example of object-oriented cookery is a five-course Mexican feast concocted to bring the wonders of edible insects to New York.¹⁰ Serving larvae and live insects, Phil Ross created one dish of squirming wax moth larvae. Popping a live bug in one's mouth, if taken seriously, would have to open a diner's eyes to a multitude of alternative sources of protein. Ross's invitation to experience live food explicitly acknowledges that we do not know exactly what an object will

10. <http://www.nytimes.com/2010/09/22/dining/22bug.html>.

do – for this chef in some sense has no control over what these bugs will do. A bug bugs.

MG's ontological commitments are to an *actualism* informed by *relationism*. That is to say, MG, even with all its chemical reactions and experimenting with food, by taking human sense as its end goal is ultimately a praxis that takes the basic structural feature of entities to be expressed in immediate events *for us* (actualism). Global relations inform this event (relationism): MG is a logical extrapolation of globalized cuisine praxis (fast food, junk food) or food science praxis located in globalized corporate food companies. A praxis that is then interjected into haute cuisine and returned to globalized cuisine with enhanced credentials.

SLOW FOOD

On the other hand, the 'basic structural feature of all entities', as far as Slow Food is concerned, is determined by a *relationism* informed by *actualism*. SF can be seen as a logical extrapolation of Chef José Andrés' words: 'McDonald's as genius of organization, development, and marketing.'¹¹ That is to say, paradoxically, that the ideology that McDonald's promotes is the same as Slow Food's: *food is more than cooking and eating*. An ideology interjected into localities, singular

11. http://living.glam.com/articles/latest_stories/exclusive_interview_with_chef_jose_andres/.

villages, towns, food markets and bazaars and then returned to globalized cuisine circuits with cogent arguments for food to be seen as more than a material substance involving real makings and doings. SF's denial of foods as individual objects and actants that move through human and non-human collectives leaves issues of nutrition, local organization and development aside in order to promote counter-progressive causes such as the preservation of what SF's (mostly European and White American) leadership perceive as valued traditions of cookery and food production. SF's inability to recognize different speeds, to see that many places in the world don't suffer the same affects and effects as 'fast' paced technologically-advanced cultures, puts into question SF's very framing of the solutions and problems. As Louise Fresco states:

Now it is not surprising that with this massification and large-scale production, there is a counter-movement that emerged – very much also here in California. The counter-movement says, Let's go back to this, Let's go back to traditional farming. Let's go back to small-scale, to farmers' markets, small bakeries and all that. Wonderful. Don't we all agree? I certainly agree. I would love to go back to Tuscany to this kind of traditional setting, gastronomy, good food. *But this is a fallacy. And the fallacy comes from idealizing a past that we have forgotten about.* If we do this, if

we want to stay with traditional small-scale farming we are going, actually, to relegate these poor farmers and their husbands – among whom I have lived for many years, working without electricity and water, to try to improve their food production – to relegate them to poverty. What they want are implements to increase their production – something to fertilize the soil, something to protect their crop and to bring it to a market. We cannot just think that small-scale is the solution to the world food problem. It's a luxury solution for us who can afford it, if you want to afford it. In fact we do not want this poor woman to work the land like this. If we say just small-scale production, as is the tendency here, to go back to local food means that a poor man like Hans Rosling cannot even eat oranges anymore because in Scandinavia we don't have oranges. So local food production is out. But also we do not want to relegate to poverty in the rural areas. And we do not want to relegate the urban poor to starvation. So we must find other solutions.¹²

SF has taken on as its goal the task of preserving ingredients and food production methods from collectives, populations and communities that may be disappearing from cookery praxis due to global economic pressures. For example, posted on a calendar

12. http://www.ted.com/talks/louise_fresco_on_feeding_the_whole_world.html.

COLLAPSE VII

of events on Slow Foods San Francisco's website was this announcement for the film *Mr. Bene goes to Italy*:

One of SF founder Carlo Petrini's favorite films was screened at the Delancey Street Theater on April 4th. Benedito Batista da Silva, 60 years old, is considered a reference when it comes to manioc flour production in the Brazilian Para State, deep within the Amazon. This documentary shows his trip from Braganca to Turin and back home. The encounter of different cultures, of small-scale farmers from all over the world and the enchantment of coming into contact with European culture blends with the profound affective bond Mr. Bene forges with his Italian host family. The film is about breaking barriers, whether cultural, economical or even physical, in this amazing *anthropological* adventure whose premise is that hope still exists for small Brazilian farmers.¹³

A small village in Brazil produces manioc flour deep in the Amazon. In order for the art of manioc flour production not to be lost and the practice maintained for centuries to come, SF invites artisans to a world conference where chefs and other small farmers interact on a global stage to figure out how to preserve 'best practices' – authentic practices. Professional chefs are

13. http://www.slowfoodsanfrancisco.com/cgi-bin/slowfood/sf_events.html?evcode=00023;id=TYTwX5Zx (emphasis mine).

put into contact with a product that may be useful to them, thereby opening up a global market for what was once food for a single village and was in danger of becoming 'lost'.

Obviously SF elevates food to a representation of human experience, a symbol of human cultural uniqueness. Where MG can be criticized for reducing food too much, SF can be faulted for attributing *too much* to food. Where MG reduces food simultaneously to primordial units and bundles of qualities, SF elevates foods to a status beyond autonomous entities, refusing a flat ontology.

For SF not only are objects, such as food, reduced to relations; human collectives as autonomous objects are identified and ignored in order to develop seamless global patterns and connections of '*more than cooking and eating*'. SF's ontological commitments or lack thereof raise questions of how to recognize actual collectives and cultural distinctions. Globalized cuisine's quest to discover the food products of underprivileged or developmentally marginalized peoples of 'cultural value' and open them up to new markets, emulates the emerging markets approach promulgated by World Bank neoliberalism and the 'Washington Consensus'. The goal of such structural and developmental reforms is to reduce objects to relations in order to place these products and collectives within a globalized food system. For SF, value lies not so much in financial economics

(although that plays a large part) as in an economy of authenticity and in the ability of specific objects to seamlessly move into other economies. Contemporary inclinations, technological innovations or caloric intake, are not considered in deciding how useful the preservation of a certain product could be within a specific collective. In other words, what a food does is not as important as how it is perceived by Western diners.

What is clear is that SF's ontological commitments are deceptive. On the one hand, SF presents an outdated mode of anthropology in which foods are idealized and cultural artifacts are preserved for the sake of preservation. On the other hand, it heralds the possibility of a radically connected network of relations where an emerging market approach can take hold. On one hand, SF values a food on the basis of its origin, taking into account its participation in collectives, but only on its own selective terms. On the other hand, SF posits a background of potential relations in which we should view food, and that frame does not allow a *food* or a *collective* autonomy, does not allow for food as a non-human actant with an endo-relational structure. A food's potential outside of human intention, outside of a perceived market, is what is at stake for an object-oriented approach. SF mobilizes food in an idolized or idealized fashion. Authentic culture and roots supersede all other concerns, in order to

introduce relation-fetishism as ingress for leftists to neoliberalism.

An object-oriented analysis of what food *does* would be useful for a political global food movement such as Slow Food. Such an approach could demonstrate how food organizes human and non-human chains; how food translates us and other objects individually and collectively in ways that resist reified generalities. In SF's case, *relationism* (in this case, the notion that 'food is the sum of its relations') informed by *actualism* (authentic immediate collectives to be subsumed) ultimately amounts to little more than a human-thought-being correlation. A correlation that neo-liberalism depends on, given that it is the 'seamlessly global' nature of the market that allows SF to *believe* that shopping at Whole Foods and eating at fine dining establishments are radical political acts.

Ultimately, either SF is redundant (because the people practicing SF do not need instructions – specific cultures in specific locations are and have been practicing SF production and preparation for a long time); or SF is dogmatic in its approach as well as its practice because it charges itself with the measurement of authentic virtue without allowing that metric to be determined in an open system that critically addresses the food it proposes to 'save'. The breaking down of cultural, economical or even physical barriers by a neo-liberalism dissimulated by outmoded 'anthropology'

or self-righteous ‘conservation’ is yet another form of praxis being trapped within a correlation of being and thought. Without ontological commitments to a ‘real’ independent of humans, SF is simply subsumed into economics.

FLAT COOKERY

In view of what has been said above, MG might be seen as object-oriented in its first stage, in that it acknowledges food as an object. Experimentation, albeit ultimately geared towards the senses, does foreground *what an object can do*. And SF’s object-oriented inclinations lie in its recognizing of collectives, towns and regions and even farmers as objects in Bryant’s sense. What MG does well is break us out of the traditional myths that have dominated cookery praxis – myths such as the searing of meat in order to encapsulate juices are debunked in favour of some progressive praxis. What SF does well is to observe the wider implications of a fast-paced technologically-advanced approach, identifying problems such as monoculture and the shortcomings of industrially-produced food.

If we return to Harman’s claim that praxis distorts, we notice that OOO at the level of praxis offers nothing new. In other words, OOO is not offering a *new* distortion, only a levelling of ontological distortion. What is revealed in this levelling are intricate webs in which

no thing (language, power, ideology, religion, food or knowledge) dominates or provides the exclusive conditions of possibility. This is not a form of materialism, but rather a realism that allows the independence or autonomy of non-material objects – any ‘thing’ that makes a difference.

At the level of object-oriented praxis and epistemology, Bryant is clear:

I think it is the hypothesis that objects *act* or are encountered in their doing. In other words, *knowing*, not passively *mirroring*, knowledge is a product of *doing* and is a discovery of *doings*. We know things, we discover them, through their *acts*, and if we wish to discover the powers of objects we have to *act* on these objects to see what they do in these conditions. It is through provoking objects to discover what properties flash forth that we discover their powers ... to find out what objects are capable of doing.¹⁴

Therefore, cookery becomes an elegant configuration of entities in a feed-forward-feed-back clumsily-woven web of objects interacting on equal footing. If we do not know what a specific food can do, and this food is interacting with all sorts of other objects at a specific instant, then even in a radically closed environment,

14. L. Bryant, ‘Object-Oriented Empiricism’, at <http://larvalsubjects.wordpress.com/2010/03/26/object-oriented-empiricism/>.

cookery becomes a lot like surfing. It consists of a series of tiny adjustments, prompted by anticipations and responses from an openness to utterances from all human and non-human actants entangled. Of course, in order to prevent short circuits, a chef must allow herself to be translated by other objects. In feeling her way through, aesthetics forms a *new* epistemology where the abundance of local manifestations forms a meal. Keeping in mind that the entanglement that constitutes this meal does not begin or end with this specific event of eating – objects stretch out through other objects. Anticipating objects' behaviours and responding to both expected and unexpected acts, even the most experienced chef benefits by adopting the disposition of an amateur home cook. A disposition which is simply a commitment to objects being out of phase.

Other than money and love, the conventional distinction between professional cookery and amateur home cookery is primarily one of epistemology and praxis. Epistemology, because the professional possesses extreme forms of the type of 'knowledge' that contributes toward an instrumental distortion of being. Knowledge built on error, keeping cookery on track. Praxis, because the professional possesses a skillset that dictates a specific set of actions. The professional's mode is one of eliminating chance, restricting the 'phase space' of objects. It is clear that

there is a financial interest in maintaining this distinction between professional and home amateur – as seen in the fact that ‘home amateur’ status is coveted by a local bistro offering *homemade* bread in the attempt to sell us something back that has been all but eliminated from actual homes; but equally in the disparaging distinction made by chain restaurants encouraging us to ‘eat out’ because ‘we deserve a break’ from the chores of cookery. On one hand amateur cookery is praised as a delicious enticement only available at local restaurants, on the other hand disparaged as a mere menial task to be avoided. The uncritical adulation of Willie Wonka, whose genius leads him to wish to do away with amateur home cookery, illustrates this drive of professional cookery to dominate and destroy home amateur cookery.

Flat Cookery praxis levels the distinction between professional and home amateur. Flat Cookery’s ontological commitments to objects and a real outside of the correlation between thinking and being are evident in 1) the entwining of epistemology and praxis, allowing food the ability to speak back or objects to act; and 2) the amateur’s indirect disposition, allowing for a wandering off the exclusive tracks of thinking and being as they pertain to cookery. Which is to say that the inclination of an object-oriented approach to cookery is that of a particular know-how that flows from acting – from doing. Flat Cookery operates out of

the acts of feeding people. Acts that have been passed down from generation to generation on one hand and yet refuse the myths, nostalgia and romance that accompany professional disciplines. The professional invents objects with minimal phase space in order to dominate amateur home cooking – objects such as frozen dinners and washed mesclun mix that pacify the non-professional. But the amateur is free of the restraints of ‘knowledge and skill’ to experience the ‘phase space’ of objects. This is not to say an amateur is ignorant, that he lacks knowledge. No, the amateur acts out of affirmation. Here affirmation is instinct, experience and the acknowledgement of webs of objects that act autonomously and in aggregate. The professional, on the other hand, not only operates in alienation but also alienates. The professional motivated by the representation, the symbolism and the distortion of markets dismisses the amateur’s clumsily-woven affirmation. The amateur is an object in this ontology. An object *does* feed one’s family or *does* socialize with others or *does* regulate one’s metabolism or *does* counteract one’s diabetes or *does* volunteer at a soup kitchen or *does* enjoy a fine repast. Of course the question of *what an object does* motivates the amateur, for as a tree trees and an apple apples, the amateur amateurs, and in doing so avoids the excesses of distortion. Object Oriented Cookery amounts to a commitment to autonomous

entities, but also to an openness to food as an actant independent of human intention.

To Roast Eggs.

Make a puncture in the large end of the egg, then pour water over it, and cover it in hot ashes in front of the fire, from whence you may easily take it when done.

Mary Mason, *The Young Housewife's Counsellor and Friend: Containing Directions in Every Department of Housekeeping, including the Duties of Wife and Mother* (NY: Protestant Episcopal Church Book Society), 1875.

Reason in the Roasting of Eggs

Richard Wrangham

In the eighteenth century egg-roasting was a sufficiently puzzling activity that it inspired a familiar saying, 'There is reason in the roasting of eggs'. The aphorism was intended to justify the most arcane of pursuits, but actually the reason for roasting eggs has been unknown until recently. There is indeed a good nutritional explanation for this now-vanished culinary tradition, as there is for cooking any other food: cooked food gives us more energy than we would get by eating the same food raw. Furthermore, our consumption of cooked food makes possible not just our high energy budgets, but also the extreme size of our brains. Accordingly the notion of 'reason in the roasting of eggs' includes a second meaning beyond the assertion of mere utility. It encapsulates my claim that the evolution of human mental powers has depended on our ancestors' food being cooked.

No such thought was in Edmund Burke's mind in 1773 when a dinner party conversation prompted him to reflect on the significance of cooking. He was responding to the idea that human beings can be defined as the species that cooks. James Boswell, diarist and amanuensis of lexicographer Samuel Johnson, made the proposal and recorded the conversation.

Boswell began by rejecting previous definitions of humanity. "An ancient philosopher said," he declared, "[that] Man was 'a two-legged animal without feathers,' upon which his rival Sage had a Cock plucked bare, and set him down in the school before all the disciples, as a 'Philosophick Man.' Dr. Franklin said, Man was 'a tool-making animal,' which is very well; for no animal makes a thing, by means of which he can make another thing. But this applies to very few of the [human] species."

He continued with his own proposal. "My definition of Man is, a 'Cooking Animal'. The beasts have memory, judgement, and all the faculties and passions of our mind, in a certain degree; but no beast is a cook. ... Man alone can dress a good dish; and every man whatever is more or less a cook, in seasoning what he himself eats." Burke approved Boswell's idea. "Your definition is quite good," he said, "and I now see the full force of the common proverb, 'There is reason in the roasting of eggs.'"

Burke may have thought he saw the full force of the proverb, but what he meant when he quoted it can only have been the idea that humans cook for a reason. As to what the reason was, Burke surely did not know; because until the last two decades no one had systematically investigated why we cook. Conventional wisdom acknowledged that cooking could remove poisons, kill bacteria and enormously improve the taste and texture of an evening meal, but there was no consensus as to whether cooking was necessary or what its most important function was. As late as the 1960s, when the anthropologist Claude Lévi-Strauss proposed that people cook merely to symbolize their distinction from animals, no one is recorded as objecting to his stated assumption that cooking was an arbitrary choice. To Lévi-Strauss and most anthropologists, humans were no different from other animals, equally capable of a successful lifestyle whether or not our food was cooked.

Fortunately ‘raw-foodism’ has become popular recently, and this habit of restricting diet to raw foods has created new opportunities for investigation. Results are consistent: On the one hand, people can eat 100% of their food raw and be healthy enough for an active life. Indeed, many raw-foodists keep to their diets because they feel very good on them. Yet unlike non-humans, human raw-foodists are so relatively short of energy that not only do they lose weight on average, but

their bodily functions are also liable to be impaired. In the only research on the reproductive performance of women, conducted by a survey of several hundred Germans, the average woman on a 100% raw diet had too few spare calories to be able to menstruate. The study indicated that, whether or not their diets included meat, and even when eating domesticated foods taken from the global food resource (and therefore free of a seasonal drop in food quality), women could not reproduce effectively when eating raw. Domesticated foods are much more effective sources of energy than wild foods, and our ancestors expended much more energy as hunter-gatherers than raw-foodists do in urban environments. So while a raw diet of domesticated foods can sustain people in the West today, a long-term raw diet of wild foods, of the type that our ancestors ate before 10,000 years ago, would be impossible. In short, although humans are animals, we are different from other animals. Without domesticated foods and an urban lifestyle, we need cooked food.¹

A close look at our intestinal systems shows one of the reasons. Our intestines are small compared to those of other primates. An excellent advantage of guts being small is that they cost less to run than the more elaborate digestive structures of our raw-food-eating ancestors. However, a species can afford for their guts

1. See R. Wrangham, *Catching Fire: How Cooking Made Us Human* (NY: Basic Books, 2009).

to be small only if they can predictably obtain a diet that is easily digested. In the case of human ancestors, cooked food explains our diminutive digestive adaptations, from our small mouth and teeth to our absent caecum and greatly reduced colon. We can get away with the reduced size of these structures because cooked food is easier to digest than raw food. Thus, in line with other comparisons between cooked and raw foods, a baked potato takes a shorter time to digest than a raw potato. It demands less muscular churning, acid secretion, enzyme production and other biological investment. Furthermore, a baked potato also provides us with more of its digestible energy than a raw potato.

The fact that cooked food provides more energy than raw food is the main reason our lineage can afford to forego efficient digestion of raw food. The fundamental logic for the extra energy is that cooking involves heat. Because hotter molecules move faster, their structure changes. They tend to open up in ways that allow component chains to be more easily attacked by enzymes. Starches gelatinize, changing a previously semi-crystalline structure into a solution of glucose-rich strings. Proteins denature, exposing otherwise hidden threads of amino-acids. Fats melt, releasing lipids from inert solidity. Animal species do not need special adaptations to take advantage of these benefits from cooking. Most animals prefer cooked food, and they fare so well on a cooked diet

that many of our pets now have an obesity problem. But human ancestors were the only species that made the breakthrough to preparing cooked food on a daily basis, which allowed them to follow the unique path of becoming committed to eating it. The skill of cooking thus gave us more calories per gram of food, not to mention a wider range of foods that we could exploit. The enhanced energy we obtain by using external fuel to improve our food is one of the main reasons why we are now the dominant species on earth.

Life is in many ways a search for energy, so a species that achieves a new level of energy acquisition faces expanded biological opportunities. Perhaps none was more important than the chance to invest in the brain.

Human brains have two very odd features. They are relatively enormous, and they have been increasing in size rather steadily for a long time (more than two million years). Their structure and neurophysiology, by comparison, are less obviously odd. Indeed, to a large extent the size of brain regions is predicted by the size of the whole brain. This does not mean that we have the same brain proportions as smaller-brained species. For example the percentage of our brain volume that is devoted to neocortex is higher than in smaller-brained species. However the extent of this disproportion is itself predicted by our brain volume, because among other primates, those with larger brains likewise devote a higher proportion to

neocortex than those with smaller brains. Within a group of closely related animals such as humans and great apes, overall brain volume is thus an excellent predictor of brain structure.

Brain size is also a good predictor of intelligence. Species of primates can be ranked according to their general cognitive ability by assessing their performances on a range of cognitive tests. Across species this general cognitive ability is well correlated with total brain size – the correlation is stronger, for example, than it is with measures of relative brain size, such as those that control for differences in body size.² Such studies use average brain volumes for the species, measured in dead animals. Non-invasive measuring techniques also allow investigators to measure brain volumes in living individuals. They show that within species too, variation in brain size is related to intelligence. Rats with bigger brains solve cognitive tasks better. Humans with bigger brains have higher ‘g’ (general intelligence), more fluid ability and greater memory, though not greater crystallized ability. Correlations between brain size and cognitive ability in these studies of rats and humans are in the range of 0.3 to 0.5.³

2. R.O. Deaner, K. Isler, J. Burkart, C.P. van Schaik, ‘Overall brain size, and not encephalization quotient, best predicts cognitive ability across non-human primates’, *Brain, Behavior and Evolution* 70, 2007:115-24.

3. J.C. Wickett, P.A. Vernon, D. H. Lee, ‘Relationships between factors of intelligence and brain volume’, *Personality and Individual Differences* 29, 2000: 1095-1122.

A good starting-point for explaining the evolution of uniquely human intelligence, therefore, is to account for the large size of our brains. The difficulty in doing so is that brains are exceptionally expensive. Their energetic running costs average some 8-10 times higher than those of skeletal muscle, and unlike a computer, brains can never be turned off. The more that brains are used, the more energy they consume. For example when subjects are asked to exert self-control in thinking, their body glucose levels measurably drop.⁴ Overall human brains consume more than 20% of the energy used by the body at rest, far more than their weight would suggest. So the problem of explaining the evolution of human brain size becomes a problem of understanding how brains are powered. Where do we get the extra energy needed to fuel our big brains?

In theory, a species like humans that has a hungry brain and access to sufficient food might be able to increase its resting metabolic rate (the number of calories used per unit time to power the body when at rest) so as to divert extra calories to the brain. In actuality, however, this solution does not occur. Metabolic rate has been well measured in humans and related primates. Remarkably, in relation to body weight the resting human metabolic rate is exactly as

4. M. T. Gailliot, R.F. Baumeister, C.N. DeWall, J.K. Maner, E.A. Plant, D.M. Tice *et al.*, 'Self-control relies on glucose as a limited energy source: willpower is more than a metaphor', *Journal of Personality and Social Psychology* 92(2), 2007: 325-36.

expected for a typical primate. The discovery that we do not simply run our metabolism at a high overall rate is highly enlightening. It means that the only way for humans to devote disproportionate amounts of glucose to fuelling our large brain is to give relatively less energy to some other parts of the body.

Leslie Aiello and Peter Wheeler were the first to realize the significance of the unchanged human metabolic rate. They showed that most of the energy-hungry organs, such as liver, kidney and heart, have the same relative size and energy needs in the human body as in non-human primates. The only organ system that stood out by being relatively variable in size across species was the gut. Aiello and Wheeler found the human gut to be relatively small, including stomach, small intestine, caecum and colon. As a result Aiello and Wheeler concluded that the human gut uses relatively little energy. Their finding suggested that variation among species in the size of the gut might offer opportunities for the evolution of large brains.⁵

In line with their hypothesis, primate species with smaller guts indeed tend to have bigger brains. The obvious explanation for their small guts is that they have an especially high-quality diet, affording them the luxury of a reduced digested capacity. This proves correct.

5. L. Aiello, P. Wheeler, 'The expensive-tissue hypothesis: the brain and the digestive system in human and primate evolution', *Current Anthropology* 36, 1995: 199-221.

Primates that eat more animal matter and calorie-dense plants in the wild have especially high quality diets, and are found to have bigger brains than other primates.⁶ Aiello and Wheeler also calculated the energetic savings for humans of having smaller guts than expected. The savings neatly match the extra energy needed because our brains are large.

These results combine into a simple and striking formula: Cooking is responsible for our small guts; and the small size of our guts allows us to power an increasingly large brain. So cooking gave us a bigger brain and higher intelligence than we could otherwise have managed.

The fact that the quality of the human diet is uniquely high fits satisfactorily with the human brain being uniquely large; but a diet of cooked food is not the only potential solution to the energy puzzle. Aiello and Wheeler themselves gave as much attention to meat as to cooking. When the brains of our presumed ancestors started growing beyond the ape size, between two and three million years ago, their possessors were beginning to cut meat from the bones of prey animals but they had certainly not become committed to cooking. So Aiello and Wheeler suggested that meat-eating was likely responsible for the initial rise in brain size, on the basis that meat-eating carnivores such as cats

6. W.R. Leonard, M.L. Robertson, J.J. Snodgrass, C.W. Kuzawa, 'Metabolic correlates of hominid brain evolution', *Comp. Biochem. Physiol. Part A*, 135, 2003: 5-15.

and dogs tend to have small guts. Their suggestion about cooking was that it could account for a later rise in brain size, around half a million years ago, when the evolution of *Homo erectus* into *Homo heidelbergensis* was marked by a notable increase in cranial capacity (from around 1000 to 1200 cubic centimetres). My own interpretation of the evidence is that *Homo erectus* was already adapted to cooked food by about 1.9 million years ago, because only cooking provides a ready explanation for the characteristically small guts and teeth found in *Homo erectus*. Furthermore there is no later time in human evolution when any subsequent reduction of the gut is recorded. My attribution of cooking as early as 1.9 million years ago is controversial however, because although it fits with the biological inference, direct archaeological evidence of the use of fire is inconsistent earlier than 400,000 years ago. So the conservative conclusion is that cooking began its contribution to the steady rise in human brain size sometime between 1.9 million and 400,000 years ago.

Whenever cooking was developed, however, its impact on reducing the costs of digestion surely had a substantial effect on brain enlargement. The largest known brain of any ape or fossil pre-human that was definitely confined to raw food (*Australopithecus/Homo habilis*) was a mere half of the volume of our more than 1400 cubic centimetres. If humans became adapted to cooked food as improbably late as 400,000

years ago, the result was to add only 200 cc of brain volume. More likely, on the assumption that cooking began with *Homo erectus*, brains roughly doubled in size under the influence of cooked food.

The impact of cooking did not have to stop there. While the first oddity of the human brain is its relatively large size, the second is the way it achieved this outlier status. Our ancestors have exhibited a near-continuous rise in brain size for more than two million years, eventually leading to a trebling of volume. During the same period other animals, by comparison, had no change in brain volume, or a much more modest increase. Since the benefits of elevated intelligence must have been particularly high in increasingly complex social groups, some have argued for a positive feedback loop: large brains enabled larger groups, which then intensified the advantages of being more intelligent. But while that kind of idea might explain the advantages of increasing cognitive ability, it misses the critical point that however strong the selection pressure in favour of large brains, and whatever benefit intelligence gave, the problem of the energetic constraint must also be solved. Unless our ancestors had higher metabolic rates than we do, which no evidence suggests, they had to fuel their brains from somewhere within their bodies.

In this context cooking offers interesting possibilities for the long-continued rise in brain size. The techniques of the first cooks were doubtless limited to

placing roots, seeds or meat by a fire so as to roast them. Recent hunter-gatherers were still practicing those simple techniques in the last two centuries, but they also employed a variety of more complex skills. The earthen oven was a technique that kept cooked food moist and even hinted of cuisine, because it allowed herbs to be added to the food. Earth ovens are evidenced from at least 200,000 years ago, and were probably worldwide. Varieties of sausage were made in several places. Pots and containers could be fashioned from plants such as bamboo, or from inverted turtle shells. Accumulated advances in cooking skill would have made food not only more palatable but also easier to digest. A more easily digested meal, in turn, would demand less energy from the gut, and spare more for other organs such as the brain.

There are other factors that may have contributed to solving the brain-energy crisis too. Species of birds with smaller breast muscles have bigger brains, indicating that energetically efficient locomotion can spare energy for the brain.⁷ Travel is energetically cheaper in humans than in chimpanzees, and likely became so when our ancestors stopped regularly climbing trees almost two million years ago. Terrestrial adaptations of the human body might thus have saved further energy that could be diverted to the brain.

7. K. Isler, C.P. van Schaik, 'Costs of encephalization: the energy trade-off hypothesis tested on birds', *Journal of Human Evolution* 51(3), 2006: 228-43.

COLLAPSE VII

So cooking was not necessarily the only route to a larger brain, but its impact was very large. The adoption of cooked food as a staple part of the diet gave our ancestors increased energy, enabled them to reduce the size of important components of their guts, and therefore most likely enabled those with bigger brains to survive and flourish.

Nowadays hunter-gatherers who collect eggs return to camp with them when possible, and roast them by burying them in hot ashes. The practice is one of many with a deep history that revolutionized our ancestors' energy metabolism and paved the way for a larger brain and higher intelligence. When Edmund Burke quipped that there was reason in the roasting of eggs, he spoke a truer word than he could have imagined. We can rewrite Descartes: *Coquo, ergo cogito* – I cook, therefore I think.

TOURT OF VEAL¹

Take a peece of Veal, blanch it, and mince it with twice as much of beefe suet, after it is well seasoned, make a sheet of fine paste, put your meat on it, in the middle of which you shall put what you have, as *beatills*, &c. Sugar it if you will, and when it is baked, serve.

1. P. La Varenne, *The French Cook*, Trans. I.D.G (London: Charles Adams, 1654), 57.

Theorizing Cuisine from Medieval to Modern Times: Cognitive Structures, the Biology of Taste, and Culinary Conventions

Vanina Leschziner and Andrew Dakin

INTRODUCTION

How do we come to think that certain flavour combinations are good and that some tastes are to be kept separate, or that one food is to be eaten prior to another? To be sure, individuals have idiosyncratic preferences, and experience strong likes and dislikes for different foods. Yet many of the deeply-held beliefs about food that guide individuals in their cooking and eating are socially-shared ideas about what is right and what is wrong that vary from one historical period and social context to another.

In the contemporary Western world, a basic principle that organizes the way food is cooked, served and eaten requires that sweet-tasting foods are kept separate from the other basic tastes.² Thus, there is a course that is preeminently sweet, dessert, which is only served after the consumption of courses that are preeminently non-sweet. This way of cooking and eating, however natural it may seem to a contemporary diner, has a relatively short history. As recently as the seventeenth century, a diner would have not only not had dessert at the end of a meal, but she would have had a large number of dishes that combined sweet and non-sweet tastes throughout a meal, served in what would to us appear to be no particular order.

Thus, even as the basic factors in cuisine – the foods, their chemical makeup, and our physiological responses to those chemicals – remain constant, our perception and theorization of food – the reasoning behind our methods for the selection, preparation,

2. Although human taste receptors respond to a broad assortment of chemicals, it is generally accepted that, qualitatively, this range evokes few distinct sensations; the standard basic taste model differentiates between sweet, bitter, sour, salty and savoury (or umami) tastes (J. Chandrashekar, M.A. Hoon, N.J.P. Ryba & C.S. Zuker, 'The receptors and cells for mammalian taste,' *Nature*, 444, 2006: 288-94, 288). It remains unclear how far along the gustatory sensory pathway cellular specialization is necessary to enable independent encoding of the distinct tastes (Ibid.; R.P. Erickson, 'A study in the science of taste: On the origins and influence of the core ideas,' *Behavioral and Brain Sciences*, 31, 2008: 59-105). While some criticize the basic taste model (Ibid.), it is, relative to alternative models proposing a continuum of tastes, more closely related to (and indeed reinforced by) modern culinary theory.

service and consumption of food – have undergone major transformations throughout history. In this article, we examine what is likely the most radical change in cuisine in the Western world during the Christian Era: the development of what is now known as modern French cuisine.³

As we explain below, early modernity witnessed a major transformation in the theorization of cuisine and the rules for cooking and eating. Prescriptions and proscriptions about food grew in their autonomy from other disciplines, particularly medicine, allowing ideas about the experience of taste, rather than the supposed therapeutic properties of foods, to ascend as the guiding principles in the theorization of cuisine. Aided by a general epistemic shift in the way phenomena were classified, as well as by changing economic and institutional conditions, the autonomization of cuisine gave rise to a new conceptual organization of the basic tastes. Whereas in medieval cookery, all tastes were blended together in all manner of dishes, the sweet began to be dissociated from the non-sweet

3. We focus on France as a historical influence, given that this country is generally credited as the source of the modern culinary traditions of the Western world (P.P. Ferguson, 'A cultural field in the making: Gastronomy in nineteenth century France', *American Journal of Sociology*, 104, 1998: 597–641, 599; P.P. Ferguson, *Accounting for Taste: The Triumph of French Cuisine* (Chicago: The University of Chicago Press, 2004): 12, 30; P.P. Ferguson, S. Zukin, 'The careers of chefs', in R. Scapp & B. Seitz (Eds.), *Eating Culture* (Albany: State University of New York Press, 1998), 92; A. Trubek, *Haute Cuisine. How the French Invented the Culinary Profession* (Philadelphia: University of Pennsylvania Press, 2000), 3.

tastes in the seventeenth century. This dissociation marked the transition from medieval to modern French cuisine, as it constituted the conceptual foundation of the new culinary style.

In this article, we first review the nature of medieval cookery, specifically its foundation in scholastic medicine and the implications of this relationship for the rules for cooking and eating.⁴ Next, we examine the liberation of cookery from medical concerns and the codification of what is now known as modern French cuisine. We suggest a number of factors that contributed to the development of the modern perception and theorization of foods, including epistemic, economic, and institutional conditions occurring in early modernity, the chemical properties of certain foods, and biological attributes of the basic tastes. To conclude, we consider certain contemporary culinary trends that challenge, yet also hinge upon, the dissociation between the sweet and non-sweet tastes, to reflect upon the implications of these practices for the maintenance or transformation of this cognitive structure that, as we posit, underlies the institution of modern cuisine.

4. We focus on the recorded rules for cooking and eating, and not actual practice, as there is little historical data on actual practices from the late middle ages to early modernity. Insofar as extant sources consist of original books on cookery and dietetics, we can examine only prescriptions and proscriptions. Without a doubt, a gap between the information presented in books and what individuals actually did is possible.

**OLD DIETETICS, COOKERY AND THE PROLIFIC
USE OF SWEET INGREDIENTS**

Prior to early modernity, cookery possessed far less autonomy as an area of activity than it does today. The aesthetic appreciation of food that provides the basis for modern cuisine was not yet the chief concern in formulating rules for the selection, preparation, and consumption of food. Instead, cookery in the Western world was governed by a system now known as the Old Dietetics, an understanding of health based on the theories of early natural philosophers.

The Old Dietetics was primarily premised on the theory of humours, inherited from the ancient Hippocratic School of medicine. The theory of humours held that every organism possessed a balance of two qualities, either hot or cold, and either moist or dry. The humoral qualities of an organism were largely (though by no means only) determined by the composition of its habitat. At the time, the natural world was understood in terms of the Great Chain of Being, a vertical linear taxonomy of life spanning from the earth to the heavens (see Figure 1).⁵ The structure of this model reflected the belief in

5. The figure depicted here is adapted from V. Leschziner 'Epistemic foundations of cuisine. A socio-cognitive study of the configuration of cuisine in historical perspective', *Theory & Society* 35, 2006: 421-43, 426, originally based on A. Grieco, 'Food and social classes in late medieval and renaissance Italy.', in J-L. Flandrin & M. Montanari (Eds.), *Food: A Culinary History* (New York: Columbia University Press, 1999), 308.

an ordered series of resemblances running through all living things.⁶ This continuum spanned the four regions of the natural world corresponding with the classical elements fire, air, water, and earth, each of which was characterized by one of the four possible combinations of humoural qualities. It followed that organisms generally acquired the humoural qualities of the region in which they resided – for example, because water is cold and moist, fish tend to be cold and moist.⁷ Each of the four possible combinations of the qualities was thought to be responsible for the production of a different dominant humour, or internal bodily fluid, which in turn dictated an organism's temperament, or predisposition to particular emotions, behaviours, and illnesses.

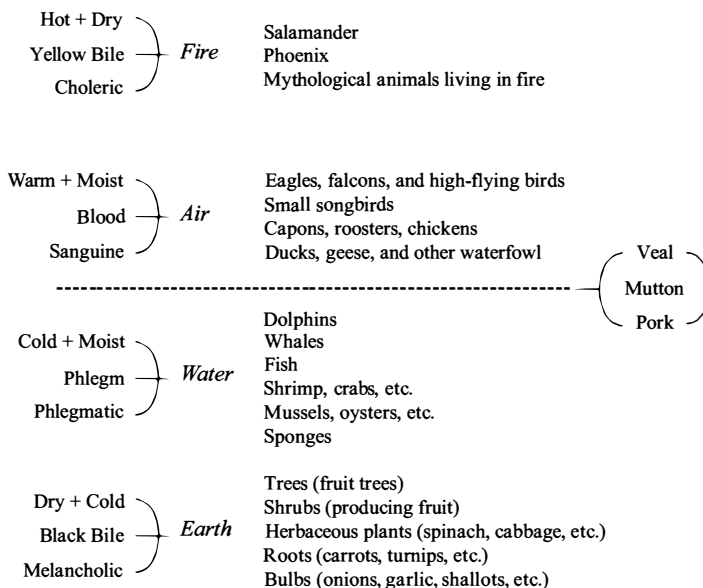
The health of human beings, it was believed at the time, depended on the maintenance of the ideal humoural balance particular to the species – a combination of hot and moist qualities. One's faulty lifestyle was thought to be the main cause of humoural

6. A. Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* [1936] (Cambridge, Mass.: Harvard University Press: 1970). See N. Cusanus, *De docta ignorantia* [1440] (Lipsiae: In Aedibus Felicis Meiner, 1932) for a renowned example of medieval thought, and in particular an elaboration of the philosophical principles underpinning the Great Chain of Being.

7. One could not assume, however, that all organisms residing in the same elemental region possessed the same humoural balance, for qualitative variance exists within a given elemental region (i.e. some bodies of water are colder than others, just as some sections of the same water body are colder than others), and other factors including age, sex, and form could affect the humoural qualities of an organism.

Leschziner & Dakin – Theorizing Cuisine

GOD



INANIMATE OBJECTS

Figure 1. The table of humours and The Great Chain of Being.

imbalance, which in turn led to illness.⁸ The regulation of diet, being a fundamental part of an individual's lifestyle, was therefore regarded as the primary

8. R. Porter, *Disease, Medicine and Society in England, 1550–1860* (Cambridge: Cambridge University Press, 1993).

means of preventative and curative medical treatment.⁹ Medieval cookery was principally structured around this Old Dietetic premise, that food had a therapeutic function through its effect on the diner's bodily humours.

Initially, a logic of equivalence dictated the ideal diet for the healthy, while a logic of opposition was used to prescribe foods for the sick. Thus, healthy people, those with the ideal balance of hot and moist qualities, were to eat food of their like. In contrast, the unhealthy, or those with extreme temperaments, were to compensate for their humoral imbalance – someone driven to excessive dryness was thought to benefit from eating moist foods, for example. In the sixteenth century, the logic of opposition became the one and only dietetic rule, as the notion that opposed qualities contributed to equilibrium in the body took hold.¹⁰

More generally, the nutritional value of food was governed by a logic of similitude, much like that which served as the foundation of the Great Chain of Being. By virtue of their hot and moist humoral qualities, organisms located in close proximity to the human

9. B. Laurioux, *Les livres de cuisine médiévaux. Fascicule 77*. (Turnhout, Belgium: Brepols, 1997); T. Scully, 'Mixing it Up in the Medieval Kitchen', in M.-J. Arn (Ed.), *Medieval Food and Drink. Acta of the Center for Medieval and Early Renaissance Studies XXI* (Binghamton, New York: Center for Medieval and Early Renaissance Studies, 1995).

10. K. Albala, *Eating Right in the Renaissance* (Berkeley: University of California Press, 2002); Porter, *Disease, Medicine and Society*; B. Turner, *Regulating Bodies: Essays in Medical Sociology* (London: Routledge, 1992).

body in the Great Chain of Being were thought to possess enhanced nutritional value as foods, relative to those with more dissimilar qualities. Thus, animals were generally more nutritious than plants, mammals more so than fowl, and these more than fish. Another core property of foods, however, was their digestibility, understood as the capacity of organisms to transform environmental humours into easily digestible material. Based on the principle that the similar attract, while the dissimilar repel,¹¹ organisms living in the air were also thought to be the least strenuous on the body to digest, as air imparted to them its hot and moist qualities. This category included not only airborne animals, but also earthbound animals living at relatively elevated altitudes,¹² as well as plant matter growing on trees, for it ‘rests on air,’ as opposed to those growing on or in the earth.¹³ Digestibility being the most important quality of foods, these plants and animals were held in the highest regard.¹⁴

But even nobility could not dine exclusively on the noblest of plants and animals, so the recipes of

11. Albala, *Eating Right*, 71.

12. B. Platina, *Platina. On Right Pleasure and Good Health* [1475]: *A Critical Edition and Translation of De honesta voluptate et valetudine*, trans. M. E. Milham (Tempe, Arizona: Medieval & Renaissance Texts & Studies, 1998), 229.

13. J.-L. Flandrin, ‘From Dietetics to Gastronomy: The Liberation of the Gourmet’, In Flandrin & Montanari (Eds.), *Food: A Culinary History*.

14. As these foods tended to have a high economic as well as symbolic value, access to them was essentially exclusive to the social elites (J.-L. Flandrin, ‘Seasoning, Cooking and Dietetics in the Late Middle Ages’ in Flandrin & Montanari (Eds.), *Food: A Culinary History*).

medieval and early modern cookbooks commonly instructed on the Old Dietetic practice of compensating for the use of less favourable foods by adding ingredients with beneficial humoural qualities, so as to improve the overall therapeutic value of the dish.¹⁵ It is for this reason that medieval cookery was characterized by an abundant use of spices, especially cloves, cinnamon, nutmeg, ginger, and saffron, for these spices were deemed to be hot and dry.¹⁶ Even more than these ingredients, medieval cookery was especially marked by a widespread and prolific use of sugar, then considered a spice. Sugar being the only spice with hot and moist qualities, the ideal qualities

15. See L. de Casteau, *Ouverture de cuisine* (Liège: Leonard Streel Imprimeur iuré, 1604); F. P. de La Varenne, *Le Cuisinier françois* [1651] (Paris: Chez Pierre David, 1654); Platina, *On Right Pleasure*.

16. There is no historical evidence or logical support for the common contemporary assumption that spices were primarily used to mask the flavour of spoiled food (e.g. S. Mintz, *Sweetness and Power: The Place of Sugar in Modern History* [New York: Viking, 1985]). Medieval cookbooks do not support the theory, as their contents do not suggest that cooks were commonly beset by the problem of having to make use of spoiled food, nor are spices cited for this purpose (T. Peterson, 'The Arab Influence on Western European Cooking', *Journal of Medieval History* 6, 1980: 317–40, 320). Moreover, given that spices were extraordinarily expensive by contemporary standards, it seems unreasonable that those wealthy enough to afford the large quantities of spices reportedly used would have not been able to also procure fresh food (Peterson, 320; W. Schivelbusch, *Tastes of Paradise: A Social History of Spices, Stimulants, and Intoxicants* [New York: Vintage, 1993], 6). Lastly, just like the consumption of noble plants and animals, any abundant use of spices would also have inevitably served a symbolic purpose as a means of social distinction (Albala, *Eating Right*; Flandrin, 'Seasoning, Cooking and Dietetics').

of the healthy human body,¹⁷ it was more widely and abundantly used than any other spice.¹⁸

THE SEPARATION OF THE SWEET FROM THE NON-SWEET TASTES

The rules for cooking and eating, however, began to undergo significant transformation in early modernity. Corresponding with the gradual erosion of belief in traditional scholastic medicine, the content of cookbooks published in France in the late seventeenth century demonstrates the declining influence of the Old Dietetics over the practice of cookery.¹⁹ These new books still had references to the Old Dietetics, but they were now accompanied by new ideas,²⁰ the most significant of which was that taste, not just humoural balance, was a legitimate factor in choosing one's food,

17. See Platina, *On Right Pleasure*. Platina, among other authors, called 'warm' what are otherwise referred to as 'hot' qualities.

18. B. Laurioux, B. *Les livres de cuisine médiévaux*. Fascicule 77 (Turnhout, Belgium: Brepols, 1997). For recipes, see M. Black, *The Medieval Cookbook* (London: British Museum Press, 1992), Platina, *On Right Pleasure*; D.E. Scully & T. Scully, *Early French Cookery: Sources, History, Original Recipes and Modern Adaptations* (Ann Arbor: The University of Michigan Press, 2002), B. Wheaton, *Savoring the Past. The French Kitchen and Table from 1300 to 1789* (Philadelphia: The University of Pennsylvania Press, 1983).

19. Cookbooks published in France are representative of a much broader phenomenon taking place in Europe. This is to a large extent because, prior to modernity, distinctions in cuisine were based primarily on conditions of socio-economic and regional availability, rather than national tradition.

20. J-L. Flandrin, *L'Ordre des mets* (Paris: Editions Odile Jacob, 2002); P. Hyman & M. Hyman, 'Printing the Kitchen: French Cookbooks, 1480–1800' in Flandrin & Montanari (Eds.), *Food: A Culinary History*.

and that taste, just like humoural balance, varies from individual to individual.²¹ Related to these notions of taste and individual variability, books of this period also reveal a diversity of opinions on health issues, certainly absent during the dominance of scholastic medicine, and an increased attention to regional variation as local habits gained relevance in the theorization of rules for cooking. In accordance with these changes, spices, particularly sugar, became much less widely used at the time.²²

The liberation of the perceptual and theoretical understanding of food from medical concerns was a gradual process, but by the end of the seventeenth century, cookbooks rarely referenced the humoural notions of the Old Dietetics, instead instructing the selection and combination of ingredients on the basis of their tastes. The practice of cookery began to be framed as an *art*,²³ and the consumption of foods as governed by personal preference rather than medicinal function. Thus, a new perceptual and theoretical understanding of food developed which, in aggregate, was eventually codified as modern French cuisine. This culinary system moved away from the abundant use of spices and preeminence of the sweet taste that characterized

21. L.S.R., *L'art de bien traiter* [1674] (Paris: Éditions Payot & Rivages, 1995).

22. Albala, *Eating Right*.

23. See Massialot, *Le cuisinier roïal et bourgeois* [1691] (Paris: Chez Charles de Sercy, 1698), 6 in Preface.

medieval cooking, to incorporate ingredients that were not commonly used in the middle ages (including white meats, fruits, and vegetables), novel basic preparations with butter and cream, and a variety of new techniques and rules.²⁴ By the eighteenth century, at a time when a whole range of scientific and artistic disciplines gained autonomy and became self-standing areas of activity,²⁵ cookery had ceased to be a dietetic subcategory of medicine, instead constituting a category of its own within the arts.²⁶

Yet, the declining influence of the theory of humours corresponding with the autonomization of cuisine from medicine can only serve to explain why spices and sweet ingredients were used more sparingly, but not why the sweet came to be perceived as dissociated from the non-sweet tastes such that the two categories constituted a fundamental dichotomy around which the emergent culinary system was structured.²⁷ Indeed, a more general and profound epistemic shift in the

24. Albala, *Eating Right*, 111; J-R. Pitte. *French Gastronomy: The History and Geography of a Passion* (New York: Columbia University Press, 2002).

25. A. Abbott. *The System of Professions: An Essay on the Division of Expert Labor* (Chicago: The University of Chicago Press, 1988).

26. Prior to the eighteenth century, cookbooks were catalogued together with dietetic treatises under the category of medicine. In 1764, in the *Traité des livres rares* ('Treatise of rare books'), cooking was classified as art for the first time (Flandrin, 'From Dietetics to Gastronomy', 431).

27. V. Leschziner, 'Epistemic Foundations of Cuisine. A Socio-Cognitive Study of the Configuration of Cuisine in Historical Perspective', *Theory & Society* 35, 2006: 421-43.

way phenomena were apprehended²⁸ was required to make the very construction of a dichotomy of tastes conceptually possible. Thus, a confluence of factors, ranging from the biological attributes of tastes and taste receptors, to economic, institutional, and epistemic changes, must be called on to explain why a dichotomy of tastes was constructed in early modernity, why the sweet and non-sweet categories served this purpose, and why this dichotomy became so central in structuring the understanding of food, the creation of dishes, and the organization of the meal.

Recalling the two models that we described earlier, the Great Chain of Being and the theory of humours, is instrumental here to grasp the epistemic structure within which medieval cookery existed. The Great Chain of Being (see Figure 1) represents two attributes that characterize pre-modern thought: the view of the universe as a continuum, and the interest in vague relations of similitude between things, constructed on the basis of resemblance of form.²⁹ The theory of humours, however, as well as the classical notion of the four elements (see Figure 1), symbolizes the very

28. M. Foucault [1970], *The Order of Things: An Archaeology of the Human Sciences* (New York: Vintage Books, 1973).

29. Foucault, *The Order of Things*; C. Lévi-Strauss [1962], *The Savage Mind* (Chicago: The University of Chicago Press, 1966); G. Lloyd, *Polarity and Analogy: Two Types of Argumentation in Early Greek Thought* (Cambridge: Cambridge University Press, 1966).

different cognitive tendency to code phenomena into binary sets.³⁰

Though the tendency to construct binary sets may seem inconsistent with the claim that medieval thought was characterized by an attention to relations of resemblance and a view of the cosmos as a continuum, dichotomies were ultimately subsumed to the principle of equivalence and the view of the natural world as a continuous whole.³¹ Furthermore, one must bear in mind that, prior to the seventeenth century, relations of identity, similitude, opposition and difference were rather vaguely understood, and little attempt was made to distinguish the nature of one type of relation from another beyond a matter of grading of the degree of closeness between objects denoted by each type of relation.³² The seventeenth century witnessed an epistemic shift that entailed a move away from the organization of phenomena by means of vague relations of resemblance of form towards the ordering of phenomena through the ascertainable presence or

30. M. Douglas, *How Institutions Think* (Syracuse, New York: Syracuse University Press, 1986); Lévi-Strauss, *The Savage Mind*; Lloyd, *Polarity and Analogy*; M. Sahlins, *Culture and Practical Reason* (Chicago: The University of Chicago Press, 1976), *Historical Metaphors and Mythical Realities: Structure in the Early History of the Sandwich Islands Kingdom* (Ann Arbor: University of Michigan Press, 1981), *Islands of History* (Chicago: The University of Chicago Press, 1985), *Culture in Practice: Selected Essays* (New York: Zone Books, 2000).

31. Foucault, *The Order of Things*; Lloyd, *Polarity and Analogy*; Lévi-Strauss, *The Savage Mind*.

32. Douglas, *How Institutions Think*; Lloyd, *Polarity and Analogy*.

absence of physical properties to establish relations of difference,³³ a requisite for the principled construction of dichotomies. Whereas prior to modernity, the ordering of natural phenomena ultimately entailed matters of grading, this epistemic shift represented the emergence of a very different cognitive style of establishing boundaries between phenomena.³⁴

While this change in the nature of classification was required for the construction of principled dichotomies, another condition was necessary to establish a dichotomy of *tastes*: a higher regard for sensorial experience. Being subject to bodily needs and temperaments, and affected by the environment, the senses had been considered too variable a means for acquiring knowledge during medieval times.³⁵ By the seventeenth century, the sense of taste, along with that of smell, was still not deemed a sufficiently reliable tool to be employed scientifically. As recognition of the validity leant by

33. This shift occurred with the development of experimental sciences, associated with which was a new interest in the study of the constitutive properties of phenomena (rather than their form), and the pursuit of analytic explanations (Foucault, *The Order of Things*). In short, scientific endeavours moved away from the construction of taxonomies toward the explanation of phenomena, and therefore from the exhaustive classification of objects on the basis of resemblances to the search for causes and reliance on judgment in selecting and synthesizing relevant properties (Ibid., 162).

34. See Douglas, *How Institutions Think*. L. Fleck (*Genesis and Development of a Scientific Fact* [Chicago: University of Chicago Press, 1979]) characterizes the emergence of a new form of classifying and understanding phenomena as the emergence of a new thought style.

35. See Foucault, *The Order of Things*; A. Hauser, *The Sociology of Art* (Chicago: Chicago University Press, 1982); C. Korsmeyer, *Making Sense of Taste: Food and Philosophy* (Ithaca, NY: Cornell University Press, 1999).

rigorous empiricism grew in early modernity, however, the senses were gradually accepted as a dependable means for acquiring knowledge, thereby allowing a dichotomy of taste categories to exist as a possible template for the perception and theorization of food. To understand why the dichotomy was constituted by the sweet and non-sweet tastes in particular, a dissociation that was absent in medieval cookery, one must examine the socio-historical, chemical, and biological significance of these categories.

A transformation in the institutional position of sweets within cuisine occurred in early modernity that is significant in explaining the dissociation of the sweet from the non-sweet tastes. In the middle ages, sweets were classified as preserves in a category that encompassed all sorts of non-perishable items, from fruits cooked with honey or sugar, to pickles made with vinegar, mustards, spiced wines, soaps and perfumes. Preserves were a category separate from the rest of foods because they were deemed therapeutic more so than nourishing, and used to improve the overall humoral qualities of dishes.³⁶ The distinction of preserves from the rest of foods had a solid institutional basis, as preserves were not made by cooks, but by a specialist, the *officier de bouche*, and they were not

36. M. Hyman, 'Les "menues choses qui ne sont de neccessité": Les confitures et la table' in C. Lambert (Ed.), *Du Manuscrit à la table. Essais sur la cuisine au Moyen Âge et répertoire des manuscrits médiévaux contenant des recettes culinaires* (Montréal: Les Presses de l'Université de Montréal, 1992), 282.

featured in cookbooks but in their own specialized books.³⁷ Though the sweet taste was not yet conceptually distinguished from the other basic tastes within the category of preserves, this specialization represents the origin of the institutional separation of the sweet from the non-sweet, a separation that continues to this day, with distinct careers for chefs and pastry chefs,³⁸ and distinct recipe books.

Certain economic conditions in early modernity also contributed to the gradual dissociation of the sweet from the other basic tastes. With the new European colonies in tropical countries, sugar turned from a luxury good into an inexpensive and readily available commodity.³⁹ This new level of abundance, together with the greater chemical combinatorial flexibility of sugar relative to the common sweeteners of the medieval period, particularly honey,⁴⁰ encouraged experimentation with sweets. During this period, sweet-tasting dishes therefore moved slowly from their ubiquitous presence throughout the meal towards a more restricted place at the end of the meal,

37. Flandrin, *L'ordre des mets*, 133; Hyman, 'Les "menues"', 282; Hyman & Hyman, *Printing the Kitchen*, 395.

38. See P.P. Ferguson & S. Zukin, 'The Careers of Chefs' in R. Scapp & B. Seitz (Eds.), *Eating Culture* (Albany: State University of New York Press, 1998), 98.

39. Mintz, *Sweetness and Power*.

40. Honey had been widely used in the middle ages because it was what sugar became in modernity: inexpensive and readily available.

circumscribed to entremets and desserts by the eighteenth century⁴¹ and solely desserts later on.

This transformation in the rules for serving food whereby sweet-tasting dishes became institutionally separated from the others in early modernity reinforced the conceptual dissociation of this taste from the non-sweet tastes. In the middle ages, table service had been structured in a varying number of sequential *services*, each of which consisted of multiple sorts of dishes that blended all basic tastes and were served at the table at the same time, including hors d'oeuvres, appetizers, soups, roasts, sweets.⁴² This was the so-called *service à la française*, generally associated with the French court and its ostentatious customs, wherein a diner's place at the banquet table governed the dishes the diner was to consume. This serving style was replaced in the mid-nineteenth century by the *service à la russe*,⁴³ still in place today, wherein the meal is structured around *courses*, each of which consists of one dish, served in a sequence from appetizer, to entrée, and dessert.

41. Flandrin, *L'Ordre des mets*, 139.

42. Flandrin, 'Structure des menus', 191; *L'Ordre des mets*, 13-15.

43. The *service à la russe* acquired this name due to its introduction in France by the Russian Ambassador to Paris under the First Empire (P.P. Ferguson, *Accounting for Taste: The Triumph of French Cuisine* [Chicago: The University of Chicago Press, 2004], 89). It was also institutionalized in Russia under Peter the Great (D. Goldstein, 'Gastronomic Reforms under Peter the Great: Toward a Cultural History of Russian food', *Jahrbücher für Geschichte Osteuropas* 48, 2000: 481-510, 506).

Scholars generally account for the shift to the Russian serving style by the socio-political changes brought about by the French revolution.⁴⁴ The more egalitarian and simpler table service of the Russian style was better suited to a bourgeois society, and to the preparation, service, and consumption of food in the restaurant, the emergent social space devoted to fine dining.⁴⁵ While these factors influenced the demise of the *service à la française*, they do not explain why the serving style that replaced it sought to separate sweet from non-sweet tastes across a sequence of individual dishes.⁴⁶

One must recall the changing epistemic configuration in early modernity to understand the motivation for this characteristic of the *service à la russe*. With no dissociation between the sweet and the other basic tastes either within a dish, within a *service*, or across the meal, the *service à la française* had corresponded with the principles reigning over medieval cookery. It was especially well suited to the Old Dietetic concern for maintaining an ideal humoural balance, in

44. J.-P. Aron, *The Art of Eating in France: Manners and Menus in the Nineteenth Century* (London: Peter Owen, 1975); N. Elias, *The Civilizing Process: Sociogenetic and Psychogenetic Investigations* (Oxford, Malden, MA: Blackwell, 2000); S. Mennell, *All Manners of Food: Eating and Taste in England and France from the Middle Ages to the Present* (Urbana, Chicago: University of Illinois Press, 1996).

45. R. Spang, *The Invention of the Restaurant: Paris and Modern Gastronomic Culture* (Cambridge, MA: Harvard University Press, 2000).

46. V. Leschziner, 'Epistemic Foundations of Cuisine': 421-43.

that serving multiple dishes at the same time allowed for each diner to select the food that was prescribed for their humoral idiosyncrasies.⁴⁷ However, this serving style became unwarranted and even impractical in early modernity, as the goal of cuisine was no longer associated with medical concerns but with the experience of taste. The *service à la russe* facilitated this growing aesthetic appreciation of food because, by bringing dishes from the kitchen to be eaten promptly, rather than having them all sit at the table for hours throughout the meal, it prevented food from losing its temperature and flavour before being consumed.⁴⁸

Moreover, the series of courses in the *service à la russe* offered perceptible temporal and spatial dimensions along which to anchor the emergent conceptual dissociation of taste categories. The sweet taste became temporally separated from the others in that it was consigned to the end of the meal, subsequent to the appetizer and entrée, courses that became predominantly non-sweet-tasting. It was spatially separated from these courses in that the table was cleared before the dessert was served. Indeed, the word ‘dessert’ has its etymological origin in the traditional practice of *desservir la table* (to remove the dishes), to let diners stand up from the table, converse or dance, to come

47. Flandrin, ‘From Dietetics to Gastronomy’, 420; Leschziner, ‘Epistemic Foundations of Cuisine’, 437.

48. Flandrin, *L’Ordre des mets*, 148.

back to have sweet dishes on a newly set table. This institutionally imposed spatial and temporal separation of the sweet-tasting course from the rest of the meal therefore reinforced the conceptualization of the sweet as dissociated from the non-sweet tastes.

The conceptual dissociation between the sweet and non-sweet tastes engendered by the courses of the *service à la russe* highlights the fact that there is not only a dichotomous relation between the sweet and non-sweet tastes, but that there is also a relation of markedness, wherein the sweet is the marked term and the non-sweet the unmarked.⁴⁹ In a relation of markedness, the marked term is defined with a high level of specificity and therefore occurs in delimited circumstances, while the unmarked term is defined more vaguely, and may even be a residual category, and is therefore something that appears more frequently.⁵⁰ In the cognitive structure of modern French cuisine, whereas the sweet is defined with precision (the presence of sugars) and is circumscribed to desserts, the non-sweet is indeed a residual category whose appearance is less restricted. This relation of markedness is relevant in considering

49. L. Waugh, 'Marked and Unmarked: A Choice Between Unequals in Semiotic Structure', *Semiotica* 38, 1982: 299–318, 301. The notion of markedness originates in the structural linguistics of Trubetzkoy (*Principles of Phonology* [1949] [Berkeley, CA: University of California Press, 1969]) and Jakobson (*Selected Writings, Vol. I. Phonological Studies* [The Hague: Mouton, 1971]).

50. As Waugh explains ('Marked and Unmarked', 307), the relation of markedness is not a matter of absolutes, but rather something that is constantly subject to redefinition. Marked terms acquire their meaning as they relate to unmarked terms and to the context more generally.

some of the biological factors that may have contributed to a conceptual dissociation between these two taste categories, rather than others.

First, while it is not unique in this regard, the sweet does hold a special status as one of the basic tastes that is intrinsically perceived as pleasant.⁵¹ Whereas the unpleasant tastes⁵² are generally indicators of toxicity or potentially harmful acidity, and therefore serve to moderate or deter the consumption of substances which exhibit them, the pleasant tastes can be used to infer the macronutritional content (in terms of fats, proteins, and carbohydrates) of substances which exhibit them, and facilitate the development of dietary preferences for these substances as foods.⁵³ In short, the hedonic properties of the basic tastes serve adaptive physiological functions with behavioural consequences that inevitably contribute to the perception and theorization of foods. In particular, the positive hedonic value connected to the sweet taste serves to promote the detection and consumption of sugars, the most basic and fundamental sources of metabolic energy.⁵⁴

51. Umami and saltiness are similarly classified as pleasant tastes (J. Chandrashekar, M. Hoon, N.J.P. Ryba, C.S. Zuker, 'The receptors and cells for mammalian taste', *Nature* 444, 2006:288-94, 289; A. Carleton, R. Accolla & S.A. Simon, 'Coding in the mammalian gustatory system', *Trends in Neurosciences* 33, 2010: 326-34, 331).

52. Bitterness and sourness are classified as unpleasant tastes (Carleton et al).

53. Chandrashekar *et al.*

54. *Ibid.*, 289.

Even bereft of their sensorial effects, the nutritional significance of sugars independently contributes to a preference for sweet-tasting foods, establishing them as the most favourable dietary material. Recently published laboratory research shows that rodents prefer sweet relative to other pleasant-tasting (i.e. nutritious) foods even when they cannot perceive the tastes.⁵⁵ The findings suggest that the regulation of glucose metabolism resulting from the ingestion of sugars is sufficient to stimulate brain dopamine centres, thereby developing and reinforcing a behavioural preference for sugars over other available macronutrients.⁵⁶ In effect, when sensorial differences are removed, the physiological consequences of consumption alone are sufficient to establish a preference for sweet relative even to other pleasant-tasting foods. Thus, the sweet taste is indeed marked relative to the non-sweet tastes, in that the nutritional significance of sweet-tasting foods, combined with their intrinsic pleasantness, is sufficiently strong to elevate the behavioural preference for these foods more than for foods of any other taste, facilitating a conceptual dissociation of the sweet from the non-sweet tastes. The institutional separation of sweet-tasting foods from the rest of dishes in a meal

55. X. Ren, J.G. Ferreira, L. Zhuo, S.J. Shammah-Lagnado, C. Yeckel & I.E. de Arujo, 'Nutrient selection in the absence of taste receptor signaling', *The Journal of Neuroscience* 30, 2010: 8012-23.

56. Ibid.

in modern French cuisine may be associated with this natural coveting of dietary sugars.

Another property of the sweet taste renders it a particularly likely candidate for dissociation from the other basic tastes in modern French cuisine: the sweet is both the least suppressed and the strongest suppressor of other basic tastes when they appear in combination.⁵⁷ Indeed, when individuals are made to sample all possible binary, ternary and quaternary mixtures of sweet with sour, salty, and bitter tastes, and asked to attribute individual intensity ratings to each of the basic tastes appearing in each sample, they invariably perceive sweetness as the dominant taste.⁵⁸ Notably, the perceptual bias for the experience of sweetness occurs at the expense of perceiving tastes that indicate potentially harmful qualities of a food,⁵⁹ suggesting that the detection and consumption of macronutrients, particularly of dietary sugars, supersedes the detection and avoidance of toxins as the primary function of the gustatory system.⁶⁰ Moreover, the finding indicates a possible perceptual motivation for the dissociation of the sweet from the non-sweet tastes, as it implies

57. B.G. Green, J. Lim, F. Osterhoff, K. Blacher & D. & Nachtigal, 'Taste mixture interactions: Suppression, additivity, and the predominance of sweetness', *Physiology & Behaviour* 101, 2010: 731-37.

58. Ibid.

59. High levels of salt consumption heighten the risk of hypertension, and as we mentioned previously, bitter and sour tastes are indicators of potential toxicity (Chandrashekar et al.; Green et al.).

60. See Chandrashekar et al.

that this dissociation, more than any other between a singular marked taste and residual group of tastes, better enables the perception of all tastes. Insofar as taste was gaining appreciation as a standard of judgment during the transition to modern French cuisine, the dissociation of the sweet from the non-sweet tastes was an ideal fit, and itself functioned to reinforce this conceptual organization of the basic tastes.

A number of factors therefore influenced the dissociation of the sweet from the non-sweet tastes, including the socio-historical, chemical, and biological significance of these categories. As we argue below, this dichotomy remains a pervasive cognitive structure in many contemporary high cuisines influenced by the French style, even as a trend is burgeoning among innovative chefs in high-end restaurants to experiment with non-sweet ingredients in desserts.

THE SWEET VERSUS NON-SWEET TASTES IN CONTEMPORARY HIGH CUISINE

In the previous section, we examined a transformation in the rules for the selection, preparation, service, and consumption of food, which led to a perceptual and theoretical dissociation of the sweet from the non-sweet tastes. We suggested that the autonomization of culinary practices, particularly from medical concerns, allowed for taste to gain appreciation as an organizing

principle in cuisine. A general epistemic shift in the way phenomena were classified, specific economic and institutional conditions, the chemical properties of certain foods, and certain biological attributes of the basic tastes, we argued, were all important factors in the perceptual and theoretical dissociation of the sweet from the non-sweet tastes. Sweet-tasting foods were thus separated from those with non-sweet tastes, and were consigned to the end of the meal, thereby reinforcing the institutionalization of the marked relationship between the sweet and non-sweet tastes. This relationship between the two categories had a central role in structuring the culinary system that was eventually codified as modern French cuisine, a system that still informs prescriptions and proscriptions across many contemporary Western culinary styles.

Indeed, there is plenty of evidence that the dissociation of the sweet from non-sweet tastes continues to structure Western cuisines in the organization of contemporary cookbooks and restaurant menus, where dishes that are preeminently sweet are essentially consigned to their own separate section, desserts. To be sure, sweet ingredients do appear in dishes outside of the realm of desserts, such as in cold appetizers or with braised meats, but many of these dishes can be traced back to medieval cookery (melon and prosciutto or *duck à l'orange* are good examples), and so are holdovers from older times rather than products created within

the modern culinary structure. Regardless of whether the dishes that combine sweet and non-sweet tastes originate in medieval cookery or not, such dishes are arguably exceptions in a cuisine that is structured around the dissociation of the sweet from the other basic tastes, wherein foods are essentially perceived to be of either sweet or non-sweet character.⁶¹

There is a trend, however, developed in contemporary high-end restaurants in the past few years, that combines sweet and non-sweet ingredients in a way that is entirely novel. In contrast to the incorporation of sweet ingredients into the realm of the non-sweet, the practice that is to be traced back to medieval custom (and beyond), the new trend sees the non-sweet encroaching upon the sweet. A few years ago, contemporary elite chefs working within Western cuisines began to create innovative desserts through the combination of non-sweet ingredients, not typically used in desserts, with more standard sweet components. These chefs incorporate herbs such as thyme or rosemary, or spices such as pepper or cumin; they

61. In contrast to medieval cookbooks, contemporary books provide evidence of the role of the dichotomy between sweet and non-sweet tastes as an organizing logic of cuisine. Not only are books structured around this dichotomy, but also if there are recipes that combine sweet ingredients with non-sweet ingredients, authors generally preface them with a comment that denotes the extra-ordinary nature of the recipe. In addition, interviews with elite chefs conducted by one of the authors (see V. Leschziner, 'Kitchen Stories: Patterns of Recognition in Contemporary High Cuisine', *Sociological Forum* 22, 2007: 77-101) also provide evidence that combining sweet with non-sweet ingredients is a practice that, even if growing in popularity, is perceived as out of the ordinary.

substitute fruits in traditional recipes with ingredients like parsnips or tomatoes, or replace cream or ricotta with strong-tasting cheeses such as a Roquefort or aged Cheddar. A widely popular ingredient in elite restaurants in the past few years, bacon has now made appearances in cakes, cookies and ice cream.

Besides the culinary novelty of these creations, the practice of making desserts with non-sweet ingredients typically consigned to non-sweet courses represents an innovative pattern of cognition with regard to the relations between taste categories. In contrast to the medieval custom of adding sweet ingredients in all sorts of dishes, in the contemporary combination of the sweet and non-sweet, it is the unmarked category (the non-sweet) that moves into the marked one (the sweet). Since membership in the residual category easily outstrips membership in the precisely marked category, a vast number of combinatorial possibilities exist for this innovative practice in contemporary Western cuisines.

However, that the practice of using non-sweet ingredients in desserts innovates on convention, both culinary and cognitive, and that there is great potential for this practice, is not to be taken as an indicator of a radical change in the underlying cognitive structure of modern cuisine. This is not only because using non-sweet ingredients in desserts is, for the moment, only a trend in elite restaurants – for it may, in time, trickle down and become socially widespread, just as the

custom of eating a sweet course at the end of the meal did in early modernity. Rather, if this trend is unlikely to change the structure of cuisine as it was formed in early modernity, it is because of the biological, socio-cognitive, and institutional attributes of the sweet taste. Insofar as sweetness is the strongest suppressor and least suppressed of the basic tastes when appearing in combination, using non-sweet ingredients in a dessert will be largely ineffective in changing the ultimately sweet character of the dish. As it follows, the addition of non-sweet ingredients into desserts is not likely to alter the marked character of sweetness, and therefore the cognitive and institutional separation of this basic taste from the others.

Examining this recent trend in contemporary cuisine sheds light on two important arguments put forth in this article. First, in purposefully challenging the dissociation between the sweet and non-sweet tastes, the current trend of using non-sweet ingredients in desserts actually demonstrates the extent to which this dissociation has a central role in structuring the selection, preparation, service and consumption of food in modern cuisine. Second, that this trend is unlikely to change the structure of cuisine as it was formed in early modernity, indicates the significance of analyzing cognitive structures, along other more commonly studied factors, to understand how and why systems of rules that govern areas of social activity develop, endure, and change.

LIGHT CYAN BLUE

Breast of chicken, one per serving

Vanilla ice cream (high quality real vanilla, not cheap artificial stuff)

Vanilla extract or, preferably, beans

Frozen orange juice concentrate

Brown sugar

Corn starch

The breast of chicken can be with or without bone, or may be half of a split chicken, including a leg, etc. – it really doesn't matter. What is important is that the skin and fat remain.

For the orange sauce, in a small pot, on low heat, warm up half a can of the orange juice concentrate, mixing in a teaspoon or two of brown sugar. The sauce should be sour, not sweetened with the brown sugar; the sugar is only there to add a touch of flavour, not sweetness. Add corn starch to the sauce to thicken it until the viscosity is similar to thick molasses. Maintain on a very low heat or otherwise keep warm until serving.

Grill the chicken to preference. However, the skin should be crispy and the meat should remain very fatty; retain the fat, rather than draining, as needed.

The vanilla ice cream should be very cold and hard, such that it scoops into balls and will take longer to melt.

The chicken should be served hot (but not excessively so), right off the grill (with a little pouring of fat over it, if desired), topped immediately with one or two scoops of ice cream sprinkled with just a bit of vanilla, this all topped with enough orange sauce to cover part of the chicken and ice cream but not to drown it. Speed is of the essence here, as the idea is for the diner to be able to experience the contrasting heat of the chicken and the coldness of the ice cream for as long as possible before temperatures equalize.

Serve with a glass of light (wheat) beer flavoured with lemon, and a glass of red wine.

The Human Sensoria and a Synaesthetic Approach to Cooking

Sean A. Day,
with contributions courtesy of
James Wannerton

[T]hat perceptions are not absolutely determinate and singular is obvious from the fact that each sense is an abstracting mechanism. Sight by itself informs us only of colors and forms. No one can pretend that the images of sight are determinate in reference to taste. They are, therefore, so far general that they are neither sweet nor non-sweet, bitter nor non-bitter, having savor nor insipid.

CHARLES SANDERS PEIRCE, 1868

THE SENSES, COOKING, FOOD, AND EATING

Which sensory modalities are involved in ‘eating’? ‘Flavour’ involves far more than just the sense of taste, or even the combination of taste with smell; we might also consider at least the components of temperature (which divides into at least two separate senses), vision (which itself is comprised of at least four

components),¹ hearing (which, in humans, separates speech sounds, musical sounds, and ‘other’ sounds), touch, pain, and kinetics.

This opens up the question of how many ‘senses’ there are as per the medical sciences. But, equally and perhaps more importantly, it raises the question of how many senses a given particular culture counts, how those senses are integrated, and, for that group of people, what the hierarchy of the senses is. The Aristotelian paradigm, for instance, which still infuses much of our thinking, holds that there are five senses, ranked from most to least important as follows: sight; hearing; smell; taste; and touch. However, it should also be noted that in *De Anima* ‘taste’ and ‘seeing’ are defined as forms of ‘touch’.² This model was later reaffirmed by Descartes. Thomas Aquinas, however, did argue for ‘taste’ to be placed higher than ‘smell’ (along with ‘touch’ ranking at the top, within certain structures), and Isidor of Seville attempted to (re-)assert the connection of *sapor* (‘taste’) with *sapere* (‘knowledge’) and *sapientia* (‘wisdom’).³ Various Christian, Muslim and Jewish theologians equated touch with the body, and thus consequentially sex and lust; touch thus became deemed the most sinful or shameful of the senses.

1. See, e.g., S. Zeki, *A Vision of the Brain* (Oxford: Blackwell Scientific Publications, 1993).

2. See S. Stewart, ‘Remembering the Senses’, in D. Howes (ed.) *Empire of the Senses* (Oxford and New York: Berg, 2005), 59-69.

3. See R. Jütte, *A History of the Senses* (Malden, Mass.: Polity Press, 2005).

Since taste, unlike sight, hearing and smell, is also obtained via touching items, and thus also in direct contact with the world, taste also became sinful.

Yet, it is not too difficult for us to find other constructs of ‘the senses’. The Desana (Wirá), a Tukano people living in Columbia, for example, are extremely careful to discern between their five different senses of vision (or sight), smell, taste, hearing, and touch. However, for the Desana, what is essential to all of this is how the senses integrate in concordance with their cosmology, with a main focus being on colours.⁴ As in many cultures throughout the world, Desana life is infused with a learned system of colour symbolism that operates synaesthetically. Thus, for example, conceptually, combining a certain colour with a certain temperature will result in producing a specific odour; that is, ‘odour’ is comprised of colour and temperature. Or, the sound of a small bone flute is perceived as red, hot, and having a male odour; these concepts combine such that a tune played on the flute evokes youthful happiness and the taste of a fleshy fruit, deemed very erotic by young women.⁵ Flavour is thought to derive from odour, but is deemed less important;

4. See C. Classen, ‘McLuhan in the Rainforest’, in Howes, *Empire of the Senses*, 147-63.

5. See, G. Reichel-Dolmatoff, *Amazonian Cosmos: The Sexual and Religious Symbolism of the Tukano Indians* Chicago: University Press, 1971; G. Reichel-Dolmatoff, ‘Cosmology as Ecological Analysis: A View from the Rain Forest’, *Man* 2, 1976: 307-18; G. Reichel-Dolmatoff, *Beyond the Milky Way: Hallucinatory Imagery of the Tukano Indians* (Los Angeles: UCLA Latin American Center Publications, 1978).

still, kin groups are differentiated by flavours.⁶ All of this integrates with the Desana's use of *Banisteriopsis caapi*, known as ayahuasca or yage, which contains harmine, harmaline, tetrahydroharmine, and the primary psychoactive component, dimethyltryptamine (with the addition of *Psychotria viridis*), combining to form a strong hallucinogen which frequently produces synaesthesia and sensory heightening.

Cooking is also conceived of as a colour process. Smoking meat is believed to transform the potentially dangerous yellow component of the meat into a safe red. After the meat is smoked it is cooked in a pot to render it an edible brown. The tripod structure used for smoking meat symbolizes this colour transformation: the lower part is said to be yellow, the grid in the centre is said to be red, and the upper part, from which the processed food is removed, is brown, the colour of edible food. Fire itself is said to contain the yellow of the sun and the red of the earth in its flames, and the blue of the Milky Way in its smoke, making it a symbol of cosmic energy.⁷

There have been numerous experiments which have shown quite conclusively that the perception of a flavour can be enhanced by the intensity of a colour, even when the colour is not of a typical natural or

6. G. Reichel-Dolmatoff, 'Desana Animal Categories, Food Restrictions, and the Concept of Colour Energies', *Journal of Latin American Lore*, 4, no. 2, 1978: 243-91.

7. Classen, 'McLuhan in the Rainforest', 157-8.

culture-based association with the flavour; given three beakers of solutions with equal amounts of strawberry flavouring, one coloured dark blue will be perceived as ‘stronger’ than one coloured faint blue, which in turn will be considered ‘stronger’ than a clear liquid.⁸ Likewise, you can trick someone into perceiving the flavour of a white wine as being that of a red wine just by dying it red.

However, while the focus on colour’s relationship to flavour is fairly common, other aspects of vision often get overlooked. For example, current research at the University of Edinburgh’s Department of Psychology suggests that humans have an innate or early-learned tendency to associate round or spherical objects with sweet and square, cubic objects with sour. This extended to experiments in which equally sweetened candies were considered to be sourer if shaped as cubes rather than spheres.⁹ We could extrapolate from this and, for example, consider the effects on the flavours of desserts served on round, triangular, or square plates.

Texture can also play a significant role: crunchy potato chips are different in flavour than soggy ones; there are reasons why certain pastas are served *al dente* or not; likewise for escargot and scallops. We could also

8. See, e.g., the episode ‘De smaak van moeders stem’, from the Dutch television series *Noorderlich*, for Donderdag 27 juni, 2002.

9. Simner et al. (forthcoming); preliminary findings from this research were presented by Julia Simner at the 8th Meeting of the American Synesthesia Association, Nashville, TN, Oct. 1 – 3, 2010.

look to the amount of masochistic pleasure induced by various chilies.

I present these issues so as to pose the following questions: What about when we create recipes where the edible creation is a spandrel¹⁰ or secondary outcome of the process? What if the recipe does not focus primarily on ‘taste’ or ‘smell’?

The purpose might, for example, be tactile, and in the preparation, not in the actual eating: Consider making mud pies. If you are quite involved in playing, there will often be a specific recipe, which needs to be followed rigidly in certain aspects, but that can be modified in others (e.g., four different varieties of ‘spices’, and three of ‘toppings’). The main attraction of making mud pies might be squishing the mud, or feeling the little chunks of twigs, stones, bugs, and other items integrated in them; or the movements involved in rolling out the pie ‘dough’ and then shaping it into form. One can then also play at eating the mud pies, but that is often secondary to the play of preparation – you play at ‘cooking’ more than ‘eating’. We can extrapolate from this to consider that almost all human cultures have foods meant to be eaten by hand – from Huli in the Southern Highlands of Papua New Guinea eating sweet potatoes, to Hoosiers in the Midwest US eating cheeseburgers and fries – where

10. See S. Gould, ‘The Exaptive Excellence of Spandrels as a Term and Prototype’, PNAS 94, Sept. 1997: 10750-55.

providing the proper tactile experience is an essential part of the preparation, or ‘cooking’, process.

Let’s next take a quick look at the attraction of the kinetic: In the United States, where I currently reside, there are few foods deliberately eaten live. There are, of course, various bacteria cultures, such as those in yogurt and cheeses, and there are also oysters. But bacteria and oysters don’t wriggle. Elsewhere in the world, eating live things is far more common. In Germany, for example, we find *Würchwitzter Milbenkäse*, with live mites, *Tyroglyphus casei*, which are consumed; these live mites, but usually in smaller quantities, may also be found in other cheeses, such as Spanish *Cabrales* cheese and French *Mimolette*. However, again, one usually cannot feel the mites moving around on one’s tongue while eating these cheeses. But then there is Italian *casu marzu*, cheese, which comes with *Piophilus casei* maggots; these may be large enough to feel wriggling on your lips and tongue, especially as the maggots are also known to leap distances up to 15cm.

With Korean *sannakji*, you can readily see and feel the chopped octopus wriggling in your mouth; the small octopuses may instead be served whole, so that you initiate the killing of the octopuses with your teeth, which is far wiser than swallowing them whole live. Similarly, there are Japanese *odori ebi*, ‘dancing shrimp’, *Pandalus borealis*; and Chinese ‘drunken shrimp’; but, although they are live, they are often served stunned

and non-moving. We could also mention Japanese *ikizukuri* and Taiwanese *Ying Yang* fish.

But these are all ‘fancy restaurant’ things, quite a bit different than the general hunter-and-gatherer’s grabbing up some termites and popping them into her mouth, or finding a good-sized spider or beetle and chomping into it. For about eighty percent of the world, insects and arachnids are still a part of ‘common-folk’ cuisine; for example, ants in traditional mole sauces, termites in the African Kalahari area, or locusts in Arabia. Yet insects or arachnids still haven’t appeared as the ‘secret ingredient’ on *Iron Chef*, or as a challenge item on *Top Chef*. As Tom Turpin, of Purdue University’s Entomology department points out,¹¹ shrimp, lobsters, and crabs, like insects and arachnids, are also crustaceans; these items turn up frequently on such shows. Turpin laments that the gourmet attitude seems to be ‘that if the creature lives in the sea it is edible, but if it lives on the land it is not’.

Tangentially, regarding the question of why we eat certain things, this also brings up the matter of eating things – such as worms, bugs, or spiders – for fun or on a dare. This also relates to such things as the Purdue Bug Bowl’s Cricket Spitting Contest,¹² at which many

11. <http://www.agriculture.purdue.edu/agcomm/newscolumns/archives/OSL/1994/January/011394OSL.html>.

12. <http://extension.entm.purdue.edu/bugbowl/events.html>.

(non-live, freeze-dried) crickets are unintentionally – or intentionally – consumed.

And, of course, from here we can consider the whole realm of aphrodisiacs, from absinthe to species of *Zygophyllum* and beyond.¹³ In terms of what we are looking at here, aphrodisiacs are an interesting group of items: With some, the intent is to provide pleasure via the flavour, which is then expected to be extended into erotic pleasure. With others, such as certain chilies, the intent is oral pain, or pain to the genitals or other body parts. Yet for others, the focus is mainly visual and tactile play, via the item's similarity to a penis, vulva, breast(s), or other body part(s). While there are very specific recipes for the precise preparation of many aphrodisiacs, the resulting flavour of the product might be insipid, horrendous, or nauseating – but that's not the point.

FLAVOUR-RELATED SYNAESTHESIAE

Synaesthesia¹⁴ is the general name for two sets (or 'complexes') of over sixty related cognitive traits. In the first set, 'sensorial synaesthesiae', stimuli to one

13. See, e.g., R. Stark, *The Book of Aphrodisiacs* (New York: Stein and Day, 1980).

14. The word 'synaesthesia' comes directly from the Greek συν- (syn-) 'union', and αἴσθησις (aisthesis) 'sensation', thus meaning something akin to 'a union of the senses'. 'Synaesthesia' is the British English spelling of the word; in American English, it is often spelled 'synesthesia', without the first 'a'. Both the American and British plural forms end with an 'e'.

sense, such as smell, are involuntarily simultaneously perceived as if by one or more other senses, such as sight and/or hearing. For example, the sounds of musical instruments might make one see certain colours, each colour specific and consistent with the particular instrument playing. Or the taste of espresso coffee could make one see a pool of dark green oily fluid about four feet away. One highly documented case of synaesthesia involved Michael Watson, ‘the man who tasted shapes’,¹⁵ who synaesthetically felt at or within his right hand shapes and textures corresponding to different flavours – the flavour of spearmint, for example, felt like cool smooth glass columns.

With the second group of synaesthesiae, which some call ‘ordinal sequence’ and ‘spatial sequence’ synaesthesiae, certain sets of things which individual cultures teach us to put together and categorize (and also usually serialize) in some specific way – like letters, numbers, or people’s names – also evoke some kind of sensory addition, such as a smell, colour or flavour. The most common forms of ordinal sequence synaesthesiae involve such things as coloured written letter characters (graphemes), numbers, time units, and musical notes or keys. For example, the synaesthete might see, about a foot or two before her, different colours for different spoken vowel and consonant sounds, or perceive numbers and letters, whether

15. See R. Cytowic, *The Man who Tasted Shapes* (New York: Putnam, 1993).

conceptualized or before her in print, as coloured. A friend of mine always perceives the letter 'A' as pink, 'B' as blue, and 'C' as green, no matter what colour ink they are printed with.¹⁶

Richard Cytowic posited diagnostic features of neurological synaesthesia;¹⁷ synaesthesia is: involuntary and must be elicited; durable; and generic regarding its perceptions. The majority (somewhere around 80% -85%) of synaesthetes who 'see things' do so 'inside the head', as if the image is projected onto a screen or just 'in the mind's eye'. The 'screen' is usually located 'on the inside of the forehead' or 'in the eyes', although for some synaesthetes it may be at the top of the head or even in the back, at the base of the skull. Or, for those in this group, there is instead a 'feeling of the colour'; that is, for example, the sound of middle C on a piano 'feels' red.¹⁸

For those who do see things 'out there', the images may range from a half metre or less away to fifty metres or more, although most are around the one-half to three

16. For more regarding the different types of synaesthesia, see S. Day, 'Some Demographic and Socio-cultural Aspects of Synesthesia', in L. Robertson, N. Sagiv, eds, *Synesthesia: Perspectives from Cognitive Neuroscience* (New York: Oxford University Press, 2005), 11-33; also <http://home.comcast.net/~sean.day/html/types.html>.

17. See R. Cytowic, *Synesthesia: A Union of the Senses* (New York: Springer-Verlag, 1989); see also the second edition (Cambridge, Massachusetts: MIT Press, 2002), 67-70.

18. See M. Dixon, *et al.*, 'Not All Synaesthetes are Created Equal: Projector versus Associator Synaesthetes', *Cognitive, Affective & Behavioral Neuroscience* 4, no. 3, 2004: 335-43.

metre range. Members of this latter group of synaesthetes are currently commonly called 'projectors'.¹⁹ It is possible for a multiple synaesthete to be both a projector of one or more types and a non-projector of other types, or even for a synaesthete to be both in regards to one type, varying between projecting and non-projecting with situations.

'Durable' here means that the associations and relationships stay the same; this is also known as 'consistency'. For example, if the sound of a piano is sky-blue, it always has been and always will be that synaesthetic colour. 'Generic' primarily pertains to synaesthetically perceived visual shapes. The shapes are basic geometrics, like circles, triangles, curves, spirals, clouds, or blobs, rather than complex structures such as, say, Winston Churchill's face, the Notre Dame cathedral of Paris, or the Chicago skyline.

Currently, there are two main theories as to the cause of congenital synaesthesia: the cross-activation theory and disinhibited feedback theory. The cross-activation theory, previously often called the 'adjacency' theory, proposes that congenital synaesthesia emerges from cross-activation of adjacent regions of the brain. For example, a region of the brain involved in identifying graphemes lies adjacent to region V4 of the visual cortex, which handles colour processing; cross-activation might result in 'coloured letter'

19. Ibid.

synaesthesia.²⁰ The cross-activation might be occurring due to atypical pruning of connections during infancy; that is, synaesthesia might be the result of neonatal retention²¹ of neuronal connections. The disinhibited feedback theory, on the other hand, proposes that synaesthesia results from a reduction in the amount of inhibition along neural pathways.²² The rate of feedback from association areas (e.g., the parietal lobe and limbic system) to primary sensory areas of the brain is usually regulated by a set balance of excitation and inhibition. However, if this rate were atypical due to developmental aberrance (genetic or epigenetic causes) or disrupted via drugs such as LSD or mescaline, synaesthesia might result. (I will note, though, regarding drug-induced synaesthesia, that while there are indeed cases both of flavour as the inducer [triggering sensation] for synaesthesia, and flavour as the concurrent [resulting synaesthetic perception], such occurrences are extremely rare, even in terms of the rarity of synaesthesia itself.) We need to keep in mind

20. See e.g. V. Ramachandran, E. Hubbard, 'Synaesthesia: A Window into Perception, Thought and Language', *Journal of Consciousness Studies* 8, no. 12, 2001: 3-34; R. Cytowic, D. Eagleman, *Wednesday is Indigo Blue* (Cambridge and London: MIT Press, 2009).

21. See S. Gould, *Ontogeny and Phylogeny* (Cambridge, MA: Belknap Press of Harvard, 1977).

22. See P. Grossenbacher, C. Lovelace, 'Mechanisms of Synaesthesia: Cognitive and Physiological Constraints', *Trends in Cognitive Sciences* 5, no. 1, 2001: 36-41.

that the cross-activation and the disinhibited feedback theories are not mutually exclusive.

It should be pointed out that congenital synaesthetes do not get to choose their associations between things, and which things get associated with which has nothing to do with likes or dislikes, 'good' or 'bad' or any other emotional aspects. For example, I like the sound of French horns, but dislike the school bus yellow colour they synaesthetically evoke. I also like the sound of saxophones, and love the electric neon purple shapes they evoke. I dislike the flavour of certain colas, along with the synaesthetic colours produced. That is, likes may go with dislikes, or *vice versa*, or likes may go with other likes, etc. And this holds throughout the synaesthete's entire life.

One of the classic scenes of synaesthesia research occurred on 10 February 1980, as neurologist Richard E. Cytowic accompanied artist Michael Watson while the latter finished preparing dinner for a party.²³ Tasting a sauce for a roasted chicken, Watson suddenly declared, "Oh, dear [...] there aren't enough points on the chicken."²⁴ With some persuading, he went on to explain to Cytowic: "I know it sounds crazy, but I have this thing, see, where I taste by shape. [...] Flavors have shape, [...] I wanted the taste of this chicken to be a pointed shape, but it came out all round. [...]"

23. See R. Cytowic, *Synaesthesia*.

24. *Ibid.*, 3.

Well, I mean it's nearly spherical, [...] I can't serve this if it doesn't have points." Watson went on to state that he mainly felt things synaesthetically rubbing against his face or sitting in his hands. "When I taste something with an intense flavor [...] the feeling sweeps down my arm into my fingertips. I feel it – its weight, its texture. Whether it's warm or cold, everything. I feel it like I'm actually grasping something."²⁵

Regarding 'flavour to touch' synaesthesia, the primary gustatory cortex, which is the first cortical area to be involved in taste, lies directly posterior to the somatosensory cortex (S1). If we consider the adjacency theory of synaesthesia causation, this could be a factor in why 'the man who tasted shapes' had such synaesthetic perceptions. This area also lies directly above the insular cortex, another area of multimodal convergence.

I myself have 'flavour to visual/spatial' synaesthesia; rather than being 'in the mind's eye', I 'project' my synaesthetic perceptions as coloured, textured geometrical forms to precise locations in front of me.²⁶ Other types of gustation-related synaesthesiae also exist, although they are extremely rare. One of these other types is 'musical sounds to flavour'. Sound is processed in the upper portion of the temporal

25. Ibid., 4.

26. A very preliminary 'work-in-progress' attempt to depict some of my synaesthetic perceptions for various flavours and smells may be seen at: <http://home.comcast.net/~sean.day/sean-foods.htm>.

lobe, taste in the lower portion; again, for the ‘sound to flavour’ synaesthete, there could be connections between these regions. The character Des Esseintes, in Huysmans’s *À Rebours* (‘Against Nature’), built a type of ‘musical timbres to (liquor) flavours’ keyboard, with which, for example, the sound of a clarinet was equated with the ‘sour’ and ‘velvety’ taste of dry curaçao, the flute with mint and anisette. However, as stated in the story, this was not a display of any type of actual synaesthesia on the part of Des Esseintes but rather an attempt at synthesizing a new form of artistic expression.

A subscriber to the Synesthesia List²⁷ wrote to tell me:

I’ve always had a connection between music and taste. I associate certain tastes in my mouth associated with particular instruments and notes. It is strongest when I listen to individual instruments and the clearer and less ‘muddy’ the pitch, the stronger the taste. Some examples: Violins taste like lemons. Cellos can be orange, or cherry if they play very low. Bass is cherry. Woodwinds tend to be ‘herbal’ – like mint or some kind of herbal tea.

27. The Synesthesia List is an international e-mail forum I have operated for the past eighteen years. Currently, it has over 660 members, from over 46 countries around the world. More than half of these are synaesthetes, of many different types. Other members include neurologists, psychologists, medical doctors, linguists, musicians, and people from many other academic disciplines. The main language of the group is English, but other languages do appear from time to time.

An e-mail from a ‘touch to taste’ synaesthete reported:

Peaches, when I touch them, taste nothing like peaches. There are many foods I don’t eat with my fingers because the synaesthetic taste produced by the texture of the object clashes so badly with the taste of the food itself. I also have the smoothest eating utensils I could buy so they don’t affect the taste of the food as much. Conversely, there are some foods (seasoned octopus salad, for instance) which I prefer to eat with my fingers because the synaesthetic taste enhances the taste of the food. Truth is, most things don’t ‘match’.

However, it is not just a matter of the feel of food items. Cameron La Follete wrote the following to me:

I’m picky about which cats I pet, because, depending on the coarseness of their fur, I taste different things. The softest fur tastes of rich butterscotch pudding. A coarser fur tastes of sweetened oatmeal. My own cat is pretty good; he tastes of butterscotch, not so very rich, and mixed with some tapioca. [She added:] I’ve always liked flannel and silks best because of their tastes [...] The flannel skirt I’m wearing tastes of a rich pumpkin/squash soup. I hate washing flannel for the first time, because it causes the fabric to become less soft and the taste changes. I wear wool sweaters

next to the skin, but they taste of meat and potato stew – heavy and filling and rather coarse, so I tend not to be very hungry when I am wearing them.

PHONEME TO FLAVOUR

A very interesting type of synaesthesia involves speech sounds or whole words evoking synaesthetic flavours.²⁸ Speech sounds for a given language are called the ‘phonemes’ of that language, so this type of synaesthesia is called ‘phoneme to flavour’ synaesthesia. If the word, as a whole unit, evokes the flavour, that’s called ‘lexeme to flavour’.²⁹ Now, here, we are not just talking about something like the word ‘coffee’ making you *think* of the flavour of coffee. We’re talking about someone actually tasting the flavour, in their mouth, in high detail. (Keep in mind that, just as it is the brain that sees, and not the eyes, likewise it is the brain that constructs ‘flavour’, and not the tongue, nose, throat, and such.) But, furthermore, we’re also talking about a word like ‘confess’ having the flavour of coffee, or the word ‘microscope’ evoking the flavour of carrots. Lexeme-to-flavour synaesthesia may be due

28. One of the earliest – and perhaps the first – recorded case of such synaesthesia may be found in G. Ferrari, ‘Una varietà nuova di sinestesia’, *Rivista di Psicologia* 3, 1907: 297-317; see also G. Ferrari, ‘Una nuovo caso di sinestesia uditivo-gustativa’, *Rivista di Psicologia Applicata* 6, 1910: 101-4.

29. See J. Ward, *et al.*, ‘A Comparison of Lexical-Gustatory and Grapheme-Colour Synaesthesia’, *Cognitive Neuropsychology* 22, no. 1, 2005: 28-41.

to cross-activation or increased connectivity between an area in the anterior insula (lying below Broca's area) involved in speech perception and production and the adjacent primary gustatory area of the brain.³⁰

A friend of mine living in England, James Wanner-ton, has this type of synaesthesia. For James, certain specific speech sounds produce corresponding flavours in his mouth. The hard /g/ sound in the words 'argue' and 'begin', for example, produces the flavour of yoghurt; the combination of the /s/ and /p/ sounds in the words 'super' or 'peace' results in James tasting tomato soup. This happens to James whether he speaks the word, hears the word, reads it, or just thinks it.

This synaesthesia emerged in James when he was young, and was fully established and set before his mid-teens. Because of this, the flavours that he tastes for words are all from foods he ate as a young child; not flavour experiences he had later on as an adult. So, for example, he experiences synaesthetic flavours of candies he has not actually consumed since he was a teenager. This is an excellent example of how cultural factors may overlay the neurological underpinnings of synaesthesiae and shape their products.

The names of food items themselves will tend to taste like the food being named. Thus, for example, the word 'sausage' will taste like sausage. Then certain phonemes of that word will be taken, and those sounds

30. Ibid.

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will extend into other words. So, for example, the ‘j’ – /d₃/ – sound in ‘sausage’ also appears in the word ‘college’, making it also taste like sausage.

I decided to ask James what flavours the phrase ‘Culinary Institute of Charleston’ evoke. He replied:

A thick slice of cucumber, a dash of semolina mixed with a thin type of bland flavoured meat of some description. The strongest flavour though is one I can only describe as sweaty, cheesy feet. Not the sort of thing I’d like to hear before breakfast!

So, what about the phrase ‘Trident Technical College’?
James replied:

This is okay. Semi-soggy Sugar Puffs, a metallic paint type of flavour, an odd, watery taste very much like the left-over vinegar you’d find in a pickled onion jar. Then the deal-breaker – a lovely, lingering flavour of a slightly cold sausage sandwich. [He added:] The way it ‘works’ for me is that I get taste after taste constantly. Some are weak, some strong. It’s the strong ones that cause problems for me as they tend to linger – a little like the afterglow when a halogen bulb is switched off. These lingering flavours mix with new ones. This sometimes tastes horrible!

‘Phoneme to flavour’ synaesthetes often also report aspects of texture and temperature as part of their synaesthetic experiences; that is, for example, the word ‘rake’ not only tastes like fried bacon, but it is crisp, oily and rather cold.³¹ These sensations are felt on the tongue and in the mouth.

Unlike ‘grapheme to colour’ synaesthesia, in which, for example, the word ‘red’ might induce a synaesthetic perception of green – a phenomenon known as the ‘alien colour effect’³² – ‘phoneme to flavour’ synaesthesia apparently displays no such effects for the names of foods, such as the word ‘bacon’ tasting of spinach.³³ However, note that, contrariwise, with my own ‘flavour to visual/spatial’ synaesthesia, I cannot think of a particular instance which does *not* display the alien colour effect, even when the *name* of the food, in English, is a colour word. For example, ‘oranges’ and ‘limes’ produce synaesthetic shades of blue; turnip and salad ‘greens’ create shades of purple; ‘white’ and ‘red’ wines both make shades of blue; ‘white sauce’ and ‘brown sauce’ both produce shades of greyish puce and lavender; and egg ‘whites’ do not produce any colour. I do note that bleu cheese is a purplish-blue colour; however, that is because cheeses, and dairy products

31. See *ibid.*

32. J. Gray et al., ‘Implications of Synaesthesia for Functionalism’, *Journal of Consciousness Studies* 9 [2002]: 5-31.

33. See Ward et al, ‘A Comparison of Lexical-Gustatory and Grapheme-Colour Synaesthesia’.

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in general, are usually blue. The particular flavourings of bleu cheese push my resulting synaesthetic colour towards purple.

James Wannerton wrote to members of the Synesthesia List:

I [also] experience colour to taste synaesthesia. Red: liquid jam; the stuff you find at the top of jam jars that have been sitting for a while. Orange: oranges. Yellow: Opal Fruits (Starbursts). Green: wine gums. Blue: thick ink. Indigo: a taste of rubber mixed in with the kind of meat you find in meatloaf. Violet: powdery, slightly inky. I get tastes for most colours, although, unlike my word/taste synaesthesia, it doesn't seem to me to be as specific. For example, all shades of red give me the same taste, the strength altering depending on how 'primary' or bright the colour is. [...] Most of my colour tastes appear to be sweet or tarty, and texture plays a very important part in the process.

Wannerton also wrote the following to me in a personal message:

Creating a virtual meal using just words is something I automatically do whenever I write or say anything. Every word has to pass through my own personal 'synthesaurus' before I commit it for posterity. It

gives writing an extra dimension for me although it does lengthen the creative process somewhat. Writing is the only occasion whereby I have some modicum of control over what I synaesthetically taste. While working as a freelance journalist back in 1998, I was asked to produce a full page feature on the possible cultural impact of changing from pounds sterling to the euro. I wrote the article as if it were a banquet: The intro consisted of *hors d'oeuvres* tasting words, the article body was the main course (I even managed to squeeze a sorbet in there as well) and the closing paragraphs were made up of sweet, dessert tasting words. This took me the best part of all night but I was immensely pleased with the final article. The thing that really appealed was the fact that no one else had any idea whatsoever!

The word 'dinner' itself actually has the taste and texture of the traditional English Sunday Roast but all mashed up together into a smooth puree kind of dish. 'Lunch' tastes of very thin ham slices and 'breakfast' tastes of crunchy bacon – the thin kind that you have all the time in the States. When people ask me about the 'worst' tasting word I've ever heard, I always default to 'cook', or even worse, 'cooking'. I'd never ever use those words unless forced to as I am now! Very, very strong – taste and texture of the horrible black, crunchy burnt bits you get around the top of pans. Yuk!

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FLAVOUR TO COLOUR

As to causations for the specific correlations between foods and colours in my own synaesthesia, unfortunately I have not yet discovered much. I have conducted many experiments upon myself, but almost all would probably not pass current standards of scientific rigour; as to experiments conducted by others, I have only participated as a subject in about seven. About the only things found so far are good reasons to speculate that it is citric acid which produces the sky blue colour I see in all citric fruits I have tried so far; here, I have been tested, and citric acid alone in water will produce the same synaesthetic colour, the intensity of the perceived colour correlating with the intensity of the solution. Less certain is what might be producing the shades of blue I see for dairy products; it may be lactic acid, but this has not yet been adequately tested. Likewise, there is the frequent orange colour seen for fish and some other seafoods, and the shades of purple seen for many green, leafy vegetables; I have no clue yet regarding these, although, for the seafood, there might be early childhood cultural experiences involved. On the other hand, I now have reason to think that the shades of pink and purple I see for cucurbits might tie to one or more chemicals found in most, rather than to a cultural connection with the pink flesh of watermelons.

But, again, we need to keep in mind that we cannot always just look towards a reductionistic neurochemical answer to this question. Keep in mind, for example, that James Wannerton's synaesthetic flavours for phonemes are culture-based: they are only food flavours from his childhood, and for example, the flavour of bacon turns up not only in the word 'bacon' but also specifically in certain other words with the same /k/ sound in a similar phonetic environment.

However, also note that Wannerton's synaesthesia operates here a bit differently to my own: For Wannerton, with his 'phoneme to flavour' synaesthesia, all of the correspondences were shaped during childhood. While new words might be encountered, the underlying phonemes remain the same, and connect to the same flavours established during his teen years. For me, on the other hand, with my 'flavour to visual/spatial' synaesthesia, even now at the age of forty-eight I can still encounter new flavours, and, with them, new, unique synaesthetic colour combinations.

My 'flavour to visual/spatial' synaesthesia does have a little bit of influence on my behaviour when shopping for food items. For example, dairy products produce shades of blue for me. The grocery stores here sell different types of milk in containers with different coloured labels and caps. I tend to most commonly buy '2%' milk. At one store I shop at, this comes in blue-labeled cartons; at another, 2% has a green label,

and it is 'skim' milk which has the blue label. So, at the second store, I frequently find myself grabbing the blue carton, only to have to put it back and take a green one instead. I've examined my line of thinking, asking myself if it is just the case that I'm used to the blue label, so that is why I go after it. But no; that's not how it works. What goes through my head is not initially a matter of the label at all. Rather, it is 'milk is blue', so I am looking for blue milk. Thus, likewise, I will tend to focus on and often at least consider grabbing containers of sour cream, any type of cheese, or ice cream in blue containers, regardless of the brand or whether it is a flavour I really care for. I am more likely to focus on coffee if it is in dark green packaging; more likely to grab beef if it is in dark blue packaging, chicken if it is in sky blue, spinach if it is in purple. However, I do note that I don't look for beer or wines, nor for orange juice, with blue labels or packaging.

CONCLUDING STATEMENTS

The culinary arts are rapidly expanding as they increasingly turn to incorporate the latest cutting edge science and technology. This can readily be seen with the current draw of new techniques emerging via chemistry and physics into Molecular Gastronomy.³⁴

34. See, e.g., H. This, *Molecular Gastronomy* (New York: Columbia University Press, 2002/2006).

It is my sincere hope, however, that, in *addition* to this (emphatically as an addition; not as a replacement), attention may also be turned to the latest cutting edge findings from the neurosciences, including psychopharmacology. Consider, for example, that, from research on macaques, there is implication that the posterior area of the orbitofrontal cortex is one of many places in the brain of humans and allo-primates which apparently acts to converge gustatory, olfactory and visual sensory data.³⁵ Not only are there neurons in this region found to respond to stimulation in each of the three modes but also (at least) bimodal neurons which respond to both taste and olfaction, or to taste and visual stimuli. I am looking to prominent figures in the culinary arts to be on the forefront of leading what I hope will be a revolution resulting in a drastic paradigm shift of our model of the human sensoria, bringing in new, experimentally-supported concepts of the integration and interactions of sensory modalities, and incorporating the current ‘embodiment’ approach that ‘the mind’ – and thus ‘the senses’ – have components in interplay throughout the entire body, and not just within the skull.

Investigations into the effects of LSD, ayahuasca, and other drugs have given us indications that the disinhibited feedback theory of synaesthesia causation

35. E. Rolls, L. Baylis, ‘Gustatory, Olfactory, and Visual Convergence within the Primate Orbitofrontal Cortex’, *Journal of Neuroscience* 14, no. 9, Sept. 1994: 5437-52.

has merit; this is further supported by research on synaesthetes involving amyl nitrite,³⁶ hormones such as melatonin and effects on serotonin receptors³⁷ (which has expanded to also looking at SSRIs such as Prozac), but also on such 'basics' as alcohol, aspirin, caffeine, and codeine. Added to this, studies on altered states of consciousness (ASCs) indicate that virtually all people – congenital synaesthetes and non-synaesthetes alike – experience synaesthesia at least four or five times per year, while entering into, within, or emerging from an ASC; most frequently, this is during hypnagogic stages. The implication here is that virtually all people – congenital synaesthetes and non-synaesthetes alike – can and do experience synaesthesia from time to time; and thus 'food'-induced synaesthesia; and, from time to time, perhaps synaesthetic flavours. And this doesn't have to be via, say, the addition of harmine to your beef stock. Instead, it could result from the proper mixture of chilies, fruits and roasted ants in a mole sauce. Or even just getting the right wine and cheese combination.

36. See R. Cytowic, *Synesthesia*; Eagleman, *Wednesday is Indigo Blue*.

37. See D. Brang, V. Ramachandran, 'Psychopharmacology of Synesthesia; The Role of Serotonin S2a Receptor Activation', *Medical Hypotheses* 70, no.4, 2008: 903-4.

SYNAESTHETES' COOKBOOK

I gained a certain notoriety in the Netherlands³⁸ for my synaesthesia-based recipe for grilled chicken topped with ice cream and orange sauce, which prefaces this text.

This recipe, which I have prepared many times for myself and at least three times for others, is an exercise in subtlety and extreme precision for me. Every ingredient except the brown sugar synaesthetically produces a shade of light cyan blue³⁹ for me; but each shade just so slightly different! There are also differences in the appearance of texture or viscosity for what I synaesthetically see for these flavours: for the chicken, the texture is like ceramic tiling with a slightly oily sheen (the skin and fat of the chicken are essential here); ice cream produces a texture of thick latex paint; vanilla, of a thin oil-based paint, such as used for painting plastic model airplanes; oranges and lemons, the inside white flakey part of a lemon peel; beer, watery milk; red wine, whipping cream. Note again that all of these are of almost –but not exactly – the same shade of sky blue. The brown sugar adds just the faintest trace of faint light grey with a lavender tinge. I could use pumpkin (pie) flavoured ice cream

38. See *Red Mondays and Gemstone Jalapeños*, directed by J. Fowler, for the Research Channel, <http://www.youtube.com/watch?v=6vs-ez62DVc>.

39. Around RGB 180, 255, 255.

instead of vanilla, and this would add a light lavender instead of the sky blue of vanilla. Putting together this recipe is like composing a Maxfield Parrish painting, with one shade and texture of blue carefully and exactly blending into the next.

So, here, a recipe is totally personal, verging on the creation of visual art; the resulting flavour combination is a spandrel – quite secondary. However, I do actually enjoy the flavour very much. This recipe was recently revived as a classroom discussion topic by Dr. Romke Rouw, of the University of Amsterdam's Department of Psychology.

Finally, James Wannerton proposes the following set of 'phoneme to flavour' recipes:

"Bicycle parts are usually small." This sentence contains words that create a lovely taste of breakfast. Rice Krispies, covered in sugar and doused in milk, not cold milk but not warm either. Crunchy in part but on the whole, slightly soggy in texture.

Asking someone called Debbie (doughy bread) if she's noticed (salad leaves and sticks) that Thomas (tomato slices) is a popular name for boys this year, would summon up the perfect hors d'oeuvres salad dish.

My companions for the main course would ideally have the names Ian (lamb), Colin (cauliflower), Hilary (sliced potatoes) and Stephanie (sage & onion balls). With someone called Stockard pouring the gravy.

Day – Synaesthetic Cooking

Pudding could be: Simon (sliced apple), query (single cream) with a dollop of Block (ice cream) and a France (thin wafers) or two. The cheese and biscuits would be best served by a waiter call Richard.
Coffee would be coffee!

Dear Nellie

Your sweet beneficence of Bulbs I return as
Flowers, with a bit of the swarthy Cake baked
only in Domingo.

Lovingly,

Emily.

2 pounds Flour –

2 Sugar –

2 Butter –

19 Eggs –

5 pounds Raisins –

1 1/2 Currants –

1 1/2 Citron –

1/2 pint Brandy –

1/2 – Molasses –

2 Nutmegs –

5 teaspoons

Cloves – Mace – Cinnamon –

2 teaspoons Soda –

Beat Butter and Sugar together –

Add Eggs without beating – and beat the
mixture again

Bake 2 1/2 or three hours, in Cake pans, or 5 to
6 hours in Milk pan, if full –

Black Cake (A Recipe from Emily Dickinson, for Emily Dickinson)

Jeremy Millar

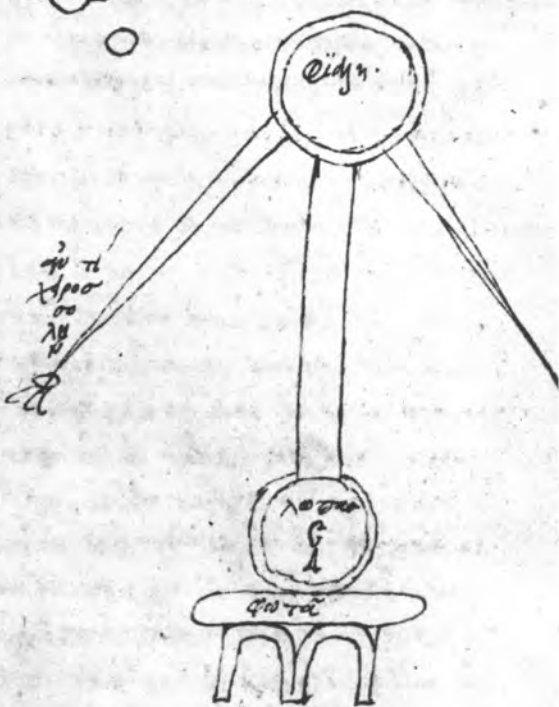
Recipe taken from a letter to Mrs. J. Howard Sweetser from Emily Dickinson, summer 1883.

Card with embossed text, 100mm x 170mm,
Edition of 1000.

Handwritten text at the top left: $\chi\epsilon\omicron\sigma\alpha\ \phi\eta\chi\epsilon\omicron\sigma\alpha\ \sigma\omicron\iota\alpha$



Handwritten text next to the crescent moon: $\eta\ \pi\ \chi\epsilon\omicron\sigma\alpha\ \lambda\epsilon\omicron\sigma\alpha$



Ec[h]ology of the Désêtre

Dan Mellamphy and
Nandita Biswas Mellamphy

*Though the logos is common to all, the many live as if they
had a wisdom of their own.*

HERACLITUS

*under such flattering colour and repainting, the terrible
original text homo natura must again be recognized*

NIETZSCHE

The following is a work of geo-philosophy beyond the bounds of Friedrich Nietzsche (its ‘founder’ according to Deleuze and Guattari)¹ yet very much in the spirit of his Zarathustra: ‘true to the earth’² and its ‘terrible text’.³ What is terrible about the terrible text that is true to the earth is that, with and in it, there

1. G. Deleuze and F. Guattari, *Qu'est-ce que la philosophie?* (Paris: Éditions de Minuit, 1991), 82.

2. F. Nietzsche, *Thus Spoke Zarathustra: A Book for All and None*, Prologue §3: ‘I implore you, my brothers, remain true to the earth’.

3. F. Nietzsche, *Beyond Good and Evil: Prelude to a Philosophy of the Future*, §230.

is no *hors-texte*⁴ – there is but one context to consider and to consume. With and in the context of planetary ecology, of a planet-wide ecosystem, everything is ecological – there is but one *logos*, one *logic*, one *world*: the geo-logical one. This accords with the statement of Nietzsche's great precursor, Heraclitus the Ephesian, that there is but one *logos*, hence no *dia-logoi*.⁵ Having no other context to consider or consume, no 'other' or 'outside' (or 'inside') as such, the planet turns upon and feasts upon itself, its own text, like the alchemical *ourobouros* or self-devouring serpent.⁶ To envision ecology in this way is terrible indeed, for one cannot engage it dialectically, one cannot have a dialogue with it. It has only one language, one *logos*: that of the *ouroburos*, this worm, serpent or dragon (old English

4. J. Derrida, *De la grammatologie* (Paris: Éditions de Minuit, 1967), 227. 'There is nothing outside of the text' / 'there is no outside-text' (trans. Gayatri Chakravorty Spivak, Baltimore: Johns Hopkins University Press, 1976), 158.

5. Hērakleitos ho Ephésios, via Sextus Empiricus, *Adversus Mathematicos* §7 §§132-3.

6. *Al khem*, the black or fertile earth, that compost which the Greeks called *chthonos* and the Romans *humus* (root of all things *human*), is the etymological origin of alchemy and current-day chemistry. The Greek *ouroburos*, the self-consuming serpent (*οὐρά-βόρος*, 'tail-devourer'), is an emblem of alchemical transmutation and of transmutation's mysterious reticulation (*mysterium coniunctionis*) as Carl Jung states in his *Mysterium Coniunctionis*, ¶1513: 'within the age-old image of the ouroboros lies the thought of devouring oneself and turning oneself into a circulatory process'; the ouroboros symbolizes the 'feedback process' in which the supposed 'clash of opposites' turns out – or turns *in* – to be naught but the knot of 'the One' primal *logos*, the alchemical matrix, its transductive *prima materia* (Princeton: Princeton UP, 1970), 365.

wyrm).⁷ Just as the worm translates all things back into black earth (*al khem*), Nietzsche suggests that to be true to the earth is to be retranslated and to retranslate things back into the ‘terrible ground-text of *homo natura*’, their vermicular black-earth b[l]ackground.⁸

The *melanosis* (Latin *nigredo*) of a dark night’s ‘pitch black’, the *leukosis* (Latin *albedo*) of a white cloud’s ‘silver sheen’ and the *erythrosis* (Latin *rubedo*) of the fiery sun’s ‘golden blaze’ are the classical stages of the alchemical / metamorphic / morphogenic process. Like Mandelbrot’s fractals, each of these ‘stages’ is in addition a recursion of the entire process – the *melanotic*, *leukotic* and *erythrotic* stages each in turn unfolding their respective *melanotic*, *leukotic* and *erythrotic* phases (these, of course, *in turn* recursing – i.e. being further recursions again). The process infolds and enfolds itself, subsumes and consumes its unfolding. Hence, indeed, what could be called the heraldic hieroglyph of ‘the great work’ as such: namely the drakon *ouroboros*, the ouroboric *drakontos*. This cosmic and chaotic dragon, like the fiery phoenix, suspire and expires in an autotelic *ekpyrosis*: its consuming conflagration ultimately eclipses and envelops its own ipseity.

Literally an unending, undulating, serpentine ‘devourer’, the Alchemists’ *ouroboros*, the all-devouring

7. <http://www.etymonline.com/index.php?term=worm>

8. Nietzsche, *Beyond Good and Evil*, §230: ‘under such flattering colour and repainting, the terrible original text *homo natura* must again be recognized’.

dragon, embodies the entelechy of alchemy, the golden goal of which points back to black – back to the beginning and foundation (the b[l]ackground) of all things. The beginning and foundation (the b[l]ackground) is in this sense not the past; it presents itself (paradoxically perhaps) as that which is *forthcoming* – that which is always *coming forth* – and yet, strange as it may seem, as that which ‘comes forth’ *backward*.

The all-consuming, hence self-consuming, cycle or ‘vicious circle’ of ouroboros is moreover the feed-back loop or cybernetic circuit of every existing thing (‘good’ or ‘bad’), of ‘existence’ as such. From this alchemi-cybernetic perspective each and every existent thing turns out to be a coil or short-circuit (measurable in time and in space, hence chronotopological) in and of this ontological *ouroboros* (the latter chronotopologically *immeasurable* by dint of its ‘deviations’, although accorded the immeasure of an *aion*: the range of an ‘epoch’, ‘era’ or ‘age’). The ontological dragon, or *drakontos* as such, is in this respect what Nietzsche called the *Wille zur Macht*: the *will to power* which infuses and suffuses existent things. Every thing is, from this perspective, an agent and *agencement* (i.e. an arrangement) of this more monstrous ‘will’, whether aware of it or not.

This is a *hideous gnosis*. The *hisda* here is in point of fact a *horror vacui*, a fear of the void and of being voided, of being devoid of self-will and of one’s self as such.

So what could a mathesis of this horrific gnosis consist in? The void inscribed in the *ouroboros*-loop, the great *zero-summa* of the alchemists, is the very void that Giovanni Malfatti di Montereccio discerned in the first part of his *Studien über Anarchie und Hierarchie*.⁹ Malfatti argued that ‘numerical characters’ – and indeed all characters – are ‘nothing but [...] modifications of the elliptical zero qua hieroglyph of man and world’¹⁰ and that this ‘hieroglyph’ (like the so-called alchemical or homeopathic ‘signature’ – the trace left behind after a substance has been diluted beyond any trace of itself¹¹ and thus the presence of an absence) is by nature *obscure, occluded, occult*.¹²

Malfatti expressed the matter via the decade which the Pythagoreans understood in terms of a tetract (since $1 + 2 + 3 + 4 = 10$)¹³ and figured in the form of a

9. See COLLAPSE III.

10. Giovanni Malfatti di Montereccio (Jean Malfatti de Montereccio), *Études sur la Mathèse, ou Anarchie et Hiérarchie de la Science* (trans. Christien Ostrowski, intro. Gilles Deleuze, Paris: Éditions du Griffon d’Or, 1946), 11.

11. The Paracelsian physician Christian Friedrich Samuel Hahnemann suggested in his 1796 *Versuch über ein Neues Prinzip zur Auffindung der Heilkräfte der Arzneisubstanzen, Nebst Einigen Blicken auf die Bisherigen* (his *Essay on a New Principle for Ascertaining the Curative Powers of Drugs*) that active, activated, or ‘succussed’ dilutions exponentially increase the homeopathic (i.e. curative) ‘force’ of substances, and that the greatest homeopathic force is reached precisely at the point when the succussed dilution no longer contains any trace of the diluted matter; this is the point of both greatest or maximal dilution and force. At the point of total dilution all that remains of a substance is its force or energy ‘signature’.

12. *Phusis kruptesthai philiei*: ‘nature loves to hide’, wrote Heraclitus (Fragment 123).

13. Pythagoreans claimed that *all numbers* and thus *everything that counts*

tightly-knit triangle (its most compact arrangement).¹⁴ Malfatti suggested in his study that the *tetractys* (i.e. the *mathesis universalis*) should be taken, like the drakon *ouroboros*, to be *coiled* rather than angled, thus more *circular* than angular, with *curves* instead of edges: hence in the end, from the very beginning, *ovoid*, *ellipsoid*.¹⁵ Everything that counts and can be accounted, every individual existent as such, has as pre-individual quantum this mystical matrix symbolically expressed as an ovoid (that is, a triangle the angles of which are oblique). As *mathesis universalis*, this ovoid *tetractys* has a universality that, for all of its computational complicity, must nevertheless be distinguished from its various versions or actual aspects as an existence

(and/or can be *accounted* for) exist[s] within the parameters of the founding and grounding decade (the *tetractys* of 1+2+3+4 or 10) since every number after 10 is but a repetition of this first and fundamental set (1, 2, 3, 4, 5, 6, 7, 8, 9, 10 followed as they are by [1]1, [1]2, [1]3, [1]4, [1]5, [1]6, [1]7, [1]8, [1]9 and so on). See the following footnote.

14. 'The kernel of Pythagorean wisdom is the *tetractys* or 'four-group' made up of the numbers 1, 2, 3, 4, which add up to 10. They are represented in a pebble figure, in the form of the "perfect triangle",

| | | | | | | | |
|---|--|---|---|---|---|---|----|
| 1 | | | | 1 | | | |
| 2 | | | | 2 | | 3 | |
| 3 | | | 4 | | 5 | | 6 |
| 4 | | 7 | | 8 | | 9 | 10 |

and the available sources, from Posidonius on, show how these four numbers contain not only the basic intervals – fourth, fifth, octave, and double octave – but also, according to the Platonic pattern: point, line, plane, and solid,' explains Walter Burkert in *Lore and Science in Ancient Pythagoreanism*, trans. Edwin Minar (Cambridge: Harvard University Press, 1972), 72.

15. Giovanni Malfatti di Montereaggio (Jean Malfatti de Montereaggio), *Études sur la Mathèse, ou Anarchie et Hiérarchie de la Science* (trans. Christien Ostrowski, intro. Gilles Deleuze, Paris: Éditions du Griffon d'Or, 1946), 7. See **COLLAPSE III**.

prior to, subtly sustaining, and eventually consuming its various existents, its distinctive *numbers*, *figures* and *forms*.

The ouroboric zero described by Malfatti seems utterly empty, devoid of content. ‘The metaphysico-mathematical zero seems to us to be null, to be nothing, whereas, on the contrary, it is everything’:¹⁶ the metaphysico-mathematical void, far from simply being devoid, is the very *mater* and *pater panton*,¹⁷ the very engine of ontogenesis. This ontogenetic and autoconsumptive *kybernetes* qua cybernetic feedback-loop finds its echo, after Malfatti, in the Deleuzo-Guattarian *corps sans organes*¹⁸ and Simondonian *centre actif initial*¹⁹ – the latter also called *l’unité magique primitive*,²⁰ *ontos* of the universal cybernetic (Simondon’s *cybernétique universelle*).²¹ Its circuit is a circuit always in formation, a *dromology* the *logos* of which is (like the *logos* of Heraclitus and the Pythagorean *tetractys*) both *pagan aenaou* and *panta chorei*, ever-flowing and always-in-motion

16. Malfatti, *Études sur la Mathèse*, 11.

17. *Polemos pater panton*: ‘War [is the] father [of] all’ wrote Heraclitus (Fragment 53).

18. The now-all-too-[in]famous concept first formulated in the late 1940s by Antonin Artaud and later developed in 1969, 1974 and 1980 by Félix Guattari and Gilles Deleuze.

19. G. Simondon, *Du Mode d’Existence des Objets Techniques* (Paris: Éditions Aubier, 1958), 159-160.

20. Ibid.

21. G. Simondon, *L’Individuation à la Lumière des Notions de Forme et d’Information* (Grenoble: Éditions Jérôme Millon, 2005), 561.

(dromological).²² It ‘consists, abstractly but really, in relations of speed and slowness between unformed elements,’ explained Deleuze and Guattari in *A Thousand Plateaus*;²³ it is a void ovoid in and through which events, happenings, haecceities, differentiate themselves schizologically (that is, via schizogenesis, Simondonian *dédoublement*).

At this level – degree zero or zero intensity²⁴ – ‘we discover nothing more than spatio-temporal dynamisms, that is to say agitations of space, holes of time, pure syntheses of *space*, *direction* and *rhythm*,’ as Deleuze explains. ‘The most general characteristics of branching, order and class, right on up to generic specifications, already depend on such dynamisms’, he continues; for example, ‘beneath the partitioning phenomena of cellular division we again find instances of [this] dynamism: cellular migrations, foldings, invaginations, stretchings’ – ‘these constitute,’ he argues, something along the lines of ‘a “dynamics

22. *Legei pou Herakleitos hoti ‘panta chorei kai ouden menei’, kai potamou rhoei apeikazon ta onta legei hos ‘dis es ton auton potamon ouk an embaies’*: ‘Heraclitus is supposed to say that ‘all things are in motion and nothing at rest’, and he compares them [i.e. ‘all things’] to the stream of a river, and says that you cannot go into the same water twice’ (Plato, *Cratylus* 402a). ‘It is frequently mentioned that the Pythagoreans, in their oath by the *tetractys*, called it the ‘fount and root of ever-flowing nature’: *pagan aenaou phuseos rhizoma t’ekhousan*’ (Hippolytus Romanus, *Philosophumena* I, §2:555, quoted in Walter Burkert, *Lore and Science in Ancient Pythagoreanism*, trans. Edwin Minar, Cambridge: Harvard University Press, 1972, 72).

23. G. Deleuze and F. Guattari, *A Thousand Plateaus*, trans. B. Massumi (Minneapolis: University of Minnesota Press, 1987), 507.

24. *Ibid.*, 164.

of the egg”,’ and ‘in this sense the whole world is an egg’²⁵ precisely in the sense the Dogons (here Dragons) held.²⁶ But the Dragon itself is this Dogon egg, this ovum – for the drakon *ouroboros* is the oosphere or field of operation defined by Deleuze and Guattari as that ‘milieu of pure intensity’ which could be called the veritable *ground zero* and b[l]ackground (*al khem*) of all production.²⁷ What is important is to understand that this *drakontos*, *tetractys*, or alchemical *kybernetes* ‘is not regressive’: that ‘on the contrary, it is perfectly contemporary’, since it is the field of every operation. All that can and does take place does so as metastatic calcinations, metastable calculations, toxic contractions from the occluded tetract (i.e. the occulted *drakontos*, *tetractys*, *kybernetes*). Every existent or potentially existent thing can and does exist, in this respect, as a recoiling or contracting from the coils of the drakontological *tetractys* qua *ouroboric matrix*, as if recoiling and contracting-in-fear from the terrifying plenitude of the void.

In Book One of *Dune*, a Hippasus-figure from the ‘Bene Gesserit’ society of sorceress-pharmatechnicians becomes what she is by becoming poison, by ingesting the matter that is precisely what’s the matter with her.

25. G. Deleuze, *Desert Islands and Other Texts 1953-1974*, ed. David Lapoujade, trans. M. Toarmina (New York: Semiotexte, 2004), 96.

26. Hence the diagram of ‘The Dogon Egg and the Distribution of Intensities’ that illustrates the relevant section of *A Thousand Plateaus*.

27. Deleuze and Guattari, *A Thousand Plateaus*, 164.

“This is a drug,” she said to herself upon ingesting the poison, but a drug ‘unlike any other drug of her experience, and Bene Gesserit training included the taste of many drugs.’²⁸ Ingesting the drug, she experienced what William Burroughs famously called (via a concise Kerouacian gloss) the event of a ‘naked lunch’: that frozen moment when one sees what is there at either end of one’s fork (‘a psycho-kinesthetic extension of herself’): ‘all this was happening in a frozen instant of time’, she noted; a frozen instant when she ‘confronted [...] a pit of blackness’ and ‘whirling silence’ at her ‘core’.²⁹ ‘That is the place where we cannot look,’ she thought – the placeless, ever-displaced ‘place’ that is always out of time, hence timeless.³⁰ Placeless, this place was neither (strictly speaking) within her nor without her, or at once (intimately and timelessly) within and without her: a ‘danger boiling around her’, ‘within’ her (as and at the ‘cellular core’: that ‘pit of blackness from which she recoiled’).³¹

This impersonal and/or prepersonal ‘pit’ of autochthonic, alchemical ‘blackness’ whirled in melanotic motion as the engine of her actual individuation, and

28. F. Herbert, *Dune I: Dune* (Philadelphia: Chilton Book Company, 1965), 283.

29. *Ibid.*

30. *Ibid.*, 283. It is ‘always out of time, hence timeless’ perhaps because it the very becoming of time – the *maha kāla* of Vedic philosophy. The Sanskrit *kāla* also designates darkness: the darkness of the aforementioned pitch-black pit, above.

31. *Ibid.*, 283.

in her individual recoil from it she initially mistook it – this pit of blackness, this *melanosis*, this whirling void – for the poison. ‘I could change it,’ she thought; ‘I could take away the drug-action and make it harmless.’³² But in the midst of *melanosis*, in the midst of this self-overcoming, ‘she sensed this would be an error’: she intuited in this instance (if only vaguely, ill-seen and ill-said) that she herself, as an individuated existent, might be the poison, rather than *it*, this *pit*, this melanotic *motor*, this ever-whirling *engine* or dromological *dragon* of ongoing individuation. Her action, her ‘being’, is itself ‘the drug action’: existent being, being at odds with the pre-individualized hence non-existent existence (understood as cosmogenic ‘chaos’, or in the words of Deleuze and Guattari via *Finnegans Wake*, a veritable ‘chaosmos’, *chaosmogenesis*), makes the entire *ouroboros* or *chaosmos* heave, expulsing it as indigestible.

What the desert ecologist Liet Kynes described as ‘ecological literacy’ in *Dune*³³ and what Leto Atreides described as ‘the eco-language of Dune’³⁴ is what Nietzsche in his *Prelude to a Philosophy of the Future* described as an ecological or physiological translation (a translation back into *phusis* or nature). ‘To translate man back into nature,’ back into ‘that eternal basic

32. Ibid., 286.

33. Ibid., 218.

34. F. Herbert, *Dune III: Children of Dune* (New York: Ace Books, 1976), 267.

text of *homo natura*,’ is ‘a strange and insane task, but it is a task [nonetheless]’:³⁵ the task of the one who is *attuned* to, and indeed an *echo* of, the earth. It is the ec[h]ological work. ‘I beseech you, my brothers, remain faithful to the earth,’ pleads Zarathustra.³⁶ The logic or *logos* of the ecologist is not that of the egological operative: its vernacular is instead *vermicular*, an unspoken and unspeakable *wormtongue*, the *logos alogos* of *earthworms*, which drags us back to the serpentine *dragon*. It is the language of egos drawn back into the dust, mixed into the mud, sunk into the sand from which they had distinguished themselves as environmentally indigestible existents. ‘To exist is to stand out, away from the background [...] existence,’³⁷ Atreides preaches; hence the background existence or milieu as such is affirmed when the foregrounded existent is translated, ingested and amalgamated into its alchemical context, its *drakontos*. Existents, for the ecologist and/or Nietzschean-Atreidian physiologist, are read in the context of their ultimate collapse, their eternal return to the earth (*alkhem*); the ecophysiologist thus calls-forth the chthonic dragon, the serpentine destroyer and phoenix-like renewer.

35. F. Nietzsche, *Beyond Good and Evil*, §230.

36. F. Nietzsche, *Thus Spoke Zarathustra: A Book for All and None*, ‘Prologue’ §3

37. F. Herbert, *Dune III: Children of Dune* (New York: Ace Books, 1976), 226-7.

From this ecophysiological perspective, beings are the pasigraphs of what ‘must come to pass’:³⁸ elements in a greater ouroboric hieroglyph. These elements are essential because they are ecologically instrumental in the face of the overwhelming *ouroboros* (i.e. *drakontos*): they are particular masks through which the otherwise inexpressible (i.e. that which otherwise would utterly overwhelm) is partially, pasigraphically, expressed. The particular is formed as a problem to be resolved: it is a problematic point or a crisis-point in ongoing ouroboric ontogenesis, hence the signature as such of a poison. To stare at the serpent *ouroboros* is an endeavour that ends in blindness; blindness can be avoided and yet insight gained through techniques of ec[h]ology which read existent entities environmentally and their restricted economies within the purview of greater generality.

Such ec[h]ology is admittedly homeopathological: it re-inserts or re-inscribes particular poisons into the poisoned system from which they were concocted and thereafter decocted, decanted or recanted. Each poison is existentially expelled in and as a crisis: expelled until its signature, i.e. the structure of its poison, has been resolved. The ec[h]ologist assists in and attends to such a resolution so that the poison may be realized as such and re-integrated (i.e. re-ingested) into the

38. Ibid., 281.

general, overarching or underlying ouroboric system. Step one, then: recognize that existent things are poisons ‘held in cellular bondage’.³⁹ Step two: rather than deny or work against such poisons, accept the poisons for what they are. Step three: assist in its formation, formulation, realization, so that the existent poison can become precisely what it is – namely, the signature of an environmental symptom (which ‘stand[s] out, away from the background [...] existence,’⁴⁰ ‘spinning in relative stability’).⁴¹ Step four: have this signature resign-and-thus-resolve-itself within its greater context (‘mingle the waters’ homeopathically, as the Bene Gesserit Jessica says).⁴² ‘This will permit you to harness any relative stability’ or existent being as such⁴³ as an ec[h]ological instrument. ‘Anything can be a tool,’ the practitioner of *taqiyya*⁴⁴ and Bene Tleilax ‘Bijaz’ explained in the second book of *Dune* – anything that exists, including individual *people*, individual *phenomena*,

39. Ibid., 32.

40. Ibid., 226-7.

41. Ibid., 251.

42. Herbert, *Dune I: Dune*, 286; her son Paul would later likewise mingle time and space ouroborically and thereby also ‘overrun himself’ as well as ‘los[e] his position in time’ – or more precisely *loosen* (rather than *lose*) himself into it ‘so that past and future and present mingled without distinction’ (Ibid, 305).

43. Herbert, *Dune III: Children of Dune*, 251.

44. See R. Negarestani, ‘The Militarization of Peace: Absence of Terror or the Terror of Absence’, *Collapse I*, 53-91.

even *poverty and war*;⁴⁵ and as Liet Kynes stated in the first book, ‘to the working planetologist the most important tool is human beings ... Men and their works have been a disease on the surface of their planets’ and ‘nature tends to compensate for [such] diseases, to remove or encapsulate them, [then] to incorporate them into the system in her own way.’⁴⁶ The ‘way’ of the planet or of the ecological system is the ‘way’ of its echo the ecologist. The wordless language of the world, its *logos alogos*, is the language of alchemy, *al khem*: that of the earth. To speak this language is to break with words and with the world of words in order to engage that of its ‘maker’, the wor[l]dmaking worm, the open-mouthed ontological *ouroboros*. Words and worlds are ‘worked out’ from the belly of this beast: the great *drakontos*.

This beast, in some sense, is all belly: the *ouroboros* is the sovereign *stomachos*, the Greek *stoma* and its *Wille zur Macht*. *Stoma*, in Greek, designates any orifice, any opening, any aperture – most commonly a mouth.⁴⁷ The worm (or *wyrm*: ‘serpent, dragon’)⁴⁸ is one great mouth, one great stomach, one long oesophagos or cyclonic aperture. According to Georges Bataille, we approximate the worm, or become a kind of dragon,

45. Herbert, *Dune II: Dune Messiah*, 210.

46. Herbert, *Dune I: Dune*, 218, 220.

47. <http://www.etymonline.com/index.php?term=stoma>

48. <http://www.etymonline.com/index.php?term=worm>

whenever we are overwhelmed and, open-mouthed, throw back our heads in horror and/or laughter and/or anguish and/or ecstasy: 'The overwhelmed individual throws back his head, frenetically stretching his neck in such a way that the mouth becomes, as much as possible, an extension of the spinal column, [...] as if explosive impulses had to spurt directly out of the body through the mouth in the form of screams'.⁴⁹ In the midst of being overwhelmed, a human is thus somehow sub- or super-human, hence a veritable über- and/or unter-menschliche Wurm, if only for a monstrous moment – one wherein the individual human is no longer demonstrable. In this condition, a condition at once pre- and post-human, the inhuman *logos alogos* that arises from within the depths of human being (as if inhumed, entombed or encapsulated⁵⁰ therein) attests to the beckoning- and ultimate becoming-*worm/stomachos/Shai-Hulud* of man. According to Frank Herbert, Wormsign is a sign of overcoming (i.e. an *Überwindung*), a sign of the coming ecophysiological 'overhuman' or 'overman' (i.e. the *Übermensch*), in *Dune*.

Bataille and Herbert lead us into the *stomachos* or 'pit of blackness'⁵¹ (i.e. the *maw*, the *mouth*, the

49. G. Bataille, 'Mouth' in *Visions of Excess*, trans. A. Stoekl (Minneapolis: University of Minnesota Press, 1985), 59.

50. Herbert, *Dune* I: *Dune*, 220.

51. Herbert, *Dune* I: *Dune*, 283.

yawning *chasm*) of a pitched battle which could indeed be called a veritable *estomachia*: a *stoma*-centric, *orifician* and ultimately *orphic* (nocturnal, pitch-black)⁵² war. The second Leto Atreides, like the sequestered Hamid Parsani in Negarestani's *Cyclonopedia*, teaches his people 'how to turn the Earth into the coiling body of *Tiamat*,⁵³ the colossal *Shai-Hulud*; this is his *mathesis*. The task is one of monstrous *melanosis*: *al deshret* as *al kemi*'s primary principle, desert-like 'wasting away' as the first phase of regeneration, recultivation. The seed planted in the black soil must decompose like one in the desert: the desert (*al deshret*) is in league, ec[h]ologically, with its oft-opposed fertile black soil, albeit only in the context of that 'chemistry of openness'⁵⁴ which acephalously opens onto⁵⁵ and is in this way radically open to *both ends* and *both beginnings*, enantiodromically – i.e. only in the space-time of the nemathetic earthworm, the ouroboric serpent, the all-consuming dragon, qua sovereign *stomachos*. The stomach is the kitchen – the crucible, curcurbit and

52. Orphism, from the Greek *orph[n]e* and *orph[n]os*, designates that which operates under cover of night (i.e. in the dark, the pitch-black); see the entry from Henry Liddell and Robert Scott's *Greek-English Lexicon* available online via the *Perseus Project* on the Tufts University website: <http://www.perseus.tufts.edu/hopper/morph?l=o%29%2Frfrn-h&la=greek>

53. R. Negarestani, *Cyclonopedia: Complicity with Anonymous Materials* (Melbourne: Re.press, 2008), 50.

54. R. Negarestani, 'A Good Meal', <http://www.cold-me.net/text/meal.html>.

55. R. Negarestani, 'Acephalous Mouth', in *Channel 93: The Journal of Wounding and Wounds*, <http://www.channel83.co.uk/articles/acephalous-mouth.php>.

cavity of culinary matters – through which transduction and transductive transmutation passes.

This is the ‘hypothesis [that] must be hazarded’⁵⁶ according to Nietzsche: to perceive through the world’s representation[s]⁵⁷ (beyond ‘the Berkeleian and Schopenhauerian’ senses)⁵⁸ the vast, intertwined, primitive and formative (‘pre-form’)⁵⁹ belly of a manifold beast,⁶⁰ to see in the interplay of moralizing subjects and mechanized objects the mathetic *melanosis* of an overarching or underlying *Wille zur Macht*. Understanding *will to power* in this way enables the inspired perception of existents as products of drakontological [in]digestion, of an ontogenic and ouroboric metabolism ‘in which all organic functions, including self-regulation, assimilation, nutrition, secretion, and change of matter’ form power constellations [*Machtkonstellationen*] which even in the face of their existent individualities are nevertheless ‘contained in a mighty unity’;⁶¹ this is why Nietzsche states altogether ec[h]ologically that ‘the world seen from within, the world defined and

56. F. Nietzsche, *Beyond Good and Evil*, §36.

57. i.e. through ‘the great third eye which looks out into the world through the other two’ as Nietzsche states in *Daybreak: Thoughts on the Prejudices of Morality*, §509.

58. Nietzsche, *Beyond Good and Evil*, §36.

59. Nietzsche, *Beyond Good and Evil*, §36.

60. ‘the spirit most resembles a *stomach*,’ the *belly* of a beast, states Nietzsche in *Beyond Good and Evil*, §230.

61. ‘Everything still lies contained in a powerful unity’ states Nietzsche in *Beyond Good and Evil*, §36.

designated according to its ‘intelligible character’, would simply be *will to power*, and nothing else’.⁶² This inspired vision discerns the *désêtre* within and without every *être* from the peculiar perspective of the so-called ‘third eye’⁶³ or volcanic ‘pineal eye’.⁶⁴ The open ‘third eye’ bears witness to the burning vision of ‘the time of the stomach’⁶⁵ that churns and burns all it consumes in accordance with ‘the eternal law of transformation.’⁶⁶ The *désêtre* as such is drakontological, homologous with the *drakontos*; the drakon *ouroboros* is its basic context, the ‘eternal basic text’ of its nature (or *phusis*) and ‘the fundamental will of its spirit’ (or *stoma*), as Nietzsche suggests in his ‘Prelude to a Philosophy of the Future’.⁶⁷

Standing out as individual existent from this basic context, one who would be drakontological (i.e. its *homo logos*), one who would open this eye, is with respect to its ec[h]ology a *pharmakon*: an actual existent *poison*. The *pharmakon* is expelled (as the indigestible or the non-metabolizeable) from that

62. Nietzsche, *Beyond Good and Evil*, §36.

63. F. Nietzsche, *Daybreak: Thoughts on the Prejudices of Morality*, §509.

64. G. Bataille, *Visions of Excess*, 77-98.

65. Frank Herbert, *Dune IV: God Emperor of Dune* (New York: Ace Books, 1984), 237.

66. F. Nietzsche, *The Pre-Platonic Philosophers* (trans. G. Whitlock, Chicago: University of Illinois Press, 2001), 62-3.

67. F. Nietzsche, *Beyond Good and Evil*, §230.

ecophysiological *drakontos* which as sovereign *stomachos* consumes everything, hence it is expelled only to be re-ingested, expelled so that it can be decrypted and then re-absorbed, re-encrypted. Thus becoming-*désêtre* is an ec[h]ological endeavour, assisting in this decryption through the self-realization, self-description, and pharmacological re-translation of the existent *pharmakon* as such. And this act of re-translation or gradual re-ingestion, propelled by pharmacological self-realization, itself in fact propels the ecophysiological engine: the indigestible is the impetus, the inciter, of ongoing ouroboric progression. Each indigestible concrescence is in other words the basis for further propulsion (and for *phusis* as such) in so far and in as much as it ‘figures itself out’ and thereby resolves its pharmaco-ecophysiological equation. This strange or rather uncanny *mathesis* underpins the one Palimbasha presents in the third book of *Dune*, where the worm-work of Dune’s *Übermensch* is described as a thoroughgoing *mathesis universalis*.⁶⁸ In Simondonian terms this would be a veritable *kybernetes universalis*⁶⁹ the guiding or governing principle of which could be called the permutational individuation of the metaphysico-mathematical zero.⁷⁰

68. Herbert, *Dune III: Children of Dune*, 234.

69. G. Simondon, *L’Individuation*, 561.

70. Malfatti, *Études sur la Mathèse*, 8.

Ec[h]ological literacy or attunement to ‘eco-language’⁷¹ in this context means becoming the consummate nihilist, ec[h]ological work being a nihilistic unworking pursued to its furthest extremes. This is the work of Nietzsche’s ‘great’ rather than ‘petty’ politics⁷² and ‘great’ rather than ‘particular’ health⁷³ – these designating nothing other than the grand operation by which man overcomes nihilism through the affirmation of its most extreme and radical form (*viz.* eternal recurrence). The ‘great politics’ of total affirmation proceeds by way of an ongoing double-crossing and betrayal of existents. The twist, of course (or the cyclonic twist-*within-the-twist*), is that the trajectory of negativity and negation (‘the most world-denying of all possible ways of thinking’⁷⁴) leads ec[h]ologically to the affirmation of the eternity of all existence⁷⁵ which is nothing more and nothing less than the death of negativity – Nietzsche’s post-nihilistic insight. The consummate nihilist annihilates to the point at which nihilism consumes itself, to the point of nihilism’s

71. Herbert, *Dune III: Children of Dune*, 267.

72. F. Nietzsche, *Beyond Good and Evil* §208.

73. F. Nietzsche, *The Gay Science* §382, 346-7.

74. F. Nietzsche, *Beyond Good and Evil* §56.

75. This is what Nietzsche calls ‘the ideal of the most high-spirited, alive and world-affirming’ in *Beyond Good and Evil* §56, and what Levinas instead calls an absolute ‘horror’ in his early essay ‘Il y a’ (*Deucalion* 1, 1946, 141–154, in *Time and the Other*, trans. R. Cohen [Pittsburgh: Duquesne University Press, 1987], and in his *Existence and Existents*, trans. A. Lingis [The Hague: Martinus Nijhoff, 1978, republished in Pittsburgh: Duquesne University Press, 2001]).

annihilation, its ultimate ungrounding in and as the zero-ouroboros .

Alchemical (hence ec[h]ological) *melanosis* is *destruction-as-transduction*: it is a destruction that transduces ec[h]ological existence. But it also (as an echo) hastens the ec[h]ophysiological genesis of an entirely new constellation of forces. It is by way of its ‘metaphysico-mathematical’ unity⁷⁶ that utter destruction can in its transduction reticulate the very void it destructively engineers and engenders, thereby inaugurating another era, age, *aion* or *yuga*. Georges Bataille would call this a destruction of restricted economies that opens onto the general – in this case drakontological or ecophysiological – economy. The restricted opens onto the general, the individual onto the transindividual and transductive⁷⁷ or ultimately overhuman/*übermenschlich* economy. Great politics and great health are the transductive effects of drakontological digestion – the effects, in other words, of *Wille zur Macht* understood as an ouroboric and vermicular Will-to-power. Rather than egocentric and egological, their operative principle or *kymatik kybernetes* is instead *ecological* and *alchemical*: a politics of putrefaction, to paraphrase Negarestani⁷⁸ – a ‘*mathesis* and politics of

76. Malfatti, *Études sur la Mathèse*, 11.

77. G. Simondon, *Du Mode d'Existence des Objets Techniques* (Paris: Éditions Aubier, 1958), 248.

78. R. Negarestani, ‘Undercover Softness: An Introduction to the Architecture and Politics of Decay’, *COLLAPSE* VI, 379-430.

decay.⁷⁹ *Will to power* is therefore far from psychological in nature; it is in principle and process a *psychophagy* as opposed to a *psychology*, a ‘force of violent destruction’⁸⁰ that ingests the individual – *all* individuals – and alchemically digests it or digests them. It is a process of *désêtrement* the ‘*désêtre*’ of which is the *über-* and/or *unter-menschliche Wurm* that is the very hieroglyph of Nietzsche’s *Übermensch* and the vehicle as such of a *volonté d’estomac(hia)*.

79. Ibid., 381.

80. Nietzsche, *The Will to Power*, §23.

Spiritual Meat: Resurrection and Religious Horror in Bataille

Eugene Thacker

Let us eat and drink, for tomorrow we die.

1 CORINTHIANS

Each of us does nothing but carry a corpse about.

PHILO

Let me be the food of wild beasts through whom it is possible to attain God.

IGNATIUS OF ANTIOCH

RESURRECTION; OR, CANNIBALISM

In his treatise *The Resurrection of the Dead*, Athenagoras of Athens, the second-century Christian apologist, notes a number of perplexing problems in the Christian idea of resurrection. Like many Christian thinkers of the period, Athenagoras conceives of resurrection in material terms; resurrection for him implies

the resurrection of the body, with all its parts intact. But this idea poses some basic questions. Knowing that bodies decompose and decay, how is it possible to 'raise up' a body at all, let alone a body that is 'incorruptible'? In response to the criticism that the resurrection of the dead is impossible, Athenagoras makes reference to the *fiat* of divine intervention. As he notes, 'that same power can reunite what is dissolved, and raise up what is prostrate, and restore the dead to life again, and put the corruptible into a state of incorruption'.¹ Furthermore, to this divine being will belong the capacity 'to separate this, I say, and unite it again with the proper members and parts of members, whether it has passed into some one of those animals, or into many, or thence into others, or, after being dissolved along with these, has been carried back again to the original elements ...'.²

But here Athenagoras runs into a problem. It is not only that the dead are dead, and cannot be made living again; it is that in resurrecting the body one is necessarily resurrecting the corpse, a corpse that could be in an advanced stage of decomposition, or worse, could have become food for beasts. Athenagoras summarizes the logic of his critics:

1. *The Treatise of Athenagoras on Resurrection of the Dead*, trans. M. Dods, G. Reith, and B.P. Pratten, in *The Ante-Nicene Christian Library, vol. II: The Writings of Justin Martyr and Athenagoras* (Edinburgh: T. & T. Clark, 1867), III, 427.

2. Ibid.

Since, then, bodies are thus consumed, and the members and parts composing them are broken up and distributed among a great multitude of animals, and by means of nutrition become incorporated with the bodies of those that are nourished by them, – in the first place, they say, their separation from these is impossible; and besides this, in the second place, they adduce another circumstance more difficult still. When animals of the kind suitable for human food, which have fed on the bodies of men, pass through their stomach, and become incorporated with the bodies of those who have partaken of them, it is an absolute necessity, they say, that the parts of the bodies of men which have served as nourishment to the animals which have partaken of them should pass into other bodies of men, since the animals which meanwhile have been nourished by them convey the nutriment derived from those by whom they were nourished into those men of whom they become the nutriment.³

Athenagoras must acknowledge that the resurrection of the body brings with it a number of paradoxes. First, while the body is subject to the temporal processes of aging, illness, and decay, the resurrected body is supposedly free from all these, and yet is still a body. Second, the doctrine of the resurrection of

3. Ibid., IV, 427-8.

the dead says little about what kind of body is resurrected – in particular, how the resurrected body is related to the earthly, living, un-resurrected body. Is the resurrected body exactly identical to our own living bodies, and if so, at which point in our lives does our living body provide the avatar, as it were, for the resurrected body? Finally, Athenagoras notes several seemingly minor, though peculiar, objections raised against the resurrection doctrine, one of which deals with eating, metabolism, and excrement. Supposing that the earthly body of a dead person is allowed to decompose, its parts returning to the earth and the worms, and supposing that the earth then serves as soil for the growth of plants, and supposing that human beings then eat those plants, are we to assume that cannibalism – albeit an indirect cannibalism – has taken place? And if so, how can the resurrection of the body occur when the dead body has disintegrated so far as to be nearly impossible to re-assemble?

While he does not definitely answer all these objections, Athenagoras' problems remain more interesting than his solutions. In his discussion of resurrection, Athenagoras articulates two different processes: the process through which the matter of the corpse is broken down, transformed, and incorporated within non-living matter (including that of other living beings), and the process through which the dead are re-animated and re-assembled in a superlative, almost

speculative afterlife. In this vertical, double articulation – the body rising up, the body sinking below – Athenagoras' treatise also traces a lateral articulation, one that describes the incessant and non-teleological transformation of matter, to the point where matter simply becomes identical with this incessant and non-teleological transformation. In short, Athenagoras' treatise happens upon a *culinary* transformation of matter that goes beyond the literal acts of eating, digestion, and metabolism, and tends to become a generalized principle of the world itself.

But in Athenagoras' treatise, this lateral articulation stands in a conflicted relationship to the vertical one. When the body becomes the decaying corpse, life is always in excess of itself – especially after life, where the processes of decay and disintegration carry on another type of life, whose endpoint, in so far as there can be said to be an endpoint, is the excess of matter as fertilization or as excrement. Put crudely, in such metabolic and metamorphic processes, *life is shit*. We die, and our decomposing bodies become prepared as food for worms, returning to their inorganic origins for which the boundary separating living and non-living no longer holds. Our bodies are broken down, bit by bit, where another, unhuman life carries on in excess of our bodies.

In the process of re-animation and re-assembling, life is not just death, but death manifest as the corpse,

the living body become a cold, dead thing broken down into its material constituents. While it reaches ever greater heights as a perfected, spiritual life after life, it resists its own immateriality, remaining embodied, living, and even anatomized; and yet this same body is also reassembled from the basic elements of the earth, with which it has merged. In resurrection, *life is dirt*. We die, and our bodies are either buried or burned, in either case undergoing a reduction to an elemental materiality in which the boundary separating the organic from the inorganic no longer holds. Bodies become ash and dirt, we become atmospheric smoke and elementary particles.

Everything that happens in the life of resurrection happens outside of life – that is, after death. The living body must first become a corpse, so that it can enter the continuity of material transformations of decomposition and regeneration; likewise, the corpse must be disseminated into innumerable elementary particles, so that it can be re-embodied in the logical conundrum that is the resurrected life. What both of these processes have in common is a kind of life that bears little relation to any vitalist, organismic, or biocentrist concept of life. In both processes, the dead are transformed into the living, but a kind of living that requires the negation of life *by* life. In both processes, what is produced is not simply a renewed life, but a qualitatively different situation that can only

be described in the language of paradox: the life that never changes, grows, or decays; the life that is always negating itself, always undergoing transformations.

As Athenagoras acknowledges, the critics of the resurrection doctrine have a hard time reconciling these two forms of life. It would seem that the life of the corpse would decompose the corpse to such an extent that it could no longer exist, or that it would become identical with the earth. In fact, the life of the corpse seems to be a direct threat to the life of resurrection; the more the life of the corpse breaks down the body into its constituent elements, the more implausible it seems that the body's parts can be re-assembled at the moment of resurrection.

Athenagoras' defence of resurrection rests, perhaps unsurprisingly, on a political theology of the miracle. Just as the Creation is an exceptional, miraculous act of the divine, so is resurrection a miraculous act, despite its apparent implausibility. In other words, Athenagoras' concern is to separate these two forms of life. The life of resurrection counteracts the life of the corpse, in spite of all that the life of the corpse does to render the corpse identical with all that is non-corpse (soil, roots, worms, etc.). That said, the life of resurrection nevertheless remains resolutely corporeal, rather than leading towards an ethereal, disembodied, spirituality.

At the extreme point of Athenagoras' problem is the life that is so perfect it is, in fact, death (the

eternal life of resurrection), and the death that is so metamorphic that it is in excess of life, culminating in the pure excess of decomposition, fertilization, and regeneration. These two forms of life come together in a concept of material transformation that is 'culinary': The decaying corpse and the re-animated soul are two aspects of a more generalized culinary process through which the very materiality of the world is continually 'cooked' (and eaten).

THREE VARIATIONS ON THE CULINARY

Here it is necessary to make a few distinctions regarding this idea of the culinary. At one level, there is the culinary considered as cooking, where cooking entails a whole set of activities that have come to anthropologically define the human: the preparation of food; the techniques of transforming non-food materials into food for consumption; the human cultural practices of eating, be they social, religious, or leisure-based. Here cooking is *nourishment*, at all levels, from the biological to the cultural. Cooking-as-nourishment is regarded as an activity specific to humanity, a form of technics that separates the human from the animal, a cultural form that includes the aesthetics of taste, the expression of cultural difference, and the intertwining of culture and economy in global food production and consumption. In this register, cooking is indelibly – and exclusively – a human endeavour, a 'restricted' form of the culinary.

Cooking is, anthropologically speaking, the root of culture and the mirror of the human.

What would it mean to consider an unhuman cooking? Here we venture into a consideration of the culinary, not in a restricted, anthropic sense, but in a generalized sense. A generic cooking, a ‘general’ culinarianism. Here cooking is not restricted within the ambit of human culture – but neither is it naïvely democratized by bestowing it on higher animals, primitive humans, or even aliens.⁴ Instead, we can ask: What would it mean to consider cooking as an anonymous process of the world as such? Cooking would have to be considered as non-teleological, benefitting neither biological health, nor cultural representation, nor economic imperative. More importantly, this generalized cooking would bypass the well-worn metaphysical boundaries that define cooking in a restricted, anthropic sense: living/non-living, organic/inorganic, natural/artificial, human/animal, and so on. Perhaps this generalized cooking would be a way of thinking the world as a continual morphology of matter and energy, but indifferently to the instrumental wants and desires of ‘cooking’ in the restricted sense. This would be a generalized cooking as *transformation*. Cooking in this general sense is the horizon of political economy. The world is continually cooked, and this generic cooking

4. That said, the 1962 Twilight Zone episode ‘To Serve Man’ (based on a Damon Knight short story) remains one the most acute critiques of anthropic notions of culinarianism.

comes to overlap nearly perfectly with a concept of impersonal, anonymous transformation.

But even this notion, removed as it is from the anthropocentrism of cooking-as-nourishment, must still presume a basic dichotomy between stasis and change, between resource and product, between that-which-changes and that-which-is-changed. Thus cooking-as-transformation appears indebted to a meta-physics of generosity, of a flux and flow of matter and energy, of a dynamic continuum of transformation. But the question we pose here is whether there is a third sense of 'culinarism,' one that is critical of the notion of cooking-as-nourishment (and its anthropic conceits), but which also departs from the notion of cooking-as-transformation (with its over-reliance on the presentism of generosity).

What would an unhuman, anonymous cooking be like that is also non-teleological and non-generous? Athenagoras (and later, Bataille) already gives us a hint of this type of cooking in his two forms of life-negation: the gradient stretching from the decomposing corpse to the emptied soul, figures of life that must necessarily negate themselves, without simply destroying themselves. If this is a continual transformation, perhaps it is an indelibly tragic one, ultimately failing to hold all the particles together, ultimately flailing in the attempt to re-assemble them. Here cooking is neither nourishment nor transformation, but really cooking as *desolation*.

A desolate cooking involves processes of evacuation, elimination, emptying. The aim is neither to re-instate nourishment and the human imperative to recuperate and recycle, nor to rush headlong into a naturalized glorification of the flux and flow of the phenomenal world. In its desolate mode, a generalized culinaryism would entail a shift from a philosophy of cooking (the hermeneutics of human taste and culture; what cooking means or signifies in its restricted register), to a cooking of philosophy – cooking-as-desolation understood as a movement towards the *indistinction* of everything that cooking-as-nourishment and even cooking-as-transformation would lay as the foundation for philosophy's hermeneutic imperative.

Resurrection brings together the strange materiality of the corpse with the equally strange, equally anonymous process of eating – in fact, resurrection is, in a sense, the point where they perfectly overlap. Whether it is in the bowels of the earth or in the specular forge of the heavens, there is, for Athenagoras, a life that continues after life. The question that he does not ask, or cannot ask, is whether these two types of life – the life of resurrection and the life of the corpse – are not so much in opposition to each other, as mutually convertible into one another. This is, however, a question that Georges Bataille does ask, and, to jump ahead a little, his response is that only a concept of life that is rooted in negation – that is always being

COLLAPSE VII

‘cooked’ – can reveal the ways in which resurrection is also decomposition, the way in which the corpse is also this anonymous, unhuman ‘cooking.’

EATEN AND/OR DEAD

Resurrection entails all the promises of the perfected, yet still corporeal, life after life, but is undermined by the problems concerning the disintegration of the corpse and its integration with the earth. Here Athénagoras isolates a problem that is worth examining in greater detail: how can life be thought in such a way that it is not simply negated by death? Or, more simply: *what is the life that is not negated in death?*

Addressing this question means addressing the tendency in Western thought to regard the question of life as philosophically tethered to the question of being. This implies a positivity to the concept of life, either as a subset of being (life is that which presumes a minimal concept of being), or as superfluous to being (life as the becoming of being). This is one of the central questions in Bataille’s work, particularly in his posthumously published text *Theory of Religion*. Bataille returns again and again to this idea of a negative concept of life – especially when life itself becomes indissociable from a certain degree zero of material transformations. And while Bataille was certainly no Christian apologist, works such as *Theory of Religion* do

take up many of the issues raised by Patristic thinkers such as Athenagoras. The difference, however, is that for Bataille theology is really *atheology*, or theology without a head, mysticism without God, the divine without the spiritual. Bataille's question is, then, a variant of Athenagoras': *what is the life that is not negated in death, but that is itself negation?*

But what would it mean to think of life in terms of negation? It would have to be something different than the negation of life – as in, for example, the individuated death or perishing of the living being. Here life is simply a positive for death as a negative, the latter having no other value than as that which is the negation of life. But it would also have to be something different than life itself negating something else (whether for survival or preservation). In this quasi-Darwinian notion, life is only negative by virtue of its propensity for growth and consumption; one form of life negates other forms of life through its overcoming of life in general.

Bataille does sometimes think of life as being negated – his recurrent example of ritual sacrifice has at its core the negation of life, though for Bataille this act of life-negation takes place within a larger economy of forces, a solar economy based on prodigality. And Bataille does often speak of life in terms of excess – in fact, one of Bataille's ontological principles is that of excess, and in particular the excess of vital energy

that, Bataille insists, governs the play of anonymous forces of the planet. Life is excess, but for Bataille life is only excess in so far as it is useless; it obtains what Bataille once called a ‘unemployed negativity’ at its core, an excess that can only be expended. The *negativity* of life is, for Bataille, not the *negation* of life (as death or perishing), and neither is it the growth, or prodigality, or agglomeration of life (in cycles of growth, decay, and growth).

To understand what life-negation is for Bataille, we have to look more closely at the arguments made in *Theory of Religion*. One of Bataille’s insights here is that, metaphysically speaking, it is in religion that the highest and the lowest orders come into intimate contact with each other. This contact Bataille often calls ‘continuity’ (other terms he uses include ‘intimacy’ and ‘immanence’).⁵ In continuity all distinctions are blurred, and individuation and differentiation give way before a vast, unhuman abyss Bataille calls ‘immensity’.

5. Bataille’s fairly consistent use of the term ‘continuity’ invites a closer examination of the relation between Bataillean ‘continuity’ and the mathematical ‘continuum’. Bataille appears to favor a dynamic and excessive flux (as per his metaphor of animals existing “like water in water”) that would seem roughly analogous to the non-empty, connected continuum in mathematical topology – though perhaps Bataille may have trouble with the mathematical apriori of geometric space over time (which his concept of ‘expenditure’ seems designed to overturn). Similarly, the continuum thesis in Cantorian set theory presents a rigorous and formalized description of mathematical infinity. We can imagine that Bataille may agree with its impetus – the articulation of an excess (a numerical excess) that cannot be counted – though one wonders if Bataille would have trouble with the notion that such un-countable excess can ever be fully circumscribed within the ambit of mathematical thought.

But we as human beings, living in a human world, rely on individuation and differentiation; we live, in Bataille's terms, in a world of discontinuity. Though rare and exceptional, there are practices or exercises by which we as human subjects are divested of our subjectivity and the self-world relation, and Bataille returns again and again to examples of this divestiture: in ritual sacrifice, in eroticism, in mystical ecstasy, in meditation or prayer, even in our interaction with useless objects, such as jewellery, bodily fluids, or poetry. As human subjects, however, we must always return to the discontinuous world, in which subject is distinguished from object, self from world, one person from another.

A central tenet in Bataille's philosophy of religion is that religion constitutes the search, within discontinuity, for an absent continuity. For Bataille, any comprehension of the significance of the religious impulse in human beings must necessarily begin at the level of the animal. Animals, for Bataille, exist already in a state of continuity. With the animal, there is no subject and object, or self and world. Unburdened with the Kantian apparatus of consciousness, '[t]he animal is in the world like water in water.'⁶ How exactly is the animal's continuity manifest? As Bataille notes, '[t]he immanence of the animal with respect to its milieu is given in a precise situation ... *the situation is given*

6. *Theory of Religion*, trans. R. Hurley (New York: Zone, 1989), 23.

*when one animal eats another.*⁷ Attempting to adopt a non-anthropomorphic position, Bataille notes that, while we as human beings may attribute qualitative differences to animals (from the scientific study of predator-prey relations to poetic evocations of the ‘king of the beasts’), for animals themselves all differences are only quantitative.⁸ Animality is continuity because it is fundamentally the lateral distribution and re-distribution of matter – and eating is the primary testament to this animal materiality. ‘What is given when one animal eats another is always the *fellow creature* of the one that eats. It is in this sense that I speak of immanence.’⁹

But the world as continuity continues to haunt the discontinuous world of humanity. Bataille remains committed to the notion that there is some part of the continuous world embedded in humanity, some part it cannot be rid of, but that cannot be totally sublimated. Continuity, for Bataille, can be accessed but is not intelligible; for this access has as its precondition the negation of accessibility.¹⁰ Again, there is something

7. Ibid., 17.

8. By ‘quantitative’ Bataille does not mean ‘mathematical’ in a strict sense, but a differential in the power relation between one animal and another, between eater and eaten. This takes Bataille into a Nietzschean (and perhaps, even, Spinozist) reading of culinaryism, in which the so-called quantitative difference of eater and eaten (‘like water in water’) can only ever be thought outside that immanent relation.

9. *Theory of Religion*, 17.

10. This idea is explored in my essay ‘Mediation and Antimediation’, in E.

of the tragic in Bataille's notion of continuity, for it is not ever fully realized or achieved.

But its failure can happen in several ways. For Bataille, traditional religion – his main target is Christianity – has failed in that it has attempted to transform continuity itself into a thing, condensed into the anthropomorphic, personal, temperamental God. For Bataille, the concept of the divine comes to describe this haunting:

If we now picture men conceiving the world in the light of an existence that is continuous ... we must also perceive the need for them to attribute to it the virtues of a *thing* 'capable of acting, thinking, and speaking' (just as men do) ... So the positing, in the world, of a 'supreme being', distinct and limited like a thing, is first of all an impoverishment.¹¹

It seems, then, that even the theological notion of God is implanted within the discontinuous world of things, one being among other beings. But if this is the case, then at what moment does the living being enter into continuity? Bataille gives two instances, instances which remarkably mirror Athenagoras' discussion on resurrection: The first instance has to do with eating.

Hörl (Ed.) *The Technological Condition/Die Technologische Bedingung* (Berlin: Suhrkamp Verlag, 2011).

11. Ibid., 33-4.

Bataille has already mentioned the role that eating plays in animality – it is the expression of continuous being. Human beings do eat, of course, but not in this sense. As Bataille notes, ‘man does not eat anything before he has made it into an object ... man is an animal that does not *have a part* in that which he eats.’¹²

Bataille’s other instance in which the living being opens onto continuity has to do with the corpse. This is also related to eating. For human beings, ‘the eaten animal can be posited as an object only provided it is eaten dead.’¹³ The transformation of the living body into a corpse is the necessary human prerequisite for the corpse to be transformed into food. But we never refer to our food as a corpse. The corpse is not only a dead thing, but a qualified dead thing. It is a dead thing with a kind of shadowy excess hovering around it, seeping from its pores. The corpse is simply that which remains, the remainder that does not go away, that persists in its thick, weighty, thingness, but which is never reducible to that thingness. Bataille discusses Western culture’s ambivalence towards the corpse: ‘... the spirit is so closely linked to the body as a thing that the body never ceases to be haunted, is never a thing except virtually, so much so that if death reduces it to the condition of a thing, the spirit is more present than ever: the body that has betrayed it reveals it more

12. Ibid., 39.

13. Ibid.

clearly than when it served it.¹⁴ The corpse reveals life in a direct, dichotomous sense, as the thing that formerly contained life, as a thing that was formerly inseparable from life. The separation of life and body results in the dead facticity of the corpse. As Bataille notes, 'In a sense the corpse is the most complete affirmation of the spirit.'¹⁵

With this in mind, we can extract from Bataille's *Theory of Religion* a sort of abbreviated typology, one in which a material concept of life is thought of in terms of negation: There is, first, *the dead life*. The dead life is the twofold life of the corpse, at once the paradoxical affirmation of a life that no longer exists, and a continuation of the life of decay, decomposition, and disintegration. In its first aspect, the dead life affirms the basic split between the living and non-living, the living body and the body reduced to a thing. But in its second aspect, the dead life frustrates this boundary, as the decomposition of the corpse into its elements cuts across the boundary of the living and non-living.¹⁶

14. Ibid., 40.

15. Ibid.

16. My treatment of the decay, decomposition, and disintegration of the corpse shares some affinities with Reza Negarestani's essay 'Undercover Softness: An Introduction to the Architecture and Politics of Decay', (COLLAPSE VI). While I share with Negarestani the notion of decay as infinite negation (perhaps, as negativity that is not negative), I am placing the decay of the corpse within the context of an unhuman, anonymous 'eating' (really, a metabolic general economy), such that the eaten and the dead come to overlap. My reading of Bataille suggests that, in short, a certain type of mysticism comes to encompass this overlapping.

Secondly, there is *the eaten life*. The eaten life is also twofold: the discontinuity of eating in humanity, and the continuity of eating in animality. In its first aspect, the eaten life is predicated on a basic distinction between human and animal, with the resultant hierarchies and taboos that follow from that distinction. In its second aspect, the eaten life does not acknowledge, or is indifferent to, the human-animal distinction, existing only as the material transformation of elementary particles, 'like water in water.'

For Bataille, both the animal and the corpse participate in divine immanence, which we as human beings cleave away into a naturalized transcendence, either through the conceptual dyad of human/animal and food, or through the affiliation of the corpse with the thing and the dyad of living/non-living.

Bataille sees in these two enigmatic states a kind of negative immanence that he aligns with the experiences of mysticism. Both the eaten and the dead, those things we name as things, are for Bataille simply names that really designate an unassignable, unhuman state – the state of absolute dissolution that is also continuity, and which, for Bataille, is simply another name for the *divine*.

CANNIBAL CORPSE

For Bataille, divinity is indelibly material. But this materiality is not one of a naturalized generativity or prodigality, and neither is it that of an infinitely calculable mechanism. It is materiality with a certain black gravity, a materiality with an emptiness at its core, a thickness of negation that does not abstract or elevate, but that saturates, that obfuscates, that renders desolate. This is Bataille's own brand of apophatic culinaryism, an unhuman and anonymous cooking that corresponds to the indistinct and indifferent sphere he calls continuity. Continuity is this gradient along which everything that is, becomes indistinct and yet not immaterial.

But these passages between the divine and the material are not exclusive to Bataille's work; as we have suggested, Bataille borrows them from a long-standing discussion in Patristic theology concerning resurrection, the body, and the flesh. These debates have been unearthed and enlivened in Caroline Walker Bynum's study *The Resurrection of the Body in Western Christianity*. As Bynum notes at the outset, 'the resurrection of the body is always tied to divine power.'¹⁷ Resurrection is tied to sovereign power, either in its ability to intervene in the natural order of things

17. *The Resurrection of the Body in Western Christianity, 200-1336* (New York: Columbia University Press, 1995), 2.

(e.g. the miracle of the resurrected body), or as an assertion of dominion over the workings of nature (e.g. the governance of the resurrected in eschatology). At the same time, resurrection is often described by theologians in terms of naturalistic or proto-biological tropes (e.g. the seed metaphor in Paul, processes of growth and hypergrowth in Origen). These characteristics come together in what Bynum identifies as the central philosophical problematic of resurrection in Christianity: the problem of continuity.

In Bynum's study, while the religious subject of early Christianity is markedly different from the modern subject, the notion of personhood is nevertheless an important element in the doctrine of resurrection. In Bynum's study, the body is central to Christian theology's notion of selfhood or personhood. Thus, formal and material continuity in the body is necessary for the survival of the person in resurrection. In short, if the survival of the body is necessary for the survival of the person, then it follows that the resurrection of the body is necessary for the resurrection of the person. Without personhood, there is no immortality, and in this way personhood (and by extension corporeality) is necessary for immortality and the eternity of the afterlife.

But if the body is necessary for resurrection, what kind of body is it that is resurrected? If the resurrected body is decaying or in parts, then will the resurrected person

also be a fragmented or decaying person? We see here a variant of Athenagoras' problem with which we began. How can the doctrine of resurrection ensure that the resurrected person will also be a resurrected body (since body is required for personhood), and how can it ensure that the resurrected body will be a unified, consistent, and whole body?

Bynum goes on to identify two aspects of the problem of continuity in the Patristics. The first is what she calls the problem of 'material continuity'. The problem of material continuity is, simply put, the problem of maintaining a stable and coherent personhood across successive transformations, including growth, old age, death, and resurrection. How can one be sure that the resurrected body is the same resurrected person as when that person was alive? Further, finer-grained questions follow from this: if there is an identity between the once-living body and the resurrected body, to what point during one's earthly life does the resurrected body correspond? Is it a teenage body, an adult body, a middle-aged body, an elderly body? Material continuity, with its *mélange* of Aristotle filtered through Neoplatonism, is forced to deal with the metaphysics of the stasis of change. At the centre of the material continuity problem is a modal disjunction between the living, earthly body and the afterlife of the resurrected body. While the former is subject to and defined by temporality, process, and

change, the latter is – so the argument goes – ‘living’ in a sense outside of time. The ontological de-coupling of earthly life and afterlife is necessary to establish the qualitative difference between the earthly and divine, but in so doing it leaves in its wake an irrevocable gulf between the temporal and the eternal.

Coupled with the problem of material continuity is a second problem, what Bynum refers to as the problem of ‘chain consumption’. Like the material continuity problem, the problem of chain consumption deals with how to maintain the identity of personhood through successive changes.¹⁸ But whereas material continuity deals with the changes to the body (and person) during life, chain consumption deals with the changes to the body (or corpse) after life. As we have seen in the case of Athenagoras, resurrection was not only a corporeal affair, it was thought of in roughly atomistic terms. If the body is composed of parts, then resurrection is equal to re-assembly. But the mysterious and gothic processes of decay and decomposition threaten to break the body down into so many parts that re-assembly becomes impossible. In addition, the corpse is not only decomposed, but it is also eaten. The corpse is eaten by a whole bestiary, from brooding

18. We should also note the significant contribution of structuralist anthropology to the idea of culinary transformation, in which the culinary is not only material, but semiotic and semantic as well. In a sense, Lévi-Strauss’ analysis in *The Raw and the Cooked* extends Bynum’s analysis to include the culinary transformation of both signs and souls.

vultures hovering in the sky to the patient feasting of worms in the earth. And this is where the theological problematic enters the scene. If we as human beings eat the flesh of an animal, and that animal has just eaten the corpse of a fellow human being, how has that once-human corpse not been forever lost in the endless chain of eater and eaten? As we've seen, apologists such as Athenagoras were unwavering in the face of such questions. Bynum notes that 'Athenagoras assumes that even the eaten dead must rise.' If cannibalism is a threat to the identity of the resurrected body, then the stomach is the grave.

These two problems of material continuity and chain consumption invite us to think about resurrection in Bataillian terms. The continuity that the doctrine of resurrection attempts to preserve is precisely that which is negated in Bataille's notion of continuity (which he also calls 'radical immanence' or the 'intimacy of the outside'). From Bataille's perspective, the twin problems of material continuity and chain consumption provide glimpses into a continuity that not only negates the preservation of the body, but also the person. They are problems for precisely this reason, just as, for Bataille, the eaten life (the eating of animality) and the dead life (the decomposing corpse) provide us with ephemeral glimpses into continuity. Both problems dovetail on what comes to be an unavoidable topic of Patristic discussions on resurrection

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– that of cannibalism. In cannibalism meat and corpse are brought together – the corpse as food, and food as the corpse – culminating in a series of material dissolutions whose serial negativity opens onto what Bataille calls continuity. As Bynum notes, Christianity ‘retained the notion that the person in some sense survives in hard, material particles, no matter how finely ground or how widely scattered. The grave will not consume us’.¹⁹ But whereas for Bataille continuity signified a radical immanence or indistinction, apart from the discontinuous world of subject and object, for the Patristics continuity is the continuity of identity across successive transformations – it is, in short, *the continuity of discontinuity*.

Such ideas emerge over a long period in which the ritual apparatus of Christianity takes shape: ‘Christians first opposed then adopted the Roman funerary meal. By the fourth century, the Eucharist was celebrated in graveyards ...’²⁰ Eventually eating and burying begin to overlap and move towards the taboo region of the eating of the dead: ‘... cannibalism – the consumption in which survival of body is most deeply threatened – was a charge pagans levelled against Christians and Christians against pagans. Polemicists for both positions assumed that cannibalism is the ultimate

19. *The Resurrection of the Body in Western Christianity*, 55.

20. *Ibid.*

barbarism, the ultimate horror.’²¹ At the limit of this convergence is a strange point at which the Eucharist comes to overlap almost perfectly with the doctrine of resurrection. Bynum paraphrases the defence of thinkers such as Tertullian, Irenaeus, and Athenagoras: ‘To eat (if it were really possible) would be to destroy – and to take over – the power of the consumed ... [E]ven if executioners feed our bodies to the beasts and then serve those beasts up on banquet tables, we are not truly eaten. To rise with all our organs and pieces intact is a victory over digestion – not only the digestion threatened by torturers and cannibals but most of all that proffered by natural process itself.’²²

In the political theology of resurrection, the resurrection of the body is not only a victory over the restricted economy of eating (culinarism-as-cooking), but it is also a victory over the more generalized economy of material continuity itself (culinarism-as-transformation). And this latter claim, so strongly asserted in the Patristics, is precisely what Bataille contests with his generalized culinarism and the concept of continuity. So, while Bataille appears to borrow the terms of the Patristics in his discussion of religion, he also stands apart from them in his emphasis on continuity as at once inaccessible and a zone of indistinction or indifference (culinarism-as-desolation).

21. Ibid.

22. Ibid., 55-6.

We can extend our abbreviated typology here, keeping in mind the theological and historical perspective provided by Bynum's study on resurrection. With Bataille, we had the *dead life*, the life of that which remained after death. We can extend this to talk simply about the dead life as the *corpse*. The corpse is at once that which decays and decomposes, and that which stubbornly remains in its thick facticity. The corpse is the materiality of the material continuity problem.

With Bataille we also had the *eaten life*, the life of the eater and eaten, be it in animal continuity or human discontinuity. This can likewise be extended to talk about the eaten life simply as *meat*. If the corpse is decay and decomposition, then meat is metabolism, digestion, and fertilization. Meat is the materiality of the chain consumption problem.

In these pairings – the dead life and the eaten life, the corpse and meat – we have a passage from one form of life determined within the human metaphysical framework (living/non-living, human/animal, etc.), to another, anonymous form of life whose precise function is to dissolve, transmute, and render indistinct this same anthropic metaphysics; and it is this latter process that points to a generalized culinarianism, cooking as an anonymous property of the world.

EATEN ALIVE AND/OR BURIED ALIVE

In an early written fragment, Bataille wonders whether there is, in the Hegelian concept of negation, an ‘unemployed negativity’ that remains inaccessible – or in excess of – the dialectic and its seemingly infinite capacity for sublimating the negative. This inclination is explored in *Theory of Religion*, where Bataille discusses the relationship between animal continuity (in the act of eating) and the life of the corpse (in the act of becoming food for worms) – again, ‘meat’ and ‘corpse’. Just as the corpse becomes food for worms, so does meat emerge from the dead corporeality of the living being. But these are simply so many instances of a more generalized culinarism, of which the indistinction between eater and eaten, and the eaten and the dead, are the exemplars. This insight reveals an indelibly material aspect to what are ostensibly religious concerns, resulting in what Bataille calls an ‘ambiguous horror.’ Generalized culinarism is therefore tied, for Bataille, to the ambiguous horror of the eaten and the dead, meat and corpse.

But this ambiguous horror Bataille mentions is not simply the emotion of fear, the stimulus/response of fright, or even the existential dread of death – all of these imply an object of experience that threatens the subject, all the while maintaining a separation between subject and object. The ambiguous horror, in these senses of the term, is not only inescapably

anthropocentric, but it is also invariably dialectical. For Bataille, however, horror is necessarily something unhuman. If it can be described in affective or even emotional terms, that is because it is, at its core, a fundamentally non-anthropomorphic affect – the affect of the unhuman. It is, really, a *religious horror*. Religious horror arises, for Bataille, from the ‘impoverishment’ of religious anthropomorphism we cited earlier, encapsulated in what Bataille calls the desire for a ‘supreme being’. The supreme being – Bataille’s target here are the monotheistic religions, though his claim applies to pagan gods as well – is continuity recuperated into discontinuity, the God made thing. On the one hand the supreme being allows for the Kantian concepts of causality, relation and modality to be applied even to the supernatural domain, such that the supreme being has both ‘isolated individuality’ and ‘creative power’. In this attempt at having one’s (theological) cake and (eucharistically) eating it too, there is the attempt to preserve the element of the divine as ‘indistinct’ and ‘immanent existence’.

The problem, for Bataille, is that in introducing the concept of the supreme being, one also attempts to comprehend continuity through the lens of discontinuity, in effect making the supreme being a being like other beings, along a sliding hierarchy of greater or lesser beings. ‘The objective personality of the supreme being situates it in the world next to other personal

beings of the same nature ... Men, animals, plants, heavenly bodies, meteors ...'²³ The kind of equivalency that results is a relative equivalency between discrete, individuated things, greater or lesser, supreme or subordinate. But this generalized equivalency is not the same as the continuity (or intimacy, or immanence) of which Bataille speaks. For even though the concept of the supreme being is, for Bataille, universal, at the same time 'the operation seems to have failed everywhere'. At best the supreme being becomes a symbol, an icon, an image that, when examined directly, necessarily gives way to negative concepts (as in Anselm's famous definition of God, as that beyond which nothing greater can be conceived).

In a sense, then, religious horror is the implausibility or the impoverishment of the supreme being, at the same time that there remains something profoundly negative in the absence of the supreme being. Religious horror is the horror of religion – of its failure despite its success, of its all-too-humanity, of its claims for continuity in the language of discontinuity, of its confused confirmation and refusal of the Kantian antinomy. *Religious horror is the generalized 'cooking' of the divine.*

If for Bataille the 'horror' that he discusses is really religious horror, what is it that makes this religious horror different from other kinds of horror (fear, fright, *Angst*)? One difference is that these

23. *Theory of Religion*, 34.

existential-phenomenological definitions of horror rely on a basic metaphysical dichotomy of life and death, and the horror elicited in the passage between them. But there is a transformation that is neither that of life into death nor death into life, but a kind of hypostasis of persisting, subsisting, and abiding – the religious horror of passing time.

We can describe Bataille's onto-theological problematic as the following: on the one hand, an immanent immersion in divine continuity, and on the other hand, a transcendental split between subject and object that guarantees the intelligibility of divine continuity. The former (divine continuity) can only be thought via the latter (subject-object split), but the latter by definition negates the former (the material dissolution of the subject-object split opening onto the material continuity of divinity). For Bataille, the only way out of this double-bind is by going headlong into it, and we can suggest that, for Bataille, this means understanding religion in terms of horror. In this sense *religious horror is a non-philosophical attempt to think of life in terms of negation, but a negation that is not negative*. This life, at once a hypostatized materiality and yet an immanence of negation, opens onto what he variously calls continuity, immanence, or intimacy: 'What is intimate, in the stronger sense, is what has the passion of an absence of individuality, the imperceptible sonority of a river,

the empty limpidity of the sky: this is still a negative definition, from which the essential is missing.²⁴

Bataille gives the name *divine* to this onto-theological problematic. The divine names not a supreme being or transcendent reality, but the necessarily implausible or impoverished character of the transcendent, when it comes to stand in for the discontinuity of continuity. The divine is this generalized culinarism that is different from either culinarism-as-cooking or culinarism-as-transformation. But, for Bataille, this divine continuity must necessarily remain tragic, not ‘out there’ and yet never comprehended: ‘This continuity, which for the animal could not be distinguished from anything else ... offered man all the fascination of the sacred world, as against the poverty of the profane tool (of the discontinuous object).’²⁵ For Bataille this element of the divine is to be distinguished from animal continuity, even though it may derive from it: ‘The sense of the sacred obviously is not that of the animal lost in the mists of continuity where nothing is distinct ... Moreover, the animal accepted the immanence that submerged it without apparent protest, whereas man feels a kind of impotent horror in the sense of the sacred. This horror is ambiguous ...’²⁶

24. Ibid., 50-1.

25. Ibid., 35.

26. Ibid., 35-6.

The divine is, for Bataille, the irresolution of the material and spiritual. Divinity is not expressed in the heady drama of disembodied, ethereal spirits, and neither is it expressed through the back door transcendence of the ritual of the everyday. Instead, divinity for Bataille derives from the inaccessibility of the continuous 'cooking' of the world, and humanity's *negative* awareness of this inaccessibility.

The religious horror of the eaten and the dead reveal different aspects of the religious horror of which Bataille speaks. They also extend our abbreviated typology thus far. But whereas the previous terms – the eaten and the dead, meat and corpse – were still predicated on an ontological split between life and death, which was then confused or rendered ambivalent, here the indistinction is followed to its logical conclusion, in some cases nearly inverting the terms.

On the one hand, we have the life of resurrection, the dead life, which, as decomposing and disintegrating, is also the corpse. In horror films, the corpse becomes more than a corpse when the life of resurrection in fact coincides with, or even precedes, the death of the living body and its internment. It is not simply that life precedes death temporally, but, in a near-inversion, the life after life is ontologically prior to the corpse. That is, the corpse becomes the *buried alive*.

On the other hand, we have the life of the eater and the eaten, the eaten life, which, in the continuity of

animality, and in the transformation of the corpse into food for worms, is also meat. Here the inversion takes place between the dead and the eaten. The dead is not simply that which is temporally prior to the eaten, but the eaten is ontologically prior to the dead, in the sense that a kind of anonymous digestion or metabolism courses through the living, the dead, and the eaten all together. In a sense, life only begins after having been eaten. In short, meat becomes the *eaten alive*.

ABJECT ORIENTED ONTOLOGY

For Bataille, religious horror, and the impossible experience of continuity on which it is founded, is always subsumed within the real order in a tenuous, ambivalent way: 'The real order does not so much reject the negation of life that is death as it rejects the affirmation of intimate life, whose measureless violence is a danger to the stability of things, an affirmation that is fully revealed only in death.'²⁷ Again: 'Death reveals life in its plenitude and dissolves the real order.'²⁸

The limit that Bataille confronts in the idea of religious horror is that of the unhuman. On the one hand, there is the pull towards absolute continuity, and the dissolving of all boundaries and individuation. This is counter-balanced by the pull towards discontinuity,

27. Ibid., 46-7

28. Ibid., 47.

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and the limit of this thought of continuity for the human being. The two culminate in what Bataille calls the 'contagiousness of the divine,' the enigmatic revelation of an inaccessibility that is the result of the dissolution of a split between subject and object, that is nevertheless necessary for the dissolution to be thought as such.

On the surface, this seems to describe the concept of the abject, as found in psychoanalytic theory. The abject is that which is neither subject nor object, a repudiated element that serves as a reminder of a threatening, primal repression prior to subject-object relations. But the abject, at least in this guise, remains tethered to a psychoanalytic framework, with its language of repression, lack, and desire. It remains tied to the paradigm of a therapeutic, human subject, even as this subject is constantly threatened and made anxious by the abject. The abject is always regarded from the stance of the subject (even if a subject under erasure). Nevertheless, the abject is relevant, in that it persists and subsists through a certain type of materiality. 'The corpse,' writes Julia Kristeva, 'that which has irremediably come a cropper, is cesspool, and death: it upsets even more violently the one who confronts it as fragile and fallacious chance ... refuse and corpses *show me* what I permanently thrust aside in order to live.'²⁹

29. *Powers of Horror: An Essay on Abjection*, trans. L. Roudiez (New York: Columbia University Press, 1982), 3.

As we've seen, the meat and the corpse, the eaten alive and the buried alive, these are the philosophemes of religious horror, forms of life paradoxically constituted by and through negation. What begins in the discontinuity of human life, is extended in and is coursed through by the continuity of the life after life – the decomposing corpse, food for worms. Furthermore, the point of contact between the eaten and the dead – meat and corpse, the eaten-alive and buried-alive – is a culinary one, but a kind of culinarianism that is quite different from the usual, anthropological meaning (culinarianism-as-cooking) or from the naturalistic meaning (culinarianism-as-transformation). The culinary continuity of the eaten and the dead, of meat and corpse, is an unhuman 'cooking' (culinarianism-as-desolation) that renders *indistinct* everything that an anthropic pretence to gustatory culture – the culture of taste, food, and humans relating unilaterally to non-humans – would claim as its metaphysical privilege.

Given this, what would it mean to consider a notion of the abject without the human, or better, a 'religious' notion of the abject? If psychoanalysis approaches the abject from the side of the subject, what of the other side, the side of the object? But such a perspectival shift would be doomed to failure, for there can be no objective abjection, just as there can be no humanity in continuity, no humanity within meat and corpse, the eaten and the dead. Would this not

require a philosophy that remains as sceptical of an object-oriented ontology as it is suspicious of a subject-oriented ontology? Perhaps we can propose something less than a unified theory; perhaps we can propose a pun. Let us consider the lesson of religious horror in Bataille – that *the world abjects the human*. Would this not require an *abject-oriented ontology*?³⁰

We have seen that, for Bataille, the transformation of the animal into a thing is ‘a basic human given’ that also provides the conditions for the emergence of religion.³¹ The animal can be reduced to a thing in the two ways that we have discussed: as the eaten and the dead. ‘Thus the eaten animal can be posited as an object provided it is eaten dead.’³² But the true articulation of the human as human comes not just in reducing the animal to a thing, whether it be eaten or dead. The true ascendancy of the human comes in the articulation of the introconversion of the eaten with the dead. The human emerges not because animals are eaten or dead, but because they are always potentially one becoming the other, eaten *and* dead. The process by which this happens is a culinary one, one in which culinarianism-as-desolation is reduced to culinarianism-as-transformation,

30. Given a certain predilection for acronyms in theory today, abject-oriented philosophy could be abbreviated as AOO (as in “oww,” it hurts...).

31. ‘The definition of the animal as a thing has become a basic human given. The animal has lost its status as man’s fellow creature, and man, perceiving the animality in himself, regards it as a defect.’ (*Theory of Religion*, 39).

32. Ibid.

one in which culinaryism-as-transformation is reduced to culinaryism-as-cooking. There is a reductionism to the culinary that is analogous to anthropism. ‘Indeed,’ as Bataille continues, the animal ‘is fully a thing only in a roasted, grilled, or boiled form ... the preparation of meat is not primarily connected with a gastronomical pursuit: before that it has to do with the fact that man does not eat anything before he has made an object of it.’³³

This provides one explanation – a philosophical one, rather than an anthropological one – for the taboo regarding cannibalism. As Bataille affirms, this type of reductionist culinaryism is deeply associated with the production of the human: ‘Concerning that which I kill, which I cut up, which I cook, I implicitly affirm that *that* has never been anything but a thing.’³⁴ And yet, ‘[t]o cut up, cook, and eat a man is on the contrary abominable’.³⁵ This is because the type of culinaryism we are discussing is a human culinaryism – indeed the terms ‘human’ and ‘cooking’ imply each other. Cannibalism, however, troubles this, resulting in a culinaryism of the human, in which the human itself becomes reduced to an object, the eaten and the dead. But as Bataille jibes, with echoes of Montaigne, cooking a human corpse really ‘does no harm to anyone; in fact it is

33. Ibid.

34. Ibid.

35. Ibid.

often unreasonable not to do something with man ... despite appearances, even hardened materialists are still so religious that in their eyes it is always a crime to make man into a thing – a roast, a stew ...'³⁶

The corpse's enigmatic persistence leads to another type of culinarism, one that, for Bataille, momentarily opens onto the limit that is continuity. In a sense, the corpse continues the life of matter that it has always been, even when it was a living, breathing and discontinuous subject. The corpse knows no absolute change, no fundamental shift, no momentous passage from life to death; it only knows that continuity of material and energetic transformations that we, from the night-side of life, refer to as decay and decomposition. For the corpse, everything is culinary, whether it is the body that eats or the body that is eaten. We are invited to think about another type of culinarism, one that has little to do with the production of the human subject (and its corresponding food-object). Not only am I a corpse (a corpse not-yet), and not only am I meat (food for worms), but at the limit of an unhuman culinarism of the world, I am just 'stuff' (and even this says too much). This is Bataille's version – a desolate culinarism, a culinarism that must assume a cooking without a 'cook,' a generic 'eating' without eaters and eaten, a *that* cooking is without a *how* cooking is – not a reduction of culinarism to cooking, which would

36. Ibid., 39-40.

reinforce and reproduce the human, but a culinaryism that is, in short, the *reductio ad absurdum* of the human.

For Bataille, the 'divine' names this impossible experience, the unhuman experience of the world – including the self – as fundamentally unhuman. This divinity is also horror, but this horror exists on several levels. At the human (perhaps all-too-human) level, it is the existential horror of death, of what will happen to me – and my body – after death. But it is also the gothic horror of the corpse, of the embodied, subjectified, living being rendered as thing, as inert, impersonal facticity. Knowing as we do that even the corpse does not stay the same, there is also the culinary horror of meat (of food, of digestion, of metabolism), of the crossing of the threshold between the living and the non-living, while never ceasing to be material, of becoming food for worms and other living beings. Finally one arrives at the *religious horror* of this unending cycle not only of growth and decay, but of eating and being eaten. This horror opens onto a certain mystical state of the realization of the continuity of all things, a kind of theological metabolism in which the eaten and dead overlap almost exactly. In this sense Bataille's *Theory of Religion* is really something like a non-philosophy of mysticism, but a mysticism of the eaten and the dead: 'Only a world in which beings are indiscriminately lost is superfluous, serves no purpose, has nothing to do, and means nothing ...'.³⁷

37. Ibid., 29.

The Metaphysics of Predation¹

Eduardo Viveiros de Castro

In the two watershed works of 1962, *Totemism Today* and *The Savage Mind*, where the ‘prestructuralism’ of *Elementary Structures...* begins to give way to the ‘post-structuralism’ of *Mythologiques*,² Lévi-Strauss establishes a paradigmatic contrast between ‘totemism’ and ‘sacrifice’ which has come to assume, for me, a status one could describe as properly mythic, allowing me to formulate more distinctly what I had confusedly perceived as being the limits of structural anthropology. Limits in the geometrical sense of the term – the perimeter of jurisdiction of the Lévi-Straussian method – as well as in the mathematico-dynamic sense – the attractor towards which certain virtualities of this method tend. This contrast has been important, in particular, for a rereading of Amazonian ethnography in the light of research carried out among the Araweté,

1. Excerpted from *Métaphysiques Cannibales* (Paris: PUF, 2009), with the kind permission of Presses Universitaires de France.

2. See E. Viveiros de Castro, ‘Xamanismo transversal: Lévi-Strauss e a cosmopolítica amazônica’, in R. C. de Queiroz and R. F. Nobre (eds.), *Lévi-Strauss: leituras brasileiras* (Belo Horizonte: Editora da UFMG), 79-124.

COLLAPSE VII

a Tupi-speaking people of the east Amazon.³ It has played a pivotal role in my enterprise of rethinking the meaning of warfare cannibalism and of shamanism, two central (or rather 'de-central') cosmopolitical institutions of the Tupi and other Amerindian societies.

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The question of the existence of 'sacrificial' rites in indigenous Amazonia poses the problem of historical and typological relations between the cultures of the lowlands of South America and the Andean and Meso-American state formations, where sacrifice is an essential theologico-political device. Behind this problem we discover in turn that, more vast, of the emergence of the State in so-called primitive societies. In Amazonia, the phenomena upon which specialists' attention is concentrated is that of shamanism, given that the shaman seems sometimes to assume the proto-sacerdotal appearance of a delegate of transcendence. But the Americanist consensus is that the classic, franco-sociological definition of sacrifice,⁴ which continues to serve as the general reference for the discipline, does not give a satisfactory account of the complex of South American shamanism.

3. E. Viveiros de Castro, *From the Enemy's Point of View: Humanity and Divinity in an Amazonian Society* (Chicago: University of Chicago Press, 1992).

4. H. Hubert and M. Mauss, *Sacrifice: Its Nature and Functions* [1969] (Chicago: University of Chicago Press, 1981).

However, the connection between Araweté ethnography and the notion of sacrifice was not impressed upon me directly on the basis of the shamanic practices of these people, but rather on the basis of its eschatological discourse. Araweté cosmology reserves a place of honour for posthumous cannibalism: the celestial divinities (the *Mai*) devour the souls of the dead as they arrive in the sky, as a prelude to the metamorphosis of the latter into immortal beings, like those who devour them. As I have argued,⁵ this mystical funerary cannibalism is an obvious structural transformation of the bellico-sociological cannibalism of the sixteenth century Tupinamba who constituted the most important Tupi-speaking tribe, inhabiting the Brazilian coast, mostly in Rio de Janeiro and Bahia.

It would doubtless be useful to recall some of the general traits of Tupinamba cannibalism. It was a very elaborate system centred on the ceremonial capture, execution and devouring of war enemies. The prisoners, frequently taken from people of the same language and culture as those of their capturers, might have lived for some considerable time alongside the latter, before undergoing a solemn execution on the central place of the village. They were generally well treated, living freely but monitored during the whole duration of the long preparations for the great rite of execution; it was usual to give them women of the

5. Viveiros de Castro, 'Xamanismo transversal'.

group as wives – the captives being thus transformed into affines ('enemy' and 'brother-in-law', in old Tupi, are said in the same way: *tovajar*, a term whose literal meaning is 'opposite'). We can already see the way in which Amerindian predation implies the question of affinity, as Lévi-Strauss observed ... The ritual cycle culminated at the moment of the putting-to-death of the captive, an act that had the status of an initiation for the executioner (who obtained a new name, underwent commemorative scarifications, gained the right to marry and have children, posthumous access to paradise, etc.), after which the captive's body was devoured by the entire audience, that is to say the hosts and those invited from neighbouring villages, but excepting the officiant-killer, who not only did not partake of the captive, but entered into a period of funerary reclusion. In other words, he engaged in a process of identification with the 'opposite' that he had just put to death.

The anthropophagy of the Tupinamba has frequently been interpreted as a form of 'human sacrifice', either in the figurative sense of the expression, by certain of the early chroniclers, or in a conceptually precise sense, as with one of the founding fathers of sociology in Brasil, Florestan Fernandes,⁶ who applied Hubert and Mauss's schema to the sixteenth century Brazilian material. To do this, however, Fernandes postulated

6. F. Fernandes, *A função social de Guerra na sociedade Tupinambá* [1952] (São Paulo: Livraria Pioneira Editora/EDUSP, 1970).

something that did not figure in his sources: a recipient of the sacrifice, a 'supernatural entity'. According to him, the sacrifice was destined for the spirits of the dead of the group, avenged and celebrated by means of the execution and the eating of the war prisoner.

In my monograph on the Araweté, I contested the idea that supernatural entities would be implicated in Tupi cannibalism, and that their propitiation would be the reason for the rite. It is true that, precisely in the Araweté case, we find 'supernatural entities' playing the role of the active pole of the cannibal relation. But, according to my reading of the eschatology of that people through the lens of Tupinamba sociology, this supernatural condition of the devourers is of no great importance. I argued that the Araweté *Mai* (their gods) occupy the place that, in the Tupinamba rite, was occupied by the group in the subject position – the group of the murderer and his allies, who devoured the captive – whereas the place of the object of sacrifice, the captive of the Tupinamba rite, is occupied by the dead of the Araweté. The living Araweté, in their turn, occupy the place of *cosubjects* which, among the Tupinamba, was occupied by the enemy group, the group from which the victim had been taken.⁷ In short,

7. In so far as the ceremonial death was considered as the *kalòs thánatos* (the beautiful death), the relation between the enemy groups was endowed with an essential positivity: not only would it give access to individual immortality, it would also permit collective vengeance, which was the motor and central motif of Tupinamba life. In Soares de Souza's lapidary formula: 'As the Tupinamba are very bellicose, all their fundamental principles consist

the transformation that divine Araweté cannibalism operates on human Tupinamba cannibalism bears not upon the symbolic content of this practice or its social function, but consists in a pragmatic sliding, a torsion or shift in perspective which affects the status and functions of subject and object, of means and end, of self and other.

I came to conclude, later, that the idea of a co-ordinated changing of points of view would do more than describe the relation between the Araweté and Tupinamba versions of the cannibal motif. This change would manifest a property of Tupi cannibalism itself, qua actantial schema. I then came to define it as a process of transmutation of perspectives, where the 'I' is determined qua 'other' by the act of incorporation of that other, which in its turn becomes an 'I', but always *within the other*, literally 'through the other'. Such a definition gave an answer to a simple, but insistent, question: what is it, of that enemy, really, that was devoured? It could not be his matter or

in knowing how to wage war on their opposites' (Soares de Souza Gabriel, *Tratado descritivo do Brasil em 1587* [1587] [São Paulo: Cia Editora Nacional/EDUSP, 1971], 320). On the dialectic of the death of the individual and the life of the group, see this passage by Thevet: 'And do not think that the prisoner is shocked by this news [that he is to be executed and rapidly eaten], his opinion being that this death is honourable, and that it is much better for him to die thus, than to die in his house from some contagious disease: for (they say) one cannot avenge death, which offends and kills men, whereas one can avenge those who have been slain and massacred in war.' (A. Thevet, 'Cosmographie universelle' [1575], in S. Lussagnet [ed.], *Les Français en Amérique pendant la deuxième moitié du XVIème siècle: le Brésil et les brésiliens* [Paris: P.U.F, 1953], 196).

‘substance’, given that it was a *ritual* cannibalism, where the consumption of the victim’s flesh, in quantitative terms, was insignificant; what is more, testimony of any physical or metaphysical virtue being attributed to the enemy’s body is rare and inconclusive, in the known sources. So the eaten ‘thing’ could not truly be a ‘thing’, even if it was – and this is essential – a body. This body was nevertheless a sign, a purely positional value: what one ate was the relation of the enemy to his devourers; in other words, his *status as enemy*. What one assimilated of the victim were the signs of his alterity; and what was aimed at was that alterity as a point of view on the Self. Cannibalism and the type of war that was associated with it implied a paradoxical movement of reciprocal autodetermination by the point of view of the enemy.

With this thesis I was obviously suggesting a counter-interpretation to certain classical precepts of the discipline. If the aim of European multiculturalist anthropology is to describe human life as it is lived ‘from the native’s point of view’, indigenous multinaturalist anthropophagy assumed as the vital condition of its self-description the ‘semiophysical’ prehension – the putting to death and the devouring – of the point of view of the enemy. Anthropophagy as anthropology.⁸

8. Or, in the vein of the ferocious humour of Oswald of Andrade, author of the celebrated 1928 *Anthropophage’s Manifesto*: odontology as ontology... (O. de Andrade, ‘Manifeste anthropophagique’ [1928], in P.F. de Queiroz-Siqueira, ‘Un singulier manifeste’, *Nouvelle Revue de Psychanalyse*, 6, 1972: 277-81).

This idea came to me in listening to Araweté war chants, in which the warrior, through a complex deictic and anaphoric play, speaks of himself from the point of view of the dead enemy: The victim, who is the subject (in both senses) of the song, speaks of all the Araweté people he has slain, and speaks of his killer – who is he who ‘speaks’, that is to say, he who actually sings the words of the dead enemy – as a cannibal enemy (although among the present-day Araweté one eats only words). Through *his* enemy, the Araweté killer sees himself *as* enemy, in his capacity as enemy. He apprehends himself as a subject on the basis of the moment when he sees himself through the eyes of his victim, or rather, when he pronounces his own singularity in the voice of the latter. Perspectivism.

The warrior semiophagy of the Tupi is far from being an uncommon development in the Amerindian lands. The idea of an indigenous political philosophy of cannibalism, which would be at the same time a cannibal philosophy of politics, was broached in its broad strokes by Pierre Clastres’s theory of primitive war.⁹ However, its ethnographic generality and complexity only began to be recognized thanks to the efforts of

9. P. Clastres, ‘Archéologie de la violence: la guerre dans les sociétés primitives’, *Libre 1*, 1977, 137-73. See also: ‘Échange et pouvoir: philosophie de la chefferie indienne’, in P. Clastres, *La société contre l’État* (Paris: Minuit, 1974), 25-42 – see P. Clastres and L. Sebag, ‘Cannibalisme et mort chez les Guayakis’, *Revista do Museu Paulista* XIV, 1963, 174-81; H. Clastres, ‘Rites funéraires guayaki’, *Journal de la Société des américanistes* LVII, 1968, 62-72, for the pioneering articles.

various Amazonist colleagues, more or less at the same moment when I embarked upon an analysis of the Tupi material.¹⁰ These works point towards a predatory economy of alterity as constituting the basic regime of Amazonian sociality: the idea that the ‘interiority’ of the social body is integrally constituted by the capture of the symbolic resources – names and souls, persons and trophies, words and memories – of the exterior. In choosing as principle of movement the incorporation of attributes drawn from the enemy, the Amerindian socius comes to ‘define’ itself according to the same

10. Certain among them deserve a special mention: Bruce Albert’s essential thesis on the bellico-funerary complex of the Yanomami (*Temps du sang, temps des cendres: représentation de la maladie, système rituel et espace politique chez les Yanomami du Sud-Est (Amazonie brésilienne)*) [Université de Paris X (Nanterre), 1985]); the studies published in the special issue ‘Guerres, sociétés et vision du monde dans les basses terres de l’Amérique de Sud’ (ed. P. Menget) of the *Journal de la Société des américanistes* LXXI, 1985), most notably Taylor’s article on the headhunting of the Jivaros as apparatus of capture of the virtualities of persons (‘L’art de la réduction’), Chaumeil’s on the cosmological economy of war in the Yagua (‘L’échange d’énergie: guerre, identité et reproduction sociale chez les Yagua de l’Amazonie péruvienne’) and Menget’s own work on the system of ‘adoption’ of enemy women and children by the Ikpeng (‘Jalons pour une étude comparative [dossier ‘Guerre, société et vision du monde dans les basses terres de l’Amérique du Sud’]). One should also mention Menget’s ‘Note sur l’adoption chez les Txicão du Brésil central’, in *Anthropologie et Sociétés* 12[2], 1988: 63-72, Philippe Erikson’s article on the cannibal ethnosociology of the pano-speaking peoples (‘Altérité, tatouage et anthropophagie chez les Pano: la belliqueuse quête en soi’, *Journal de la Société des Américanistes* LXII, 1986: 185-210), and Joanna Overing’s on the images of cannibalism in the cosmology of the Piaroa (‘Dualism as an expression of differences and danger: Marriage exchange and reciprocity among the Piara of Venezuela’, in K. Kensinger (ed.), *Marriage Practices in Lowland South America* [Urbana/Chicago: University of Illinois Press, 1984]). In the following years, studies multiplied (beyond the numerous works of the researchers already mentioned, let us cite those of Ph. Descola, B. Keifenheim, I. Combès, A. Vilaça, C. Fausto, A. Surralès, D. Karadimas, and T. Stolze Lima).

attributes. This is what can be seen in the course of the great ritual moment of Tupinamba life, the putting to death of the captive, where the place of honour is reserved for the twin figure of the killer-and-his-victim, who reflect each other and reverberate to infinity. Ultimately, here is what is essential in the 'metaphysics of predation' of which Lévi-Strauss speaks: primitive society as a society without interior, which only arrives at being 'itself' *outside itself*. Its immanence coincides with its transcendence.

It was thus less via shamanism than via war and cannibalism that I came to deal, for the first time, with the problem of sacrifice. Now, if the Maussian definition seemed to me inappropriate (no recipient of the sacrifice, no notion of 'the sacred') the notion proposed by Lévi-Strauss in his discussion on totemism, on the contrary, appeared to me to shed a new light on Tupian anthropophagy.

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The contrast between totemism and sacrifice presents itself from the start in the form of an orthogonal opposition between the *totem* and *manido* systems of the Ojibwa, established in the first chapters of *Totemism Today*.¹¹ In Chapter VII of *The Savage Mind* the opposition

11. C. Lévi-Strauss, *Le totémisme aujourd'hui* (Paris: PUF, 1962), 32.

is generalized, redrawn¹² and systematized in the following terms:

- Totemism postulates the existence of an homology between two parallel series (natural species and social groups) by establishing a formal and reversible correlation between two systems of globally isomorphic differences.
- Sacrifice postulates the existence of just one series, continuous and oriented, along which is effected an actual and irreversible mediation between two polar and non-homogeneous terms (men and divinities), whose contiguity must be established through successive analogical identifications or approximations.
- Totemism is metaphorical, whereas sacrifice is metonymic; the first is an 'interpretative system of references'; the second a 'technical system of operations'; the first is of the order of language [*langue*]; the second, of the order of speech [*parole*].

It can be deduced from this definition that sacrifice actualizes processes of a different type, at first glance, from the equivalences of proportionality at work in totemism and in the other 'systems of transformation' analysed in *The Savage Mind*. The logical transformations of totemism are established between terms whose reciprocal positions are modified by permutations, inversions, chiasms or other combinatory or extensive redistributions – totemism is a topic of discontinuity.

12. C. Lévi-Strauss *La pensée sauvage* (Paris: Plon, 1962), 298.

Sacrificial transformations, on the contrary, unleash intensive relations which modify the nature of the terms themselves, for they 'make something pass' between them: the transformation, here, is less a permutation than a *transduction*, in Gilbert Simondon's sense – it appeals to an energetics of the continuous. If the objective of totemism is to establish a resemblance between two series of differences each given on their respective side, the goal of sacrifice is to induce a zone or a moment of indiscernibility between two poles supposed to be self-identical – a goal that engages difference in an entirely other way (via the inside rather than via the outside, so to speak). To return to a mathematical allegory, one could say that the model of structural transformations of totemism is combinatory analysis, whereas the instrument necessary to explore the 'realm of continuity' (Lévi-Strauss) established by the intensive metamorphoses of sacrifice instead comes down to something on the order of differential calculus: imagine that the death of the victim is the tracing of a tangent, the best approximation to the curve of divinity ...

Thus, the Lévi-Straussian definition of totemism apprehends the latter as a system of *forms*, whereas that of sacrifice has recourse to formulations that suggest the presence of a system of *forces*. A veritable fluid mechanics: Lévi-Strauss utilizes a whole schematism of communicating vessels to speak of sacrifice,

referring, for example, to a 'solution of continuity' between 'reservoirs', to a 'deficit of contiguity' filled 'automatically' and other similar expressions. All of this evokes irresistibly the key idea of a *difference of potential* as the principle of sacrifice.

The same hydraulico-energetic language reappears in the analysis of laughter and aesthetic emotion as discharge of accumulated symbolic energy, in the 'Finale' of *The Naked Man*. Here, Lévi-Strauss has recourse to it when he turns to societies with a 'cold' history, who struggle against entropy by utilizing differences of potential contained in their inequalities of class or in the exploitation of other people, thereby to engender becoming and energy.¹³ The notion of difference of potential plays a decisive, if little-remarked, role in the construction of the concept of *mana* in *Outline of a General Theory of Magic*. Hubert and Mauss hold that *mana* expresses the general idea of the differential value of things and of beings ('it is always a matter, in magic, of respective values recognized by society'), and thus, of their hierarchical arrangement, and that this hierarchical difference of value (Mauss *avec* Nietzsche!) is coherent with the translation of concepts of *mana*, *orenda*, etc. by Hewitt as 'magical potentiality'. And they conclude:

13. C. Lévi-Strauss & G. Charbonnier, *Entretiens avec Claude Lévi-Strauss* (Paris: UGE, 1961), 44-8.

What we call the relative position or respective value of things could also be called a difference in potential, since it is due to such differences that they are able to affect one another ... [T]he idea of *mana* is none other than the idea of these relative values and the idea of these differences in potential. Here we come face to face with the whole idea on which magic is founded, in fact with magic itself.¹⁴

The Lévi-Straussian interpretation of *mana* in terms of an inadequation between signifier and signified¹⁵ is therefore a compromise between a totemic-type explanation, in so far as it appeals to a model of correlative differences between a signifying series and a signified series, and a sacrificial-type explanation, in so far as it depends on the observation of a perpetual disadjustment (the absence of a 'perequation') between two series, a disequilibrium that very much resembles Hubert and Mauss's 'difference of potential'.

In short, two different images of difference, an extensive image and an intensive image: form and force. Images that are so different as to be 'incompatible', suggests the author¹⁶ – a judgment I shall allow

14. H. Hubert & M. Mauss, 'Esquisse d'une théorie générale de la magie' [1902-3], in M. Mauss, *Sociologie et anthropologie* (Paris: PUF, 1950), 114. [Translation by R. Brain from M. Mauss, *A General Theory of Magic* (London/NY: Routledge Classics, 2001)].

15. C. Lévi-Strauss, 'Introduction à l'oeuvre de Marcel Mauss', in M. Mauss, *Sociologie et anthropologie*, XLIX.

16. Lévi-Strauss, *La Pensée Sauvage*, 295.

myself to interpret as aiming to indicate *complementary* images, in the sense of Niels Bohr, an author frequently cited by Lévi-Strauss.¹⁷ In this case, rather than designating two ‘systems’, totemism and sacrifice would designate two descriptions – both necessary, but mutually exclusive – of a same general phenomenon, sense or semiosis qua articulation of heterogeneous series.

However, such a complementarity, at least as far as Lévi-Strauss is concerned, is clearly asymmetrical. In his inaugural lecture at the Collège de France, the author affirms that, unlike history, structural anthropology must utilize ‘a method that would be that of *transformations* rather than of *fluxions*’,¹⁸ suggesting with this something more akin to a group algebra than to a differential dynamics. Recall that ‘method of fluxions’ was the name given by Newton to what would later be called differential calculus. And, in fact, it is as if the structural method in anthropology – or rather, the usual interpretation of this method – was conceived to take account of form rather than of force, of the combinatory rather than the differential, of the corpuscular rather more easily than the undulatory, of language to the detriment of speech, of categorization

17. See, for example: Lévi-Strauss [1952], *Anthropologie Structurale* (Paris: Plon, 1958), 326; ‘La notion de structure en ethnologie’, in Lévi-Strauss *Anthropologie structurale*, 398; ‘Pensée mythique et pensée scientifique’ in M. Izard (Ed.) *Lévi-Strauss* (Paris: L’Herne, 2004), 42; Lévi-Strauss and Charbonnier, *Entretiens*, 18, 25.

18. C. Lévi-Strauss [1960], ‘Race et histoire’, in Lévi-Strauss, *Anthropologie structurale deux* (Paris: Plon, 1973), 28.

in preference to action.¹⁹ Consequently, those aspects that seem to resist to a greater or lesser extent the structural method are habitually treated by Lévi-Strauss as semiotic (or even ontological) minor modes – it is not by chance that I speak at the beginning of *Métaphysiques Cannibales* of a minor anthropology – either because they bear witness to the limits of the thinkable, or because they belong to the asignifying, or, finally, because they express the powers of illusion. Thus, as we know, sacrifice is held to be imaginary and false, and totemism esteemed as objective and true,²⁰ a judgment that repeats and generalizes the great opposition between myth and ritual developed in *Naked Man*;²¹ a judgment which, we are tempted to say, teaches us more about certain aspects of Lévi-Strauss's cosmology than about the cosmology of the peoples he studied so intensively.²²

19. This having been said, Deleuze observed, already in 1972, on the subject of structuralist mathematics: 'Sometimes the origins of structuralism are sought in the area of axiomatics, and it is true that Bourbaki, for example, uses the word "structure." But this use, it seems to me, is in a very different sense [...]. The mathematical origin of structuralism must be sought rather in the domain of differential calculus, specifically in the interpretation which Weierstrass and Russell gave to it, a *static and ordinal* interpretation, which definitively liberates calculus from all reference to the infinitely small, and integrates it into a pure logic of relations.' (G. Deleuze, 'À quoi reconnaît-on le structuralisme?' [1972], in D. Lapoujade [ed.], *L'île déserte et autres textes. Textes et entretiens 1953-1974* [Paris: Minuit, 2002], 247. [Translation from 'How do we Recognize Structuralism?' in *Desert Islands and other Texts 1953-1974* (Los Angeles: Semiotext(e), 2004)]).

20. Lévi-Strauss, *Anthropologie structurale II*, 301-2.

21. C. Lévi-Strauss, *Mythologiques IV: L'Homme Nu* (Paris: Plon, 1971), 596-603.

22. This opposition between myth and rite proposed in *Naked Man* was to

Totemism, today, is dissolved in the general classificatory activity of savage thought;²³ sacrifice still awaits a comparable constructive dissolution. We know how totemism was undone by Lévi-Strauss: it ceased to be an institution, becoming a method of classification and a system of signification in which the reference to a series of natural species was contingent. Would it be possible to rethink sacrifice along similar lines? Would it be possible, in short, to see the divinities that function as terms of the sacrificial relation, as being as contingent as the natural species of totemism? What would this look like: a generic schema of sacrifice, of which typical institutional crystallisations would only be particular cases? Or, to formulate the problem in a language more sacrificial than totemic, what would be the field of dynamic virtualities of which sacrifice is a singular actualization? What forces are mobilized by sacrifice?

be a great obstacle for the structuralist legacy, as can be seen in various attempts at modalisation, reformulation or flat-out rejection of the latter (and with it, sometimes, of whole areas of Lévi-Straussian anthropology). Americanist ethnology, in particular, has had to confront this opposition in at least two fundamental studies on Amazonian ritual systems (S. Hugh-Jones, *The Palm and the Pleiades: Initiation and Cosmology in North-West Amazonia* [Cambridge: Cambridge University Press, 1979]; B. Albert, *Temps du sang, temps des cendres: représentation de la maladie, système rituel et espace politique chez les Yanomami du Sud-Est [Amazonie brésilienne]* [Paris: Université de Paris X (Nanterre), 1985]).

23. With the important exception, already remarked upon, of Ph. Descola's theory, where the term comes to designate a specific ontology, typically exemplified by Australian aboriginal cultures.

Setting aside Lévi-Strauss's value judgements, the contrasts established between metaphorical discontinuity and metonymic continuity, positional quantity and vectorial quality, paradigmatic reference and syntagmatic operation, were a great help to my own work, and led me to inscribe Tupi ritual cannibalism in the column (the paradigm!) of sacrifice. A true anti-totemic operator, cannibalism would engage a transformation that is virtually reciprocal (the imperative of vengeance that gave it its entire sense in Tupinamba society) but actually irreversible between the terms that it connects, through the medium of acts of a supreme contiguity and 'discontiguity' (the violent physical contact of execution, the dismembering and consumption of the victim's body) which imply a movement of indefinition and the creation of a zone of indiscernibility between killer and victim, devourers and devoured. It is not at all necessary to postulate the existence of supernatural entities to realise that one is indeed in the element of sacrifice. In the tripolar interpretation of Tupinamba ritual developed in my ethnography of the Araweté, the actants are (1) the group of devourers, (2) the dual person executor-victim, and (3) the enemy group. 'Death' is but a vicarious function assumed alternately and successively by the three poles of the rite; but it is death that conducts the forces circulating in the process.

This is all very well. But does the concept of ‘sacrifice’, in this new Lévi-Straussian sense, really describe what happened in the cannibal ritual? There is nothing of the imaginary, and even less of the false, in Tupi cannibalism. Not even vengeance, which is strictly speaking ‘impossible’, was imaginary; for it was, before anything else, a schematism of social *poiesis*, a mechanism for the ritual production of collective temporality (the interminable cycle of vengeance) via the installation of a perpetual disequilibrium between enemy groups.²⁴ And in any case, even if one must always *imagine* the enemy – construct the other as such – the objective was *really* to eat him – to construct the self qua other. There is something that does not pass through the concept of sacrifice, even if many more things pass through it than through that of totemism.

24. ‘Perpetual disequilibrium’ is a key concept of *Histoire de Lynx* (C. Lévi-Strauss, *Histoire de Lynx* [Paris: Plon, 1991]), elaborated – as if by chance – on the basis of the analysis of the Tupinamba myth of the twins, recorded by Thevet around 1554.

Ex-Nihilo: Forming a Body Out of Nothing¹

Dorothee Legrand

1. CAN A SUBJECT EAT?

What does an eating subject do? He incorporates what he is not. That does not only mean that he transforms what is not his body into what composes his body. It also means that he transforms himself into what he is not. As one incorporates food into oneself, one incorporates oneself into the realm of food: the realm of dead animals and plants. Eating is an act of survival; eating is an act of merging one's life with death.² Eating blurs the difference between one's body and a corpse. The stomach is 'a *zone of indiscernability or*

1. I wish to thank Gabriel Catren for feeding my thoughts on the issues discussed here and Dylan Trigg for commenting on a previous version of this article. I am grateful to Reza Negarestani for inviting this contribution. I acknowledge the support of the 'European Platform for Life Sciences, Mind Sciences, and the Humanities Volkswagen Stiftung grant.

2. G. Didi-Huberman, *Disparates sur la voracité*. *MLN*, 106, 1991, 765-79.

undecidability’ between life and death: what happens ‘in there’ is not a combination but rather the processing of the common factor between life and death, ‘not an arrangement of [life and death], nor a resemblance, it is a deep identity, a zone of indiscernability more profound than any sentimental identification [...] That is the reality of becoming’:³ ‘every man who [eats] is a piece of meat’.⁴ Unfolding these claims will allow considering what ‘eating’ and ‘eating nothing’ can teach us about the constitution of who we are: *can a subject eat without negating himself as such?*

2. CONCEPTUAL TOOLS

Phenomenology has significantly contributed to the characterization of the subject of conscious experience as being irreducible to the object. The subject is what the object is not. In particular, the object is understood phenomenologically as what is aimed at by the intentional act of consciousness and the subject as the one who aims at the object. Schematically, the subject is the ineradicable starting point of the ‘arrow’ of intentionality and the object its ending point. Crucially, in this view, the subject (of consciousness) does exist but not as an object (of consciousness).

3. G. Deleuze, *Francis Bacon: Logique de la sensation* (Paris : Seuil, 1981); trans. D.W. Smith as *Francis Bacon, The Logic of Sensation* (London/NY: Continuum, 2003), 25.

4. Ibid., 23.

Not being an object of consciousness obviously does not prevent the subject from being a body. However, it is important to underline here that the bodily subject is also irreducible to an animate material thing – an organism living anonymously – and to an inanimate material thing – a corpse. It is in this sense (and only in this sense), that here it is said that the subject is *no-thing*. The subject is thus constituted as a *double negativity*: the *specificity* of a subject lies in what an object of consciousness is not and in what a material thing is not. In what follows, the term ‘object’, when used with no more specification, will be used to cover both ‘object of consciousness’ and ‘material thing’. The negation of objecthood will be termed no-thingness. This ambivalence will allow us to capture *at once* the double negativity constituting the subject.

The characterization of the subject’s double negativity allows the consideration of the multidimensionality of bodily self-consciousness.⁵ On the one hand, consciousness of one’s body-as-subject is a dimension of bodily self-consciousness that is pervasive, as it corresponds to the experience of any object from one’s bodily anchored perspective. For example, experiencing an object to one’s right is experiencing oneself as

5. D. Legrand, ‘Pre-reflective self-consciousness: on being bodily in the world’, *Janus Head*, ‘Special Issue: The Situated Body’, 9/1, 2007, 493-519; ‘Phenomenological dimensions of bodily self-consciousness’, in S. Gallagher (ed.), *Oxford Handbook of the Self* (Oxford: Oxford University Press, forthcoming)

bodily located to the left of the object, experiencing a surface as affording support to one's steps is a way of experiencing one's bodily weight. In these cases, one's body is not taken as an object of intentional consciousness, but is experienced as subject.

On the other hand, consciousness of one's body-as-object is a special case of intentional consciousness where one takes one's own bodily states as intentional objects of consciousness, be it explicitly or not. For example, one experiences one's body-as-object when one evaluates one's body as being thin or fat, on the basis of a mirror reflection of one's bodily shape; one may also experience one's body-as-object when focusing on the interoceptive sensation of one's heartbeats which one may be able to count accurately or not.

Now considering that the body is a material thing, and that the subject is irreducible to a material thing (is no-thing), it is important to underline that *any* experience qualifying as a form of *bodily* self-consciousness involves the experience of oneself as *material*. The body may be experienced as material in various ways. One may scrutinize one's body as if it were any typical object (e.g. one may pay attention while cutting meat, because one experiences that the knife may cut as well through one's fleshy finger, thereby experiencing the common materiality of meat and finger), or one may experience one's body while encountering or using other objects (e.g. one may use one's fingers as instruments to grab

food, one's tongue as an instrument to lick, feel the texture or test the temperature of a meal, because one experiences the common materiality between one's bodily instruments and food). One may also experience the materiality of one's body while merely looking forward, which involves, albeit implicitly, experiencing oneself as a material subject, voluminous, located and oriented in space.⁶

In addition to these experiences of the materiality of one's body-as-object and of one's body-as-subject, one may experience the materiality of one's 'anonymous' body. Indeed, the materiality of one's body may be experienced as *escaping* one's experiential grasp, unveiling one's complicity with anonymous materials.⁷ As will be further evidenced below, *one's own* materiality may be experienced as being common to the materiality of inanimate things and corpses, while it may also be experienced as participating to the pre-personal dynamic of the physiological processes of one's living organism. Importantly, such 'anonymous' processes and aspects of one's body fall within the range of one's *experiences of oneself* as they may be experienced as *one's own* participation in the material realm, as *one's own anonymity*.

6. Legrand, 'Phenomenological dimensions'.

7. R. Negarestani, *Cyclonopedia: Complicity with Anonymous Materials* (Melbourne: Re.press, 2008).

The double negativity of the subject – irreducible to objects of consciousness and to material things – will be used and developed throughout this contribution. Two points should thus be kept in mind from now on. First, the present discussion is not concerned with any purported divide between the subject and the body; between soul and matter. The distinctions that are at stake here are *experiential* and are intrinsic to the experience of the *body*. What will be discussed is *not* the distinction between an experience of oneself that would be bodily and one that would not; what will be discussed is different dimensions of *bodily* self-consciousness. Secondly, starting from the distinction between subject and object, it should be remembered that *differentiation is not separation*. While the different modes of experiencing oneself are *irreducible* to each other, they are also typically *integrated* with each other. The view defended here is that bodily self-consciousness is typically multidimensional in the sense that its different ‘dimensions’ are *equi-primordial* to the constitution of self-consciousness.

Notice that such a conception of bodily self-consciousness as *pervasively multidimensional* counters the view that focuses on the ‘primordial absence’⁸ of the body. For example, as repeatedly described in phenomenology, the seeing eye is not itself seen: ‘the body conceals itself precisely in the act of revealing what

8. D. Leder, *The Absent Body* (Chicago: University of Chicago Press, 1990), 22.

is Other'.⁹ The bodily subject would recede from consciousness, efface itself, in favour of the perceptual field that it discloses. This, however, does not describe adequately typical bodily self-consciousness. In particular, it leaves aside two considerations of importance. First, if subject and object are irreducible to each other, the absence of the body-as-object in one's experiential field would not eradicate the pervasive presence of one's body-as-subject as anchoring one's experiential field: one may not see one's eye (one's own *seeing* eye cannot be taken as *object* of visual experience), but one may still pervasively experience one's seeing body (as subject) as anchoring one's visual experience.¹⁰ Ignoring this experiential evidence involves the unwarranted reduction of experience to its intentional object, thereby precluding any consideration of the conscious experience of one's body-as-subject. Second, if consciousness of one's body-as-subject and consciousness of one's body-as-object are equi-primordial, then the latter, far from being an 'aberrant type of appearance',¹¹ would rather fully constitute one's bodily self-consciousness. Ignoring the structuring role of one's consciousness of one's body-as-object would run the risk of reducing consciousness to its subjective dimension.

9. Ibid.

10. D. Legrand, 'Objects and Others in Anorexia Nervosa', in *Philosophy, Psychiatry and Psychology*, forthcoming (2011).

11. J.-P. Sartre, *L'être et le néant* (Paris: Tel Gallimard, 1943); trans. . Tr.: H. E. Barnes as *Being and Nothingness* (New York: Philosophical Library), 357.

As one is a body, one experiences one's materiality as-subject, as-object and as-anonymous. None of these dimensions of bodily self-consciousness are ever fully eradicated from one's experiential field. The intention of the present contribution is to unfold the scope of this conception of bodily self-consciousness. In particular, what is proposed here is that, *due to their mutual irreducibility and complementarity, the different dimensions of bodily self-consciousness are neither fully integrated to each other nor fully dis-integrated from each other*. Rather, *typical bodily self-consciousness is characterized by a tension inherent to its multidimensionality*, a tension that may atypically lead to what will be described here as processes of '*constitutive self-negation*'. To anticipate, as conceptualized here, '*constitutive self-negation*' is a process of constituting oneself through a process of negating oneself, or a process of negating oneself in order to constitute oneself. In particular, and as touched upon above (section 1), while eating, one is not only assuming survival; one is also negating one's subjecthood by incorporating food, thereby incorporating oneself into the realm of anonymous organic processes and of corpses, assuming one's dependence to one's objecthood, thereby negating the sovereignty of one's subjecthood. Conversely, one may eat nothing as an act of constitutive self-negation: while eating nothing, one may refuse to let one's subjecthood surrender to one's objecthood. One may then seek to

constitute one's subjecthood by negating one's objecthood, refusing to incorporate food, thereby refusing to be incorporated into the realm of anonymous organic processes and of corpses.

3. EXPERIENTIAL DESCRIPTIONS

To start with, the idea that there is a tension inherent to bodily self-consciousness, and the consequence that it may have on one's experience of oneself, and on one's constitutive self-negation, should be clarified at the *experiential* level. For this, I will first give voice to the people who I will be referring to throughout this contribution when considering atypical bodily experiences, quoting (at length) from their published reports. I will first present the quotes 'raw' so that the reader can get a sense of how they 'taste' on their own, and I will then 'bake' them in the conceptual 'oven' proposed above – together with some other 'ingredients' and 'spices'.

Marya Hornbacher

The first type of atypical bodily experience that will be discussed here is *anorexia*. For the sake of consistency and conciseness, I will refer here to one particular story 'only'. Marya Hornbacher was born in 1974, in California. When she was 23, she wrote her

autobiography entitled *Wasted*.¹² There, she describes how she ‘became bulimic at the age of nine, anorexic at the age of fifteen [...] and now, at twenty-three, [she is] an interesting creature, an Eating Disorder Not Otherwise Specified’.¹³ An eating disorder, she describes, has ‘the centripetal force of black holes’¹⁴ as ‘one’s worth is exponentially increased with one’s incremental disappearance’.¹⁵ She describes an eating disorder as

a bundle of deadly contradictions: a desire for power that strips you of all power. A gesture of strength that divests you of all strength. A wish to prove that you need nothing, that you have no human hungers, which turns on itself and becomes a searing need for the hunger itself. It is an attempt to find an identity, but ultimately it strips you of any sense of yourself, save the sorry identity of “sick.” It is the grotesque mockery of cultural standards of beauty that winds up mocking no one more than you. It is a protest against cultural stereotypes of women that in the end makes you seem the weakest, the most needy and neurotic of all women. It is the thing you believe is keeping you safe, alive, contained – and in the end,

12. M. Hornbacher, *Wasted. A Memoir of Anorexia and Bulimia* (NY: Flamingo, 1998).

13. *Ibid.*, 2.

14. *Ibid.*, 129.

15. *Ibid.*, 4.

of course, you find it's doing quite the opposite. These contradictions begin to split a person in two.¹⁶

She reports:

I have never been normal about my body. It has always seemed to me a strange and foreign entity. I don't know that there was ever a time when I was not conscious of it. As far back as I can think, I was aware of my corporeality, my physical imposition on space [...] I do not remember very many things from the inside out. I do not remember what it felt like to touch things, or how bathwater traveled over my skin. [...] I did not like to be touched because I craved it too much. [...] I remember the body from the outside in. [...] I remember wanting. And I remember being at once afraid and ashamed that I wanted. [...] Somehow, I learned before I could articulate it that the body – my body – was dangerous. The body was dark and possibly dank, and maybe dirty. And silent, the body was silent, not to be spoken of. [...] I watched it with a wary eye.¹⁷

According to Hornbacher,

16. Ibid., 6.

17. Ibid., 13-4.

the shrinks have been paying way too much attention to the end result of eating disorders – that is, they look at you when you’ve become utterly powerless, delusional, the center of attention, regressed to a passive, infantile state – and they treat you as passive, infantile creature, thus defeating their own purpose. This end result is not your intention at the outset. Your intention was to become superhuman, skin thick as steel, unflinching in the face of adversity, out of the grasping reach of others.¹⁸

David Nebreda

The second person I am calling in here is David Nebreda. Born in 1952 in Madrid, he is a photographer, exclusively devoted to self-portraits and to the writing of books that ‘recount the story of a schizophrenic process’.¹⁹ Though he has not been diagnosed with eating disorder, the peculiarity of his eating behaviour and the radical consequences it has on his body, as well as the potential (existential) relations between schizophrenia and eating disorder²⁰ make his story

18. Ibid., 68.

19. D. Nebreda, *Autoportraits*. (Paris : Editions Léo Scheer, 2000), 9.

20. L. Binswanger, ‘Der Fall Ellen West’, *Schweizer Archiv für Neurologie und Psychiatrie*, 1944; ‘The Case of Ellen West, An anthropological-Clinical Study’, in R. May et al. (Eds.) *Existence: A New Dimension in Psychiatry and Psychology* (New York: Basic Books, 1958).

a relevant case of ‘constitutive self-negation’ in the present context.

David Nebreda has ‘the conviction that there still exist spaces for genuine investigation concerning behaviour – human and non pathological – and its limits’.²¹ Such investigation is ‘in accordance with [his] most intimate project’.²² He describes how he lives this project in the following way:

I live alone, have neither family nor any social contact in my country. [...] I live concentrated, devoting myself to my reflections, I do not do anything else;²³ I stayed, during nine years of my life, without getting outside and without pronouncing a single word.²⁴

Always working alone, he says,

forces me to be perfectly conscious of my brain and of its instrument – my body, its possibilities, the most minimal nuances of its movements, its situations in space and its continual alterations²⁵

I seek – always sat on the bed, in silence, eyes closed, that’s how I spend my time – to approach and to see

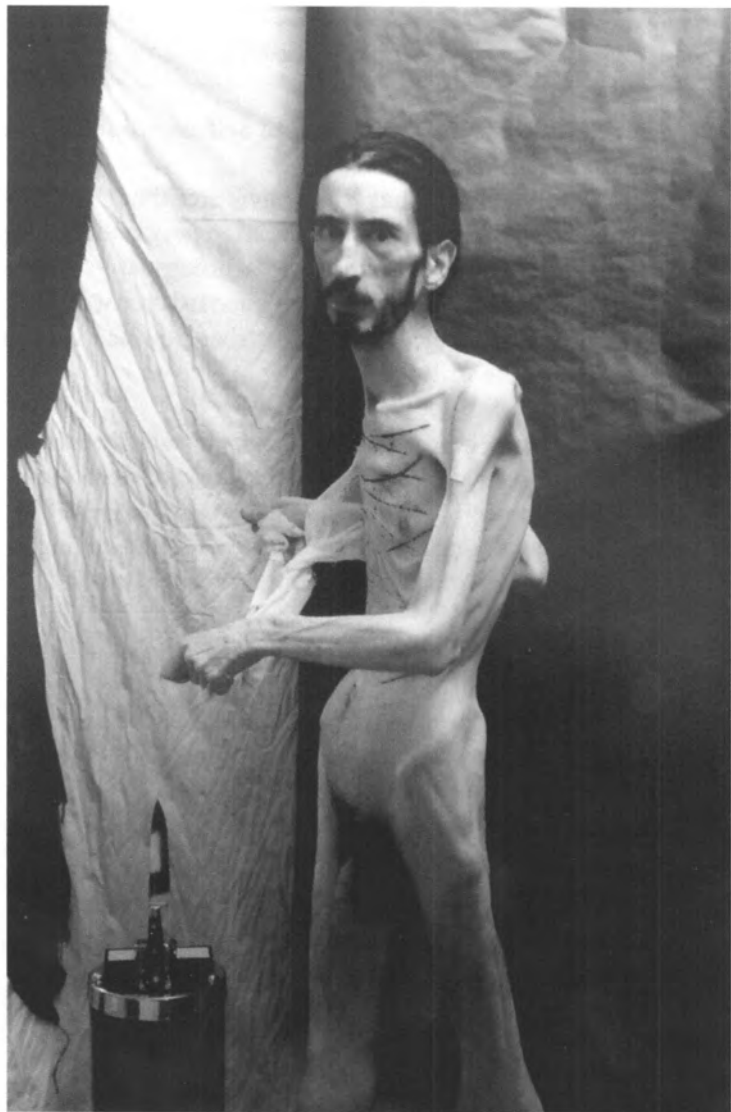
21. D. Nebreda, *Sur la Révélation* (Paris : Editions Léo Scheer, 2006), 17.

22. Ibid., 17.

23. Ibid., 21.

24. Ibid., 27.

25. Ibid., 22.



David Nebreda, *Le cadeau de la mère. Le couteau nouveau portant mon nom.*
[The gift of the mother. The new knife having my name]
(D. Nebreda, *Autoportraits*, 62). ©2000 Éditions Léo Scheer

an image of myself which must not only be perfectly composed [...] but also obey to a precise rule of reflection²⁶

Once the mental image has been perfectly constructed, measured and justified, I use my camera.²⁷

He insists:

my body is only an instrument whose control must always be subjected to an idea of general discipline.²⁸

Self-portrait is an exercise of reflection and of internal organization, much more than an exercise of representation [...]. Self-portrait can be neither biographical, nor artistic, nor cathartic, nor complicit [...]. The self-portrayed body [...] must be calm and precise.²⁹

For that to happen,

the first decision contents itself with ceasing (silence, lack of hygiene, of food, of movement, of clothes...), when this is not enough anymore, one must open oneself, lacerate oneself, bite oneself, flog oneself, burn oneself, maintain the wounds infected [...], the body must exhaust itself, for the foreign matter to be

26. Ibid., 22.

27. Ibid., 23.

28. Ibid., 26.

29. Ibid., 29.

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put to the test. [...] One cannot talk of violence – no matter the violence inflicted – since genuine violence would come from preventing it.³⁰

In the notes about the self-portraits he took in 1989-90, David Nebreda asks: what is 'the relation between himself and the photographic other'?³¹ And he answers:

One knows well that the reality of this relation is the 'other', [...] once one reaches the goal initially set to renounce one's own identity in favour of the new one, the fruit of this relation, that is, that of the photographic witness (and not of the photographic object) in his status as another me, more real and more definite.³²

Being constrained to stay at the psychiatric hospital from 1990 to 1992, he then lives 'seven years of silence and of near-paralysis'.³³ When he gets back to photography in 1997, he acknowledges being 'conscious of not being and mistaken about his real image'.³⁴ His work becomes an 'attempt at the self-recovery of

30. Ibid., 72.

31. Nebreda, *Autoportraits*, 174.

32. Ibid.

33. Ibid., 175-6.

34. Ibid., 177.

oneself, at the self-reconstitution of an image':³⁵ 'the author acquired the awareness of not being, from this abolition and exhaustion [...]; he begins a therapeutic attempt at the recovery of a vital cycle which does not manage to happen'.³⁶

One of the questions David Nebreda asks, and that might be the most strikingly relevant one in the present context – the interrogation of the notion of 'constitutive self-negation' – is the following: 'How to maintain an identity when this demands and is recognizable only by the means of offering relentlessly proof of one's own destruction?'.³⁷ It is this question that is at stake in his life, 'to the extent that the demonstration of his own existence, that the awareness of his own identity are not questions of rhetoric any more but a daily *tour de force*'.³⁸ It is notably this question that is at stake also here, only at a theoretical level.

35. Ibid.

36. Ibid.

37. Ibid., 162.

38. Ibid., 184.

4. THE MIRROR AND THE TENSION BETWEEN ONE'S BODY-AS-SUBJECT AND ONE'S BODY-AS-OBJECT

What follows from the aforementioned distinction between subject and object (section 2) is that bodily self-consciousness is characterized by an irreducible self-fracture between one's consciousness of one's body-as-subject and one's consciousness of one's body-as-object. In particular, as identified by Lacan³⁹ and further commented upon by Merleau-Ponty,⁴⁰ recognizing one's image in a mirror transforms the subject who can now acknowledge that there can be a spectator of himself: contrasting with the body as 'a strongly felt but confused reality [...] the collection of confusedly felt impulses',⁴¹ the recognition of the specular body as one's own brings together with it the possibility of an ideal image of oneself, image which would 'henceforth be either explicitly posited or simply implied by everything I see at each minute'.⁴²

39. J. Lacan, J, 'Le Stade du Miroir comme Formateur de la Fonction du Je', in J. Lacan, *Écrits* (Paris: Seuil, 1966), 93-100; trans. B. Fink as 'The Mirror Stage as Formative of the I Function as Revealed in Psychoanalytic Experience', in *Écrits* (New York: Norton, 2006), 75-81.

40. M. Merleau-Ponty, 'Les Relations avec autrui chez l'enfant' (Centre de Documentation Universitaire, 1951), in M. Merleau-Ponty, *Merleau-Ponty à la Sorbonne. Résumé de cours 1949 1952* (Grenoble : Éditions Cynara, 1988).

41. *Ibid.*, 136.

42. *Ibid.*

What matters for the point at stake here is the experiential split that is involved in the recognition of oneself in one's specular image: 'at the same time that the image of oneself makes possible the knowledge of oneself, it makes possible a sort of alienation'.⁴³ This 'alienation' does not involve the vanity of some excessive fascination for one's physical appearance. Rather, it involves the fact that with specular recognition, the immediately lived body is confiscated for the benefit of the mediatively seen body: one's 'visible me' is given priority relative to one's bodily feelings. This 'captation'⁴⁴ is constitutive of oneself, as one is both at once subject and object. Experiencing oneself thus involves a tension between what is given 'here' – one's body-as-subject – and 'there' – one's body-as-object.

By introducing such tension, the objectification of the body that occurs with mirror self-recognition would introduce a negation of the purity of one's subjecthood, a 'negation of its absolute'.⁴⁵ In reaction against such a 'narcissistic wound', the child recognizing himself in a mirror would assume 'the armour of an alienating identity, which will mark with its rigid structure the subject's entire mental development'.⁴⁶ From the

43. *Ibid.*

44. J. Lacan, J, *La Relation d'Object. Séminaire IV* (Paris : Seuil, 1998), 17.

45. Henri Ey, quoted in J. O'Neill, 'The Specular Body: Merleau-Ponty and Lacan on Infant Self and Other', *Synthese*, 66/2, 2007:201-17, 202.

46. Lacan, 'Le Stade du Miroir', 4.

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identification – ‘the transformation that takes place in the subject when he assumes an image’⁴⁷ – due to mirror self-recognition, the subject ‘flounders in quest of the lofty, remote inner castle’,⁴⁸ projecting himself into ‘the unthinkable of an absolute subject’,⁴⁹ seeking an ideal of integrity.

Points of controversy notably concern whether the transformation that occurs through the identification with one’s specular image can be achieved via other routes, whether the body lived prior to the mirror stage is a ‘body in bits and pieces’ [*corps morcelé*] or whether the body is first lived as a synesthetic whole which is particularly sensitive to the rejecting or caring behavior of others.⁵⁰ These different scenarios are nonetheless united by the idea that bodily self-consciousness hosts a tension between one’s body-as-subject and one’s body-as-object.

With this in mind, it is interesting to consider again the bodily experiences reported by Marya Hornbacher. She says:

I remember my entire life as a progression of mirrors.
[...] my mother, as I scuttled along sideways beside
her like a crab, staring into every reflective surface,

47. Ibid., 2.

48. Ibid., 5.

49. Ibid., 5.

50. O’Neill, ‘The Specular Body’, 209.

would sniff and say, Oh, Marya, You're so vain. That, I think, was inaccurate. I was not seeking my image in the mirror out of vain pride. On the contrary, my vigilance was something else – both a need to see that I appeared, on the surface at least, acceptable, and a need for reassurance that I was still *there*.⁵¹

This suggests that the mere experience of her body-as-subject does not suffice to attest her existence. Quite the opposite: she seeks to validate her self-experience/self-existence in the experience of her body-as-object, in her body image. It would be as if, facing her image in a mirror, a surprising thought – conscious or not – would suddenly come to her mind: 'so all this really *does* exist!'.⁵² To exploit here Freud's description of his experience of incredulity when facing the Acropolis,⁵³ it's as if the person who would express such surprise would be divided from herself, far more sharply than is usually noticeable. On the one hand, she would behave as though she is obliged, under the impact of an unequivocal observation (the sight of the Acropolis for Freud, the sight of herself for Marya), to believe in something the reality of which had hitherto seemed doubtful (Freud encountering himself as *a man who*

51. Hornbacher, *Wasted*, 13-4.

52. S. Freud, 'A Disturbance of Memory on the Acropolis', Standard Edition Vol XXII, 237-48, 236.

53. *Ibid.*

really has gone a long way, while facing the Acropolis; Marya encountering *her own objecthood* when facing her own body image). On the other hand, she is justifiably astonished, because she had been unaware that the real existence of the Acropolis (for Freud) or of her own body-as-object (for Marya) had ever been objects of doubt. We see here how the identification with one's mirror image leads the subject to experience the (potentially 'depersonalizing') tension between, on the one hand, his body-as-object captured in an image and, on the other hand, his body-as-subject never captured as an image.

While (some) anorectics are obsessed with their mirror image, David Nebreda, quite in contrast, did not face any mirror since twenty-one years. He explains that 'the observation of the mirror had been forbidden [...] and, after all those years where one has not looked any mirror, the only reference I have of my image is the one that the photographic double gives me and continues to give me';⁵⁴ 'Mirrors [...] did not disappear, they are covered with papers (not entirely, frame etc. included, but only their reflecting surface)'.⁵⁵ Despite his aversion for mirrors, David Nebreda also constructs the image of his body-as-object, along the lines (some) anorectics do. But most radically, he does not only shape his body by controlling his eating

54. Nebreda, *Autoportraits*, 183.

55. Nebreda, *Sur la Révélation*. 27.

behaviour, by cutting and burning his body, but also controls the way he appears to himself, by cancelling any spontaneous image of himself: 'I seek [...] to approach and to see an image of myself which must not only be perfectly composed [...] but also obey a precise rule of reflection. [...] an improvised image is rarely satisfactory.'⁵⁶

It appears here that, on the one hand, the body-as-subject and the body-as-object are in tension with each other, while on the other hand, this tension, as radical as it may be, does not lead the subject to seek the eradication, but rather the *controlled transformation* of the body-as-object and its image. It is not accidental that this self-transformation is operated through a hyper-controlled eating behaviour by both Marya Hornbacher and David Nebreda (who also uses many other strategies). Indeed, the incorporation of food is possible only on the premise that the subject accepts the fundamental ambivalence of his own being – at once body experienced as *subject*, corpse-like thing experienced as *object*, and living organism experienced as one's anonymity. One may experience as unbearable the tension there necessarily is between these dimensions of one's own being; as a reaction, one may refuse one's ambivalence, and seek to reduce the tension by transforming oneself, operating on an

56. Ibid., 22.

ambivalent process that one can deliberately control: food-incorporation.

One may wonder, however, how the tension between the experience of one's body-as-subject and the experience of one's body-as-object, paradigmatically experienced in mirror recognition – typically benign – may have such a tremendous impact that it may become life-threatening, as it is the case both for Marya Hornbacher and for David Nebreda. The next sections intend to unfold this issue.

5. DESIRE VS. NEED

To understand the impact of the experiential tension there is in particular between one's body-as-subject and one's body-as-object, it is relevant to explore the experiential tension there is in general between the subject and any object. And this tension may be adequately captured by introducing here the notion of desire.

The notion of desire is relevant here as it contrasts with that of need. On the one hand, reaching the needed object (e.g. grabbing food) fulfills the need (e.g. fills in the stomach), thereby appeasing it (e.g. calming hunger). On the other hand, reaching the target of one's desire (e.g. savouring the taste of the very special hot-chocolate that your grandmother used to bring you in bed when you were a child) does

not fulfill the desire (e.g. your desire to activate your cherished childhood memories), does not appease it,⁵⁷ but rather exacerbates it through the very fact of satisfying it (e.g. exacerbates nostalgia).⁵⁸ Need is awakened by the absence of the needed object (e.g. food), and turned off by its presence. Need thus involves a form of lack (e.g. hunger) in the sense of a default of presence (e.g. an emptiness in mouth and stomach). Desire, by contrast, is not characterized by a lack of fulfillment: it lacks nothing in the sense that no thing can fill it in (e.g. it is neither the absence of hot-chocolate nor the lack of memories that activates nostalgia through the taste of hot-chocolate). The experience of food catalyzing feelings and emotions is very common but very revealing nonetheless. What it underlines is, again, the ambivalence of eating behaviour: one is never related to food as merely fulfilling one's needs but also as feeding one's desires. Not only food, but any object can occupy such ambivalent place;⁵⁹ but the ambivalence seems particularly acute in the case of food. Indeed, owing to human neoteny, which forces the child to receive food from others, one's need for food is deeply linked from early on to one's desire for inter-subjective relations.

57. R. Barbaras, *Introduction à une phénoménologie de la vie* (Paris: Vrin, 2008), 134.

58. Ibid., 127.

59. Lacan, *La relation d'objet*.

Food materializes inter-subjective relations under specific conditions. First, it may be given and received as a sign of the sensitivity of the giver to the receiver's need and desire, if it is given consistently with the manifestation of the subject's call for food and attention.⁶⁰ In this sense, the desire expressed by the subject's call may be validated inter-subjectively if it receives appropriate feedback. In contrast, there are multiple ways of invalidating the subject's desire. One such way involves not replying at all to the subject's call, not giving anything. In this case, even the needs of the deprived subject are not met (the child remains hungry). Such *privation*⁶¹ differs significantly from the *frustration* at stake when the subject's desire is not met. In this latter case, an object (food) may be obtained and may fulfil the subject's need (appease his hunger), while failing to carry subjecthood from the giver to the receiver, failing to materialize inter-subjective relations, failing to feed the subject's desire (for care and attention). Moreover, fulfilled needs may *substitute* the frustrated desire, the subject regressively nipping the latter in the bud.⁶² In this context, desire is

what is evoked by any demand beyond the need that is articulated in it, and it is certainly that of which the

60. Ibid., 182.

61. Ibid., 36, 55.

62. Ibid., 189.

subject remains all the more deprived to the extent that the need articulated in the demand is satisfied. Furthermore, the satisfaction of need appears only as the lure in which the demand for love is crushed, by sending the subject back to sleep [...]. But the child does not always fall asleep in this way [...], especially if the Other, which has its own ideas about his needs, interferes, and in place of that which it does not have, stuffs him with the choking pap of what it has, that is to say, confuses his needs with the gift of its love. It is the child one feeds with most love who refuses food and plays with his refusal as with a desire (*anorexia nervosa*).⁶³

We see here how food (and, according to Lacan, any object) is intermeshed in inter-subjective webs. As one understands that the (m)other may or may not respond to one's hungry calls, given or refused objects (food) acquire the value of a testimony of (m)other's power of acknowledging or censuring one's need and desire. Objects are thus endowed with two layers of potential satisfaction: they may fulfil a need (for food), while they may as well satisfy a desire (for care) thereby symbolizing the favourable power of the (m)other.⁶⁴

63. J. Lacan, 'La Direction de la Cure et les Principes de son Pouvoir' [1958], in J. Lacan, *Écrits* (Paris: Seuil, 1966), 585-646: 627-8; trans. A. Sheridan as 'The Direction of the Treatment and the Principles of Its Power', in *Écrits. A Selection* (London: Routledge Classics, 2001), 173-214: 200.

64. Lacan, *La Relation d'Object*, 69.

In contrast, they may still fulfil a need (for food), while being frustrating as well, when they fail to feed one's desires, failing to materialize (m)other's care, thereby symbolizing the withdrawal of (m)other's favour.⁶⁵

This framework conveys specific conceptions of the subject's relations to objects, to himself and to others, conceptions which are all interrelated to each other but which will be discussed for their own sake in the following sections.

6. THE SUBJECT'S RELATIONS TO OBJECTS

As far as the subject's relations to objects is concerned, the current framework allows us to understand the 'painful dialectic of the object, at once there and never there'⁶⁶ following which the demand of the desiring subject can never be satisfied by a need-fulfilling object⁶⁷ but only by what is 'beyond' the object, i.e. the materialization of inter-subjective relations. Reciprocally, what engenders frustration is not the lack of objects but the absence of inter-subjective validation of one's desire.

It appears here that a tension lays at the core of any subject-object relation, not only due to the aforementioned irreducibility between subject and objects

65. Ibid., 180-1.

66. Ibid., 183.

67. Ibid., 101.

(section 3) but also due to the discordance between any object and the target of the subject's desire: on the one hand, objects are matters of transactions between subjects, as they may be given, refused or retrieved; on the other hand, what is desired is not some exchange of objects but interrelations between subjects. The consideration of desire as constitutive of subjective experience thus leads to the conceptualization of the subject's relation to objects as involving unavoidable tensions,⁶⁸ as the latter can never satisfy the desire of the former. This view⁶⁹ stands in sharp contrast with some idealist conception of a subject who, like a spider pulling out of itself the strings of its web, would project the constitutive images of his own world, projected world which would thus suit the subject harmoniously.

The experiences reported by (some) anorectics contrast with the conception of the spider-subject and his fulfilling world. It could even be said that the anorectic suffers from knowing all too well that she is not a spider, in the sense that she experiences that the world of objects, on the one hand, and herself, on the other hand, are incommensurable: anorexia involves 'the release, the comfort, the power, however illusory and short-lived, of being able to conquer nature. Of being able to spit in the face, or rather puke on

68. Ibid., 16.

69. Ibid., 55.

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the shoes, of this material realm'.⁷⁰ Eating as an act of ingesting objects which are meant to be assimilated by the subject thus becomes both absurd and unbearable as it acts against the irreducibility of the subject to any object. For the anorectic, not only is the subject what the object is not, but moreover the subject is what the object cannot/should not fill in. Interestingly enough, there is some philosophical appeal to this mode of being anorexic. Sartre may be relevantly convoked here. He argues:

The description of knowledge is too often alimentary. [...] we are not yet rid of that primitive illusion [...] according to which to know is to eat – that is, to ingest the known object, to fill oneself with it (*Erfüllung*), and to digest it ('assimilation'). We shall best account for the original phenomenon of perception by insisting on the fact that the relation of the quality to us is that of absolute proximity (it "is there," it haunts us) without either giving or refusing itself, but we must add that this proximity implies a distance. It is what is immediately out of reach, what by definition refers us to ourselves as to an emptiness. Contemplation of it can only increase our thirst for being as the sight of the food out of reach added to Tantalus' hunger. Quality is the indication

70. Hornbacher, *Wasted*, 121.

of what we are not and of the mode of being which is denied to us.⁷¹

In this quote, Sartre characterizes two forms of subject-object relation (in the particular case of perceptual knowledge): one involves the full assimilation of the object by the subject who would thereby be filled in; the other, which Sartre advocates, involves a never-fulfilling object whose capture by the perceiving subject reflects to the latter what he is not: objecthood is the mode of being that is denied to the subject. Sartre describes here the irreducibility of one's subjecthood: no capture of any object would ever suffice to fill in the subject who remains inevitably 'empty', i.e. not-an-object, no-thing.

7. THE CONSTITUTION OF THE DESIRING SUBJECT

Conceptualizing subject-object relations in terms of desire involves conceiving of the subject as driven by an orientation towards desired objects, by an aspiration towards what he is not.⁷² The notion of desire also allows the characterizing of this process of reaching out as incessant, since the satisfaction of desire

71. Sartre *L'être et le néant*, 223-4; *Being and Nothingness*, 187.

72. Barbaras, *Introduction à une phénoménologie de la vie*; D. Legrand, 'Self-consciousness and World-consciousness', in D. Zahavi (ed.), *Oxford Handbook of Contemporary Phenomenology* (Oxford: Oxford University Press, forthcoming).

fuels the desire itself and unavoidably fails to nullify the distance between the subject and the object desired (section 5). Importantly, for a subject, being incessantly irreducible to an object does not amount to a lack: being a bodily subject inevitably involves being already an object too. Moreover, being an object is not something one could ever fully achieve without losing one's specificity: being oneself constitutively involves being a subject, i.e. it irreducibly involves not-being-an-object.

This characterization contrasts interestingly with Sartre's view. According to Sartre, the subject is determined as a 'lack of being'.⁷³ Sartre characterizes an 'original connection',⁷⁴ or 'bond'⁷⁵ between the subject ('for-itself') and what he lacks ('in-itself'). In this framework, the subject is 'an incomplete being' surpassing itself toward a 'particular totality which it lacks'.⁷⁶ Nonetheless, Sartre insists, this is an 'impossible synthesis': 'this totality can not be given by nature, since it combines in itself the incompatible characteristics of [objecthood] and [subjecthood]'.⁷⁷ The subject is thus suffering because it is 'perpetually haunted' by a totality or coincidence with itself which

73. Sartre *L'être et le néant*, 121; *Being and Nothingness*, 85.

74. Ibid.

75. Ibid., 122; 85.

76. Ibid., 125; 89.

77. Ibid., 126; 90.

remains unreachable, precisely because one cannot attain objecthood without losing oneself as subject.⁷⁸ Such 'unhappy consciousness with no possibility of surpassing its unhappy state' would involve the fear of losing oneself in the very search for oneself. As is often the case with Sartre's views, however, this characterization would better suit atypical states of consciousness than typical ones.⁷⁹ Interestingly, this equivocation sheds some light on a common point between atypical and typical states of consciousness, namely, the tension between irreducible dimensions of oneself. Furthermore, it would be contingent whether such tension is experienced as such, whether it is experienced as a threat to one's integrity, or whether it is experienced as a happy contribution to one's complexity.

The case that Sartre elaborates on, the 'unhappy consciousness' of the subject 'perpetually haunted' by the search of a perfectly harmonious version of oneself, and constantly threatened by the risk of losing oneself in this very search, this case would not capture self-consciousness as such but atypical forms of it. In particular, this characterization suits the experiences reported by (some) anorectics well. For example, Marya Hornbacher states: 'somewhere in the back of my brain there exists this certainty: The body is no more than a costume, and can be changed at will. That the

78. Ibid.

79. Legrand, 'Subjective and physical dimensions'.

changing of bodies, like costumes, would make me into a different character, a character who might, finally, be all right'.⁸⁰ Notice here that, in her mind, neither costumes nor one's body are only external envelopes to the self: one could not change costumes or exchange bodies at no cost to oneself and one's self-experience. Rather, for her, one can 'judge a book by its cover', and she seeks to make her body-as-object fit perfectly herself-as-subject – in vain, since these dimensions of bodily-self-consciousness are irreducible to each other. She believes that the body can be transformed, like one would change clothes, to fully match the way she feels about herself. Reciprocally, she believes that the way she feels about herself can be changed by changing her body, thereby offering to herself the 'right' being. Seeking perfect harmony between one's body-as-subject and one's body-as-object thus haunts (some) anorectics. But the *threat* that this search represents is also vividly present in their experience. Indeed, as subject and object are irreducible to each other, harmonizing them would require losing one or the other. To avoid eating is thus a mode of refusing the assimilation of objects to oneself, in the fear of becoming an object oneself; it is a mode of being a subject by avoiding being an object, by literally voiding one's body from objects before they get incorporated; it is a refusal to be unharmonious, a refusal of the tension

80. Hornbacher, *Wasted*, 31.

there is between one's body-as-subject and one's body-as-object, as well as a refusal to solve this tension by incorporating and being incorporated to objects.

On this point, it may be said that Marya Hornbacher and David Nebreda are opposite to each other. Indeed, if Marya Hornbacher seeks to regain a sense of her identity by preserving her body-as-subject, David Nebreda may be involved in the opposite process of regaining a sense of his identity by projecting himself fully in the body-as-object. Of course, this body-as-object is quite peculiar in that its natural functioning is controlled, to the point of its' being annihilated. Indeed, he explains that 'the first big decision consists in accepting myself definitively and secretly as negation of any natural state whatsoever'.⁸¹ This includes negating the pre-personal functioning of the body, 'the search for any mode of putrefaction apart from the one that is inherent to any micro-organism'.⁸² Moreover, its image is also rigorously controlled by the practice of photographic self-portraits (section 3). But this radically controlled body image seems to become David Nebreda himself: the 'photographic witness' is not a 'photographic object' but 'another me more real and more definite' in whose favour he 'renounce[s] [his] own identity'.⁸³ Renunciation here is

81. Ibid., 72.

82. Ibid., 66.

83. Nebreda, *Autoportraits*, 174.

a mode of constituting oneself without suffering from the intolerable tension between different dimensions of oneself.

Nebreda makes this inner tension painfully clear. At the end of the period of work where he produced his first series of colour self-portraits, he was constrained to stay at the psychiatric hospital from 1990 to 1992. He then described the

degeneration in which one found oneself when the psychiatric entity demonstrated peremptorily the intolerable character of [one's visionary project, which leads to the new life materialized by means of pictures and of notes], and when it [(the psychiatric entity)] maintained without a shadow of a doubt that what it had before its very eyes was not a vital project but a pathological and dangerous entity which must be eradicated as quickly as possible. [...] One will have to renounce [the photographic witness] to protect him. From the moment that all his previous history, personified in the 'evil', had rejected him and evicted him from himself following his experience of death and of rebirth, and [from the moment] that one has to renounce the 'good' [(the photographic witness)] for its own good [(to protect it from the psychiatric entity)], the only perspective

that remains is that of ‘nothingness’, the everyday hell of radical and profound negation of oneself.⁸⁴

It is at this period that he lives ‘seven years of silence and of near-paralysis’.⁸⁵ This description, sharp as a razor, captures the way the tension hosted within oneself may become unbearable. It also underlines the way such tension is itself immersed in an inter-subjective context where others represent one’s own body at will. The impact of *others* on one’s bodily self-consciousness is multi-faceted. Below, I consider only some of the ways inter-subjectivity may be involved in (a)typical bodily experiences and eating practices.

8. THE INTERLACING OF DESIRING SUBJECTS

It follows from the characterization given above that desire targets others. Indeed, the desiring subject may only be satisfied by an object if it materializes others’ sensitivity to his desires.⁸⁶ In this sense, the ‘painful dialectic of the object, at once there and never there’⁸⁷ also materializes a dialogue between giving-receiving subjects (section 5). This interlacing of desiring

84. Ibid., 175-6.

85. Ibid.

86. Lacan, *La Relation d’Object*, 141.

87. Ibid., 183.

subjects may be best explained by appealing to Kojève's reading of Hegel's Master-Slave dialectic.⁸⁸

In the current framework, a subject is first of all not-an-object, no-thing. According to Kojève/Hegel, the subject is revealed to himself as a desiring subject and receives a positive content from the action that arises from his desire. This content is relative to the desired target: as no-thing, the subject's 'void' is penetrated by the object his desire targets.⁸⁹ By desiring a 'natural' object, the subject assimilates, incorporates, internalizes such object, thereby constituting himself as object-like, e.g. targetting food, he is a fed body, a container of feeding matter. Notice that this is exactly what (some) anorectics refuse: to be reduced to an object by assimilating objects (section 6). To genuinely constitute himself-as-subject, the subject cannot assimilate any thing, he can only desire no thing. In particular, if the subject desires another subject, he assimilates the nature of this subject, i.e. desire. Thereby, we see here that mutually desiring subjects exacerbate their subjecthood by amplifying their respective desires, feeding each other. In this

88. A. Kojève, *Introduction à la lecture de Hegel : leçons sur la Phénoménologie de l'Esprit professées de 1933 à 1939 à l'École des Hautes Études* (Paris : Gallimard, 1980), trans. J. H. Nichols as *Introduction to the Reading of Hegel: Lectures on the Phenomenology of Spirit* (Ithaca, NY: Cornell University Press, 1980).

89. G. Catren, 'The Thing and The Shrink', conference presentation, *Dark Materialism*, Kingston University, UK, January 12, 2011. At <http://backdoorbroadcasting.net/2011/01/dark-materialism/>.

sense, desire is 'anthropogenetic', i.e. it constitutes humans as self-conscious beings, when it does not target objects but others' desire. For example, subjects desire food as humans when they react not only to their bodily need for food, but to the desire to be fed by others, food thereby becoming a materialization of others' care.

(Some) anorectics epitomize the inter-subjective constitution of the subject.⁹⁰ Their sense of themselves is mediated not only through their image (section 4), but also through others. Through others' approbation, they seek the objective confirmation of their being. They exist for themselves only through others: 'What are you worth if no one's looking? How do you know you're even there?'.⁹¹ In Sartre's words, the self is here enslaved to the other: 'I am a slave to the degree that my being is dependent on the centre of a freedom which is not mine and which is the very condition of my being'.⁹² In this sense 'my original fall is the existence of the Other'.⁹³

Moreover, (some) anorectics recognize all too well that others cannot validate them if they are themselves enslaved; that the attitude of the master treating slaves as dependent animals is an existential deadlock: only

90. Legrand, 'Subjective and physical dimensions', 'Objects and Others'.

91. Hornbacher, *Wasted*, 125.

92. *Ibid.*, 267.

93. *Ibid.*, 263.

a free desiring subject can validate one's own desire; only mutual desires are constitutive. Like a slave, the anorexic subject understands that she depends on others' subjecthood to be validated as subject. Like a slave, she must free herself from any unidirectional dependency in which her desire would suffocate for the benefit of others' desire. To establish reciprocity, she must negate herself as slave. As she cannot negate her dependency upon others, as others' desire remain her master, she cannot do anything other than negate herself; as she cannot reduce others to slavery without thereby losing the inter-subjective recognition her being relies upon, it is her own body that she subjects to slavery. This latter point will now be unfolded.

9. NEGATING ONE'S BODY-AS-OBJECT

As we saw above, in the current framework, the subject is conceived of as revealing himself as a desiring subject and as receiving a positive content from the action that arises from his desire. Such action negates the desired target, not by eradicating it but by transforming it. Kojève takes eating as an example of such an action that is negating without being merely destructive: the subject who eats creates and maintains his own being thanks to the transformation, internalization, incorporation of food, i.e. a foreign, external object which the subject is not. Again, this is quite precisely what

(some) anorectics refuse: to be constituted through the assimilation of foreign objects, to be constituted by alterity, as this would threaten the autonomy and irreducibility of themselves-as-subjects.

For the subject to be constituted as subject, he cannot content himself with desiring objects (section 8). Rather, he must prioritize his subject-specific desire over the fulfillment of his object-related need. As it turns out, fulfilling needs involves self-preservation, the maintaining of the constancy of a pre-constituted internal milieu, the conservation or restoration of a self-constituted subject and in particular the homeostatic conservation of one's life. It follows that it is by bracketing the preservation of himself as a given living being that the subject may attest his subjecthood: *self-constitution must overcome self-conservation*.

In particular, prioritizing his desire, the subject negates the need of his body. Therefore, even though 'there appears round our personal existence a margin of almost impersonal existence, which can be practically taken for granted, and which I rely on to keep me alive', and even though 'for most of the time personal existence represses the organism without being able either to go beyond it or to renounce itself; without, in other words, being able either to reduce the organism to its existential self, or itself to the organism', in particular circumstances, 'my human situation abolishes

my biological one'.⁹⁴ To continue with Kojève's own example, the subject may be revealed to himself as desiring food, but as the subject eats, he assimilates the objecthood of food, thereby negating as much as constituting his subjecthood. *Negating* food, on the contrary, as both Hornbacher and Nebreda do radically, allows the subject to overcome the fulfilment of his bodily needs, thereby overcoming the constitution of himself as an animate material thing – an organism living anonymously – and as an inanimate material thing – a corpse (section 2).

To negate food, however, is not to stop eating all together. Rather, it notably involves controlling voluntarily one's eating behaviour. What is negated is the nutritional need of one's body, as fulfilling nutritional needs represents the surrendering of the subject to the matter of his body, to his belongingness to the realm of anonymous organic processes and of corpses. As Deleuze argues, anorexia:

is not a matter of a refusal of the body, it is a matter of a refusal of the organism, of a refusal of what the organism makes the body undergo. [...] The anorexic void has nothing to do with a lack, it is on

94. M. Merleau-Ponty, *Phénoménologie de la perception* (Paris: Éditions Gallimard, 1945), 99-100; *Phenomenology of Perception* (London: Routledge and Kegan Paul, 1962), 84.

the contrary a way of escaping the organic constraint of lack and hunger at the mechanical mealtime.⁹⁵

Nutritional needs are negated by being transformed into (non-)eating projects representative of one's subjecthood, and thereby constitutive of it. Physiologically, the human being is an omnivore. Constructing oneself beyond one's need thus involves selecting specific aliments, not for their nutritional value but for their subjective value, that is, for how they may symbolize oneself-as-subject. Anorectics do not stop eating, or they die: 'People have this idea that eating-disordered people just don't eat. Wrong. They have rules about what they eat',⁹⁶ 'I had decided to ingest one hundred calories a day. It seemed a good number, a tidy number, a 'diet' rather than a disorder, a Plan. Carrots, mustard, two pretzels, the milk in my coffee.'⁹⁷ Anorectics live thanks to a careful selection of aliments that represent and express who they are or want to be(come). As for Nebreda, 'vegetarian since more than thirty years, [he] follow[s] a strict diet composed of a small number of invariable food (eight or nine) which [he] eat[s] raw or simply cooked in water'.⁹⁸

95. G. Deleuze, C. Parnet, *Dialogues* (Paris: Flammarion, 1977), 132; trans. H. Tomlinson & B. Habberjam as *Dialogues* (New York: Columbia University Press, 1987), 110.

96. Hornbacher, *Wasted*, 113.

97. *Ibid.*, 119.

98. Nebreda, *Sur la Révélation*, 21.

These cases put the selection of food to such an extreme that they exemplify unequivocally that what is at stake here is not some game, coquetry or vanity, but the constitution of oneself by risking one's life, the constitution of oneself as a desiring subject by the negation of one's bodily needs. Negating over and over again the constitutive belongingness of one's body to the realm of anonymous organic processes and of corpses is necessary for the incessant constitution of oneself-as-subject, which always risks falling into mere objecthood as one eats, thereby internalizing the objecthood of food.

10. MATERIALIZING NO-THING-NESS

This framework allows us to understand that a lack of objecthood is not sufficient for the constitution of subjecthood. Rather, what is at stake is the dialectical negation of one's objecthood: its transformation. To understand the type of transformation that is relevant for the constitution of one's subjecthood, let us return to the idea that subjecthood is constituted through inter-subjective validation, that is, through reciprocal recognition: the other who I value as a subject must recognize me in return to validate me as a subject (section 8). For that to happen, subjecthood must be expressed in the material world that the subject shares with others. The subject must be capable of showing

himself to others specifically as subject, i.e. he must materialize his no-thing-ness.

Strikingly, both Hornbacher and Nebreda must make their subjectivity exist in the outer world in order for them to believe that they exist. Neither of them are 'Cartesian' subjects who could be certain that they exist while doubting about their materiality. As Marya Hornbacher describes, 'a disappearing act, the act of becoming invisible, is, in fact, a visible act, and rarely goes unnoticed'.⁹⁹ Here again, (some) anorectics' reports would join Sartre's words:

What we call 'noble' or 'good' or 'true' suffering and what moves us is the suffering which [...] is presented to us as a compact, objective whole which did not await our coming in order to be and which overflows the consciousness which we have of it; it is there in the midst of the world, impenetrable and dense, like this tree or this stone; it endures [...]. And it is as such that it fascinates us [...]. The suffering which I experience, on the contrary, is never adequate suffering [...]. It escapes as suffering toward the consciousness of suffering. [...] If I must suffer, I should prefer that my suffering would seize me and flow over me like a storm, [...] but this enormous, opaque suffering, which should transport me out of myself, continues instead to touch me lightly with its wing, and I can

99. Hornbacher, *Wasted*, 129.

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not grasp it. I find only myself, myself who moans, myself who wails, myself who in order to realize this suffering which I am must play without respite the drama of suffering. I wring my hands, I cry in order that [...] their sounds, their gestures may run through the world [...]. Each groan, each facial expression of the man who suffers aims at sculpting a statue-in-itself of suffering. But this statue will never exist save through others and for others.¹⁰⁰

As this quote emphasizes, the materialization of one's experiences in the material and shared world allows grasping those experiences and offering them to intersubjective validation. As already seen above (section 4), for (some) anorectics, the experience of one's body-as-subject may indeed be too dim and would need a supporting validation requiring its materialization into one's body-as-object.

As for Nebreda, his photographic witness assures him that he exists for real. The construction of this highly-controlled image is a 'vital project' for him.¹⁰¹ The material world must express one's subjecthood; one's 'endemic hungers' must be materialized in a 'made-to-measure ectoplasm'.¹⁰²

100. Sartre *L'être et le néant*, 128; *Being and Nothingness*, 91-2.

101. Nebreda, *Autoportraits*, 175.

102. Nebreda, *Sur la Révélation*, 56.

Both cases evidence that one's own body must be seen as the carrier of one's subjecthood. As such carrier, the body-as-object is fundamental for the constitution of oneself-as-subject. The body-as-object may carry, express, expose subjecthood to the subject himself and to others, thereby participating to the constitution of oneself-as-subject. Conversely, if the subject is not carried, expressed, exposed by the body-as-object, he fails to be recognizable by others and evaporates as a solipsistic illusion. Being or rather becoming a subject thus involves practices of bodily self-transformation leading the body-as-object to expose one's subjecthood. Plagiarizing Negarestani's characterization of decay allows understanding the sense in which anorexia and other forms of constitutive self-negation like the one performed by David Nebreda are building processes involving the objective manifestation of subjecthood: 'a building process toward exteriority'.¹⁰³

11. CONSTITUTIVE SELF-SUBTRACTION

Crucially, self-transformation may be both at once self-constituting and self-negating. To unfold this point, let me import here what Negarestani described in another framework, namely the Etruscan torture in which 'a living man or woman was tied to a rotting

103. R. Negarestani, 'Undercover Softness: An Introduction to the Architecture and Politics of Decay', *COLLAPSE VI*, 379-430: 385.

corpse, face to face, mouth to mouth, limb to limb, with an obsessive exactitude in which each part of the body corresponded with its matching putrefying counterpart'.¹⁰⁴ After Aristotle, Negarestani discusses this torture as an 'analogy with the twofold composite of the body and soul'.¹⁰⁵ In this view, 'we are punished much as those tortured by the Etruscan robbers: so our souls, tied together with our bodies as the living fixed upon the dead'.¹⁰⁶ This view affiliates the body to a corpse and links the living to the soul. Negarestani exploits this in the aim of unfolding the necrocratic dynamic of life itself. For my own purpose, however, I will maintain the torture at the bodily level. But instead of linking one's living body to another dead body, the torture may be an analogy of the tension there is between the different dimensions of one's own body. On the one hand, the corpse figures the body-as-object, as both partly share common attributes: shape, opacity, etc. On the other hand, the living body figures the body lived as subject, while the corpse lacks subjectivity. The Etruscan torture can thus function as an allegory for the double-sidedness of one's own body: at once subject and object, characterized at once by features specific to subjects and by features shared with objects. This is the 'necrophilic intimacy' of the body.

104. R. Negarestani, 'The Corpse Bride: Thinking with Nigredo', *COLLAPSE IV*, 129-161.

105. *Ibid.*, 130.

106. *Ibid.*, 132.

In this sense, anorexia would be a necrophobia, since (some) anorectics refuse the ‘dead’ that composes their body – and who would blame them for being repulsed by the Etruscan torture?

Negarestani’s analysis of *aphairesis* (from the Greek: withdrawal, separation) is most relevant here: ‘*aphairesis* emphasizes simultaneously removal (that which is taken away) and conservation (that which is left behind by removal) – the removed and the remainder’.¹⁰⁷ *Apharesis* is an operation of subtraction which, as such, is composed to two vectors: ‘The negative vector is the vector of removal whereby belongings or attributes are subtracted from a magnitude. The positive vector, on the other hand, emphasizes the possibility of conservation and persistence against subtraction. The vectors of *aphairesis* respectively effectuate the removed and the remainder in subtraction’.¹⁰⁸ These two vectors are necessary to each other: on the one hand, shedding continues only as long as some remainder can support the operation of subtraction; on the other hand, the remainder is attested only as long as it resists some subtraction.

Inevitably, one thinks here about atypical bodily experiences. Remember (section 3b) David Nebreda’s striking question: ‘How to keep an identity when this demands and is recognizable only by the means of

107. Ibid., 136.

108. R. Negarestani, ‘Differential cruelty’, *Angelaki* 14: 3, 2009: 69-84, 73.

offering relentlessly proof of one's own destruction?'.¹⁰⁹ Negarestani's analysis of the notion of *aphrairesis* allows us to address this question, as he shows how relentlessly proving one's existence and identity *requires* relentlessly proving its resistance to subtractive self-negation. Anorexia can also be better understood in this framework – the anorectic's eating nothing may be seen as a subtractive operation. In fact, Negarestani's characterization of *aphrairesis* could be used, word for word, to describe anorexia: 'a procedure which takes away all that exists extraneously and negatively contributes to all that remains and itself progressively diminishes'.¹¹⁰ We understand here that the anorectic's necrophobia does not lead her to mortification¹¹¹ in the sense that the very process she is engaged in requires that her body to remain – to remain less and less without disappearing all together: it is through the diminishing persistence of her body that the anorectic attests the continuity of her existence/identity: as she needs to continuously attest herself, she is constrained to 'the infinitesimal persistence of the decaying object – in other words, its limitropic convergence upon zero'.¹¹² Letting the body persist minimally is thus necessary not only for the continuation of the anorectic's life but also for the

109. Nebreda, *Autoportraits*, 162.

110. Negarestani, 'The Corpse Bride', 138.

111. *Ibid.*, 139.

112. *Ibid.*, 388.

continuation of the anorexic project. The same can be said about David Nebreda: the living body must relentlessly bleed to attest its own decay and recovery, thereby attesting its existence. In both cases, the 'vital project' involves continuing to remain/become oneself by continually stripping oneself of what's foreign (the corpse-likeness of the body-as-object and pre-personal spontaneity of the organism).

12. NO-THING-NESS

Now, one must ask: what is it that guarantees and is attested by the operation of subtraction? It cannot be an object since, ultimately, all objects will have to be stripped off for the subtraction to continue up to its own radical limit. As Negarestani shows, what guarantees and is attested by the operation of subtraction can be neither what remains contingently and will eventually be removed nor what is already removed: rather it is a 'resistance toward correlation with what remains and what is removed'.¹¹³ In other terms, what guarantees and is attested by the operation of subtraction cannot be an object, it has to be no-thing qua non-object. No-thingness is thus what guarantees the continuation of subtraction, thereby guaranteeing the continuation of the attestation of this very no-thingness.

113. Ibid., 144.

In particular, what guarantees and what is attested by one's self-subtraction is one's own no-thingness, one's irreducibility to objecthood, i.e. one's subjecthood. We understand here that the one way of attesting oneself-as-subject is by peeling away one's body-as-object as an act of revealing one's body-as-subject as no-thingness. The anorectic takes this literally and traps herself in a deadly contradiction: being necrophobic, i.e. refusing to surrender to the corpse-likeness of her body-as-object, she ends up mimicking the dead. She 'prioritize[s] the reign of the void qua non-belonging'.¹¹⁴ She constructs herself/her body 'as a byproduct of the differential regurgitation of a shriveling body which is in the process of becoming less and less, without ever finding the relief of complete annihilation'.¹¹⁵ What is negated here is oneself as a given, in favour of oneself as self-constituted through an operation of self-negation. It is only by constituting one's body-as-object actively, by actively negating the body as given, that the body-as-object may express one's subjecthood. The operation at stake here is thus a dialectic negation that is, a conserving suppression or suppressing conservation. The entity that is suppressed dialectically is cancelled in its contingent aspect of being a naturally given being (pre-personal life and death) but it is retained as significant and meaningful

114. Negarestani, 'Differential Cruelty', 76.

115. Negarestani, 'The Corpse Bride', 382.

(oneself-as-subject). On the one hand, anorexic processes can be said to involve a dialectic negation in the sense that the negation of their body as manifesting their corpse-likeness involves the constitution of their body as manifesting their subjecthood. On the other hand, David Nebreda can be said to be involved in a dialectic negation, not because he produces 'art', but first of all because he produces what he considers/experiences as himself (his photographic double).

13. SYMBOLIC NEGATION

In the view proposed here, anorexia is not understood as primarily involving the construction of a body-as-object with obsessive care for its shape and weight. What (some) anorectics primarily seek is rather the formation of the body-as-object as a manifestation of their body-as-subject, which can thereby be carried in the world and expressed to others. Such anorexic subject exposes to others what she is as subject: nothing. And she shows how to relate to others beyond the transaction of objects and exchange of bodies.

Inter-subjective relations are shaped by *signs* of love, attention, understanding, listening of the subject('s desires).¹¹⁶ As the expression of inter-subjectivity cannot be reduced to the transaction of any thing (section 5), the clearest sign of inter-subjectivity (love) is the

116. Lacan, *La Relation d'Object*, 140.

gift of what one lacks. Reciprocally, inter-subjective relations target no thing, i.e. the subject and what he lacks.¹¹⁷ It thus appears here that (some) anorectics (like the young homosexual woman described by Lacan)¹¹⁸ want to expose to others how they want to be loved. What such an anorexic subject materializes is that she is not an object of love and that she refuses to be so; what she begs is to be loved, not for what she has, a body-as-object with breast and hips, but for what she is, a body-as-subject, no-thing. She wants to be given the type of love she's been frustrated of, as her desires have been choked by the (over-)fulfillment of her needs (section 5).

We understand here that this anorexic subject may refuse fulfillment to preserve the function of desire¹¹⁹ and that this process is inter-subjective. More in detail, eating relies primarily on the goodwill of others. The demand to be fed, addressed by the subject to others, is the simplest oral demand. To this demand, the (m)other responds by the inverse demand that the subject lets himself be fed. It is in this *encounter* of two demands that lies a (inter-subjective) desire that overflows the (nutritional) demands themselves. We see here that fulfilling nutritional needs may silence the

117. Ibid., 142; A. Johnstone, 'Nothing is not Always No-One: (a)voiding Love', *Filozofski vestnik*. XXVI: 2, 2005, 67–81.

118. Lacan, *La Relation d'Object*, 145-7.

119. J. Lacan, *Le Transfert. Séminaire VIII* (Paris: Seuil, 2001), 178)

demands, in turn extinguishing the desire expressed in their confrontation. This view sheds light on why a subject who is hungry may not allow himself to be fed, as he may refuse to disappear as desire by being fulfilled as demand. Abandoning one's desire to others, enslaving one's desire to the power of satisfaction which the (m)other is endowed with, is accepting that one's desire may be shattered by the fulfilment of one's bodily needs, a stuffed mouth being unable to express desire in the oral demand. As in idealized love (that, strangely, is understood as specifically masculine), what is sought in anorexia (mostly seen as feminine) is non-fulfilment.¹²⁰

Anorexia is seen here as an inter-subjective process whereby a subject expresses her desire that others desire her as desiring. Another way of saying this is to say that anorexia is a *symbolic* process.¹²¹ Rather than focusing on (normative) body image, unfolding the idea that anorexia is a symbolic process leads to the distinction between an object and a gift: a gift is an object received as a sign of the sensitivity of the giver to the receiver's desire. As such, it is not reducible to the transaction of any particular object but materializes the interaction of subjects. A gift materializes no-thing and as such, it exists symbolically, the materializing object being replaceable by any other object. It may

120. Lacan, *La Relation d'Object*, 109, 141.

121. *Ibid.*, 155.

be replaced by words,¹²² and it may as well be replaced by no thing at all. According to Lacan, this is what explains anorexic symptoms. Anorexia is not a refusal to eat, a negation of activity, but *an act of eating nothing*, a no-thing which exists symbolically.¹²³ No-thing is savoured as such and is used to preserve one's desire from being swallowed up. In anorexia, the hungry subject refuses to respond to (m)other's demand: 'let me feed you'; by annihilating the object (food) that materializes both her dependency on bodily needs and her dependency on the demanding (m)other, she builds up 'a perfect response to a lack of autonomy':¹²⁴ 'The anorexic body seems to say: I do not need. It says: Power over the self [...] power over the body, over the life, over the people around you, power over a world gone berserk'.¹²⁵

The role of the (m)other in David Nebreda's project is particularly delicate to characterize/understand and any 'interpretation' would be unwarranted. Encountering his work, it is impossible not to see that his self-portraits are culturally anchored, that his mother is particularly 'present' in his writings and photographs (one picture of her and many references), that the very act of exposing his photographs and of publishing his

122. Ibid., 175.

123. Ibid., 184-5.

124. Hornbacher, *Wasted*, 68.

125. Ibid., 85.

words places him in a socially recognizable and inter-subjectively shared location. Nebreda says that his experience of the look of the other is not very different from that any other person may have.¹²⁶ Importantly, however, he insists that he lives and works alone (section 2b); exceptionally he pictures himself and only himself; his art is not primarily directed at others – at first, he buried his self-portraits. His books are not for him an opportunity of encountering others but an ‘outlet for all the negations’.¹²⁷ Nonetheless, he himself describes that ‘it is by thinking of me, by demanding of myself, by ripping myself, by contradicting myself, but above all by giving up myself that I constitute myself necessarily in a cultural form’.¹²⁸ Importantly, he does not pursue the representation of himself. Rather, as Baudrillard says:

he finds the strength to inscribe himself in a living sign, the living equivalent of [his] mental destruction – the sign of his own body. His own body or his personal body? At any rate it is the only living object available to him in his reclusion with which to put his own death into circulation. [...] He manages to deny himself absolutely and to produce that denial

126. Nebreda, ‘J’espère que Mon Travail Sera Toujours Innocent. Entretien. Propos recueillis et traduits par Anna Guilló’, *La Voix du Regard*, 15, 2002 : 72-7, 77.

127. Nebreda, *Sur la Révélation*, 57.

128. Ibid., 61.

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as work, and even as artwork. For his photos are not mere testimony, they are works. And this is where art appears as the perfect simulacrum: not just the sign, but the simultaneity of the thing and the sign [...]
That is not in any way representative.¹²⁹

The 'simultaneity of the thing and the sign' would indeed be at the core of Nebreda's 'production'. It is in this sense that his work is a *production of identity*. He would not be able to represent his identity, as this would presuppose the existence of the identity to be represented. He is rather moulding himself by the very act of picturing himself. The 'photographic double' and the act of giving birth to it is not 'just' a crucially important aspect of himself; it is himself as he lives himself. In exposing his photographs, he is thus giving *himself* to the gaze of others, and to their (mis)interpretation.

14. CONCLUSION

What has been proposed here is that, for the body to attest to rather than cancel one's subjecthood, the subject must form his body, for it to escape the status of a natural (living or dead) object. To be more or less than an object, the subject must realize himself as a

129. J. Baudrillard, *L'Echange Impossible* (Paris :Editions Galilée, 1999); trans. C. Turner as *Impossible Exchange* (London: Verso, 2001), 125-6.

self-made body. This work of self-realization is rooted in the anxiety of death,¹³⁰ as it is rooted in the negation of one's bodily needs, the negation of the preservation of oneself as a given (section 9). One's irreducibility to objects must be expressed in the material world in order for others to recognize it, to validate the subject's subjecthood (section 10).

If one's subjecthood were only internal, intimate, invisible, mute, it would conflict with other subjects who live in solidarity with the material world. In this sense, as defended by Kojève, if a subject changes and

his change remains 'private', purely subjective, revealed to himself alone, 'mute', not communicated to others [...] this "internal" change puts him at variance with the World, which has not changed, and with the others, who are bound to the unchanged World. This change, then, transforms man into a madman or a criminal, who is sooner or later annihilated by the natural and social objective reality. Only work, by finally putting the objective World into harmony with the subjective idea that at first goes beyond it, annuls the element of madness and crime that marks the attitude of every man who – driven by terror – tries to go beyond the given World

130. Kojève, *Introduction à la lecture de Hegel*.

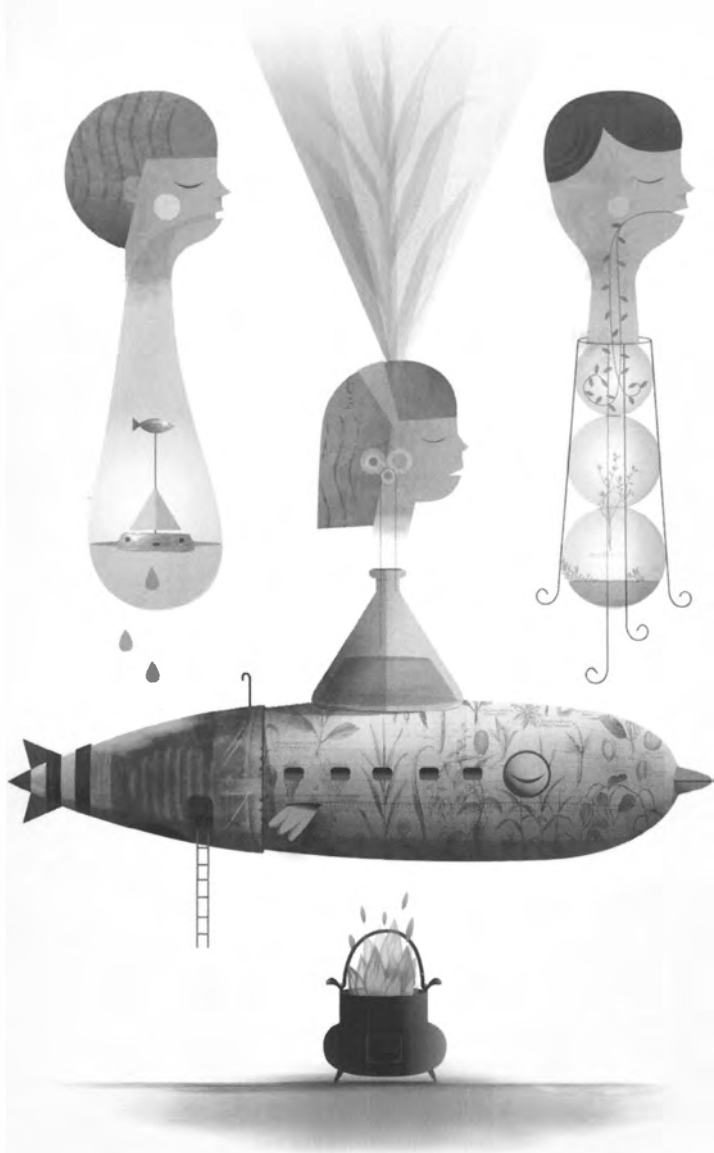
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of which he is afraid, in which he feels terrified, and in which, consequently, he could not be satisfied.¹³¹

While un-exposed subjecthood turns the subject into a madman or a criminal, the expression in the material world of one's subjecthood – as atypical it may be – may be motivated by the desire to accord oneself with others, by building a world where one has a place, and where one can share oneself with others, thereby appeasing one's craving for inter-subjective validation.

One's own body seems the most primary locus of the self-transformation that must occur, for matter to expose one's subjecthood. And manipulating food-incorporation seems the most basic way to perform such self-transformation. In particular, a radical subtraction from one's body of the elements of pre-personal life and death can be conceptualized as involving two contemporaneous processes: *shedding* one's objecthood, thereby attesting to the *irreducibility* of one's body-as-subject and one's body-as-object; and *exposing* one's no-thingness, thereby attesting to their ineradicable *intermeshing*.

131. Ibid., 28.



On Philosophical Alchimery, or Why All Chimeric Compositions are Philosophical Stones

Gabriel Catren

Illustration by Cristian Turdera¹

*If you have a philosophical stone, do you therefore also
have a mathematical and artistic stone? etc.*

NOVALIS²

*I have always dreamed and attempted something else, with
the patience of an alchemist, ready to sacrifice all vanity and
all satisfaction, as in the past one burned his furniture and
the beams of his roof, to feed the furnace of the Great Work.*

MALLARMÉ³

1. <http://www.cristianturdera.com/>.

2. Novalis, *Notes for a Romantic Encyclopaedia, Das Allgemeine Brouillon*, trans. E.W. Wood (Albany, State University of New York Press, 2007), 16.

3. S. Mallarmé, 'Lettre à Paul Verlaine, 16 novembre 1885', in S. Mallarmé, *Œuvres complètes*, ed. B. Marchal (Paris : Gallimard, 1998), tome I, 789.

The system of faculties of a local subject is a *prism* that, according to the different possible interests of reason and the concomitant entanglements of faculties, refracts experience onto different abstract planes or sections (e.g. theoretical, ethical, esthetical, affective, etc.). We shall call *mode of thought* a discipline that aims to mediate the limits of the regional historical world that surrounds the subject *according to a particular abstract plane of experience*. Each mode of thought (e.g. science, politics, arts, psychoanalysis, etc.) defines a *monochromatic* trans-regional – or universal-oriented – gradient of mediation coplanar to the corresponding spectral section. Philosophical reason is a *systematic* or *trans-modal* regime of thought, that is to say a regime of thought *transversal* to the different planes, whose goal is to compose *concrete* polychromatic mediators by bringing the abstract vectors of mediation into concert. Such a philosophical concrete synthesizer produces, from the spectral decomposition of experience provided by the abstract modes of thought, a *polyphanic* overcoming of a regional field of experience. The constitutive abstract trans-regionality of the diverse modes of thought is thus enriched with a concrete operatic trans-modality. This means that systematic philosophy should not be understood in terms of a volatile overarching encyclopedic survey of the different interests of reason, but rather as a katabatic deepening of the bottomless concreteness of

trans-modal experience. We shall then call *philosophical stone* the adamant converging pole of the concrescent operations carried on by a particular process of trans-modal philosophical synthesis. The orchestration of a philosophical stone requires an amalgrammation of the local grammars that literalize the diverse modes of thought into a unique *grimoire*, and the arrangement of the regulative ideas that provide different prismatic orientations in thinking into a single *constellation*. The very possibility of this philosophical *ars magna* relies on the following theses: firstly, that every *regional* environing world is immersed in a unique non-horizontal (i.e. non-arche-earth-centred) *universal* field of experience; secondly, that every *abstract* mode of thought is a section of one and the same *concrete* field of experience; and lastly, that every form of transcendentially-determined intentional experience is an immanental reflexive self-experience of the impersonal field itself. This *universal* and *concrete* field of *immanental* self-experience will be called *absolute*. It follows that the different regulative ideas that orient the labour of the abstract modes (e.g. the *Verum*, the *Bonum*, the *Pulchrum*, etc.) are just kaleidoscopical cases of the idea of the absolute as such. To concoct a philosophical stone, the philosopher begins by inserting and dissolving the different prismatic modes of thought into the solvent field of concrete experience. This *liquefactio* of the abstract modes of thought into a unique concrete

solution triggers a process of fertilizing corruption that proceeds by means of free associations, impure mixtures, transversal contagions, epiphytic transplantations, teratological combinatorial processes and communicant vessels of the highest connectivity. The monochromatic chastity of each abstract plane is thus (re)inserted into the *universal menstruum* (Novalis) of impure experience. In the wake of Hegel, we could say that the philosophical track towards the concrete must traverse the Spirit's treasury of this unconscious night, this dark chaos which contains every production of spirit in its destratified simplicity – a wealth of infinite theoretical representations, artistic percepts, imaginative schemes and eidetic poles.⁴ This absolution with respect to the prismatic foliation of experience permits the philosopher to attune himself to the monstrous parousia of the absolute in its uttermost *infinite* (trans) *versability* (Novalis) : 'only out of the chalice of this realm of spirits, foams forth to him'⁵ the trans-modal mercurial menstruum.

In order to compose a concrete *organon* of mediation, the philosopher has to distill a particular set of spectral mediators from this cacophonical mixture. The ingression of these ingredients into the opus requires

4. Cf. G.W.F. Hegel, *Hegel and the Human Spirit. A translation of the Jena Lectures on the Philosophy of Spirit (1805-6)*, trans. L. Rauch (Detroit: Wayne State University Press, 1983), 87.

5. Cf. G.W.F. Hegel, *Phenomenology of Spirit*, trans. A.V. Miller (Oxford: Clarendon Press, 1977), 493.

whitening the composite by means of a spectral synthesis of their monochromatic gradients of mediation. The superposition of this linearly independent set of mediating vectors permits the philosopher to span and clear a multimodal theatre of operations. The philosophical alchimery enriches the resulting composite by means of transversal operations of internal consistency, operations that will permit the concrescence to hold itself. The production of counterpoints between different themes, the introduction of topological twists between the overlapping phenomenological sheaves, the extrapolation of the motifs far beyond their natural domains, the chimerical wedding of disconnected kingdoms, the knitting of textural montages between divergent lines of escape, the compossibilisation of different harmonic keys, the tiling of multidimensional mosaics of glass beads, the potentialization of the different components to higher powers, the knotting of the relevant interests of reason in new sinthomatic ways – all these diagonal operations permit the philosopher to entangle the heterogeneous ingredients into a consolidated concrescence that overflows every single abstract section. Thanks to the lysergic injection of this *korova lacta philosophica*, the ingredients are joined together into a composite that, overcoming the state of a mere cultural juxtapositive multiplicity, coagulates into a coalescence of mutual implication. This condensation allows the philosopher to transmute

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the volatility of the abstract modes into the downward weightiness of the concrete. Once the *dissolve* and *coagulate* phases are over, the furnace of the *magnum opus*, fed by the furniture and the beams of the roof that accommodate and shield the anchored existence upon the transcendental earth, will ignite and propel a multistage-alembic. In the crimson phase of the trip, the alembic heads towards the supposed elementary, immediate and unilateral last instances of regional experience. The elementary grains which voxel the local historical world that surrounds the alchimerical theater, far from defining the outermost edges of any possible experience, result from a particular transcendental coarse-graining. In order to circumvent the narcotic hypostasis of these cut-offs and unground the local renormalization of experience, the *opus* has to *mediate*, *resolve* and *fibrate* the transcendental trellis and *decompactify* its concealed higher-dimensional abysses. In this way, the philosophical composite, being concocted in a particular – cultural, historical, cosmological, linguistic – phenomenological horizon, will project itself towards the trans-regional interzone of manifestation disclosed beyond these contingent and permeable thresholds. Instead of travelling through the 3+1 spatiotemporal dimensions of the firmament painted on the underside of the outer sheltering umbrella, this sort of at-homeness-fired alembic-chuggabug tears open the firmament itself

to frame in a new light a stereoscopic vision of the polyphonic landscape that appears through the lattice.⁶ This trans-modal '*vitrauxlisation*'⁷ of the environing world is as philosophical as the fortuitous hierogamy of a sewing concrete machine and a doxical umbrella in a Klein retort (Lautreamont). Once the acclimatized integrity of the local Zabriskian atmosphere has been blown-up, the propelling furnace is turned off, the pre-modern orni-theological mystifications are '*right away evaporated in mists*', and the bluish *katabatic* stage of the voyage begins. By dropping away the propelling stages, the remaining stoned kernel starts its groundless free-falling into the nested unconcealed underworlds. The consistent *unheard of* combination of heterogeneous ingredients forms a sort of crystalline lens whereby a stereoscopic, atonal and polyphonic experience of the absolute – in the double sense of the genitive – takes a cleared place and pulses a diachronic time. The more concrete the philosophical stone is, the deeper the musaical descent into this nether yonder.

6. Cf. G. Deleuze and F. Guattari, *What is Philosophy?*, trans. H. Tomlinson and G. Burchell (New York: Columbia University Press, 1994), 203.

7. Cf. nakH ab Ra, *Breve Diccionario de Brujería Portatil*, in *Nosotros, los Brujos. Apuntes de arte, poesía y brujería*, ed. J. Salzano (Buenos Aires: Santiago Arcos editor, 2008), 267.

ANALYTICAL JELLY

| | |
|----------------------|---|
| Gelatine (30g) | Its translucent, tasteless structure will be essential. |
| Lemon Juice (100ml) | Will help bring about the aseptic, astringent product desired. |
| Water (400ml) | What can be said? Will wash away all obscurities. |
| Plain cream (80g) | Whiteness of 'white' will ensure a firm blend. |
| Sugar (little spoon) | To keep open a door to 'other worlds'. |

Dissolve the gelatine in water, add the lemon juice, the cream, put in a pan, soak and boil. Throw away the sugar, no one is looking. Allow to cool. Sell it as a magnificent dish, whose preparation involved great difficulties. Make its aura shine. Enjoy with your closest friends and distribute to the World.

TRANSMODERN TATIN

| | |
|--------------------|--|
| Flour (330g) | Will bring you down to Earth. |
| Butter (330g) | Worst will be the best. |
| Icing sugar (110g) | Nature and artifice will come together. |
| Egg yolks (3) | Life will have to surface. |
| Apples (6) | What can be said? Will obscure all. |

Do not worry much about the preparation. Forget good orders and canonical behaviours. Just do it. Or, better, travel to France, recall that you are still an heir of Romanticism, and, in some remote village, ask for a wonderful *Tarte Tatin*.

Analytical Jelly and Transmodern Tatin: Two Trivial Recipes

Fernando Zalamea

Good cooking comes from small villages and long traditions. One cannot favour, for instance, France's *petite cuisine* over its *cuisine villageoise*. A solid, rooted, generous, *confit de canard aux lentilles*, deliciously magnified in Moissac, far exceeds a light, pretentious, stingy, *émoullade de tourteau à l'aneth*, *sauce fleurette citronnée*, served at Taillevent's. But philosophy in the twentieth century has followed fashions far meaner than those of the *petite cuisine*. The analytical (and anglosaxon) obsession with language and (classical) logic has obscured many earlier, wider pursuits of knowledge, related to a *necessary* blend of philosophy with creative mathematics, chemistry, art and literature. Nevertheless, well beyond *petite* analytical hunting estates, some giant critics stood firm: Warburg, Florenskij, Benjamin, Cassirer, Merleau-Ponty, Blumenberg, to

name just a few boundary-crossers. With reference to Llull, Leibniz, Novalis or Peirce (mandatory readings are Jordi Gayà's *La teoria luliana de los correlativos*¹ and Laurent Margantin's *Système minéralogique et cosmologique chez Novalis*),² culture as a *continuum* was also continually explored in the twentieth century. Of course, the death of *universals* and of *metaphysics* alike has been greatly exaggerated.

A *savoury paradox* shows how contemporary mathematics produces new understandings of universals without an Absolute, with extremely interesting 'relative universals', in category theory and model theory, rising renewed from the ashes. Following Rosa María Rodríguez Magda,³ we may understand *Transmodernism* as a Modernism which never died; which, like the Phoenix, continues to rise again. Transmodernism maintains Postmodernism's open spirit of dissemination, as well as some of its main emphases (not new conquests, since we find them already in Novalis, Valéry, Florenskij, etc.) on the fragmentation of truth and the conjunctions of antinomies, but goes well beyond the mere register of singular breakdowns and tries to propose new relative nets to encompass residuation. A rich *counterpoint* emerges between Postmodernism

1. Palma de Mallorca, 1979.

2. Paris: Harmattan, 1998.

3. *La Sonrisa de Saturno. Hacia una teoría transmoderna* (Barcelona: Anthropos, 1989).

and Transmodernism: break, locality, differentiation, contradiction, ambiguity, the impossibility of universals, ‘all is equally worthwhile’, death – what might be called postmodern dissonance – contrasted with revision, local/global dialectics, oscillation, differentiation/integration, partial gluing of relative coherences, fabrics of vagueness/exactness, relative universals, ‘some are more worthwhile than others’, renaissances – a sort of transmodern harmonics.

We propose these two ‘trivial recipes’ in order to give a hint of the *pendulum* between *petite* and *villageoise* philosophy. But beware! – After the *Jelly*, the *Tatin* becomes mandatory! If not, a nasty taste in the mouth may result, that lasts months, years, or ... a century already ...

Appendix

COLLAPSE VII

WORLD-SOUL

PLATO, *TIMAEUS*

Now that which is created is of necessity corporeal and visible and tangible – visible and therefore made of fire, tangible and therefore solid and made of earth. But two terms must be united by a third, which is a mean between them; and had the earth been a surface only, one mean would have sufficed, but two means are required to unite solid bodies. And as the world was composed of solids, between the elements of fire and earth God placed two other elements of air and water, and arranged them in a continuous proportion—

fire:air::air:water, and air:water::water:earth,

and so put together a visible and palpable heaven, having harmony and friendship in the union of the four elements; and being at unity with itself it was indissoluble except by the hand of the framer. Each of the elements was taken into the universe whole and entire; for he considered that the animal should be perfect and one, leaving no remnants out of which another animal could be created, and should also be free from old age and disease, which are produced by the action of external forces. And as he was to contain all things, he was made in the all-containing form of a sphere, round as from a lathe and every

way equidistant from the centre, as was natural and suitable to him. He was finished and smooth, having neither eyes nor ears, for there was nothing without him which he could see or hear; and he had no need to carry food to his mouth, nor was there air for him to breathe; and he did not require hands, for there was nothing of which he could take hold, nor feet, with which to walk. All that he did was done rationally in and by himself, and he moved in a circle turning within himself, which is the most intellectual of motions; but the other six motions were wanting to him; wherefore the universe had no feet or legs.

And so the thought of God made a God in the image of a perfect body, having intercourse with himself and needing no other, but in every part harmonious and self-contained and truly blessed. The soul was first made by him – the elder to rule the younger; not in the order in which our wayward fancy has led us to describe them, but the soul first and afterwards the body. God took of the unchangeable and indivisible and also of the divisible and corporeal, and out of the two he made a third nature, essence, which was in a mean between them, and partook of the same and the other, the intractable nature of the other being compressed into the same. Having made a compound of all the three, he proceeded to divide the entire mass into portions related to one another in the ratios of

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1, 2, 3, 4, 9, 8, 27, and proceeded to fill up the double and triple intervals thus:

- over 1, $4/3$, $3/2$, - over 2, $8/3$, 3, - over 4, $16/3$, 6, - over 8:
- over 1, $3/2$, 2, - over 3, $9/2$, 6, - over 9, $27/2$, 18,
- over 27;

in which double series of numbers are two kinds of means; the one exceeds and is exceeded by equal parts of the extremes, e.g. 1, $4/3$, 2; the other kind of mean is one which is equidistant from the extremes – 2, 4, 6. In this manner there were formed intervals of thirds, 3:2, of fourths, 4:3, and of ninths, 9:8. And next he filled up the intervals of a fourth with ninths, leaving a remnant which is in the ratio of 256:243. The entire compound was divided by him lengthways into two parts, which he united at the centre like the letter X, and bent into an inner and outer circle or sphere, cutting one another again at a point over against the point at which they cross. The outer circle or sphere was named the sphere of the same – the inner, the sphere of the other or diverse; and the one revolved horizontally to the right, the other diagonally to the left. To the sphere of the same which was undivided he gave dominion, but the sphere of the other or diverse was distributed into seven unequal orbits, having intervals in ratios of twos and threes, three of either sort, and he bade the orbits

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move in opposite directions to one another – three of them, the Sun, Mercury, Venus, with equal swiftness, and the remaining four—the Moon, Saturn, Mars, Jupiter, with unequal swiftness to the three and to one another, but all in due proportion.

COLLAPSE VII

PREPARATION OF AND ANTIDOTE TO A POISON

IBN WAHSHIYA¹

One procures the lizard which exists in houses and inns – the larger the better – and adds to it a kind of blister fly which is green and small, having long legs and something like flour on its wings, and which often alights on the trees of the large and small cucumbers.

They are both put into a large glass bottle with a wide mouth. On them olive oil is poured and the bottle is stoppered tightly. It is hung in a bakery or kitchen until both animals are dissolved in the oil.

If you see that they have been dissolved and consumed, shake the contents of the bottle for three days, then bury it in ass manure for fourteen days. Then take it out; all of what is in it has become black.

A dāniq and one-half of this can kill in one to two days. The victim has a burning of the palate, a contraction of the opening of the stomach, a violent pain in the bowels, swelling of the tongue, and abundant vomiting. One and one-half dāniqs of this poison are given in hot gravy or hot water. If the humour of the victim be cold, then it is fatal in four days. He will die unless he is cured before this by the remedy.

1., from M. Levey (ed., trans.) *Medieval Arabic Toxicology: the Book on Poisons (Kitab Al-Sumum) of Ibn Wahshiya and its relation to early Indian and Greek Texts*, (American Philosophical Society: 1966), 53.

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Preparation of the Remedy Antidotal to This Poison.

It is obtained from two mithqāls each of laurel seed, Aristolochia, germander which has the five leaves, dry sea moss, and seed of the white poppy, and three mithqāls each of the crystalline matter attached to the dried leaf of the rose, and cabbage seed. Ten dirhams of amomum and twenty dirhams of crystalline sugar are added. All are pulverized until they become like dust. Then they are kneaded with bee honey which has been mixed in wine. It is left for two months. Two mithqāls of its beverage is used with hot water after the poisoned one has vomited, if God wills.

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EXPERIMENTS TOUCHING BURIALS

FRANCIS BACON¹

Experiments in consort touching burials or infusions of divers bodies in earth.

376. Burials in earth serve for preservation, and for condensation, and for induration of bodies. And if you intend condensation or induration, you may bury the bodies so as earth may touch them: as if you will make artificial porcelane, &c. And the like you may do for conservation, if the bodies be hard and solid; as clay, wood, &c. But if you intend preservation of bodies more soft and tender, then you must do one of these two: either you must put them in cases, whereby they may not touch the earth, or else you must vault the earth, whereby it may hang over them and not touch them: for if the earth touch them, it will do more hurt by the moisture, causing them to putrefy, than good by the virtual cold, to conserve them, except the earth be very dry and sandy.

377. An orange, lemon, and apple, wrapt in a linen cloth, being buried for a fortnight's space four foot deep within the earth, though it were in a moist place, and a rainy time, yet came forth noways mouldy or rotten, but were become a little harder than they were; otherwise fresh in their colour; but their juice somewhat flatted. But with the burial of a fortnight more they became putrefied.

1. In *Phenomena of the Universe or Natural History for the Building Up of Philosophy* (1607).

378. A bottle of beer, buried in like manner as before, became more lively, better tasted, and clearer than it was. And a bottle of wine in like manner. A bottle of vinegar so buried came forth more lively and more odoriferous, smelling almost like a violet. And after the whole month's burial, all the three came forth as fresh and lively, if not better than before.

379. It were a profitable experiment to preserve oranges, lemons, and pomegranates, till summer, for then their price will be mightily increased. This may be done, if you put them in a pot or vessel well covered, that the moisture of the earth come not at them; or else by putting them in a conservatory of snow. And generally, whosoever will make experiments of cold, let him be provided of three things; a conservatory of snow; a good large vault, twenty foot at least under the ground; and a deep well.

380. There hath been a tradition, that pearl, and coral, and turquois-stone, that have lost their colours, may be recovered by burying in the earth, which is a thing of great profit, if it would sort: but upon trial of six weeks' burial, there followed no effect. It were good to try it in a deep well, or in a conservatory of snow; there the cold may be more constringent; and so make the body more united, and thereby more resplendent.

NOTE ON THE ROCKS WHICH CONTAIN DRIED OUT PLANTS AND FISH – WITH REFERENCE TO A LOST RECIPE BY LEIBNIZ

B. LE BOVIER DE FONTENELLE¹

What we reported in *l'Histoire* in 1703, about those rocks found in the Verona area which contain dried out plants and fish, has been confirmed by Mr Leibniz. He says that in the land of Brunswick around Osterode, in the County of Mansfield around Eisleben and in many other places in Germany, one finds veins of slate, more or less horizontal, in which there are representations, though very exact and very detailed, of various kinds of fish or plants, which appear in their natural length and width, but without any thickness. These traces are often etched in a mixture of copper, which even contains silver. Some of these plants are unknown in those regions, but they are found in pictures of plants from the Indies.

Mr Leibniz conceives that a kind of soil covered the lakes and surrounding areas, and buried fish and plants in it, or that some muddy water loaded with soil enveloped them or carried them away. This soil has itself since hardened into slate, and the length of time, or some other cause, destroyed the delicate matter of the fish or plant, almost in the same manner in which the bodies of flies or ants that are found encased in yellow

1. In *Histoire de l'Académie des Sciences de Paris* [1706], 202-3.

amber have disappeared and are not now tangible at all, but simple delineations. The matter of the fish or the plant, being consumed, left its form imprinted in the slate, by way of a hollow which remained in it, and this hollow has eventually been filled by a metallic matter, whether a subterranean fire burning the soil into slate has made the metal that was mixed in it come out, or a metallic vapour penetrating the slate fixed itself into these hollows. Mr Leibniz adds that one can imitate this effect by a rather curious process. One takes a spider, or some other suitable animal, and buries it within clay, while keeping an opening that enters from outside into the hollow. One puts the mass in a fire in order to harden it; the matter of the animal disappears in cinders, which one can make come out by way of some liquid. After which one pours through the opening some melted silver, and when that cools down, one finds inside of the mass the figure of the animal wonderfully represented in silver.

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COOKING EARTH WITH SALT AND GRAVITY

ISAAC NEWTON²

When mercury sublimate is re-sublimed with fresh mercury, and becomes mercurius dulcis, which is a white, tasteless earth scarce dissolvable in water, and mercurius dulcis re-sublimed with spirit of salt returns into mercury sublimate; and when metals corroded with a little acid turn into rust, which is an earth tasteless and indissolvable in water, and this earth imbibed with more acid becomes a metallic salt; and when some stones, as spar of lead, dissolved in proper menstruums become salts – do not these things shew that salts are dry earth and watery acid united by attraction, and that the earth will not become a salt without so much acid as makes it dissolvable in water? Do not the sharp and pungent tastes of acids arise from the strong attraction whereby the acid particles rush upon and agitate the particles of the tongue? And when metals are dissolved in acid menstruums, and the acids in conjunction with the metal act after a different manner, so that the compound has a different taste much milder than before, and sometimes a sweet one – is it not because the acids adhere to the metallic particles, and thereby lose much of their activity? And if the acid be in too small a proportion to make the compound

2. From *Newton's Philosophy of Nature: Selections from His Writings* (Whitefish, MT: Kessinger, 2003), 166-7.

dissolvable in water, will it not by adhering strongly to the metal become unactive and lose its taste, and the compound be a tasteless earth? For such things as are not dissolvable by the moisture of the tongue, act not upon the taste.

As gravity makes the sea flow round the denser and weightier parts of the globe of the Earth, so the attraction may make the watery acid flow round the denser and compacter particles of earth for composing the particles of salt. For otherwise the acid would not do the office of a medium between the earth and common water, for making salts dissolvable in the water; nor would salt of tartar readily draw off the acid from dissolved metals, nor metals the acid from mercury. Now, as in the great globe of the Earth and sea, the densest bodies by their gravity sink down in water, and always endeavour to go towards the centre of the globe; so in particles of salt the densest matter may always endeavour to approach the centre of the particle: so that a particle of salt may be compared to a chaos, being dense, hard, dry, and earthy in the centre; and rare, soft, moist, and watery in the circumference. And hence it seems to be that salts are of a lasting nature, being scarce destroyed unless by drawing away their watery parts by violence, or by letting them soak into the pores of the central earth by a gentle heat in putrefaction, until the earth be dissolved by the water, and separated into smaller particles, which by reason

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of their smallness make the rotten compound appear of a black colour. Hence also it may be that the parts of animals and vegetables preserve their several forms, and assimilate their nourishment; the soft and moist nourishment easily changing its texture by a gentle heat and motion till it becomes like the dense, hard, dry, and durable earth in the centre of each particle. But when the nourishment grows unfit to be assimilated, or the central earth grows too feeble to assimilate it, the motion ends in confusion, putrefaction, and death.

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VERMICULAR PREPARATIONS

CHARLES DARWIN³

During the grinding process, the particles of earth must be rubbed against one another, and between the stones and the tough lining membrane of the gizzard. The softer particles will thus suffer some attrition, and will perhaps even be crushed. This conclusion is supported by the appearance of freshly ejected castings, for these often reminded me of the appearance of paint which has just been ground by a workman between two flat stones. Morren remarks that the intestinal canal is 'impleta tenuissima terra, vel uti in pulverem redacta'. Perrier also speaks of 'l'etat de pate excessivement fine a laquelle est reduite la terre qu'ils rejettent,' etc.

As the amount of trituration which the particles of earth undergo in the gizzards of worms possesses some interest (as we shall hereafter see), I endeavoured to obtain evidence on this head by carefully examining many of the fragments which had passed through their alimentary canals. With worms living in a state of nature, it is of course impossible to know how much the fragments may have been worn before they were swallowed. It is, however, clear that worms do not habitually select already rounded particles, for

3. In *On Humus and the Earthworm: The Formation of Vegetable Mold through the Action of Worms with Observations on their Habits* (London: John Murray, 1881), 123, 126.

sharply angular bits of flint and of other hard rocks were often found in their gizzards or intestines. On three occasions sharp spines from the stems of rose bushes were thus found. Worms kept in confinement repeatedly swallowed angular fragments of hard tile, coal, cinders, and even the sharpest fragments of glass. Gallinaceous and struthious birds retain the same stones in their gizzards for a long time, which thus become well rounded; but this does not appear to be the case with worms, judging from the large number of the fragments of tiles, glass beads, stones, etc., commonly found in their castings and intestines. So that unless the same fragments were to pass repeatedly through their gizzards, visible signs of attrition in the fragments could hardly be expected, except perhaps in the case of very soft stones.

[...] Nor should we forget, in considering the power which worms exert in triturating particles of rock, that there is good evidence that on each acre of land, which is sufficiently damp and not too sandy, gravelly or rocky for worms to inhabit, a weight of more than ten tons of earth annually passes through their bodies and is brought to the surface. The result for a country of the size of Great Britain, within a period not very long in a geological sense, such as a million years, cannot be insignificant; for the ten tons of earth has to be multiplied first by the above number of years, and then by the number of acres fully stocked with

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worms; and in England, together with Scotland, the land which is cultivated and is well fitted for these animals, has been estimated at above 32 million acres. The product is 320 million million tons of earth.

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CANNIBAL CORPSES

APARECIDA VILAÇA¹

[...] In reporting a number of cases of cannibalism among [Pano language-speaking] populations, Gertrude Dole comments:

But in spite of the obvious supernatural element in Panoan funerary endocannibalism, some of the data indicate that there is also a gastronomic aspect to the practice. The Capanahua, for example, roasted the body 'like game' [...] The Cashibo ate their old people with delight...²

I suggest we need to examine this emphasis on the pleasure of eating human flesh with more caution, before we extract from it any rapid conclusions on the protein value of the meal, a notion which empties the food of all its symbolic character. I wish to highlight the fact that such claims of gustative pleasure coexist with others which appear to be set in contradiction. The Guayaki ate intestines which were only slightly spoiled, as well as less putrid parts of the decomposing

1. From 'Relations between funerary cannibalism and warfare cannibalism: the question of predation', *Ethnos* 65/1 (2000), 83-106.

2. G. Dole, 'Endocannibalism among the Amahuaca Indians', In P.J. Lyon (Ed.), *Native South Americans: Ethnology of the Least Known Continent* (Boston: Little, Brown, 1974): 302-8, 306.

corpses.³ By contrast, as I discuss later, Wari' corpses were roasted after they had already reached an advanced state of putrefaction, and then eaten with some sacrifice. Nonetheless, faced with this almost indigestible meat, the eaters politely exclaimed: "this is good, it isn't at all rotten!"

If we suppose a relation of continuity between the type of exclamation made by the Wari' and the claims about the deliciousness of the corpse's meat reported by other authors, it becomes clear that we are presented with people's efforts to prove the edibility (far from evident) of the deceased's flesh. A corpse does not look like food, whether this is due to the recognition of a kinsperson or group member, or due to its rotten state. For this reason, in the presence of the corpse – or that of the astonished ethnographer face-to-face with such a bizarre custom – what is stressed is the unobvious: the corpse is food. This kind of exertion is not restricted to the consumption of a dead member of the group. Here, we may cite Cunhambebe's famous phrase in reply to Hans Staden's disapproval of the former's consumption of human flesh: "I'm a jaguar. It's tasty".⁴ In turn, we may contrapose this statement to Anchieta and Abbeville's observations on the repugnance held for human flesh by the Tupinamba:

3. P. Clastres, *Chronicle of the Guayaki Indians* [1968], trans. P. Auster (NY: Zone Books, 2000).

4. H. Staden, *Duas Viagens ao Brasil* [1557] (São Paulo: Editora Universidade de São Paulo, 1974), 132.

some expressed an enormous disgust for this flesh, and would vomit after eating it.⁵ Relish and disgust are not, in my view, contradictory aspects associated with the consumption of human meat, attributable simply to individual taste. Rather, both are attitudes whose aim is to evince the edibility of the meat, dehumanizing the deceased, but without failing to preserve some of his or her humanity: this explains the obligatory abstention of some, such as the enemy's killers, or the kin of the dead group member in the Wari' case, who sometimes express their avoidance precisely in terms of repugnance. As we shall see, this double posture in relation to the humanity of the deceased or the enemy corresponds to the equally dual nature of these rites. In the case of the Wari' funeral, a failure to perceive its double aspect – in which the deceased's humanity and inhumanity remain in constant opposition – could lead us to a partial interpretation, one which misses the rite's essence.

As far as the Wari' material is concerned, my hypothesis – possibly applicable to some other ethnographic universes, as I hinted above – is that ingestion is a fundamental classificatory operator, one intrinsically bound to the notion of predation, understood here as a relation between predator and prey. Given the basic identity between humans and animals, predation

5. Cf. E. Viveiros de Castro, *From the Enemy's Point of View: Humanity and Divinity in an Amazonian Society* (Chicago: University of Chicago Press, 1992), 56.

has as its aim the marking of a difference in a human continuum, or the explication of this difference which in another mode would remain masked. Let us see how this takes place among the Wari'.

[...] The Wari' conducted war expeditions with the sole aim of killing enemies: Indians of other ethnic groups and Whites. A group of men would leave in the direction of the enemy village and lie in hiding, waiting for someone to approach. The technique of attack was ambush. When the enemy approached all the men released their arrows, shooting even if the first arrow had been sufficient to kill. In this way, everyone became a killer, returning to the village and beginning a period of seclusion, during which they remained almost immobile, sustaining themselves on great quantities of non-fermented maize drink (*chicha*) produced incessantly by women. The killers – all of them – contained the spirit of the dead enemy within them, and it was this which, with the help of the maize brew, caused them to swell and fatten; the ultimate purpose of the seclusion.

Whenever possible, the killers brought with them parts of the victim – head, arms and legs – which were carried, raw, in baskets slung over the shoulders exactly like animal game, differing only in that the latter – with the exception of large animals such as tapir – are usually carried whole. The enemy's trunk, very heavy, was left in situ. The genitals (especially male genitals) were

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taken by the men in order to be admired by women (and then thrown on the fire to burn).

The enemy's flesh was transported raw for roasting in the village. However, if the journey was lengthy, it could be roasted in the forest by the killers. What is crucial here to our analysis is that the enemy's flesh, just like the flesh of game, was never eaten rotten. Arriving in the village, the women, who constituted the majority of the people who stayed behind, welcomed the killers exuberantly, especially if they had brought enemy flesh, and this meat was roasted and eaten by them and by the men who had not been involved in the kill.

Near to home, the warriors whistled or sounded their flutes. Everyone ran to meet them. They handed the enemy's body over to the women, saying "Roast my prey" (*Xain je watama*). The enemy's flesh was consumed in the same way as animal game, the meat eaten off the bone. The Wari' say, however, that they ate the enemy's flesh with anger. The killers, who contained the spirit of the enemy inside them, refrained from eating his flesh.

It is important to stress that the essential aspect of warfare was killing the enemy, not eating him. In less favourable circumstances, when the killers were forced to flee, the victim's body was left where it fell. Everything happened exactly in the same way on their arrival, including the seclusion of the killers, although

the enthusiasm of the women was slightly lessened. Eating the enemy was an excess, a pleasure which they allowed themselves whenever possible. In contrast to the flesh of deceased Wari' which, as we shall see, had at least to be tasted, the enemy – having been killed like an animal – did not need to be eaten. Predation by itself confirmed his animal status, placing the Wari' in the position of humans.

What should be underlined here is that the Wari' do not strive to differentiate warfare and hunting: they endeavour to approximate them. When they hunt and eat their favourite game, they quickly become subject to reprisal, a counter-predation, which is likewise defined by hunting and by warfare. As such, enemy (*wijam*) and prey (*karawa*) are equivalent positions with which the Wari' maintain the same type of relation: both are shot and eaten.

So, on one hand, the identity between *wijam* and *karawa* is founded on their mutual difference from the Wari', who themselves occupy a position of humans – the unique humans, *wari'*. This equivalence occurs in the context of the relation between elements; that is, in the context of predation. Ideally, the Wari' are those who prey and this is what differentiates them, what characterizes them as humans, *wari'*, and constitutes enemies and animals – both equally prey – as non-humans. Yet, on the other hand, what enables them to be related to the Wari' is precisely their human

potential; the capacity to act as humans (also see Chaumeil 1985, for an analogous vision of Yagua warfare). In this sense, legitimate game is that which is also a predator, and the animals preferred as prey by the Wari' are precisely those which are capable of preying on them (symbolically). These animals and enemies can potentially occupy the position of predators; they are capable of attacking, killing and eating the Wari', and are, during these moments, humans, *wari'* (which makes the Wari' non-humans – *wijam* or *karawa*). Thus, the Wari' take the subjectification of war victims to an extreme, extending it to the animals which they choose to eat.

However, it is important to note that when the Wari' speak of enemies and game in the context of predation, they emphasize their animal characteristics, not their human ones. Their desire is to demarcate that what is killed and eaten is not people. An interesting fact is that the Wari' never use the female gender when speaking of enemies, even when this involves women, as the female gender only exists for human beings. To refer to a woman from an enemy group, they say: 'female enemy (*fêmea*),' just as they speak of animals, and not 'enemy wife'.

We turn now to the Wari' funeral, where the corpse-food equivalence is less perceptible, masked by ritual procedures whose aim is precisely to differentiate this meal from both daily alimentation and the devouring of enemies ...

RECIPE FOR DISASTER

EUGENE THACKER

What You'll Need

- Incredulity towards reality, accompanied by a period of psychic fatigue;
- A loss of the Presence of consciousness, in the form of physical comedy;
- An acute sense of imperfection, built on an ectoplasmic form of ennui;
- The pain of God (may be substituted with periodic Self-Naughting);

Directions

1. Allow the logical paralogism to consist in the falsity of a syllogism due to its form, whatever its content may otherwise be. Its impression can be rendered complete in the semi-darkness that glimmers in vaulted caverns or starry temples, beneath the branches of a lofty forest glade, strangely quickened and stirred by the enigmatic play of half-lights in the horrific quiet after the rain; empty distance, remote voids, and a daemonic dread far too serious.
2. Make sure that the transcendental paralogism, however, has a transcendental ground for inferring falsely due to its form. I swayed and moaned, clumsily clutching each of the strange growths like fresh

bruises. When I finally looked, the skin had peeled back painlessly, revealing an almost reptilian crust that reminded me of tree bark. There was only one possible conclusion to draw from what had happened, and it almost defiled common sense. These lonely ruins were alive.

3. Keep in mind that a fallacy of this kind will have its ground in the nature of human reason, and will bring with it an unavoidable, although not insoluble, illusion. Occasionally reflect on the Plain of Obsidian Fire or the Black Arch of the Absurd, which both pass out of the Unknown Lands, by the Place of the Ab-humans, which tends to always be immersed in a mossy green, luminous mist (whole libraries had been assembled there, and many a thousand million had mouldered into the forgotten dust of its long, softly singing corridors).

4. Thus there will be syllogisms containing no empirical premises, by means of which we can infer from something with which we are acquainted to something of which we have no concept, and yet to which we nevertheless, by an unavoidable illusion, give objective reality. In respect of their result, such inferences are thus to be called crystalline rather than rational inferences; even though they might lay claim to the latter term on account of what occasions them, because they are not thought up, nor do they arise contingently, but have sprung from the nature of tragicomedy.

Nutritional Information

The street organ drawl, the polar explorers and botanical linguists, all inadvertently united on the arid plain of a manuscript, will hoist black flags signaling the presence of pentacular ambergris flying out of the still night of an ink-well, abandoned to those preoccupations of those who, in every perfect liquid night, do nothing except make stains with crabbed, articulated fingers, and in that way are incapable even of leading into error the ridiculous seraphim of logical deduction.

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SERVING THE OPEN (AN EXEGETICAL EXERCISE) MANABRATA GUHA

*Being devoured is, after all, also a form of existence.*¹

FANTASIES ON A BIOLOGICAL MODEL OF SUPER-EGO FORMATION²

H.'s spontaneous statement on her fatness: 'all this fat is my mother'. If she felt freer inside from the disastrous (introjected) mother-model, then she noticed a decrease in the fat padding, and at the same time she lost weight.

During the week, in which, for the first time, he faced up defensively to his cruel mother: S. felt he had lost weight. At the same time, however, he had the idea that this fat was that of his equally cruel grandfather. These observations lead to the idea that formation of the super-ego occurs as the final outcome of a fight, in reality lost, with an overwhelming (personal or material) force, roughly in the following way:

A precondition is the existence of an 'intelligence' or a 'tendency to deal with things economically', with an exact knowledge of all the qualitative and quantitative energy charges and possibilities of the

1. Ferenczi, *Final Contributions to the Problems and Methods of Psychoanalysis* (London: Karnac, 1994), 230.

2. Excerpt from Ibid, 227-30.

body, also of the ability of the mind to accomplish, to bear, and to tolerate; in the same way this 'intelligence' can estimate with mathematical exactitude the distribution of power in the external world. The first normal reaction of a living being to external unpleasure is an automatic warding off, that is to say a tendency to self-preservation. If beaten down by an overwhelming force, the energy (perhaps in fact the external power of the trauma) turns against the self. In this moment the 'intelligence', which is concerned above all with the preservation of the united personality, seems to resort to the subterfuge of turning round the idea of being devoured in this way: with a colossal effort the 'intelligence' swallows the whole hostile power or person and imagines that it itself has devoured somebody else and, in addition, its own person. In this way man can have pleasure in his own dismemberment. Now, however, his personality consists of a devoured, overgreat (fat) aggressor and a much smaller, weaker person, oppressed and dominated by the aggressor, that is, his pretraumatic personality. Many neurotics symbolize their illness in dreams and symptoms as a bundle that they have to carry on their backs; in others this bundle becomes part of the body and turns into a hump or growth; also favoured is the comparison with an enveloping great person which, as it were, enwraps maternally the former personality. The psychological 'devouring'

seems to be associated with greedy voracity and increased hunger for assimilation: putting on fat as a hysterical symptom. If, by the analytic reservoir of the traumatic struggle, the person has been freed from the overwhelming power, then the obesity, the physiological parallel phenomenon, may disappear. Physiological and chemical aspects: the muscle and nerve tissues consist, in essence, of protoplasm, that is to say mainly of proteins. Protein is specific for each species, perhaps even for each individual. Foreign protein acts as poison; it is therefore broken down and the specific protein synthesized anew out of the harmless constituents. Not so with unspecific fat. Pork fat, for instance, is stored in the cells as such, and can quite well stand as the organic symbol, or the organic tendency to manifestation, which runs parallel with the devouring of the external powers. Here a still quite vague idea emerges. Is it possible that the formation of the super-ego and the devouring of the superior force in defeat may explain the two following processes: (1) 'Eating up the ancestors', and (2) adaptation in general.

(1) Plants grow and develop through the incorporation of minerals. Thereby the possibility of existence within the organism is offered to minerals (inorganic substances) which, however, is equivalent to being devoured by the organism. How far the inorganic matter as such is destroyed or dissolved, however,

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remains problematic. Quantitative analysis rediscovers the consumed inorganic substances to the last grain. When the plant is devoured by a herbivorous animal, the plant organism is destroyed, that is to say reduced to organic or even partly inorganic components. It remains problematic whether or not, despite this, part of the plant substance survives and conserves its individuality, even in the body of the herbivorous animal. In this way the animal body is a superstructure of organic and inorganic elements. Expressed psycho-analytically (although at first glance highly paradoxical) this means: the animal organism has devoured one part of the (menacing?) external world and thus provided for the continuation of its own existence.

The same thing happens at the devouring of animal organisms. It is possible that we harbour in our organism inorganic, vegetative, herbivorous, and carnivorous tendencies like chemical valencies. The likewise highly paradoxical aphorism here is as follows: 'Being devoured is, after all, also a form of existence.'

The idea then emerges that one ought to consider in this process the possibility of a mutual devouring, that is to say a mutual super-ego formation.

2. Adaptation in general appears to be a mutual devouring and being devoured, whereby each party believes that he has remained the victor.

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We begin with a personality, an individual, a discrete entity – bounded, internally consistent, and self-affirming. It occupies space by asserting its existential right. Such entities, which share not boundaries but economies of relations, operate under a diktat which asserts that the

... precondition [for the formation of the super-ego] is the existence of an intelligence or a tendency to deal with things economically, with an exact knowledge of all the qualitative and quantitative energy charges and possibilities of the body, also of the mind to accomplish, to bear, and to tolerate; in the same way this intelligence can estimate with mathematical exactitude the distribution of power in the external world.³

But what happens when this discrete entity, the individual, Ferenczi's patient, finds herself threatened with being 'consumed' by her mother's fat? Under such conditions, what happens to the economy of relations or that which Ferenczi refers to as the 'tendency to deal with things economically'? Is this logic of economic relationality overwhelmed by an external force (of an external world) with which the individual had prior relations? What impact does this have on the individual, the discrete, the particular? What insight

3. Ferenczi, *Final Contributions*, 228.

does it give us into the individual, the discrete, the particular?

Ferenczi reports that the first stage in the strategic defence of the discrete entity in the face of an intrusive external and traumatic power or force consists in the designing of a quantitatively and qualitatively precise act of resistance. But, when faced with the prospect of such a *mathesis* of defence being overwhelmed by the external force, the 'tendency to deal things with economically' compels the discrete (defender) to expand the logic of relationality to be 'open' to the external force: The discrete (defender) allows itself to be infiltrated by the external force, but with the ulterior motive of being able to contain it – by consuming it. In other words, the apparent tactical retreat effected by the discrete (defender) could be considered to be a feint – a deceptive strategic manoeuvre executed at the local or tactical level – designed to contain the external force by internalizing it – by make the external force its own. For Ferenczi, this presence of the external force inside the discrete (defender) is akin to an 'alien transplant' that resides or is nested within the discrete. As a consequence of this, as Ferenczi points out, the originally discrete entity (the defender) is now co-constituted not only by itself, but also by the presence of this alien intruder that lurks within itself. It is worth pointing out that when Ferenczi refers to the trauma inflicted by the 'external force', he is not

referring to a cut in the sense of an externally-inflicted opening. Instead, the feint executed by the discrete (defender) is a self-opening to the external force (which we can now restate as 'the open'). In this way, the discrete 'consumes' 'the open' in what will eventually be a feeble attempt to keep 'the open' at bay. Ferenczi alludes to this when he observes that

[m]any neurotics symbolize their illness ... as a bundle that they have to carry on their backs; in others this bundle becomes part of the body and turns into a hump or growth; also favoured is the comparison with an enveloping great person which, as it were, enwraps materially the former personality.⁴

But there is a twist in this account of tactical defence on the part of the discrete: By being open to 'the open' – in its attempt to maintain its fidelity to the economy of relations that guide the discrete – the discrete (defender) also opens itself to a deep chemistry that radically alters it to unimaginable extents. In Ferenczi's case-study, where his patient expresses her neurosis in terms of assigning the presence of fat in her body to her mother, 'the psychological "devouring" seems to be associated with greedy voracity and increased hunger for assimilation'.⁵ But this assimilation

4. Ibid.

5. Ibid.

is not digestive in the sense that what is being devoured is chemically assimilated, that is to say, fully internalized without increasing the constituency of the discrete. Rather, this assimilation is expressive of a nesting – like the harbouring of chemical valencies – within the discrete (defender). As Ferenczi explains, the mechanism of defence – or what we have referred to as a tactical defensive manoeuvre – of the discrete is a matter of chemical valencies.⁶ In a somewhat grotesque description, Ferenczi shows how ‘consumption’ is the intensive dissolution of discrete entities (in this connection, he refers to plants, herbivorous and carnivorous animals, including the human being) into both organic and inorganic substances, which make their way and leave their traces (traces which, according to Ferenczi, can be quantitatively analyzed) along the chain of consumption. Note that the radical indeterminacy at play here – what is consumed can be rendered into organic *and* inorganic substances – is an instance of the subversion of the Law of the Excluded Middle. In this sense, what is operative here is not so much a logic of continuity, but a logic of plasticity that fuses the discrete and its now internalized – but not fully assimilated – organic and inorganic substances. It is this logic of plasticity that guarantees the continued existence of the discrete (defender) albeit in a form and manner quite different from its original state.

6. Ibid., 229.

The discrete, in fact, does not survive as the discrete; rather, it exists as a nested possibility of existences (local *possibilia*) along and across a continuum of chemical valencies, i.e., 'the open'. We can then say that there are two models of consumption at play here: The first is the most obvious one which involves the discrete *consuming* 'the open' by *being* open. The second is the intensive consumption *of* the discrete by 'the open' which lurks within the former. In the context of our exploratory exercise concerning the *Bhut Jolokia*,⁷ this serves as an example of a highly subversive para-tactical model of operability. The trick (and the challenge) is to review the emerging battlespace in terms of nested chemical valencies drawn from what we have referred to as the continuum (or 'the open') rather than in terms of the mechanical relationalities that normatively connect discrete entities. In this sense, Ferenczi's 'highly paradoxical aphorism ... Being devoured is, after all, also a form of existence' withstands the scrutiny of our exegetical exercise. Thus we can say that while a para-tactical mode of operability, which remains *true-to-the-universe logic of delivering all expressions of isolation and discreteness 'remorselessly into the open*, may – as Ferenczi is at pains to point out in his case-study – reinforce the assertion that resistance

7. Present volume.

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may be futile, existence *per se*, along different and often alien modal possibilities, is not.

Notes on Contributors and Acknowledgements

AO& are a Vienna-based semi-nomadic organisation consisting of Philipp Furtenbach, Philipp Riccabona, Thomas A. Wisser and Rainer Fehlinger. AO& work with sites and environments to create settings and sequences for people to gather and interact. Their interventions often involve food, from simple dishes to multicoursed menus, strictly using aliments and products from disclosed origin. <http://www.aound.net>.

JOHN COCHRAN is a Washington DC-based practicing Chef with thirty years of experience in both the United States and the United Kingdom. He is currently working on his dissertation for his PhD at the European Graduate School while simultaneously cooking dinners at several DC locations.

GABRIEL CATREN holds a PhD in theoretical physics (University of Buenos Aires) and a PhD in Philosophy (University of Paris). Currently he works as a researcher in philosophy for the Argentinean National Research Council for Sciences and Technology (CONICET) in Buenos Aires, and directs the project 'Savoir et Système' at the Collège International de Philosophie in Paris.

ANDREW DAKIN recently completed an HBSc in Psychology and Sociology at the University of Toronto. He will be pursuing graduate studies in Fall 2012, focusing on the interaction of culture and cognition.

SEAN A. DAY holds a PhD in Linguistics, with BA and MA degrees in Anthropology. He is a congenital synaesthete, who sees coloured, textured objects before him when he hears musical instruments, tastes flavours, or smells odours. He is current President of the American Synesthesia Association, and the creator and operator of The Synesthesia List, an international forum for synaesthetes and researchers.

EDOUARDO VIVEIROS DE CASTRO teaches anthropology at the National Museum of Rio de Janeiro. He has also held the Simon Bolívar Professorship of Latin American Studies at Cambridge University and was Directeur de recherches at the CNRS in France.

His main publications are *From the Enemy's Point of View: Humanity and Divinity in an Amazonian Society* (Chicago: University of Chicago Press, 1992), *A Inconstância da alma selvagem* (São Paulo: CosacNaify, 2002) and *Métaphysiques cannibales: lignes d'anthropologie post-structurale* (Paris: PUF, 2009).

RICK DOLPHIJN is Assistant Professor at Humanities, Utrecht University, the Netherlands. He is the author of *Foodscapes: Towards a Deleuzian Ethics of Consumption* (Delft/Chicago: Eburon/University of Chicago Press, 2004). He is now finishing a book entitled *New Materialism* (with Iris van der Tuin) and struggling with *Manifesto for the Mouth: a Philosophy of Raw and Untamed Matter*.

FIELDCLUB was initiated in 2004 as a live research project based on a four-acre field in Southwest England. The project collaborators, artist Paul Chaney and researcher Kenna Hernly, seek to deconstruct the post-modern notion of self-sufficiency through interdisciplinary art practice and direct interaction with the land. FIELDCLUB's findings have led it to diverge from contemporary ecological discourse, and develop theories of 'nature' which rest outside of conventional humanist frameworks.

COLLAPSE VII

JOHN GERRARD (born Dublin, 1974) has been the subject of recent solo exhibitions at the Scottish National Gallery of Modern Art in Edinburgh, the Hirshhorn Museum and Sculpture Garden in Washington, DC. and the Perth Institute of Contemporary Arts, Australia. In July 2011, his major new work, *Infinite Freedom Exercise*, will be installed in Lincoln Square in Manchester as part of the Manchester International Festival.

CAROL GOODDEN, born London 1940, emigrated to the western USA in 1945 to start a long career in horse training. Interspersed were years in Spain, published writings, group photography shows, a clinical psychology degree, a long involvement with the NYC art world. She was co-founder of FOOD and a member of the Trisha Brown Dance Company. Currently living in New Mexico, she has resumed her studies with horses.

IAIN HAMILTON GRANT is Senior Lecturer in Philosophy at the University of the West of England. He is the author of *Philosophies of Nature after Schelling* (London/NY: Continuum, 2006) and of numerous articles on Kant and post-Kantian Idealism, philosophy of nature, philosophy of science and technology, and contemporary philosophy. He is currently working on a book entitled *Grounds and Powers*.

MANABRATA GUHA is Assistant Professor at the National Institute of Advanced Studies (NIAS), Bangalore, India. His research work focuses on 'future war', network-centric warfare, and counter-strategic theories of war and combat. He is the author of *Re-Imagining War in the 21st Century: From Clausewitz to Network-centric Warfare* (London: Routledge, 2010).

DOROTHÉE LEGRAND is a researcher at CREA: Centre de Recherche en Epistémologie Appliquée (CNRS, Ecole polytechnique, Paris). She is trained in psychology and cognitive sciences and holds a PhD in philosophy. Thematically, her work focuses on the investigation of (a)typical bodily subjectivity.

VANINA LESCHZINER is an Assistant Professor in the Sociology Department at the University of Toronto. Her primary areas of interest are theory, culture, cognition, and organizations. She is working on a book manuscript about Elite Chefs. Her research has appeared in *Theory & Society* and *Sociological Forum*, among other publications.

NANDITA BISWAS MELLAMPY is an Assistant Professor of Political Theory in the Department of Political Science and Centre for the Study of Theory and Criticism at Western (uwo.ca). She is author of *The Three Stigmata of Friedrich Nietzsche: Political Physiology in the*

Age of Nihilism (Palgrave Macmillan, 2010) as well as essays published in various journals and anthologies.
<http://uwo.academia.edu/biswasmellamphy>

DAN MELLAMPHY is an Adjunct Professor of Literary Theory and Criticism in the Departments of English, Modern Languages and Literatures, and the Centre for the Study of Theory and Criticism at Western. His work has appeared in various journals and anthologies. He is the co-founder of the annual Nietzsche Workshop @ Western, co-translator of Gilbert Simondon's treatise *On the Mode of Existence of Technical Objects* (Semiotexte/MIT Press: forthcoming), and editorial board-member at Helvete and Punctum Books.
<http://uwo.academia.edu/mellamphy>

JEREMY MILLAR is an artist living in Whitstable, UK. His recent solo exhibitions include 'Mondegreen' (with Geoffrey Farmer), Project Arts Centre, Dublin; 'Resemblances, Sympathies, and Other Acts', CCA, Glasgow; 'Amongst Others', Plymouth Arts Centre; and 'Given', National Maritime Museum, London; his work has also recently been included in 'Never the Same River (Possible Futures, Probably Pasts)', Camden Arts Centre, London; and 'The Dark Monarch', Tate St Ives. He is currently tutor in art criticism at the Royal College of Art, London.

MICHAEL A. MORRIS is Professor in the Department of Chemistry, University College Cork, and a founding member of the Centre for Research on Adaptive Nanostructures and Nanodevices [CRANN] at Trinity College, Dublin. His current research interests are associated with the synthesis of nanomaterials and nanostructured materials and their subsequent characterisation.

EUGENE THACKER is the author of several books, including *After Life* (Chicago: University of Chicago Press, 2010) and *Horror of Philosophy* (London: Zero Books, 2011). Thacker teaches at The New School in New York City.

CRISTIAN TURDERA is a graphic designer, illustrator, and publisher. <http://www.cristianturdera.com/>.

RICHARD WRANGHAM is Ruth Moore Professor of Biological Anthropology at Harvard University, teaches in Harvard's Department of Human Evolutionary Biology, and is co-director of the Kibale Chimpanzee Project. He is the co-author, with Dale Peterson, of *Demonic Males: Apes and the Origins of Human Violence* (NY: Houghton Mifflin, 1996) and author of *Catching Fire: How Cooking Made Us Human* (NY: Basic Books, 2009).

FERNANDO ZALAMEA, born Bogotá, 1959, is Professor of Mathematics at the Universidad Nacional de Colombia. Scholarly works on Peirce, Lautman and the philosophy of contemporary mathematics have not deterred him from exploring other avenues. As an essayist and cultural critic, he has written a dozen books on Latin American and European thought. His *Synthetic Philosophies of Contemporary Mathematics* will be published by Urbanomic/Sequence Press in 2012.

Interview with Iain Hamilton Grant conducted in Bristol by Robin Mackay and via e-mail by Robin Mackay and Reza Negarestani.

Interview with Carol Goodden conducted via e-mail by Robin Mackay and Kenna Hernly.

Interview with AO& conducted in New York and via e-mail by Robin Mackay.

Eduardo Viveiros de Castro's 'Metaphysics of Predation' translated by Robin Mackay.

Thanks to:

Miguel Abreu and Katherine Pickard at Sequence Press for their support and enthusiasm; Stewart Cauley for his invaluable typographical expertise; Laurence Symonds, Concept Shed (Falmouth) for his engineering of Jeremy

Notes on Contributors

Millar's print; Gwendolyn Owens, Louise Déry and Julia Dawson at CCA Montréal for their help in sourcing images of Gordon Matta-Clark's work; and to David Rylance, Tobias Huber, Martine D'Anglejan-Chatillon, John Gerard, Paul Chaney, Kenna Hernly, Simon Preston, and Teresa Gleadowe.

Special Thanks to Kristen and to Louise.

COLLAPSE

Philosophical Research and Development

VOLUME VII

CONTRIBUTORS: AO&, Eduardo Viveiros de Castro, Gabriel Catren, John Cochran, Sean Day, Rick Dolphijn, FIELDCLUB, Michael A. Morris and John Gerrard, Carole Goodden, Iain Hamilton Grant, Manav Guha, Dorothée Legrand, Vanina Leschziner and Andrew Dakin, Dan and Nandita Mellamphy, Jeremy Millar, Eugene Thacker, Richard Wrangham, Fernando Zalamea.

Collapse VII brings addresses, from multiple perspectives, the multifaceted question of cookery, exploring how the question of the culinary – in an extended and expanded sense – is bound up with some profound and enduring issues in the history of philosophy, and can also suggest new approaches to contemporary philosophical problems.

ISBN 978-0-9567750-9-2



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