

Zoontotechnics (Animality/Technicity)
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Brooding – Life after Animals
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I would like to conduct a kind of experiment with you. Let me take you to the lab where you, if you agree, will be the serum or the culture medium, and the paper I want to give will be the text or cultivating tissue. This will be one modest attempt by an even more modest cultural theorist to brood over what has been called in-vitro meat production or, maybe more misleadingly, but eminently more captivatingly, “cultured meat”.

Before I start, let me give you short impression of where the idea for this paper came from. After the “Style in Theory/Styling Theory” conference in Malta, organised by Ivan Callus last November, Ivan, Laurent Milesi and I were saying good-bye to each other at the airport. We were talking amongst other things about “zoontotechnics”, the conference, this one. Walking past the news stand I noticed a headline on the front page of *The Sunday Times* that read: “Meat Created in Laboratory”.

It was the 29th of November 2009. I showed this article to Ivan and Laurent whose minds were probably already elsewhere, in any case they didn’t show any reaction. But something in my mind must have clicked at that moment. Some synapses must have fired together to create an uncanny association. From that moment for me there was a connection between cultured meat and zoontotechnics. Naïve you may say, since, something like artificial meat has been almost a “staple” or standard topic in science fiction for the past century and even in praxis muscle tissue has been kept alive and even grown in petri dishes for almost as long. Nevertheless, somehow this outrageous and slightly monstrous phrase, “cultured meat”, remained and when I saw the actual conference programme of zoontotechnics, much later of course, I felt somewhat vindicated, even if not reassured, that at least one other speaker had made the same connection. There is at least one other contribution that addresses the technocultural phenomenon of in-vitro meat and relates it to the idea of zoontotechnics, namely Neil Stephens’s paper on “Animality/Technicity for Lunch? Understanding In-Vitro Meat”.¹

Back to our experiment. So far I have given you one ingredient for the serum in which I want to try and grow my in-vitro engineered tissue of an argument on “cultured meat”. The other ingredient has more to do with the larger context, intertextuality, or, one might even say, the “intertissuality”, maybe the entire tissue-ontology in which the technoscientific, cultural and commercial practice of growing meat in a laboratory is taking place. Which in a sense leads me back to what I said in Malta last November, when I tried speaking about “Life in Theory”. I was asking then whether there was “life” in theory still, whether theory was actually “alive”, whether one could maybe live “in” theory, have a life in theory, and whether

¹Neil Stephens was Cesagen Research Associate at Cardiff, member of the Genomics Network and specialist on stem cell research. He is now based at Brunel University: <https://www.brunel.ac.uk/people/neil-stephens>.

theory really had anything to say about life, as such, “bare life” and the living (*le vivant*), so to speak. Of course, an event like the present one and a concept like zoototechnology should imply an affirmative answer to all of these questions...

Zoototechnology – the word is truly frightening. In the current techno(cultural) science-fiction environment nightmarish visions of all sorts of “electric animals” (Lippit), biotech chimeras (Haraway’s oncomouse, Kac’s GFP rabbit...) and a whole humanimal (Poster) zoo come to mind. Behind the monstrous compound with its complicated syntax combining zoo/zoe + ontology + technics – or the question of the Aristotelian “bare” animal life, the whole of Western metaphysics including Heidegger’s *Destruktion* of it, and the end(s) of humanism, combined with the whole tradition of thinking the co-implication of hominization (or anthropogenesis) and technology – what an explosive cocktail! And the more one thinks about possible truncations and morphological permutations the more frightening it becomes. Zoontology (Wolfe), ontotechnology (Stiegler), zootechnology (Haraway), which of these morphological elements are qualifiers here, and what is being qualified? Does the “zooto” work like a kind of prefix, let’s say as in pyrotechnics, anthropotechnology...? Does “technics” work like a suffix to “zooto” – making an endless list of other suffixations thinkable, like zooto-genesis, zooto-politics, zooto-ethics etc.? And what about the infix “onto”, which gives rise to another long list of compounds and permutations? One could brood endlessly over the implications and potentialities of these concepts which, increasingly, seem to develop a life of their own...

But since they are all more or less about the regained prominence of the question concerning “the meaning of life” I believe they coincide with what could be called the current phase in cultural theory’s or “thinking’s” embattled history: after the theory, culture and science wars, here we are in the middle of the “life wars”. At stake is the shifting discursive ground over “what is life” or “life-itself”. Life wars, about bio-, zoo-, thanato-, necro-politics, combined with bio-, info-, cogno-, nanotechnologies applied to reproducing, hybridising the living, “*le vivant*”, as such, that is today giving rise to all sorts of liminal ontologies (or, following Derrida, “hauntologies”) and thus theories or thinking, “in” between life and death. Thinking, in Derrida’s words, that is neither on the side of death, which is not a side you can (ontologically) “be” on, nor entirely identical with life, and therefore on the other side of life, maybe, where all forms of life and non-life, organic and inorganic seem to have been proliferating (or pro-life-erating): machines, cyborgs, viruses, genes, molecules, tissues, plants, minerals, crystals etc. So much so that, increasingly, in theory we’re dealing with forms of neo- or even ultravitalism, some of them trying to free themselves from the very notion of “life”, from an ontology of life, and instead turning towards an inclusive and seemingly non-normative notion of the living. What exactly, in life, is “living”? Is it some kind of pure force, the “*élan vital*” without the dangerous heroism associated with that notion? What is this “bare life”, “zoe”, as opposed to “*bios*”, if one agrees to follow Agamben and Foucault in this?

No wonder then that there is so much talk of “life” in theory these days, life in all its forms, on the one hand, a plurality of life forms, but also, on the other side, of life itself, bare life, zoe, bios, but, indissociably, death and hence necro- and thanatopolitics etc. It is as if the “end of man”, the antihumanism of theory, has ironically given birth to “life”, life after people so to speak, posthumanist if not posthuman, maybe even post-theoretical, but at least and hopefully so, post-anthropocentric, life. For example life understood in Donna

Haraway's term as "multi-species flourishing" (*Animal Encounters*, 131), hybridisation, or the pro-life-eration of "naturecultures", one word. The last borderline was always going to be life – "life wars", wars for life.

A few names are key to this revival and proliferation of life in theory today. On the one hand, on the one side, the side of death probably, approaching life from the side of death, the late followers of Aristotle: Hannah Arendt, Michel Foucault, Giorgio Agamben etc. – all in their own way thinkers of "biopolitics" based on the impossible but, at least for them, necessary distinction between *bios* and *zoe*, which is supposed to be a distinction that modernity has blurred and continues to blur, and in which the "state of exception", the exposure of "bare life", becomes the main "material" for and the main "stake" of politics; or should that rather be the "steak" of politics, in memory of Roland Barthes's nation-building myth of "le steak-frites"; or, another more Anglo-American association, the juicy virtuality of Cypher's steak, which makes him choose *The Matrix* over sordid reality. There is no real time here for entering into the whole debate about the supposed radicalisation of Foucault's biopolitics in Agamben's work and to what extent this is or isn't complementary with Deleuze's notion of "alife", one word, or Derrida's use of "*le*" or "*les vivants*", and, maybe even more crucially, to what extent these ideas are either opposed to or contribute to the advent of a biotechnological society, of biotechnics as the reproducibility of life, in Bernard Stiegler's words where the "living... becomes a material for the industrial biological system" ("Technoscience and Reproduction", *Parallax* 13.4 (2007): 38), and where the biotechnological thus constitutes what he calls a "new device of tertiary retentions" which are themselves no longer controlled through scientific or theoretical criteria, but "which make it possible to produce in chimerical series, clones and other transgenic materials". Another way of putting this would be, following Eugene Thacker's call for a "Biophilosophy for the 21st Century", to think of the era of merging biotech and infotech through biomedica, as the time of "generalised breeding" – a "pastoral", Heideggerian theme that will later return in connection with a brief discussion of Peter Sloterdijk's suggestion to see humanism basically as a (now failing) "breeding" technique.

I mentioned one side, so there must be another. On the other side of the bio-technics and necropolitics camp, maybe on the side of life-as-such, are the late and distant followers of Spinoza, Bergson, and Darwin, for example Deleuze & Guattari, Keith Ansell Pearson, Rosi Braidotti and others, who are, as I said, proponents of a "new vitalism" based on some idea of "biocentrism" (as opposed to anthropocentrism). Biocentrism understood as the celebration of all life, for sure, of life as life, life in all its forms, including material everyday life and maybe even artificial and technological life (Lash). A life understood as "pure immanence", in the Deleuzian sense (*Pure Immanence: Essays on Life*, New York: Zone Books, 2001). Again, there won't be time to go into detail and explain this proliferation of life or lives related to the rise of "life sciences" and "life technologies" that go far beyond any known modern Foucauldian "technologies of the self". I am thinking here of works like Melinda Cooper's *Life as Surplus* (2008), or Nicolas Rose's *The Politics of Life Itself* (2007), or Kaushik Sunder Rajan's *Biocapital* (2006), Keith Ansell Pearson's *On Creaturely Life* (2006), Susan Squier's *Liminal Lives* (2004), or Richard Doyle's *Wetwares: Experiments in Postvital Living* (2003) and so many others. While Agamben's argument in *Homo Sacer* (1995/1998), *Remnants of Auschwitz* (1999) and *The Open* (2002/2004) has been widely discussed this new vitalism is maybe less present. To briefly catch the mood I propose we look at a text by Rosi Braidotti, who accuses Agamben and arguably the whole "phallogocentric"

philosophical tradition he inherits, of a “fixation on Thanatos” or “necropolitics”. Instead, she, on her side, the side of life, I imagine, argues that the emphasis should fall “on the politics of life itself as a relentlessly generative force. This requires an interrogation of the shifting inter-relations between human and non-human forces. The latter are defined both as in-human and as post-human” (“Bio-power and Necro-politics”). In short, she claims, “death is overrated”. What Braidotti wants to put in the place of “bio-power and necropolitics” is “the primacy of life as zoe”, as “vitalistic, prehuman, generative life” (“The Politics of Life as Bios/Zoe”, *Bits of life*, 177). Opposing the traditional humanistic necropolitics she follows Deleuze and Guattari in an attempt to “trespass all metaphysical boundaries” by celebrating a “becoming animal, becoming other, becoming insect, becoming machine”, in short, becoming a “posthuman” body: “a living piece of meat activated by electric waves of desire, a script written by the unfolding of genetic encoding, a text composed by the enfolding of external prompts” (180). I don’t need to spell out how uncannily this resonates, at least in my mind, with all I said at the beginning in relation to “cultured meat”. This “becoming corpse” which Braidotti understands as a return to a “Spinozist ontology” set against the “metaphysics of finitude” that negates life and overrates death, according to her, is affirmative, the affirmation of life itself. It is “neomaterialist”, “feminist” and “embodied” and above all “eco-logical” and “postanthropocentric”, these are her words:

The vital politics of life as zoe, defined as a generative force, resets the terms of the debate and introduces an ecophilosophy of belonging that includes both species equality and posthumanist ethics. (*Bits of life*, “The Politics of Life as Bios/Zoe”, 183)

“Life” privileges assemblages of a heterogeneous kind. Animals, insects, machines are as many fields of forces or territories of becoming. The life in me is not only, not even human. (189-190)

As I explained I am using Braidotti as an example of a certain post- or neovitalist posthumanism, and I have to admit that I am worried, at least as worried as I am about the phrase “cultured meat”. Worried, for example, by the liberal use of the copula “is”, proliferating wherever there’s a question of life. Worried about the ontologisation of life as such, and I wonder whether theory has to change its way of speaking to life and about life.

In short, I find all this very exciting but also rather bizarre. As you may know, Ivan Callus and I have been wondering, maybe even brooding, for the past decade or so over how one might come to terms with the desires and anxieties that the spectre of the posthuman and the process of posthumanisation or even posthominisation, while remaining “critical” (which, no doubt, somewhere involves a posthuman or at least posthumanist subject). While the posthuman has been proliferating, has been breeding and interbreeding in an increasingly frenzied way, I guess we have been trying to investigate theory’s and human brooding habits, so to speak. As you can probably tell, I have been gradually zooming in onto the word “brooding”, which appeared almost automatically while I was being interpellated by the monstrosity of “zoontotechnics” I saw at work in the technoscientific and technocultural construction of “cultured meat”.

What exactly would the ontology of cultured meat be? Despite all the arguments for and the undeniable benefits of regenerative tissue engineering, giving it a commercial boost by using its techniques to solve the growing demand for meat, to combat the economic inefficiency

and the negative environmental consequences of intensive *in vivo* meat production, i.e. farming, breeding and slaughtering, not to speak of the reduction in animal suffering, despite all this, there is something “fishy” about the vision of a vegetarian future thanks to *in-vitro* produced meat. It is as if our meat culture believes it might cure itself by tucking into cultured meat, by having its meat cake and eating it, so to speak. In my brooding over this I was helped by one of Erica Fudge’s recent articles in *Textual Practice* (24.1 (2010: 149-166), “Why it is easy to be vegetarian”, where she asks, provocatively, of course:

If questions about nutritional value are set aside, what purpose does the act of consuming an animal possess? I take this as my central question here because meat-eating is not just an issue of nutrition: as Derrida wrote [in “Eating well”]: ‘and who can be made to believe that our cultures are carnivorous because animal proteins are irreplaceable?’ There is something else going on when an animal’s flesh is consumed. (Fudge, “Why it is easy to be vegetarian”, 149).

It is of course an ontological aspect, even an anthropoontotechnical one that underlies carnivorousness or “carnivoracity”. In eating the (significant) other I am becoming a self, by affirming my dominion, legitimated by my radical difference established through the power to consume or assimilate I become human. Or, as Fudge puts it: “Meat-eating is hegemonic in anthropocentric societies” (149). Interestingly, Fudge concludes her amplification of Derrida’s notion of “carno-phallo-logo-centrism” by looking at *in-vitro* meat production and asks why, instead of producing “fake meat” we don’t just give up eating meat altogether? And she goes on to answer her own question thus:

Without meat-eating there is a possibility that we would no longer be human as we currently understand the term... By implication, we in the west need to have dominion represented, legitimated and authenticated by animal flesh to be who we think we currently are. Without the categorical differences that dominion establishes, that sense of self would be lost. (161-2)

However, Fudge’s zoontological argument for giving up human dominion by deconstructing carnophallologocentric meat culture and by risking our becoming unhuman, or non-human animals opens up some fascinating possibilities that are at least as frightening as those offered by the “cultured meat” scenario. She herself hints at the fact that giving up humanistic (read anthropocentric) ideas, values and justifications of “dominion” that legitimate being carnivorous, erases the boundary between human and non-human animals not necessarily in view of a generalised vegetarianism but quite possibly the opposite, namely a generalised “cannibalism”:

Eating meat is a declaration of human dominion (to consume animal flesh is to declare – with the teeth if not the voice – that these creatures are lower than us, that we have power over them). But eating meat is also an action that can, possibly, undo that dominion... how do you know you are not eating a human as you tuck into a steak? (160)

Because, one could say, in the end, “we (human and non-human animals) are all meat”, even “dead meat”, or worse, “zombie meat”, floating, growing, decaying in our own culture-media-serum – this is Haraway’s idea of natureculture pushed to a biotech extreme. The end

of human exceptionalism undoubtedly can also mean that, which is the reason why a more vigilant posthumanism might be called for, maybe a posthumanism that is more of the brooding kind.

One starting point could be to look again at “cultured meat” – the in vitro production of animal muscle for human consumption – and ask what exactly it is that causes the “disgust” or at least the deep ambiguity vis-à-vis what could, after all, by bypassing the whole slaughtering process, spell the end of animal cruelty and thus of many animal rights concerns; it may even, eventually, allow us to tackle the whole idea of an essentially sacrificial metaphysics underpinning human exceptionalism (i.e. Derrida’s notion of “carnophallogocentrism”)? As some animal rights groups have reportedly signalled: “as far as we’re concerned, if meat is no longer a piece of a dead animal there’s no ethical objection”, thus plunging into crisis the whole ideology of vegetarianism as we know it. My question would be whether growing animal tissue for consumption is still merely a matter of “breeding” and hence of zoontotechnics, or whether it already hints at a new kind of ontology, or hauntology, namely *zoo*hauntology? Is it, not technically but ontologically, ontotechnologically speaking, more like (animal) brooding rather than the necessarily anthropocentric idea of breeding (which somewhere, even if problematically, always presupposes a presumably quite human subject)? Incidentally, both Stiegler and Sloterdijk in their accounts of hominization refer of course to breeding animals as a key moment within anthropogenesis.

I would argue instead that *brooding* (not *breeding*), zoontotechnically speaking, refers to one of the most essential “life technologies”: “to incubate; to warm, protect, or cover (your young) with your wings or body” (OED). In human animals, however, brooding also seems to bring about some surprising side-effects: “to think or worry persistently or moodily about; to ponder; to dwell on a subject or to meditate with morbid persistence” (OED). Why the negative connotations if the process is ontologically so fundamental, if it links us as a species to arguably our most fundamental “technics”? Is it because it might betray that we’re ultimately not mammals but rather “amphibians”, as Sloterdijk argues? That our ontology might actually be determined, pardon the pun, by our egg-sistence – ovulating, mating, laying, pondering, brooding, hatching, feeding...

All these ruminations, as I explained to you at the start of our experiment, are the result of the firing of a few synapses stimulated by the phrase “cultured meat” and the subsequent association with brooding as something in between zoo- and anthropotechnics, indeed one might want to refer to it as “theriotechnics”, because it is a technics “before” any distinction between human and non-human animals. And this is the point where I would like to add another, final, ingredient into the serum. In Peter Sloterdijk’s provocative interventions a few years ago, developing what he called a “prophetic anthropology” (cf. *Regeln für den Menschenpark – Ein Antwortschreiben zu Heideggers Brief über den Humanismus*, 1999; and *Das Menschentreibhaus – Stichworte zur historischen und prophetischen Anthropologie*, 2001), he discussed the notion of “anthropotechnics” – the evolutionary “production of the human” alongside technics and technology (in the Heideggerian sense – which, of course, parallels Bernard Stiegler’s work). Given this long term view of hominization, the current biotechnological turn is merely the latest development in the creation of the necessary conditions under which the production of the human can occur. The originary condition Sloterdijk refers to as the “human greenhouse” (*Menschentreibhaus*) – an “insulation

mechanism” creating a protective interiority where human evolution and especially “cerebralization” can take place. It is the beginning of anthropogenesis as anthropotechnical “breeding process”.

Current eugenics, tissue engineering and biotechnology in general would thus only be the logical outcome if not the conclusion of the original exteriorised zoo-anthropo-technics of (cattle) breeding, in turn made possible by the interiorised creation of a breeding or brooding “sphere”. I would need a lot more time to do justice to Sloterdijk’s argument here, but what interests me in particular is how Sloterdijk, in following and radicalizing Heidegger (and arguably, virtually all thinkers of technics for whom technics remains fundamentally anthropotechnics), ignores or at least downplays the “animal question” that is at the core of hominization and anthropotechnics. I have to admit that it is not quite clear to me to what extent the human greenhouse (the “breeding” place where humans can brood) would be radically different from “brooding” in the “animal realm” more generally, as arguably the more fundamental “theriotechnics” underlying Sloterdijk’s model.

The generalised brooding “metaphor”, however, is also what opens up this fascinating but “monstrous” parallel I have been brooding about, namely the biotechnological “meat culture” scenario above, as a quite unforeseen by-product of the erosion of the human-animal boundary. This erosion might, quite unexpectedly, not only lead to the “end” of vegetarianism and to new forms of cannibalism, but maybe the end of animals as such. It also shows that behind the current theoretical return to questions of “life”, “bare life”, “bio” versus “zoe” etc. lies a more fundamental anxiety than the question of the human or the animal, namely a kind of (zo)ontology of “brooding” itself – an entirely different form of “biopolitics” that promises to upset (t)issues of life “before” the distinction between animal and human, and maybe even vegetal, maybe even before any imaginary alternative between vitalism and necro-politics or morbidity.

As a final afterthought and to return to the second part of my title “life after animals”, there is a common popular “posthumanist” media scenario summarized most poignantly and most recently seen in the Channel 4 virtual “documentary” series “Life after People” (itself based on Alan Weisman’s *The World Without Us* (2007), that reveals signs of our all too human obsession with our own passing. Ivan would probably address it under the heading of “autothanatography”. It is nevertheless clear that even the most radical anti- or posthumanist thinking and imagining of the end of the human cannot help but imply at least a minimal form of subjectivity that would witness the passing (as Lyotard, in fact, reminds us in *The Inhuman*). In the end, there is always too much reassurance even in the worst (post-post-post-)apocalyptic scenario, regardless of how inhuman it might look, even worse, almost something perversely and ghostly endearing. Weisman’s *The World Without Us* is quite a typical example of apocalyptic “self-indulgence”:

Is it possible that, instead of heaving a huge biological sigh of relief, the world without us would miss us? (5)

Having become suspicious of or somehow vaccinated against the standard humanist culture-media-serum, I suggest that a combination of posthumanist cultural theory and biotech-biocapital practice, for example in the form of in-vitro meat production, makes thinkable

something even worse than a world without us, namely a world without animals – not least because, in the end, this would of course concern all animals, both human and non-human.

There is no question, the animal is “*en vogue*” and animal studies are “*de rigueur*”. However, beyond the fashionable aspect there is another more poignant dimension to the question: why getting interested in animals now? The obvious connections are, on the one hand, the ongoing and arguably accelerating physical disappearance of animals under the conditions of modernity (something that Carol Adams refers to as “post-meat-eating” – the continuation of meat-eating after the “referent” symbolically and also materially has disappeared). In addition, the erosion of what is left of so-called “natural habitats”, the looming global environmental crises, which will hit animals first, as well as the radical segregation between pets and animals as “meat products” or exotic attractions, all play a part in this disappearing process. On the other hand, maybe more cynically but also more radically, in times of genetic “breeding”, boundaries between human, animal and machine are eroding, questioning traditional “purities” and provoking new utopias of hybridity and anxieties of purification. This has been Donna Haraway’s argument all along from her “Cyborg Manifesto” (1985) right up to her “Companion Species Manifesto” (2003) and, most recently, in *When Species Meet* (2008). And, this time, I would endorse Rosi Braidotti when she says that: “the animal has ceased to be one of the privileged terms that indexes the European subject’s relation to otherness” (*PMLA* 124.2: 526), which (speaking with Deleuze & Guattari once again) for Braidotti means that “in turning into human-animaloid hybrids, we are becoming animal” (*ibid.*). And thus, I would add, we are, therefore, consequently, threatened with the same disappearance.

But this is where the experiment has to end and, looking at my petri dish I am of course curious to see whether any fibres, any textures or tissues have grown...