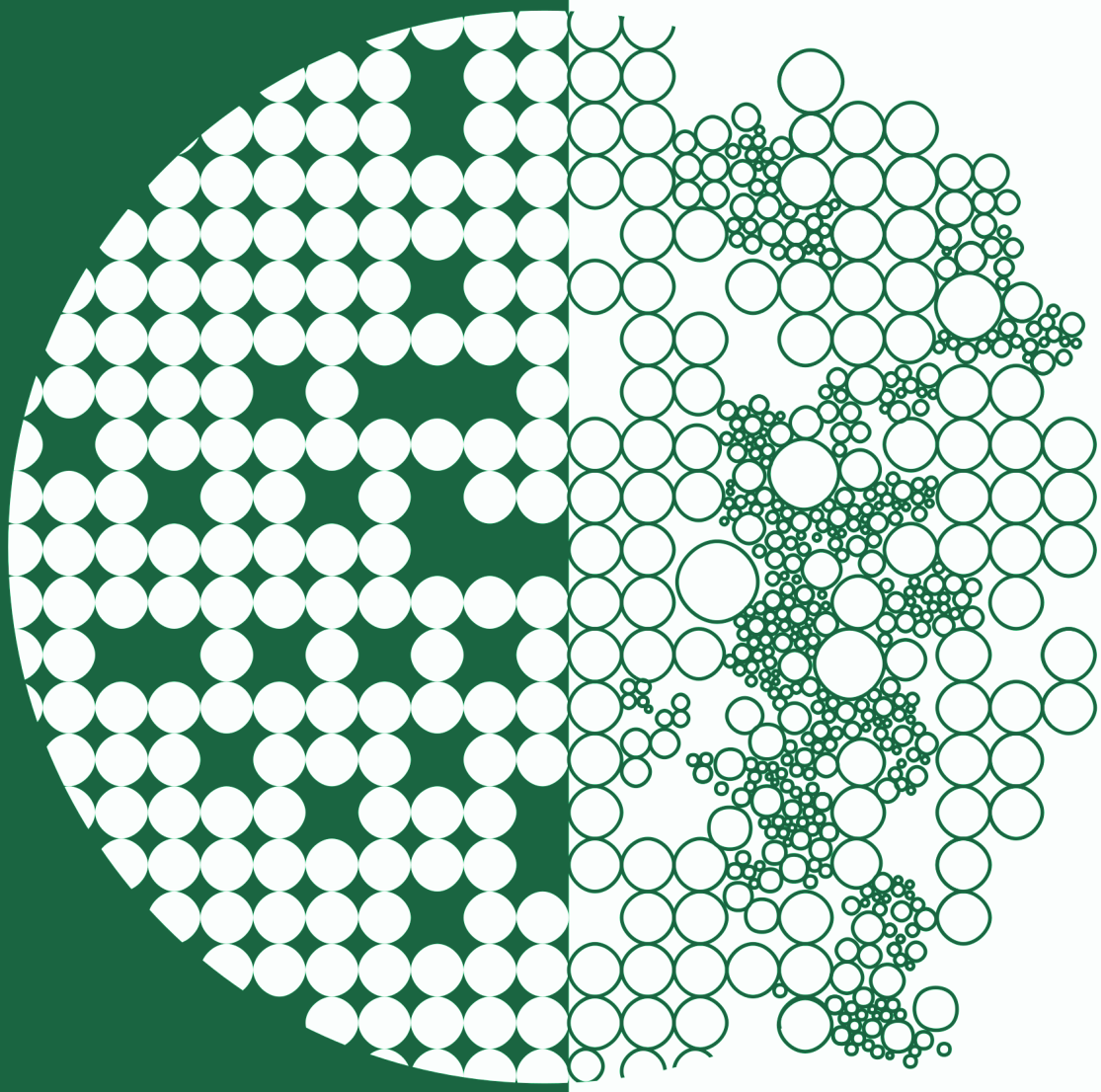

Pulse

A History, Sociology & Philosophy of Science Journal

Issue 4, 2016

Fani Cett
João Duarte
Elisa Fiore
Martin Grünfeld
Sandipan Mitra
Paul Stephan
Tabitha Taylor
Georgios Tsagdis
Karijn van den Berg

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Nador u. 9., 1051 Budapest, Hungary
pulse.scistudies@gmail.com

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Editor's Note

As editor of the fourth issue of Pulse I have several people to offer my sincerest thanks to. I would like to thank all our wonderful peer-reviewers who took the time and effort to carefully work with our authors on their manuscripts. All authors have reported that their interactions with our peer-reviewers were productive and helpful, and this year's issue saw some thought-provoking and exciting exchanges between authors and reviewers during the peer-review process. Without their generosity of time and attention this issue simply would not have been possible. I would like to thank Heather Mackenzie Morris for her meticulous copy-editing skills, as well as Eva Zekany for once again producing an aesthetically pleasing, carefully constructed, and technically precise journal by formatting the entire issue. I would like to thank Frank G. Karioris for stepping into the role of book-review editor and excelling therein. I would also like the remainder of the editorial board, Adina Covaci, Claudia Manta, Maria Temmes, and Georgios Tsagids for their input, expertise, and support from afar. Lastly, I would like to thank all the authors for submitting their work to Pulse. Their excellent pieces, and collaborative and open attitude made compiling the issue a very enjoyable experience.

Matthew Baxendale, Editor

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Pulse: A History, Sociology & Philosophy of Science Journal, 2016, Issue 4

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João 'Cão' Duarte

Center of Philosophy of Sciences of the University of Lisbon (CFCUL)

Abstract

Do-It-Yourself biology, or DIYbio, is a contemporary movement that makes claims of equality in its practice of scientific research. The people that join DIYbio are hacking biotechnology in the same way that hackers use information technology. These biohackers are spread world-wide in community laboratories that work similarly to squats. In this article, we explore the identity of this movement and how it is related on the one hand to institutional biotechnology research, and, on the other hand, to open source culture. On equality, we follow the thinking of the eminent French thinker Jacques Rancière. The claims put forward by DIYbio work as a re-enactment of a community of equals as described by Rancière. Moreover, a parallelism can be made with the Icaria settlement in the end of the XIX century, which tried to relive Marx's egalitarian vision. Equality gains substance and makes sense through events of community affirmation. Another lesson, taken from Icaria by Rancière, works as a warning to the biohackers: to claim equality in the unequal world of work can come to make the movement subdued by capitalism.

Keywords: Do-it-Yourself biology; Jacques Rancière; community of equals; equality; Icaria.

Biohackers, taking Labs into communities

Rob Carlson was once a senior researcher at Washington University. He had worked closely with the first synthetic biologists, who sought to simplify molecular biology by

treating it as an engineering discipline. He aimed to develop a protein-tagging system, but wasn't into institutional research anymore. Could he take the matters into his own hands? Did it sound crazy? The most basic laboratory equipment is extremely expensive, that's a huge obstacle: or is it? In 2005, Rob found out that old laboratory equipment was getting easier to find online, even on e-bay. To work with genetics, like he did, he would need some hardware and software, but that was getting cheaper as well. That, and you could always up-cycle, to cannibalize some old equipment and computers that were once abandoned by public research and could now find a new life in a cozy private space. Rob announced his discovery to the world in an article in Wired magazine: anyone could build up a laboratory in a small garage (Carlson, 2005). He built his own that same year. That was just the start. Today there are community labs, as the Parisian La Paillasse, establishing new territories in science research (La Paillasse, 2015).

The 2005 media coverage of the home laboratory of Dr. Carlson had an immediate consequence. The first group laboratories came to be with many new biohackers joining. DIYbio became a global movement, spreading the use of biotechnology beyond traditional academic and industrial institutions. It started to take shape in 2000, but it was in 2005 in a report published in *Nature Biotechnology* that its reputation started to build, and through an article at *Wired* that it started to become notorious (Grushkin *et al.*, 2013, p. 9). DIYbio had evolved to include approximately 3300, according to the number of online DIYbio message board members (idem, 8). People who were originally doing kitchen or garage experiments began organizing and setting up labs in commercial spaces. Most of these volunteers and entrepreneurs are young and north-American. Yet, the official map of DIYbio spots biohackers also along Europe, Syria and New Zealand (idem; Landrain, 2014). Some of those people pooled resources to buy, or take donations, of equipment and began the group labs, also known as "community labs" that sustain themselves through volunteers and membership donations. Paid classes have a role also, with lessons in synthetic biology, neuroscience, bio art, genetics, and basic biotechnology (Grushkin *et al.*, 2013, 5). According to the research done by the *Synthetic Biology Project* of the *Wilson Center*, most of the DIYbio laboratories were performing mostly basic bio-technological operations, as happens in any University, from 2011 - 2013 (idem, p. 12). Still, when following the practices of these biohackers, we realize that the nature of the majority is distinct from the institutional student-researcher, and far from the bioterrorist. DIYbio practitioners are a mix of amateurs, enthusiasts, students, and trained scientists.

Most of the biohackers work in multiple spaces and there's a diversity of backgrounds (idem, p. 7). Each biohacking facility has its own identity. The first community labs opened up in the USA: in Brooklyn, New York, and in Sunnyvale, California. La Paillasse is one of the most recent, having been formed in 2012 in the outskirts of Paris, then moved in September 2014 out of the suburbs and into the city center, to the deuxième arrondissement of the city (Cheshire, 2014). According to Thomas Landrain, founder and president of La Paillasse, these are new 750 m2 "of pure

freedom" (Landrain, 2014, video at 9 minutes). It all began with Landrain going enthusiastically inside a hackerspace. Once he got there he built the first iteration of La Paillasse, finding old equipment in University Laboratories (Cheshire, 2014).

This *biochiner*, antiquing, is exactly the mark of the innovation of La Paillasse, according to Landrain, and is one of the greatest strengths of the Do-It-Yourself biology movement (Landrain, 2014; Grushkin *et al.*, 2013, p. 12). DIYers have succeeded in producing inexpensive alternatives to expensive biotechnology equipment. Everyday equipment expected to be found in a lab, such as a professional Polymerase Chain Reaction machine, a lab staple used to amplify DNA (meaning to make more copies of the same genetic material) can cost more than $2,000. DIYers developed their own kit version that only costs $600 and are openly giving the schematics online (Grushkin et al., 2013, p. 11). The same logic applies to other lab equipment, as the gene gun showed on Figure 1.

Figure 1. A gene gun, or a biolistic particle delivery system, originally designed for plant transformation, is a device for injecting cells with genetic information. This technique was developed as an alternative to other, more traditional, genetic material transfection methods. The technique fires microparticles that insert the desoxy (or rybo)-nucleic-acid into the target cells. The Helios® Bio-Rad gene gun, shown on the left, is one of the most popular choices in biotechnology laboratories using bioballistics. The one on the right is also a gene gun hacked by Rüdiger Trojok, a biohacker. As the Bio-Rad solution is integrated into scientific research technological problem solving (e.g. O'Brien, Holt et al., 2001; O'Brien, Lummis, 2011), Rüdiger's hacking is presented as an effective way to have access to this technology, so as to perform a basic transfection into onion cells. The hacked gene gun, shared without peer-review with other biohackers can be built spending 50 EUR, while the professional one from Bio-rad can is sold for up to 15,000 EUR (Trojok, 2012).

Affronting the academic culture, Landrain asks "Why should one wait to get a PhD? Why should one wait to get one million USD in his bank account to set up a lab to experiment his own ideas?" (Landrain, 2014, video at 4 m). La Paillasse materialized from a need, namely that of looking for solutions for "zero euro laboratories" (idem, at 5m55s).

In-between academic research and open-source culture

DIYbio is deeply influenced by open-source culture, in comparison with 'formal' academic research. Open-source is a concept emerging from software development, consisting in the collective effort of individuals towards a common goal in a more-or-less informal and loosely structured way. Most of those individuals are working in their free time and no single entity owns the end product, free of charge, to be used. The most famous examples of open source software include the GNU/Linux operating system, the Apache web server, Perl and BIND (Benkler, Nissenbaum, 2006, p. 395). Some characteristics of the DIYbio movement allow us to see its proximity to the open source culture, and this distinguishes it from the more normative science research:

- Firstly, the antiquing and up-cycling culture is common to both DIYbio and open source technology;
- Secondly, in contrast with academic culture, the communication of results is also done differently, as rather than wait for some peer-reviewed publication, members are more likely to emblazon their accomplishments on the Internet (Grushkin *et al.*, 2013, p. 8). We see this contrast in DIYbio and other participative approaches, particularly in relation to institutional science research. Just like open source developers, DIYbio shows the same trend of moving away from copyrighted software developing.
- Thirdly, the cooperative action that arises in the community labs inherits the unbounded movement of the wills of individuals. In a squat house anyone might come in at any minute. From this, the interdisciplinary character of the biohackers' labs is a fruitful consequence, which academic labs are not able to achieve, says Landrain. In La Paillasse, the seemingly aleatory cooperation between designers and biologists has come to light, through the development of different products (La Paillasse, 2015). According to Landrain's statements, "You can work with anyone and you can address those problems that you cannot deal with by yourself. Academic labs aren't prepared for this kind of permeability between labs and disciplines, this is making innovation slower" (Landrain, 2014, video 22m). In this sharing space, while most DIYers are still learning the essentials of biotechnology, many already have expertise in electronics and access to rapid prototyping tools like 3D printers and laser cutters (Grushkin *et al.*, 2013, p. 11).

An example of this interdisciplinary permeability, Sarah Choukah says that her membership to the biohacking community Bricobio in Montreal, Quebec, allows "being playful with concepts and tools we would otherwise take for granted or don't know enough about" (La Paillasse, 2015). Other community labs, as Bricobio, reach out to the lay public and students with hands-on training and education that would otherwise be

available only to university students, and those in industry (Grushkin *et al*., 2013, 8). Inside these spaces, the social interplay is more informal, and allows the participant more easily to tinker, to play around with an object and 'glass-box' it. The focus of the efforts on using the technology can be diverse, as to create art, or to explore genes and proteins.

Hence, DIYbio is strongly marked by the desire to have more democratic access to knowledge than in formal learning tracts (Landrain, 2014, video at 3m50). Nevertheless, Thomas Landrain himself is involved in the market industry with some of the outputs from this interplay at La Paillasse. The first pen fed by bacteria, having a much smaller impact in the environment than the traditional ink pen, is the first product of a new start-up company named Pili, which partners the biologist Landrain with a designer and an entrepreneur (Yin, 2016).

The Parisian DIY-bio La Paillasse is one with a strong egalitarian message, and is developing products with both an ethical and moral perspective. Of course, these aren't entirely for free and aren't set aside from the market economy. In contrast, the open source technology develops zero-euro solutions for users. Evidently, the DIY-bio movement brings biotechnology closer to home than the academic culture, but it becomes pertinent to get to grips with its identity.

Do-It-Yourself biology, tracking lines of identity

DIYbio can be thought of as the coming together of a *community based on equality*, specifically in its active affirmation of social egalitarian principles. Inside this movement there is no single voice that can speak on behalf of the others. In spite of the strong care given to safety that is shared among biohackers, there is no way to know what every member is doing at any given time (Grushkin et al. 2013, p. 8). In agreement, according to Landrain, “the mind-framework at La Paillasse is that you know you can do whatever you want, wherever you want and whenever you want” (Landrain, 2014, video at 22m10s).

As a broad and decentralized movement, DIYbio is close to its contemporary Occupy movement, which started out from 2011 by reclaiming the public space for equality of rights against the global market. Manfred Steger and Paul James see Occupy as a type of “justice globalism”, generating worldwide protests against inequality and uneven distribution of wealth (Steger, James, 2013). Its social organization is characterized as a grass roots movement, decisions starting at the base, just as DIYbio has similarly affirmed itself to be. With La Paillasse originating in a squat, DIYbio also shares this political motivation as denouncers of a corrupted system (Pruijt, 2013). Testimonials of DIYers also address their critical awareness towards the state and economical market (La Paillasse, 2015).

Yet, economical innovation is, paradoxically, one of the aims of the movement. Ideas and products emerging from DIYers already present several academic and industrial applications. For example, the products developed include: inexpensive

biotech equipment, and diagnostic tests for the developing world (Grushkin *et al.*, 2013, p. 8), the aforementioned pen that lasts longer and has been produced independently by the start-up Pili, and the development of biodegradable fabrics (Yin, 2016; Landrain, 2014). The aspirations of DIYbio are bold, as "DIYbio can inspire a generation of bioengineers to discover new medicines, customize crops to feed the world's exploding population, harness microbes to sequester carbon, solve the energy crisis, or even grow our next building materials" (Grushkin *et al.*, 2013, p. 4). The movement shows a strong humanitarian-ecological ethos and integration into the economic market.

Also, in terms of biosafety, all community labs have security rules, and overall they are getting more integrated into laboratories' formal administration's demands (Grushkin *et al.*, 2013, p. 9). For example, in the USA the access and protocols for the use of DIY bio laboratories have been strict. The movement has been acting on its security measures in cooperation with the Federal Bureau of Investigation, since 2011 (idem, 18). For all these reasons, DIYbio doesn't seem more prone to irresponsibility or bioterrorism. Since the first reports of Carlson's new home laboratory, the media had overtly speculated about the offspring of bioterrorist cells. Just like with other movements of "justice globalism", there was an immediate mediatization of fear that has been diluted in the following years.

La Paillasse communitarian research center was itself a squat "where you could get all your equipment for free" (Landrain, 2014, video at 6m). Many squats have been social centers, give-away shops, or pirate radios (Pruijt, 2013). As mentioned, the squat that gave origin to the Parisian community laboratory was also a hackerspace, a space where people cooperate in understanding and building up their hardware and software. A good part of this cooperation that happens online for the development and management of open source technology is also physically taking place in such hackerspaces. The DIYbio network shares this up-cycling culture, as the idle instruments of academic research are restored and reused in this continuous search for inexpensive and ecologically viable alternatives.

One of the lines of identity in DIYbio was claimed through open source culture. Many DIYers affirm themselves as hackers, that the biotechnology appropriation they propose is parallel with the first hackers in the 1970's, who created personal computers (Landrain 2014). From the hackers movement, a whole set of digital tools has been developed, framed by open source technology. The licensing of these products falls under the GNU General Public License model, now on its third version since 2007, and allows the free sharing and editing of the works done (unlike commercial models). The most famous examples of these intellectual licenses are the *Linux operating system* and the *Wikipedia Free Encyclopedia*. Altogether, this alternative socio-economic system of production is described as Commons-based Peer Production. The commons enterprise, besides avoiding market pricing, also applies coordination without managerial hierarchies. Some authors make evident how this approach fosters important moral and political virtues (Benkler, Nissenbaum, 2006).

Taking things a step further, some members of DIYbio together with other citizens, took the legacy of the commons into the biosciences. Can discoveries, technologies, and products be considered politically as common goods? From a discussion held in Helsinki, in June 2014, the concept of Bio-Commons was settled. Not only DIYbio members were involved. Together with others they identified the requirements and conditions of Open-Source and Citizen-Science concepts in order to realize Responsible Research and Innovation (RRI) in the Life Sciences (Trojok, 2014). The political frame for the action of DIYbio became, in this way, far more substantial.

As inclusive spaces prone to experimentation and error, community laboratories are open to people for exploring aesthetic value, producing art. Others were longing for a space to do with genes what amateur astronomers were doing with the night sky. The biology was "too important to be left over in the hands of professionals" (Landrain, 2014, video at 3m50s), as if the formal science research was in need of democracy.

On the route for equality

Much of the identity of DIYbio appears to be rooted in the political affirmation of equality through the words of Thomas Landrain. Biotechnology was taken out of formal laboratories and into the fold of hackerspaces, thus asserted into a political position of global justice. The statements taken by Landrain are also connected to the community lab that Landrain integrates, La Paillasse, which opened its doors in September of 2014, in a new wider space in Paris. His arguments on equality, though, go beyond the walls of the community space in the middle of the French capital, and they define the DIYbio movement. In this frame, DIYbio can be represented as a re-enactment, a re-invention of a *Community of Equals* (Rancière, 1995). The concept was coined by Jacques Rancière, a contemporary thinker, who has been described as having a fundamental message, namely the democratization of knowledge (Nordmann, 2007 in Pelletier, 2009, p. 13). According to Rancière, democracy can be defined as the space for egalitarian practice in the making (Rancière, 1995, p. 90). A concept such as the community of equals can be inscribed in these events of coming together. Nonetheless, to reach equality is both a political and a philosophical problem, which can be appreciated through reflecting with Rancière.

Jacques Rancière is Emeritus Professor of Philosophy, at the University of Paris VIII (St. Denis). He has a wide array of experience in different fields of study, from politics to aesthetics, and education. According to Kristin Ross, we can identify two moments in Rancière's work: an archival, and another, critical, phase. The archival phase, including his research of the XIX century workers and dynamics, is characterized by an eruption of negativity of *thinking* into a social category, always defined by the positivity of *doing*. Such groundwork nourishes a critique of the claims of bourgeois observers and intellectuals (Ross, 1991, p. xviii). In the axis of these reflections are the concepts of *equality* and *emancipation*.

After May 1968 with Jacques Rancière

The student demonstrations of May' 1968 had students taking over public spaces, and implementing other decision-making methods. This was done in the university as with workers who strike in a factory. For some, it represented the inauguration of a new politics that related knowledge to power (idem, p. xvi-xvii), that consequently energized transformations in the following years. Hopes for social change dissipated: the 1970's favored above all the sociological reflection itself.

After May of 1968, *reproduction* and *distinction* became popular concepts with the new sociology of Pierre Bourdieu. The reproduction and distinction of social inequality didn't have a considerable impact to sociologists, but it did transform the practice of historians, anthropologists, and pedagogues (idem, p. x). With such a critique of social dominance, traditional schooling was discredited. The science that Bourdieu builds maintains a critical attitude towards social arrangements, whilst keeping the sociologist in the role of denouncer. In the words of the editors of 1984's *L'Empire du sociologue* this discourse is fitting for a time that combines the "orphaned fervour of denouncing the system with the disenchanted certitude of its perpetuity" (ibidem).

The new sociologist, as designed by Bourdieu, could unveil the relations of dominance hidden from other social actors. Rancière formulates the logic of Bourdieu's argument with two propositions (Rancière, 1984, p. 28):

1. The working class are excluded from university because they do not understand the real reasons for which they are excluded (from *Les Héritiers*, Bourdieu, 1964)
2. The misrecognition of the real reasons for which they are excluded is a structural effect produced by the very system from which they are excluded (from *La Reproduction*, Bourdieu, 1970).

The "Bourdieu effect" could be summed up in this perfect circle, a tautology. As Rancière explains, the workers are excluded because they don't know why; and they don't know why they are excluded because they are excluded. From this perspective, Bourdieu's analysis of the division of knowledge between social groups appears as an explanation of inequality.

Still, Pierre Bourdieu's sociology of education was actually related to a practice, implemented to the renewal of French education. Bourdieu supported a reform of educational institutions starting from social relations, thus formalizing a compensatory attitude to unequal opportunity. On the other side of this equation was Jean-Claude Milner, with republican teachings and equality by the diffusion of knowledge. The aim of education at school should be "instruction", transmitting knowledge, not "educating" (Ross 1991, xiv). Bourdieu's approaches to education that were undertaken meant for Milner a sacrifice of true scholarly research (idem, p. xiii, xiv). The focus on "instruction" referred back to the public, mandatory, secular laws on education passed

by the republican Jules Ferry at the end of the nineteenth century. As shown, Rancière didn't agree with Bourdieu's vision and neither did he go along with this alternative of a pure, scientific transmission (idem, p. xv).

In spite of their diverging viewpoints, Rancière was together with Milner, who was part of the young theorists of the "cercle d'Ulm", the *Union des Etudiants Communistes*. Just on the other side of the river from the biohackers at La Paillasse, these young students attended classes at the *Ecole Normale Superieure*, in the *5éme arrondissement* of Paris. There, the Marxist Louis Althusser gave them early seminars on Marx.

Rancière, through his 1974 *La Leçon d'Althusser* examined the political core of althusserian philosophy, the communist opposition between science and ideology, in light of the post-1968 developments and the revolutionary tradition (ibidem). More and more, Rancière gained distance from the Marxist tradition and recognized the capitalist domination taking place. According to his interpretation, the protests of May 1968 were also giving to capitalism the means to regenerate itself, especially after the oil crisis of 1973 (Rancière, 2008, p. 53). The subversive logic of contemporary capitalism, he accuses, subsumes all wishes of autonomy and creativity (idem, p. 53).

James and Steger are clear in stating that alter-globalization movements, such as the Occupy movement, work often within many of the same subjective frameworks and precepts as the market-globalist world that they criticize (James, Steger, 2013). In agreement, Rancière included in his *Emancipated Spectator*, a 2005 piece of art by Josephine Meckseper (Rancière, 2008, p. 41), that is reproduced in Figure 2. In the second plane of Josephine's photography, an anti-war protest occurs while in the forefront a full bin of trash overflows. Terrorism and consumption, protest and spectacle, are re-directed to a same and only process. This is also an affirmation of equality, the market rule of equivalence (Rancière, 2008, p. 45). According to Rancière, Marx "is now lodged at the heart of the system as a ventriloquist' voice. He has become the infamous specter or the infamous father who testifies to the shared infamy of the children of Marx and Coca-Cola." (idem, p. 50). It's more than a disapproval of the demonstrators that the photography of Meckseper attests. The power of domination has assimilated Marxism.

The failure of finding alternatives to neoliberal globalization makes us guilty. In an earlier work, Rancière places here, in the same identity line; the 1986 French students' upheavals against the more 'selective' public university (Rancière, 1995, p. 91). "Participation", "innovation", "citizenship for projects" are all integrated into the lexicon of the dominant power. Still, the critical reflection of Rancière isn't debouching in a dead end. How to overcome the market domination?

Figure 2. Josephine Meckseper's untitled. The work is part of a series of photographs of street protests taken after the announcement of the invasion of Iraq in 2003. It was shown in one of the main cultural venues of the second biennial of contemporary art in Seville, in 2006. Juxtaposing in the same frame the protests against the war and the consumerism of the same crowd, this art piece gives a clear insight. According to Rancière's own words Josephine's work "tries to show protest culture as a form of youth fashion" (Carnevale, Kelsey, 2007, p. 259).

From Icaria to Community Labs, Equality on the making

In the middle nineteenth century, the French communist movement was dying down. Still, the visionary egalitarian dream of Marx was re-enacted with the Icaria settling. Étienne Cabet, or father Cabet as he was called, lead his followers to the USA where he established a number of communes from 1848, through 1898 (Rancière, 1995, p. 78). Following Rancière it becomes clear that the concept of equality lives through these moments, as it makes clear sense in such processes.

The (re-)invention of the *community of equals*, according to Rancière: (i) is part of the random interplay between what is there and what forces change; (ii) is fundamentally part of a process of sharing; (iii) refers to an earlier coming together of egalitarian event and egalitarian text (Rancière, 1995, p. 90).

If we take Rancière's egalitarian signifier to the heart of the DIYbio message, many parallels can be drawn. From Rob Carlson's initial step, grounding a laboratory in his garage and finding a new use for old lab equipment, community labs spread around the world. This practice seems to rise above Bourdieu's disenchanted tautology while, at the same time, doesn't carry out Milner's view on education as top-down instruction. The spaces where biohackers exercise are designed as based on social inclusion, and, in contrast to formal laboratories, with a vigorous political base of equality.

But where is the egalitarian text that defines the DIYbio community? In Rancière's definition we find the need for such a text, just like Icaria had Marx's words to re-invent a community of equals. For DIYbio, the *Bio-Commons Whitepaper*, released at the end of 2014 takes, in part, such a role. The paper is signed by Rüdiger Trojok, who was involved in the building of a citizen science biolab in Berlin (Trojok, 2014). Still, this paper claims to be the result of a meeting of individuals, not only DIYbio members, but also participants in an open meeting in Helsinki. They present themselves as *citizens*. It's easily understood that this mantle of citizenship is one closer to the republican model, as defined from Aristotle to Jean-Jacques Rousseau, than to a liberal conception. A liberal account of citizenship focuses on the legal status of the citizen, alongside the freedom to make private associations and attachments. Rüdiger and the other individuals meeting in Helsinki claimed their roles as citizens through their political agency, using their own processes of deliberation and decision-making (Leydet, 2014).

Starting out from a concrete problem, a public health issue, DIYbio forges an egalitarian text. The need to develop new antibiotics, stemming from the challenges to human health posed by multi-resistant bacteria, recruits their involvement. They state that not only air, earth, water, but also "discoveries, inventions and man-made creations such as genetic codes, algorithms, novel metabolic pathways and molecular processes designed for and realized in biological media and even entire organisms can be considered as natural goods" (Trojok, 2014, p. 5). The aim of the Bio-Commons Whitepaper is, therefore, to envision a strategy to import the commons concept into life sciences. This can be considered as an innovation for a new Bio-Economy. Biological

codes and concepts would be protected in the same measure as software, and all the related products and physical processes would be protected (Sauter *et al.*, 2015, p. 245).

The fundamental text of DIYbio establishes the Bio-Commons license as a way to stabilize global collaborations, overcome the over-exploitation of common goods and the failure of the Economical Market. Ethically, it is established as a tool to protect and manage any type of biological knowledge in order to curtail possible misuse (Trojok, 2014, p. 21). In other words, it tries to establish a dividing line between salable and non-salable nature (Sauter, Arnold *et al.*, 2015, p. 243). Despite the fierce claim of equality coming from DIYbio, there are actors in the movement dealing directly with money and an uneven distribution of goods.

Brooding within equality

In 1984 Jacques Rancière gave a lecture with Alain Badiou that further developed his reading of claims for equality and the communist tradition. The Community of Equals is based on this experience, published in *Aux bords du politique* in 1990 (English version – Rancière, 1995).

As a starting point, Rancière affirms two kinds of brooding in the becoming of the community of equals (Rancière, 1995, 63). On one side, a "grudging relief", as individual will and reason is menaced by the social leveling of the "great whole". On the opposite side, a "reasonable" nostalgia, described as a virtue of generosity of "being together", characteristic of politics.

The representation of socialist and communist *ardour* is connected to the foundational works on 'utopian socialism' by Pierre Leroux (idem, p. 65). His 1838 *De l'Igalité* and 1840 *De l'Humanité*, were adopted by the working class press. A dual origin can be traced via this representation. First, the image of a fraternal meal inspired by the dynamics of old Greek warriors, the Spartan fraternity. Secondly, the words of the Epistle to the Romans: we are all members one of the other, as one body in Christ. A historical reading of the workers' emancipation, places it better in time as a coming to awareness, as a "self-consciousness of democracy", going against the oligarch values of work as envisioned by the July Monarchy of Louis Philippe I (idem, p. 80). It was in this very period that Icaria was settled in the USA by Father Cabet.

In parallel, a democratic vision feeds DIYbio. More than giving access to a hindered technology, the biohacker's community lab creates settings for mediation, criticism, and exploring possible societal consequences for life sciences research (Sauter, Arnold *et al.*, 2015, p. 250). The 'ivory towers' separating practicians of biotechnology from society seem, in this way, more feasible to crack.

Still, following Rancière's reflection, the Icarian community was torn apart by the unequal distribution of goods and roles (Rancière, 1995, p. 78). All the egalitarian narratives we find with Rancière are fated to fail due to incomprehension of equality.

Rancière's reading of the utopian socialist events places the workers movement as the aforementioned (re)invention of the community of equals. However, just like the

contemporary re-enactments of 1968, it is doomed to fail: "no sooner than its system is instituted than its system of identification collapses: the communist worker is immediately split into toiler and communist, worker and brother" (idem, p. 76). The recurrent split of the communist movement was unavoidable. The founding text given by Leroux, the "Christian formula for equality" is, simultaneously, as expressed by the commentaries of the church Fathers, as said by Gregory of Nanzius, to also be the formula for hierarchy. In other words, the great Christ-like image of the communist body hides the Pauline image of the body of the church (idem, p. 69). Also, the recollection of the Spartan fraternal meal is ill-fated. As Rancière recalls, the Spartan fraternal meals were called *phidities*. From a passage of Aristotle's *Rhetoric*, Diogenes said that Athenians found their *phidities* in taverns. Likewise, in contrast with the Spartan meals, Aristotle's Politics favors Athenians' communal meals, where each one pays an equal share (idem, pp. 66, 67, 69). The "inconvenient discordance" between community and democracy is one that Plato envisioned well, and that many choose to ignore.

In between the Athenian school of freedom and easy living, and the military discipline of Sparta, many "moderns" plotted their visions of more democratic and civilized societies. Such was the case of Jacques Rousseau and Pierre Leroux, envisioning an Athenian Sparta. The foundation of such communities, Rancière tells us, will be fated to a schism. The voyage to Icaria, founded on the same principles as Laroux's socialism, was also split, as if the old Plato was getting his revenge (idem, p. 78). Plato's Republic gives a Community of Guardians, which has as a founding rule that all of what they have of their own is common. The government of lower by higher "ties non-belonging to equality" (idem, p. 73). The community of guardians means, in the first place, the rejection of possession, and affirms this rejection as the first step to equality. The original source of the above-mentioned communitarian miscalculation lies in a singular experience of transgression that in platonic terms means a revolt of *cardinal* against *ordinal* (ibid., p. 87).

As Rancière reviews, true equality, as friendship, contrasts with false equality, as the citizens that claim equality with scales, such as merchants (idem, 73). It represents a classic opposition between geometric and arithmetic equality, one that Plato was well aware of. The communities of labor and this other, of fraternity, have different logics. The social bond has inherent a form of organization based on an inegalitarian logic, while fraternity with its acts of wanting to speak and listening has a deep-rooted logic based on equality (idem, p. 88). According to Rancière, "a community of equals is an insubstantial community of individuals engaged in the ongoing creation of equality. Anything paraded under this banner is either a trick, a school or a military unit" (idem, p. 84).

The brooding of the community of equals is therefore deciphered. Bringing together the two orders of the social and labor amounts to "casting the imaginary veil of the One" over the schism that puts these apart (idem, p. 84). Still, the generosity of "being together" appeals to the true meaning of democracy, as the "space for egalitarian

practice in the making" (idem, p. 91). Equality and community are in a "never-ending settling of accounts" (idem, p. 65), as the community of equals can always be re-invented. Equality is, therefore, a matter of practice that comes to be through specific events. The re-inscription of such an "egalitarian signifier" can happen in reaction to any stimuli, as any apparently insignificant political measure, a word-out-of-place, a badly judged assertion (idem, p. 91). A beast is awakened, an old-Greek *apeiron*, as desire knows no determination and limits.

Discussion

For the worldwide community of Do-It-Yourself biology (DIYbio), a re-enactment of a community of equals is made (Rancière, 1995, p. 90). As with other denouncements of contemporary justice globalism, the technoscience is denounced as corrupt, the economy of research as elitist. In the DIYbio community laboratories the technology is up-scaled to be more inclusive. The identity of this community is close to the occupy movement, the cyberhackers and the open-source culture, that give references of egalitarian events in the past. Commons-based peer production, an alternative way of facing the economical market by open source technology is adopted in one of DIYbio main texts, namely the *Biocommons white paper*. There has been an inclusive way to approach the commons, devised to include not only "natural goods", such as air, water, and earth, but also entire organisms, biochemical processes, and other discoveries, and even man-made biological and biochemical concepts (Trojok, 2014). Biotechnology has, then, with DIYbio, a new political and economic vision based on equality.

In the community labs, a random play takes place. In the setting of up-cycled biotechnology equipment, anyone can enter. The political affirmation of equality makes the sharing between the "lab rats" and other people the central point. The global change of such meeting is stated by the DIYbio movement as one of devising new knowledge and new objects to solve global issue that enter the economical market. This is the most critical point following Rancière.

The post-May 1968 revolutionary energies had an impact on Rancière's thought. Many egalitarian signifiers came together in the demonstrations and group works, and yet, with time, were subdued by capitalism. Can the biohackers venture be more than just a new Icaria? Is DIYbio ill-fated because it affirms equality in the unequal world of work? The coming of Plato's revenge might be seen as a warning, as Rancière's narrative might be appreciated without the fatalist tone, but rather with a hopeful overture. To follow the "democratic passion" might put us at crossroads, just like Father Cabet settling Icaria or the biohackers Landrain and Trojok setting political overture inside Biotechnology. Equality, for Rancière, is put at play exactly in these moments, bringing people together to a mutual stand point. It means exactly this possibility of acknowledging the possible roads, and, this way, to be "prepared to be torn in all directions at once" (Rancière, 1995, p. 80).

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A Critique of Compound Presentism

Tabitha Taylor

Central European University, Budapest

Abstract

In this paper I argue that Barry Dainton's proposed Compound Presentist view in (Dainton, 2010) is unsuccessful in solving two of the problems that Presentism incurs; firstly, the relation/relata problem and secondly, the clash with Truthmaker Theory. I begin by outlining Presentism, and describing its advantages and disadvantages. I then describe Dainton's Compound Presentism in Section Two before critiquing it in Section Three. Finally, I conclude that Presentists must do more work to defend their view against the two problems I explore.

Keywords: compound presentism; time; truthmaker theory; extended present.

Section One: Presentism

Presentism, broadly construed, is the view that only the present exists. Future objects and events do not yet exist, and past objects and events no longer exist. This view is opposed most starkly to Four Dimensionalism, which is the view that all of time exists in a 4-dimensional block, i.e. all objects exist forever at the time segment in which they occur and always have done; there is no ontologically privileged time. Another view, not identical to Presentism, but closer to it, is growing block theory which holds that time grows, so that (typically) the past and the present exist, but not the future.[1]

A- and B-Theories of Time

Both Presentism and growing block theory are A-theories of time, whereas Four Dimensionalism is a B-theory of time. This terminology comes from McTaggart in his

most famous paper 'The Unreality of Time' (1908), where he argues that time is in fact unreal. Though not many philosophers have taken his arguments to be conclusive, the terminology he set out is useful when talking about time. An A-theory of time is that which carves time up into past, present, and future. Time ordered in such a way may be referred to as an A-series. On the other hand, a B-theory sees no such need for past, present, and future, instead terms like 'before', 'at the same time as', and 'after' represent the ordering of time in a B-series.

1.1 What's so good about Presentism?

Presentism has advantages over other theories of time and is often thought to be the common sense view.[2] It is more intuitive to think that only present objects and events exist. This is particularly salient when one compares Presentism to the Four Dimensionalist view where everything exists. Furthermore, it is more common to think that the future is open, and Presentism (as well as most forms of growing block theory) characterises this intuition.

Another advantage of Presentism is its simplicity which is manifested through, amongst other factors, its symmetry.[3] Unlike growing block theory, Presentism holds that the future is just as unreal as the past, therefore providing an ontological symmetry – a symmetry in the reality of different tenses of time. This can be thought of as advantageous since simplicity is a coveted theoretical virtue. [4] However, Four Dimensionalists can also claim the advantage of simplicity as compared with growing block theory. It might, however, be argued that Four Dimensionalism though sharing the value of simplicity in symmetry, is less ontologically parsimonious due to the sheer number of things in existence.

A unique advantage of Presentism, as an A-theory of time, is its compatibility with the emotional asymmetry people have towards the future and towards the past. This idea comes from Arthur N. Prior's 'Thank-goodness' argument (Prior, 1959), stating that the way in which we talk about past events and future events cannot be characterised by exclusively using B-theoretic language such as "x is earlier than this utterance" in place of A-theoretic language like "x is past". When we say, "thank goodness that headache is over" we are expressing relief for something being in the past, but before it has happened we dread it. Just saying that something is earlier than now does not capture this emotional reaction. Both the growing block theorist and the Four Dimensionalist have trouble explaining why we feel relief about the past, if all past events continue to exist. Why do we feel relieved when something is no longer present if it continues to exist in the past? And for the Four Dimensionalist, why do we feel differently about events that happen to be after 'now' i.e. future events and events that happen to be before 'now' i.e. past events? The Presentist does not have this problem with asymmetrical attitudes towards equally existent events, since attitudes towards the past and the future are attitudes towards non-existent things, so they cannot be inconsistent. Furthermore, for the Presentist, this relief about the past and anticipation

about the future makes sense due to the non-existence of both, coupled with the flow of time. Therefore, Presentism has a number of advantages over its rival theories of time.[5]

1.2 So why isn't everyone a Presentist?

Presentism also has some disadvantages. Here I mention three of them and then focus on the two which Compound Presentism endeavours to solve.

Clash with Special Relativity

The first is Presentism's clash with Einstein's Special Theory of Relativity first expounded in his famous 1905 paper (Zur Elektrodynamik bewegter Körper). Special Relativity is currently our best scientific theory of the relationship between space and time, according to which there is no absolute simultaneity. This implies that there is also no absolute present, which poses a problem for Presentism, discussed by Dainton (Time and Space, 2010, pp. 313-342).[6] I will not go into these considerations here, needless to say, there are attempts at uniting special relativity and Presentism.[7] Here I shall not be dealing with that issue, but shall instead focus on two problems addressed by Compound Presentism, namely the relations/relata problem and the clash with Truthmaker Theory.

Relations/Relata Problem

The second problem Presentists must face is what I call the relations/relata problem, which Dainton discusses in connection with causation and perception of change. In general, if there is to be a relationship between two events or states of being, both relata must exist. If only present objects and events exist, how can one say that *x* is the cause of *y* when *x* no longer exists? And how can we perceive the changing of an object if the past object no longer exists? The relations of causation and of change need their relata to exist in order for the relations to hold. Since Presentism has a very narrow selection of things that exist, the existence of relata, or lack thereof, poses a problem: for any cross-temporal relation, the Presentist can hold that only one of the relata exists, namely, the present one.

Clash with Truthmaker Theory

Related to this is the third problem for Presentism, the clash with Truthmaker Theory, also raised by Dainton in Chapter 6 of (Time and Space, 2010). Since past events no longer exist, there are no truthmakers for facts about the past. Some Presentists solve this problem simply by rejecting Truthmaker Theory,[8] but this solution is not widely favoured. Presentists who wish to maintain Truthmaker Theory must explain what it is that acts as a truthmaker for past events. One way to do this is to say that we have evidence in the present that can act as truthmakers for facts about the past. This can work in some cases, but then our evidence, or rather lack thereof, seems to limit not only our knowledge about the past, but also the actual events and objects of the past

itself. For example, we would have to say that only certain individual dinosaurs actually existed, those for which we still have fossils. This is far from ideal.

As I have shown, Presentism generally has its advantages and disadvantages, but what of more specific forms of Presentism? There are many different ways of forming a Presentist view, some of which are outlined in Dainton's Time and Space (2010, pp. 81-102). However, in this paper I focus on just one, Compound Presentism. Dainton suggests this is the most viable form of Presentism since it purports to solve both of the issues I will be focussing on in this paper, namely, the relation/relata problem and the clash with Truthmaker Theory.

Section Two: Compound Presentism

Two main features of Compound Presentism distinguish it from other types of presentism: these two features are the concept of the 'extended present' and that of 'becoming and anhiliation'.

The 'Extended Present'

For the compound Presentist, the 'extended present' is two coexistent time slices, and therefore, 'extended presents' can overlap. Dainton is inspired by William James' observation that '*the lingerings of the past [drop] slowly away, and the incomings of the new, are the germs of memory and expectation, the retrospective and the prospective sense of time*' (James, 1952).[9] Dainton recognises that one only needs two "*non-simultaneous very brief*" time slices in order to maintain this 'extended present' (Dainton, 2010, p. 95).

Becoming and Annihilation

The idea of becoming and annihilation can also be maintained using just two time slices in an 'extended present', though James seems to suggest many more such overlaps. As one time slice comes into existence, another is annihilated. This results in the overlapping of time slices mentioned above; there is simultaneous annihilation and becoming. This view can be represented pictorially as seen in figure 6.5 from (Dainton, 2010, p. 96).

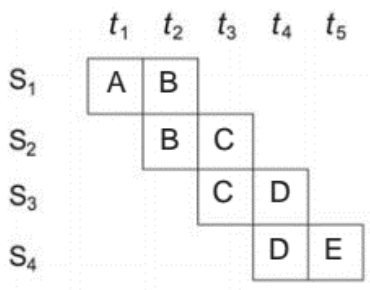

Figure 6.5 Compound Presentism. A doubly dynamic reality: the sum total of reality is not limited to a single present, and absolute becoming is matched by absolute annihilation.

Dainton's proposed Compound Presentism is the most viable of those versions of Presentism he discusses because it purports to solve the two main problems with Presentism outlined in Section One, namely the relations/relata problem and the clash with Truthmaker Theory.

2.1 What is an 'extended present'?

First of all, Dainton claims that the use of an 'extended present' allows the compound Presentist to avoid defining a moment. This is an advantage since if a moment is defined as instantaneous, then nothing can actually happen within it. But if a moment is defined as a finite length of time, then this length would have to be small because it may contain only simultaneous events, as opposed to a succession of events. It is unclear just how long a moment ought to be to include only simultaneous events. It might be argued that this concept also restricts what can happen in a moment; essentially nothing can happen in a moment because there is no possibility of change or movement if everything must be simultaneous. As may be clear, the Presentist usually finds it difficult to define a moment.

Dainton's Compound Presentism, on the other hand, ostensibly avoids having to do so. The 'extended present' allows for non-simultaneous events to be contained in the present, so a moment may be defined either as instantaneous or a finite length of time; both can be accommodated because the 'extended present' allows for change and movement to happen within the (extended) present moment (Dainton, 2010, p. 97). It is this idea that is in the background for the solution to the relations/relata problem.[10]

2.2 What's the use of an 'extended present'?

Let us examine how Compound Presentism explains the relation/relata problem with regards to causation. Simply put, the cause of an event can be said to exist in the earlier time slice of the extended present; the relata in a causal relationship are temporally distinct. For example, the cause of the window breaking is the brick hitting it. The brick hit the window in the earlier time slice of the extended present and the breaking of the window is in the later time slice of the extended present. In this way the cause coexists with the effect, so both relata for the causal relation exist.

Similarly, one can use this strategy to explain the relation/relata problem with regards to the perception of change. The earlier stage of the change, one relata, is in the earlier time slice and the later stage of change, the other relata, is in the later time slice of the 'extended present'. For example, when a dried camomile flower unfurls in hot water the change from dried closed flower to soaked unfurled flower can be perceived due to the fact that the dried closed flower is in the earlier time slice, and the soaked unfurled flower is in the later time slice of the 'extended present', and we can experience them both in the same moment.

2.3 How do we get facts about the past?

The second problem that Dainton's Compound Presentism solves is the clash with Truthmaker Theory. The 'extended present' is presumably not large enough to contain all the truthmakers for our facts about the past, so how does one maintain that facts about the past still hold? Dainton proposes the Factual Inheritance Principle which states that "*what is true (or factual) as of time* t *is also true (or factual) as of all other times that coexist with* t" (Dainton, 2010, p. 100). So facts are passed down through coexisting time slices, i.e. overlapping 'extended presents', although the actual truthmakers for these facts may no longer exist. For example, take the proposition *q*: 'Amelia sits in a blue chair at 5pm on the 6th of April 2015'. This proposition will remain true after 5pm on the 6th of April when the truthmaker no longer exists. Amelia's sitting in the blue chair is initially what makes the statement true and this truthmaker exists in the earlier time slice of the 'extended present'. But this earlier time slice coexists with the later time slice of the 'extended present'. So, according to the Factual Inheritance Principle, the truth of the proposition is passed through to this later time slice and indeed every subsequent time slice. So *q* remains true the next morning, for example, despite its truthmaker no longer existing. So again, facts about the past maintain their truth value despite their truthmakers no longer existing.

Thus it seems that Compound Presentism is the most viable version of Presentism given Dainton's proposed solutions to both the relation/relata problem and the clash with Truthmaker Theory. However, in the next section we shall see how in fact, Compound Presentism fails on both counts.

Section Three: Critique of Compound Presentism

There are two ways in which I will critique Compound Presentism. The first concerns the solution to the relation/relata problem and the concept of the 'extended present', specifically, the definition, or rather lack thereof, of the length of a time slice (sections 3.1 and 3.2). The second critique concerns the Factual Inheritance Principle and what it entails when facts about the future are considered (sections 3.3 – 3.8).

3.1 The 'extended present' won't get you out of being late for class

As discussed before, Dainton's 'extended present' allows for non-simultaneous events to coexist in the present and therefore purportedly avoids the relation/relata issues, whilst not committing to defining a moment as any given amount of time. But when we take a closer look, it is not clear that the problem really disappears.

First take the causation case. Here is another example of cause and effect: the cause of my being late for class is the fact that I woke up late. In this instance, the cause and the effect are at least forty-five minutes apart (since this is how long it takes to

travel to university); my waking up happens at 08.30, at which point I am not late for class since class starts at 9. However, I get to class at 09.15 at which time I *am* late for class. To maintain that the cause of my being late for class was my waking up late, one has to concede that the 'extended present' is at least forty-five minutes long so that my waking up can coexist with my walking in to class late in consecutive time slices.

This is problematic firstly because it is unintuitive to say that the present moment is forty-five minutes long. Secondly, this is one step towards the difficult proposition that the whole of the past can be named in the 'extended present' in order to account for the causes of all the current events. Admittedly, the 'late for class' example is quite contentious: one might argue that the cause of something must be an immediate cause (such as my opening the door to the class room fifteen minutes later than it should have been opened by me), as opposed to being the first in a string of events that led to an effect. Indeed, it may be argued that the first in any string of events can be traced right back to the beginning of time. This would be the way in which the whole of the past could be contained in the one 'extended present'.

Nonetheless, one could make the argument that any amount of time allowed between cause and effect might commit one to the slippery slope, that leads to the claim that the whole of the past can be just one time slice in the 'extended present'. The only way to avoid this is to specify an exact length, or at least a limit to the length, of a time slice. To do this non-arbitrarily is not easy, as we shall see next.

3.2 Insects perceive change too

When we look at the perception of change example, the time scale is much smaller; it takes just a few seconds for the unfurled flower to open up in the hot water. This is a more plausible length for an 'extended present', but then the question arises as to who it is that must be able to perceive the change. Some humans can detect change more sensitively than others, and then there are many different creatures one might take into account. Many creatures, particularly small insects, perceive the world as if it were in slow motion, compared to the way we see the world (Silverman, 2013). Thus, their perception of change would be much sharper and the length of the 'extended present' for them wouldn't need to be as large as for humans. It seems necessary, if there is to be an objective length of the 'extended present' (or any present for that matter), that it takes into account the different perceptions of different creatures. One might argue that it would be arbitrary, or at least anthropocentric, to choose humans as the creatures for which we define the objective length of a time slice. How the compound Presentist might define the length of a time slice non-arbitrarily is unclear, and particularly so if there is to be no bias towards human perception and experience.

Perhaps a solution to this problem would be to specify two lengths of time between which the length of a time slice might fall. One problem with this, however, would be that the objective length of the present might not be the same for each time

slice. Rather, it would merely be in the same range. The defining of the length of a time slice is a tricky task and one that the compound Presentist unfortunately cannot avoid.

3.3 How do we know Amelia really did have eggs for breakfast?

The second difficulty with Compound Presentism is that the Factual Inheritance Principle, as it stands, entails some unpalatable consequences for the Presentist. The problem is that calling things 'facts' doesn't change their need for a truthmaker; facts need the same support as past events. To see this take the proposition *p*: 'Amelia has eggs for breakfast on Tuesday the 7th of April 2015'. According to the Compound Presentist, this proposition is true because Amelia really did have eggs for breakfast on Tuesday the 7th of April 2015. This event is the truthmaker for *p*. Though the event itself is not in existence any longer, the event made it the case that one time slice contained a truthmaker for *p*. This event together with its existence within a time slice is counted as a fact. This fact is then passed down to the subsequent time slices in accordance with the Factual Inheritance Principle. There is something strange about the actual truthmaker being erased, but the 'fact' remaining.

As well as this strangeness, what do we say about before the 7th of April 2015? What was the truth value of *p* on, say, the 5th of April 2015? Since, according to all Presentists, the future does not exist, then the truth value of *p* must be metaphysically (as opposed to epistemologically) indeterminate. But if *p* is indeterminate on the 5th of April 2015, then according to the Factual Inheritance Principle, this fact is passed down not only to the relevant time slice where the truthmaker for *p* is actually taking place, but also to now. So if we take this route, the Factual Inheritance Principle implies that all propositions that concern the future are indeterminate and stay indeterminate even after the proposed event has taken place. This implies that all propositions are indeterminate since all propositions were about the future at some point. So, it seems we cannot take this route.

3.4 Are all propositions indeterminate, or does the future exist?

The alternative is to say that all propositions have a determinate truth value, i.e. are either true or false, and therefore that *p* is true on the 5th of April 2015, and indeed was always true, and will always be true.[11] But then one might wonder where the truthmaker for *p* came from before the relevant state of affairs took place, that is, before Amelia had her eggs. It can't be from the future since, for the Presentist, the future does not exist. Does the Compound Presentist have to commit to the existence of the future in order to avoid all propositions being indeterminate? It seems that either the Factual Inheritance Principle implies that all propositions are indeterminate, or that the future exists.

3.5 The future doesn't exist

One way in which the compound Presentist might avoid saying that the future must exist is to suggest that the Factual Inheritance Principle works backwards as well as forwards. In that case, the truthmaker for *p,* which does not yet exist, makes the time slice in which it actually occurs pass *back* the fact of the truth of *p* to times *before* the relevant state of affairs took place. However, this is rather unintuitive. Where states of affairs in the *past* can provide truthmakers for facts passed down, it is difficult to see how, if the states of affairs are yet to take place, they could act as truthmakers for facts in the past.

3.6 Is the present determined?

Another option the Compound Presentist might take is to admit determinism in the strongest sense. It could be the case that the truth value for any proposition is fixed, not by an existent state of affairs, but by the fact that the laws of nature are such that nothing that happens is random and there is only one way in which events can take place. In this way propositions about the future have a metaphysically determinate truth value, which in theory one could ascertain were all the relevant facts known.[12] This would mean that one doesn't need the Factual Inheritance Principle to work backwards as in the previous solution; instead facts are fixed by what has previously taken place.

3.7 One truthmaker to rule them all

The problem with this solution, aside from potential misgivings about the truth of determinism, is that it no longer adheres to Truthmaker Theory. In principle, if this strict sort of determinism is true, there need only be one truthmaker for all truths, the beginning of the universe. The beginning of the universe, according to this strict determinism, is the "truthmaker" for all facts and therefore passes down all facts to the present moment through the Factual Inheritance Principle.

However, it does not seem necessary to say that the truthmaker for *p* is anything other than the state of affairs where Amelia is eating eggs for breakfast on the 7th of April 2015. To deny this would be to deny, at least traditional Truthmaker Theory, which as I mentioned at the beginning, is not a popular stance. Furthermore, Dainton's solution to the clash between Presentism and Truthmaker Theory via his Compound Presentism implies that he also wants to maintain Truthmaker Theory. Therefore a commitment to strict determinism cannot help us here.

3. 8 Can a Presentist be a determinist?

Aside from this complication, determinism does not fare well with the openness of the future (the idea that there is more than one way in which events after now could take

place), which Presentists seem to want to hold true.[13] Strict determinism doesn't exactly assert the existence of the future, but it certainly asserts that the future is *not* open and for many this is enough for it to clash with arguably one of the key motivations for a Presentist view, i.e. characterising the intuition that there is more than one way events after now can take place, and that the future has not yet been written.

So it seems that the Factual Inheritance Principle either fails to solve the clash with Truthmaker Theory rendering all propositions indeterminate, or the compound Presentist must admit the existence of the future and cannot therefore call their view Presentism.

Conclusion

Compound Presentism is a problematic version of Presentism on two counts. Firstly, the solution offered to the problem of relation/relata does not work since in order to avoid saying that the whole of the past is contained in the earlier slice of the 'extended present', one must define the length of the 'extended present', which is difficult to do non-arbitrarily. Secondly, the Factual Inheritance Principle, which is used to solve the clash between Truthmaker Theory and Presentism, implies either that all propositions are indeterminate, or that the future must exist.

The failure of Compound Presentism in these respects does not bode well for Presentism in general, since Compound Presentism is supposed to solve at least some of the problems other Presentist views incur. However, there are other views that I have not considered here, so Presentism in general cannot be said to be defeated. Nonetheless, Compound Presentism is not the most viable version of Presentism, as Dainton suggested.[14]

Notes

[1] The direction in which time grows is difficult to fix non-arbitrarily; the growing block and the shrinking block have the same benefits when it comes to fixing facts. See Dainton (2010) for a discussion of these problems.

[2] For example, Dean Zimmerman argues for Presentism on the basis of its commonsensical nature, see (Zimmerman, 2008).

[3] Dainton alludes to this advantage in (Time and Space, 2010) having outlined the growing block theories of time and their downfalls owing to their ontological asymmetry.

[4] Quine is a proponent of simple theories, see for example, (Quine, 1963). See also (Baker, 2013).

[5] One might wonder why these experiences of time need be vindicated by metaphysical reality since, in terms of experiences, past events have ended and future ones have not begun. This is true, but the Presentist has a much easier time of explaining why our experience of time is this way than does the Four Dimensionalist or the growing block theorist. This is not to say that the Presentist's explanation is the only

plausible one, but it is certainly the most obvious, at least on the face of it. Nonetheless, this particular issue that Prior raised has been discussed in the literature, and the broader issue of time and experience is beyond the scope of this paper.

[6] See also (Balashov & Janssen, 2003) for a comprehensive account of Presentism's clash with Special Relativity, which also argues against the possibility of other interpretations of Special Relativity such as Craig has argued for (see below).

[7] William Lane Craig argues for a neo-Lorentzian interpretation of special relativity which reconciles special relativity with Presentism (Craig, 2000).

[8] See (Goff, 2010) and (Tallant, 2009)

[9] From (Dainton, 2010)

[10] This solution will be called into question since it seems to produce some problems as I shall explain in Section 3.

[11] Assuming truth values cannot change once assigned.

[12] Though in principle this seems possible cf. Pascal's Demon, it would include unfathomably detailed facts about a great number of things that might affect any given event. Indeed, some, such as Peter Van Inwagen (Inwagen, 1983), have raised doubts about whether this sort of thing is even possible given the supposed indeterminacy in quantum mechanics amongst other things (see also (Earman, 1986) for information on the truth or falsity of physical determinism).

[13] For example, Craig Bourne's book *A Future for Presentism* (Bourne, 2006) details the ways in which the Presentist can make sense of the future as indeterminate.

[14] I wish to thank my professor, Philip Goff, my Grandmother, Anne Darrell, and the anonymous editors of this journal for their illuminating comments on earlier versions of this paper.

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The Construction of the Truth-Teller in the Early Issues of the Philosophical Transactions from 1665: The Relationship between Author Functions and Enunciatory Power

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Martin Grünfeld

University College Dublin

Abstract

One astonishing feature characteristic of the early issues of the Philosophical Transactions from 1665 is that each text is not ascribed an author. In this paper, I study this remarkable feature by exploring the relationship between authors and texts through an intra-textual analysis of the various author functions in the texts in order to discuss how (and if) the ascription (or omission) of an author's name marks the truthfulness of a text. By analysing the various author functions, a complex network of positions of the knowing subjects emerges, which shows that the contributors are bestowed with different degrees of enunciatory power to speak the truth. The dispersion of the positions of the knowing subjects ranges from an elevated position of the truth-teller as a gentleman scientist to the dubious entertainer. While the truth-teller is endowed with the authority to speak the truth, the entertainer is in a subordinated position marked by epistemic relativity. Within this distribution of the positions of the knowing subjects, laypersons could contribute to knowledge production, yet they remained in a subordinated position. Thereby, I show how the speaking of truth was distributed unequally in the early issues of the Philosophical Transactions.

Keywords: author function; enunciatory power; knowing subjects; truth.

Introduction

In 1665, the *Philosophical Transactions* (*PTRS*) was founded by the *Royal Society* as one of the first academic journals in the West.[15] *PTRS* was not only one of the first journals, it was also one of the most influential journals in the history of Western science (Atkinson, 1999, 48). Thereby, the earliest issues of *PTRS* provide a privileged access point to the birth of a writing practice that has become widespread today, namely the scientific article. Thus, digging into the past of academic journal writing does not solely tell us something about the past, but re-opens practices of scientific writing that we take for granted, since it makes the historical background of our practices visible. However, certain features of the early issues of *PTRS* appear so alien that they are difficult to believe from a contemporary viewpoint. It is one such feature that I will analyse in this paper, namely the astonishing feature that each text[16] was not ascribed an author. This feature is almost unthinkable from a contemporary viewpoint given the importance of accumulation of scientific credit within the academic system. Yet in the earliest issues of *PTRS*, the author was not stabilized as a point of reference in the texts.

In this paper, I will explore the role of the author in the earliest issues of *PTRS* from an intra-textual perspective, and analyse the different ways in which the authors function in the texts. When I am studying the *author function*, I am particularly paying attention to the relationship between texts and authors in order to analyse how the ascription (or omission) of an author's name marks the truthfulness of a text and endows it with status.[17] I will specifically analyse the variation of ways in which the authors function, and discuss whether these different author functions can be seen as correlative to different positions of the knowing subjects, which are embedded with different enunciatory powers to speak the truth. Here *enunciatory power* refers to the level of authority and truthfulness that a given position is endowed with. This perspective is influenced by Foucault's work, especially his hypothesis that the speaking of truth is always distributed in various ways (1971, 10-11), and his claim that the author function does not affect all discourses in a constant way (1998, 212). From this perspective, I explore the relationship between the position of the authors in the texts and the enunciation of truth, in order to study the construction of the truth-teller in early scientific writing. By looking at the various author functions in relation to the dispersion of positions of the knowing subjects, I will show how the construction of the truth-teller entails an unequal distribution of enunciatory power to speak the truth, distinguishing virtuous gentlemen scientists from common people.

The exploration of the different author functions sets off from an analysis of selected texts from the first issues of *PTRS* from 1665. I have analysed the two earliest issues, which consists of 18 texts in total (including the "Epistle Dedicatory" and the "Introduction"). I have chosen to focus on a small selection of texts from the very first issues in order to explore the distribution of the different ways that the authors function qualitatively. These differences gradually disappear viewed from a broader historical perspective. Indeed, the author function becomes stabilized around 1675 in *PTRS*,

which has been pointed out by Bazerman (1988, chapter 3) and Atkinson (1999, 21) among others. Accordingly, by 1675 the texts were authored and presented in the original author's words. Thereby, what I am studying appears to be a momentary phenomenon, perhaps at a threshold to the author function we know today. Yet, this momentary phenomenon provides an interesting insight into not only the various ways in which the author functions, but also the positions of the knowing subjects and the construction of the truth-teller.

The historical variations of the author function in scientific writing have been studied before. According to Foucault, in the Middle ages, it was indispensable for a scientific text to be attributed to an author, because the text derived its scientific value from its author as an index of its truthfulness, but since the 17th century this principle began its demise (1971, 29). However, given that the author function in *PTRS* is transformed from the multiplicity of presences and absences that I am studying to a stable index for the truthfulness around 1675, perhaps the multiplicity that I am studying is not a sign of the demise of the author, but rather part of the process of stabilization. This points in the opposite direction of Foucault's claim. Moreover, Atkinson has recently argued that it is not until the 19th and 20th centuries that scientific writing moves away from an author-centred basis to an object-centred orientation (1999, xxviii). What he means by this is that scientific texts grow more informational and impersonal. Through a historical analysis, Atkinson shows how the demise of the author in scientific writing occurs much later than Foucault claimed. Nevertheless, as I will show, the question of the demise of the author is complicated further by the heterogeneity of ways in which the author functions in the early issues of *PTRS*.

What I show is that not only is the role of the author in scientific writing historically variable, it is not necessarily stable within a scientific journal at a specific point in time. This has already been pointed out by Valle, who shows how the position of the author is uncertain in the early issues of *PTRS* (Valle, 2006). According to Valle, there does not seem to be a particular reason for the various positions of the authors (Valle, 2006). However, what I discuss here is whether and how the author function is correlative to various positions of the knowing subject invested with different enunciatory powers. Thereby, I add a nuance to the ongoing discussion of the historical role of the author in scientific writing, particularly how the author function may be related to truthfulness.

The Institutional Framework and the Ideal of the Knowing Subject

Before I move to the analysis of author functions, I will begin by focussing on the two opening texts in the first issue of *PTRS*, namely the "Epistle Dedicatory" and the "Introduction". Taken together, these two texts inaugurate the journal.[18] Interestingly they provide an insight into the ideal virtues and roles of the contributors qua knowing subjects within an institutionalized production of knowledge. I begin by focussing on these two texts in order to give a glimpse of the institutional framework and ideals

within which *PTRS* is operating, particularly in order to be able to analyse to what extent the ideal of a knowing subject is embodied in the various texts.

PTRS was established by the *Royal Society*, which had ties to the political power at the time. This connection is explicated in the "Epistle Dedicatory" written by the first editor, Oldenburg. The "Epistle Dedicatory" is addressed to the *Royal Society*, but the dedication is primarily directed to the King. In the text, the scientific endeavours are described as working under the King's approval (RSL, 1665b). However, not only is *PTRS* subordinated to the King, it is inscribed in a threefold framework of authority:

> The Great God prosper You in the Noble Engagement of Dispersing the true Lustre of his Glorious Works, and the Happy Inventions of obliging Men all over the World, to the General Benefit of Mankind: so wishes with real Affections,
>
> Your humble and obedient Servant
>
> Henry Oldenburg
>
> (RSL, 1665b)

In these final lines of the "Epistle Dedicatory", the threefold framework is visible in the dedication to the King and his noble engagement in dispersing the true brilliance of the work of the great God, which benefits all of humanity. Thereby the contributors are inscribed in a subordinated relationship to God, the King, and universal humanity as humble servants attempting to reveal the brilliance of God's creation. Indeed, when Oldenburg declares himself as a "humble and obedient Servant" it appears as if the scientific endeavours are subordinated to these external forms of power. However, it is precisely by being closely tied to religious and political powers that *PTRS* is capable of circulating knowledge freely without censorship, and corresponding with citizens from other countries (Atkinson, 1999, 16).

Within this framework, Oldenburg functioned as the first editor of the journal and controlled what was published (RSL, 1781). In 1665 at a meeting in the council of the *Royal Society*, it was decided that the *PTRS* should be composed by Oldenburg (Birch, 1968, vol. 2:18). *PTRS* was Oldenburg's personal enterprise and he chose and edited what was published (Moessner, 2007, 208). The first volumes mainly contained Oldenburg's versions of the scientific news (Kronick, 1962, 75f; Iliffe, 1995, 173; Bazerman, 1988, 129-133). Indeed, as Bazerman has pointed out: "All was filtered through his voice" (1988, 131). Oldenburg was never pressurized from the outside to publish a particular text; he functioned as a sovereign editor that could choose what to publish, what to extract or rewrite, and what to omit at will (Moessner, 2007, 209). Thus, *PTRS* was invested with power to publish and circulate knowledge freely, and it was indeed Oldenburg who had the sovereign power over the content of the journal. However, while Oldenburg assumed the position of the sovereign editor that controlled the content, the contributors were also subordinated to another internal element, namely

an ideal of the knowing subject. The production of knowledge was subordinated to a specific ideal of the knowing subjects as virtuous tellers of truth, which is explicitly expressed in the "Introduction" to the first issue:

> Whereas there is nothing more necessary for promoting the improvement of Philosophical Matters, than the communicating of such, as apply their Studies and Endeavours that way, such things are discovered or put in practice by others; it is therefore thought fit to employ the *Press*, as the most proper way to gratifie those, whose engagement in such studies, and delight in the advancement of Learning and profitable Discoveries, doth entitle them to the knowledge of what this Kingdom, or other parts of the World, do, from time to time, afford, as well of the progress of the Studies, Labours, and attempts of the Curious and learned in things of this kind, as of their compleat Discoveries and performances: To the end, that such Productions being clearly and truly communicated, desires after solid and usefull knowledge may be further entertained, ingenious Endeavours and Undertakings cherished, and those, addicted to and conversant in such matters, may be invited and encouraged to search, try, and find out new things, impart their knowledge to one another, and contribute what they can to the Grand design of improving Natural knowledge, and perfecting all *Philosophical Arts*, and *Sciences*. All for the Glory of God, the Honour and Advantage of these Kingdoms, and the Universal Good of Mankind. (RSL, 1665c)

In this quotation, the undertakings are placed as serving God, the nations, and universal mankind. However, what is of particular interest here is the explication of an ideal knowing subject as a curious, ingenious, and learned subject, who is delighted in the advancement of learning and even addicted to and desiring solid, useful knowledge.[19] This image of the knowing subject is also visible in the front matter, where *PTRS* is described as "giving some accompt of the present undertakings, studies, and labours of the ingenious" (RSL, 1665a). Thereby a particular formation of the *will to knowledge* is visible here, which imposes a specific position on the knowing subject, who must search for knowledge for the sake of knowledge and for the benefit of the greater good for humanity.[20] Social, political, and economic interests are absent from this ideal, which finds resonance in the contemporary gentleman culture. At the time of the emergence of *PTRS*, British science was based on the gentleman as a social category, characterized by disinterestedness and moral rectitude (Atkinson, 1999; Daston, 1991; Shapin, 1995). As Shapin has shown, there was a relationship between the idea of the gentleman and the idea of truth telling (1995, xxi). In particular, the gentleman was marked by social, political, and economic freedom, which positioned him as an autonomous, disinterested, and honourable teller of truth (Ibid., 83-4). Thereby resting on the conventional image of the gentleman, a whole social system was put to work as a way to powerfully speak the truth (Atkinson, 1999, xxvii).

In his description of the contributors as dedicated, desiring, curious, even addicted to knowledge, Oldenburg reveals an ideal of the knowing subject pursuing knowledge for the sake of knowledge. The authority of the contributors is based on this ideal of the

knowing subject, which the contributors must embody as virtuous and honest gentlemen, as well as on the institutional framework within which the knowing subjects are placed. Yet when the various texts in the early issues of *PTRS* are taken into consideration, a broader dispersion of positions of the knowing subjects appears, ranging from a virtuous teller of truth resembling the ideal of the truth-teller present in the "Introduction", to a subordinated entertainer. In the following sections, I will discuss how these positions are related to the various author functions.

Author Functions

Let me begin with a few brief remarks on the characteristics of the texts that I am analysing. *PTRS* emerged at a time, when the main channels of scientific communication in written form were books and private letters. The production of books was time-consuming and expensive, and books were only published in small numbers, thereby rendering wider circulation difficult (Moessner, 2007, 206). Meanwhile, the private letter was the most convenient form of circulation of scientific knowledge (Kronick, 1962, 50-9). Yet, this form of circulation was slow and vulnerable, and made it inconvenient to share ideas with many fellow researchers (Moessner, 2007, 206 & 220). Within this void, *PTRS* emerged as a medium for sharing scientific ideas, and it greatly stimulated the growth of adepts, providing an excellent means for exchanging views (Gotti, 2014). The journal had four main functions: to report new findings, to establish a forum for debate, to function as scientific newsletters, and to review new scientific literature (Valle, 2006). The first issues are characterized by a multiplicity of accounts, book reviews, narratives, extracts of letters, and an obituary. The texts are relatively short (1-5 pages) and a mixture of different genres. It is generally possible to distinguish between accounts and reviews written in the third person, and letters written in the first person. The difference between the use of a third person and a first person is related to the various ways in which the authors are present or absent in the texts.

If we direct our attention to the position of the author in the texts, something strange appears: there is no explicit author ascribed to each text. Instead, there is a variety of author functions, which suggests that the author is not stabilized as a reference point for the truthfulness of a text, but at the same time, the author has not disappeared altogether. As Valle has pointed out, the textual practices in the early issues of *PTRS* show little concern with identifying the authorial voice (Valle, 2006). The various author functions can roughly be divided into three categories:

1) The name of the author is presented in the title
2) The author is anonymous, while the name of the observer is presented in the text
3) No name is attributed to the text, but can in some cases be inferred from other texts

This is a schematic overview and within each category, there are internal variations. Nonetheless, the majority of the texts analysed can be placed within one of these categories. While this distinction might seem somewhat arbitrary, it will reveal a range of different positions of the knowing subjects, invested with different levels of enunciatory power. Here are some examples of the first category, where the name of the author figures in the title:

> An Extract of a Letter, Containing some Observations made in the ordering of Silk-worms, communicated by that known Vertuoso, Mr. Dudley Palmer, from the ingenious Mr. Edward Digges. (RSL, 1665r)
>
> Extract of a Letter, Lately Written from Venice, by the Learned Doctor Walter Pope, to the Reverend Dean of Rippon, Doctor John Wilkins, Concerning the Mines of Mercury in Friuli; And a Way of Producing Wind by the Fall of Water. (RSL, 1665q)

To begin with, it is worth noticing the ascription of personal characteristics in the titles in which the contributors are described as "ingenious" and "learned". These characteristics resemble the general properties of the ideal knowing subject, and through the ascription of these characteristics to particular contributors, the contributors are marked as embodying the ideal. This emphasis on their personal characteristics bestows them with powers to enunciate knowledge and establishes a relation between the author and the truthfulness of the text. However, the two titles above also show how proximity to the *Royal Society* has important implications for the position from which one can speak. Pope was himself a member of the *Royal Society*, while Digges, who was the colonial governor in Virginia, knew Palmer, who was a member of the *Royal Society* and functioned as an intermediary link. As such, Pope is in a position from which authority and truthfulness is automatically ascribed through the personal pronoun "I", while Digges is in a mixed position in which he is relying on the mediation of his observations, but is still ascribed authority to speak truthfully. This runs parallel with Valle's claim that members of the *Royal Society* are more often allowed to speak in their own voice (Valle, 2006). In general, the first category is characterized by the constitution of a knowing subject, who is ascribed authority to enunciate truth.

If we compare the attribution of authority to the author with the second category, where the observer is mentioned by name in the text, we find a similar ascription of authority through personal characteristics:

> There was lately sent to one of the *Secretaires* of the *Royal Society* a packet, containing some Copies of a Printed Paper, Entituled, The *Ephemerides* of the *Comet*, made by the same Person, that sent it, Called *Monsieur Auzout*, a *French* Gentleman of no ordinary Merit and Learning. (RSL, 1665f)

Here the contributor is proclaimed to be "a *French* Gentleman of no ordinary Merit and Learning", and later in the text, he is even described as a "Philosophical Prophet".

Consequently, the contributor, Auzout, who was a French natural philosopher and member of the Montmor Academy, is ascribed authority to enunciate his calculations and observations truthfully. Yet, he is no longer the author of the actual text, but the person accounting for his calculations and observations, and recounting them for the editor, while the text is written in third person by an anonymous author. The actual writer (and in some cases translator) of these third person accounts was Oldenburg (Banks 2010, 3; Atkinson 1999, 20). This is characteristic of the second category of texts: the observer is not the author of the actual text. This means that the author is effaced, while the observer is ascribed authority. In some cases, the observer is even ascribed the authority to verify his own calculations and observations through his status as virtuous and honest, e.g., "he assureth, that he hath not changed the least number in his Calculations" (RSL, 1665f). In the first category, we see observations in some cases are affirmed automatically through the presence of the author, which secures the truthfulness of the text. Conversely, in the second category, authority is displaced to the position of the observer, who is praised and can affirm the truthfulness of his observations.

So far, the positions of the knowing subjects in categories 1 and 2 resembled the overall ideal of the knowing subject presented in the "Introduction". However, if we compare the two first categories with the third category, we find larger variations in the positions ascribed to the knowing subjects. In the third category, the authority ascribed to the name of either author or observer has disappeared. However, this is a complex and heterogeneous category, which can be divided into (at least) two subcategories, namely:

a) Anonymous first person letters.

b) Anonymous third person accounts with descriptions of the contributor.

An example of subcategory a) is a letter from Rome, written in the first person using explicitly the personal pronoun "I", without the name of the author being presented:

> Extract of a Letter, lately written from Rome, touching the late Comet, and a New one. I cannot enough wonder at the strange agreement of the thoughts of that acute French Gentleman, Monsieur *Auzout*, in the *Hypothesis* of the Comets motion, with mine; and particularly, at that of the *tables*. (RSL, 1665n)

The actual author is only indirectly available, since he is revealed to be Cassini in a subsequent text (RSL, 1665o), which is a response to the letter. Furthermore, Cassini, who was an Italian astronomer, is not praised anywhere, which marks a difference from categories 1 and 2, where the positive attributes of a contributor qua knowing subject were emphasized explicitly. In contrast to category 1 and 2, it appears as if the contributor as a point of reference for the truthfulness has been effaced. However, if we look at the following letter, which is also written anonymously, but where the author is indirectly available, it is revealed that the author is no other than the aforementioned and highly praised Auzout. Thereby, there is a tension between the explicit praising of the contributor in one text and his anonymity in another text.[21] Given the earlier praise of Auzout, his anonymity cannot be understood as signifying a lower degree of

truthfulness or scientific significance in comparison to the other categories. Nevertheless, given the absence of a positive constitution of the knowing subject, which is regularly used in the first two categories, this category is markedly different and does not entail the same level of authority.[22]

While the anonymous letters of category 3a still contained indirect references to their authors, subcategory 3b is characterized by being third person accounts without any references to the name of the contributor. However, within texts from category 3b, there are some descriptions of the contributors e.g.:

> Here follows a Relation, somewhat more divertising than the precedent Accounts; which is about the new *Whale fishing* in the *West Indies* about the *Bermudas*, as it was delivered by an understanding and hardy Sea-man, who affirmed he had been at the killing work himself. (RSL, 1665k)

What is worth noticing in this excerpt is the way the observer is described as an "understanding and hardy Sea-man". In contrast to the ideal of the knowing subject as ingenious and learned, here is an account produced by a hardy seaman, who lacks the autonomy ascribed to the gentleman. Even though the seaman is taking part in the transactions contributing with what he can to the general understanding of nature, and may even incarnate the ideal of curiosity, nonetheless, he remains in a subordinated position in comparison to the other contributors. This can be seen by the demand that he affirms "he had been at the killing work himself". In contrast to the gentleman scientist, who is tacitly trusted to be a first-hand observer, the seaman must explicitly affirm that he is trustworthy and not only spreading rumours. The subordinate position of the anonymous account of the seaman is also emphasized by the remark that it is "divertising", thereby taken as entertainment. Here a difference between enunciatory powers ascribed to the various contributors appears, which marks a difference between serious scientific work and entertaining observations with epistemic relativity.

The Dispersion of the Enunciatory Powers of the Knowing Subjects

The analysis of the author functions revealed a differentiation of positions of the knowing subjects that are infused with various enunciatory powers. Thus, rather than the demise of the author as an index for the truthfulness, authority is ascribed in various ways and in varying degrees. In this way, enunciatory powers and truthfulness, as well as general perceptual competences, are distributed unequally.[23] However, it is important not to take the author functions as directly correlative with the various enunciatory powers of the knowing subjects. For example, even though the texts written within category 2 are predominantly characterized by the displacement of authority from the

author to the observer, who is praised as a knowing subject and endowed with enunciatory powers to speak the truth, there is an important exception:

> The *First* regardeth the excellency of the long *Telescopes*, made by the said *Campani*, who pretends to have found a way to work great *Optick Glasses* with a Turne-tool, without any Mould; And whereas hitherto it hath been found by Experience, that *small* Glasses are in proportion better to see with, upon the earth than great ones; that Author affirms, that his are equally good for the Earth, and for making Observations in the Heavens. (RSL, 1665d)

In this quotation, an epistemic relativity appears to be inserted with the use of the word "pretends". Nevertheless, the use of "pretends" is in and of itself not enough to mark the insertion of epistemic relativity. On the contrary, in 1665 the meaning of "pretends" was more neutral than today, meaning "to assert" rather than "to put forward a false claim". Indeed, because the author is allowed to affirm his claims, the neutral meaning gains further plausibility. However, in the text, Campani, who was an Italian telescope maker, is not explicitly praised. Meanwhile, in the same text Huygens, who was a Dutch mathematician and member of the Montmor academy, is mentioned as a "worthy Gentleman". As a result, inequality between Campani and Huygens is established. This example shows how an internal differentiation is at work between virtuous scientists of great merit, and dubious observers, which affects the truthfulness of the texts or in the above case, the different claims within a text.[24] Thus, the differentiation between truth-tellers and dubious observers occurs at various levels, both internally in the texts and inter-textually. Thereby contributors of great merit and virtue, and dubious observers are differentiated, and the speaking of truth is distributed unequally. The genuine truth-teller is constructed through a distinction from dubious knowledge producers. It was Oldenburg, from his position as editor, who ascribed authority to certain contributors, and decided whether credit should be conferred through naming (see also Valle, 2006 and Iliffe, 1995). Indeed, through the naming processes, and particularly the characteristics given by him, to specify the attributes of a person, Oldenburg endows the actual contributors with different enunciatory powers.

The dispersion of the positions of the knowing subjects distributes different levels of truthfulness, ranging from an elevated position of the ingenious and learned gentleman scientist, to a subordinated position of the dubious observer and/or entertainer. However, while these positions cannot be seen as strictly correlative to the different author functions, the elevated position of truth-teller is predominantly present within the author functions found in categories 1 and 2. In categories 1 and 2, the knowing subject is almost exclusively described positively as "ingenious", "noble", "knowing", "curious", "learned", "serious", "gentleman", etc. These characteristics create an image of a virtuous teller of truth that, besides intelligence, also possesses attributes such as autonomy, honesty, and seriousness, which collectively mould the readers' assessment of the text.

In the elevated position, the knowing subject functions as an authority for telling the truth. This entails that not everybody is allowed to speak the truth, they need to have

certain positive personal attributes and merits. Indeed, the ascription of virtues such as honesty and nobility to the knowing subject grounds the truth of the observations. Honesty plays a crucial role within this system of knowledge production, because the knowledge produced is almost exclusively based on private observations.[25] What this entails is that the editor has very little chance of checking the observations before publishing the texts. As Daston has pointed out, modern science depended on the rhetorical technology of trust and proximity (1991). Thus, being a gentleman was the most efficient way to validate one's own science (Atkinson, 1999, xxvii).

The elevated position of the knowing subject as a virtuous teller of truth can be contrasted with the positions of the dubious observers and entertainers. Besides the above example with Campani, another example of a subordinated position is the seaman recounting anonymously, where his recount is characterized as "divertising", which indicates that his recount is printed because of its entertaining virtues rather than its scientific significance. Furthermore, it is important to notice a specific characteristic of category 3b, namely that while the observers are anonymous and not praised as knowing subjects, their professions are explicated (e.g., as a seaman and as a physician) (See RSL, 1665i and RSL, 1665j). As such, attention is drawn to the knowing subject as a layperson, and the reliability of his testimony is connected to his specific position in society. This position can be contrasted with the autonomy of the gentleman as a genuine disinterested knowledge producer. This point resonates with Shapin's work, particularly his description of how common people were treated as unreliable compared to gentlemen, thus, reliability was ascribed differently to different people (1995, 78).

Now a dynamic relationship between the editor Oldenburg and the contributors is visible: while the space for speaking the truth is distributed unequally, consequently constraining the contributors, the contributors are simultaneously bestowed with various degrees of enunciatory power to speak the truth. Concurrently, the contributors are endowed with powers to produce knowledge and constrained because they are measured up against a restricting ideal of a knowing subject as a virtuous teller of truth.

Conclusion

Through an exploration of the early issues of *PTRS*, I have shown that various author functions are at work, and that the contributors are bestowed with different degrees of enunciatory power to speak the truth.

In my analysis, a complex network of positions of the knowing subjects emerged. In some texts, namely category 1, the author functions as an index for truthfulness. In other texts, the author is effaced, while the authority of the author has been displaced to the position of the observer (category 2). In these cases, the contributors are predominantly constituted as truth-tellers, and described in positive terms as curious, learned, ingenious, addicted to the advancement of learning, and searching for knowledge for the sake of the greater good for humanity. This ideal of the truth-teller is visible in its pure form in Oldenburg's "Introduction" and it reappears in some of the texts in categories 1

and 2. Yet, there are other texts in which the contributors are anonymous and not ascribed positive characteristics (category 3a), and in some texts the observers are presented as dubious, marked by certain limitations and epistemic relativity (category 3b). However, even though there is a connection between the different author functions and the enunciatory powers of the contributors, still, there is no direct correlation between a specific author function and a given position of the knowing subject. Thereby, a complex mixture of author functions becomes visible, which shows that neither has the author disappeared as an index for truthfulness, nor is the ascription of an author the only way to establish the truthfulness of a text.

The dispersion of the positions of the knowing subjects ranges from the elevated position of the truth-teller as a virtuous and ingenious gentleman scientist to the subordinated dubious entertainer. While the truth-teller is constructed as the reference point for the truthfulness of his own observations, through virtues such as honesty and disinterestedness, establishing the authority to speak the truth, the entertainer is characterized by being a layperson, thereby implicitly having specific interests, which may influence his observations. Thus, the speaking of truth is distributed unequally. From his position as a sovereign editor, Oldenburg orchestrates this hierarchy of voices. While the truth-teller is endowed with the authority to speak the truth, the entertainer finds himself in a constrained position marked by epistemic relativity. The dispersion of the positions of the knowing subjects allows laypersons to contribute to the enterprise of expanding knowledge, while they remain in a subordinated position. Consequently, lesser men could also produce knowledge, but remained lesser men.

Notes

[15] A few months before the publication of the *Philosophical Transactions*, another academic journal emerged in France, namely the *Journal des sçavans*.

[16] I have chosen to designate the texts in *PTRS* as *texts*, rather than as *articles* or *papers*, because they are very different from what we understand by the terms *articles* and *papers* today. Indeed, some of the early texts in *PTRS* resemble news articles of the day, while others are letters of correspondence.

[17] For a general discussion of the *author function,* see Foucault (1998, 205 & 211-216).

[18] Perhaps these texts can be seen as establishing what Foucault describes as a ritual control of speakers within a discourse (1971, 41).

[19] In RSL, 1665m, which is an obituary, we find further formulations that indicate the ideal of the knowing subject as not only a genius with extraordinary merit, but also with moral virtues of politeness.

[20] This runs parallel with Foucault's analysis of the *will to knowledge* in *L'ordre du discours* (see Foucault, 1971).

[21] This contrast can be seen by comparing RSL, 1665f and RSL, 1665o.

[22] Here it is also worth noticing that the letters analysed are from Rome and Paris, because it entails that they are translations made by Oldenburg (see also Moessner, 2007, 218). This changes the appearance of the "I", since it is not a direct authorial voice, but rather a translated, paraphrased, and extracted voice.

[23] For a detailed discussion of the distribution of perceptual competence, see Shapin (1995, 75). There are also some hidden moral implications. Influenced by Christianity, only the morally behaving "man of science" can see the truth and be trusted to communicate it (see Shapin, 2008).

[24] This differentiation can also be seen in RSL, 1665h and RSL, 1665p. For example in RSL, 1665h the noble Boyle is distinguished from an anonymous butcher.

[25] This problem is at the core of the controversy between Boyle and Hobbes. While Hobbes advocated for mathematics as an effective science, Boyle and his co-operators established the laboratory with passive onlookers as an attempt to develop an experimental regime of knowledge production that was no longer based on private observations (Shapin and Schaffer, 2011).

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Never modern, never human, always post-Anthropocene?

Latour, Haraway and Colebrook: assembling conversations (as) becoming knowledge

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Karijn van den Berg

Utrecht University

Abstract

This article engages with Feminist Science Studies and knowledge production, and specifically focuses on different collective engagements by the authors Bruno Latour, Donna Haraway and Claire Colebrook. How do they use the word "we", and who are they referring to, as they go into notions of modernity, humanity and the Anthropocene? What are the consequences of articulating a "we" when talking about topics such as the current geo-political situation? What collectivities and exclusions are created? Who has the power to define this "we" and who can talk for, about, or through it? This article positions the different scholars as in conversation, in exploring what kind of "we" they are talking about in their texts and how this "we" is constituted. As such it aims to demonstrate that this "we" is not always taken for granted and does not necessarily assume a unified human species as opposed to all other forms of being and mattering.

Key-words: Anthropocene; Discourse; Feminist Science Studies; Collective Engagements

> As an assemblage, a book has only itself, in connection with other assemblages and in relation to other bodies without organs. We will never ask what a book means, as signified or signifier; we will not look for anything to understand in it. We will ask what it functions with, in connection with what other things it does or does not transmit intensities, in which other multiplicities its own are inserted and metamorphosed, and with what bodies without organs it makes its own converge.
>
> – Deleuze and Guattari, 1987 – *A Thousand Plateaus*

This text aligns three authors and their texts with comparable titles: Bruno Latour who wrote the book *We Have Never Been Modern*, Donna Haraway who named part I of her book *When Species Meet,* "We have never been human", and Claire Colebrook who in April 2014 gave a lecture called "We Have Always Been Post-Anthropocene" at a conference about Anthropocene feminism.

Alliances have been made between Latour and Haraway before, by many, and elaborately.[26] Since both authors have written on the process of science and knowledge production – specifically Latour's *Science in Action* (1987) and Haraway's "Situated Knowledges: The science question in feminism and the privilege of partial perspective" (1988) reflect on this – most of the comparative analyses have focussed on those aspects. Such analyses have been helpful for feminist theory in order to think about questions of 'truth', 'objectivity' and power, which are involved in the process of knowledge production. However, this article aims to highlight a different aspect: not the process of knowledge production per se, but rather how different authors can be brought together as in conversation. Bringing Claire Colebrook in conversation with Latour and Haraway will help to contextualize their work in current discussions on the Anthropocene and link it to concepts of modernity and humanity, thereby calling these concepts into question and decentralizing the position of the human modern subject. As such this conversation can bring feminist analysis further forward in thinking about these issues and concepts.

This article will thus not attempt to reiterate or take up other analyses, and will not read the actual texts together as such[27], but rather will argue for an alignment as conversation between the authors through their respective texts and investigate how they 'sound through' in each other. It will concentrate on *how* certain ideas sound through and are brought across in the different texts, while taking some corresponding concepts, such as the conceptualization of nature(-)cultures, into account.

Resulting from their respective and responsive titles the following questions arose: Who is the "we" the authors are talking about in their titles? How do they respond to each other? And, if they aim to think beyond the human realm, are they not still very much focussed on a human audience when talking of a common "we"? Who has the power to define this "we" and who can talk for/about/through it? This article aims to position the different scholars as in conversation, in exploring what kind of "we" they are talking about in their texts and how this "we" is constituted.

1. Who are "we"?

Before starting the actual analysis of this article, I will first take a brief moment to reflect upon the difficulties, as well as the implications, that exist in talking of and exploring the use of "we". Throughout this text, I might talk in terms of "we" as well, but whom do I refer to when I do so? Do I mean to implicate that I am speaking for all feminist scholars when I say "we", because I conduct my analysis from a feminist theoretical perspective? I hope not. Rather, whenever I speak of "we", I will do so by

putting it in between quotation marks, to indicate that the "we" that I am referring to is not a unified grouping that exists in 'reality' (which would indicate generalizing assumptions about who does and who does not belong to this grouping), but rather existing in me and my reader in response-able[28] conversation.

As said, the respective titles of the different texts by Latour, Haraway and Colebrook seem to be similar to a great extent and therefore I will try to read them as forming a conversation here. Helping me in the direction of reading the authors together, I will use the Deleuzian notion of assemblage as a framework to think in terms of a relational engagement and entanglement of these different texts.

In their introduction to *A Thousand Plateaus*, Deleuze and Guattari (1978, pp. 3-4) introduce this notion of assemblage precisely in relation to the textual matter of books:

> Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or, on contrary, of acceleration and rupture. All this, lines and measurable speeds, constitutes an assemblage. A book is an assemblage of this kind, and as such is unattributable. It is a multiplicity – but we don't know yet what the multiple entails when it is no longer attributed, that is, after it has been elevated to the status of a substantive.

The notion of assemblage here refers to the increase of different dimensions and is thus inherently multiple. It contains the possibility of different interpretations, without indicating or pinning down what such interpretations might look like. Along the same lines, this article is not an attempt to detect some inherent essence of the texts, but rather show that bringing these texts together in conversation not only can change their meaning, but also expand their connections with other texts and thereby is able to thicken their different dimensions and readings. The notion of assemblage can thus productively be used to take the inter-textual level of texts into account, as well as bring different texts together and enhance productive new meanings in such an engagement. Therefore, this practice provides innovative ways to include the importance of the materiality of texts, as well as to provoke different modes of thinking in terms of "we".

The titles of the three different texts that this article discusses seem to be, besides being merely titles, clear statements in themselves: respectively that "we" have never been modern (Latour), have never been human (Haraway), or instead have always been post-Anthropocene (Colebrook). Who do the authors talk about when they refer to "we", and how do they talk about it? How is this "we" constituted? I like to look into these questions by reading the texts in a comparative way.

Due to limited space I will not discuss and read their complete (and complex) works together as such, but rather will explicitly focus on the "we" in their works with corresponding titles: Latour's *We Have Never Been Modern* (1993), Haraway's "We Have Never Been Human" (part of her book *When Species Meet*, 2008) and Colebrook's conference talk "We Have Always Been Post-Anthropocene" (2014). Haraway's text explicitly takes up Latour's book and shifts from modernity to

humanity, while Colebrook's talk seems to link the two concepts, while turning the "never" into an "always".

The analysis of this paper will focus on these works specifically because they all refer to a "we" in relation to contemporary modes of existence concerning humanity, modernity and the current epoch called the Anthropocene. Highlighting this use of "we" in this context is especially relevant as using the word "we" always carries certain power implications and categorizations with it. As such, exploring their use of "we" in their different works can bring such power implications to the fore and possibly open this "we" up, in order to critique the limits of remaining focussed on an anthropocentric "we". As these different usages of "we" can have implicit consequences, this paper specifically explores: who do Latour, Haraway and Colebrook address and whom do they speak *for*? In whose name do they speak? And what kind of power implications does this entail?

1.1. Latour: "we have never been modern"

In his book *We Have Never Been Modern* (1993) Latour examines the way science is conducted and knowledge is gathered in the discipline of anthropology. He links anthropology to the way modernity is presented or conceived of. Central in his book is his conception of the Great Divide: according to him there are two main divides through which Western humanity has come to think of itself in relation to others. These divides can be distinguished as one being internal and the other as being external: the internal divide refers to the distinction that "we" make between nature and culture, and the second, external divide refers to the distinction that "we" make between "us" and "them", the latter referring to all o/Other cultures, who in this view contain a pre-modern overlapping of nature and culture (Latour, 1993, p. 99). These Great Divides are also reflected in other related dualisms such as human/nonhuman, self/other, agential/non-agential, etc.

In the constitution of Latour's "we" these Great Divides play a significant role, in my view, for their existence is one of the main reasons that a distinction is made between a modern "Us" versus a pre-modern "Them". Latour's "we" can then be seen as existing in the modern "Us", as well as in the critical reflection on who this "Us" is and what power divisions play a role in this divide. As Latour argues, the conceptions underlying the Great Divides are false and only constructed as such. As other scholars, such as Karen Barad[29], have shown as well, nature and culture, human and non-human are not as opposed as they are presented. Instead, "nature, over which we were supposed to gain absolute mastery, dominates us in an equally global fashion, and threatens us all" (Latour, 1993, p. 8). Nature is thus always already intertwined with culture, as much as the non-human is with the human, which proves that the two are in fact not opposed as a great divide at all. Once this is established, this idea can be used to overcome and deconstruct other binaries that are so prevalent and troubling in the human domain like self/other, masculine/feminine, white/of colour, etc.

Moreover, Latour argues that in fact "we" have never been modern; although he does not address who this "we" is explicitly, the assumed "we" seems to consist of the (hu)man embedded in culture, as it is constructed through multiple scientific discourses, placed at one end of the Great Divides. Being modern, in this interpretation, indicates two different practices that must be kept separate in order to remain efficient, but have started to intermingle as of late, and I think that this intermingling also has consequences for the implicit "we" that Latour refers to. The first is the practice of translation, which would enable the blurring of boundaries between new types of being: "hybrids of nature and culture" (Latour, 1993, p. 11). The second practice is that of purification, creating two very distinct ontological realms: that of the human vs. that of the nonhuman. Both practices are valued, as Latour explains: "Without the first set, the practices of purification would be fruitless or pointless. "Without the second, the work of translation would be slowed down, limited, or even ruled out" (Latour, 1993, p. 11). But as he argues, lines between the first and the second practice already have begun to blur. As soon as attention is focused both on hybridity as well as on purification "we" start to become retrospectively aware that they have always already been at work, even before the current historical period, and thus our past begins to change: "Finally, if we have never been modern - at least in the way criticism tells the story - the tortuous relations that we have maintained with the other nature-cultures would also be transformed" (Latour, 1993, p. 11).

This, according to Latour, is the beginning of a realization that "we" indeed have never been modern and that modernity has never begun: this realization is a matter of "retrospective sentiment" in which "we" reread our history (Latour, 1993, p. 47). It can be considered a positive development, as long as the two halves of the symbol that has been broken into two, being nature and culture, are reunited as a sign of recognition: "Half of our politics is constructed in science and technology. The other half of Nature is constructed in societies. Let us patch the two back together, and the political task can begin again" (Latour, 1993, p. 144). The coming into being of these two halves is the result of these processes of translation and purification, and can be undone through a careful rereading of "our" history, which would exemplify how nature and culture have always been connected and part of the same whole, "one and the same production of successive states of societies-natures, of collectives" (Latour, 1993, p. 139). Therefore, it has been the mere idea of modernity and modernization that has "made it possible to distinguish between the laws of external nature and the conventions of society" as Latour asserts (Latour, 1993, p. 130).

As such Latour argues that modernity has not been illusionary, but rather that it has been actively performed (Latour, 1993, p. 144). This is much in line with many feminist approaches to the concepts of modernity and humanity, as they portray it through the figure of the Man of Reason (Lloyd, 1984). This figure refers to the unmarked category, the normative position that the white, European, able-bodied, rational man holds as the ideal universal and liberal subject of science and humanism (Braidotti, 2013, p. 24). Rather than an actual position this is a constructed norm that is performed: "The

dialectics of otherness is the inner engine of humanist Man's power, who assigns difference on a hierarchical scale as a tool of governance. […] This process is inherently anthropocentric, gendered and racialized in that it upholds aesthetic and moral ideals based on white, masculine, heterosexual European civilization" (Braidotti, 2013, p. 68). Modernity is thus actively performed through different discursive techniques that hold a firm belief in liberal autonomy, pure rationality, and truth, often holding the dominant position of the humanist idea of the "Man of Reason"[30] at its centre. Moreover the idea of modernity sustains the various Great Divides that Latour mentions and can therefore not be dismissed as merely an illusion: "Neither Nature nor the Others will become modern. It is up to us to change our ways of changing" (Latour, 1993, p. 145). In this quote he thus seems to juxtapose a modern "us" or "we" against "Nature" and "Others", whilst at the same time giving this "us" the responsibility to change. Hence, although it is his main point to criticize the division that is made between the West and the rest, he seems to reiterate the same practice, in urging the self-identified modern subject to rethink its position, both in relation to Nature, as well as in relation to Others. Therefore it seems at times that Latour continues to speak from a position at one end of the Great Divides, from a perspective embedded in modern, human society, as he writes: "At the end of the process, there is indeed a nature that we have not made, and a society that we are free to change; there are indeed indisputable scientific facts, and free citizens" (Latour, 1993, p. 140). However, it seems that he only does so in order to stress his point, as he continues: "but once they are viewed in a nonmodern light they become the double consequence of a practice that is now visible in its continuity, instead of being, as for the moderns, the remote and opposing causes of an invisible practice that contradicts them" thereby dismantling this position as a performative practice of modernity that is actively constructed (Latour, 1993, p. 140). Thus, rather than taking up a specific position of "we" he seems to construct an imaginary "we" and "them", and "Nature" and "Society" as a position to formulate a critique on these processes of translation and purification.

Nevertheless it remains important to take into account, and reflect upon, what kind of "we" it is that has the ability to reflect upon their own position and this responsibility to change, and retrospectively reconsider "our" past. Is this not implying a human audience only? As such his "we" seems to be situated in a human domain, although Latour recognizes that there is an inevitable link between humanity and modernity, asserting that: "The two expressions 'humans' and 'nonhumans' are belated results that no longer suffice to designate the other dimension" (Latour, 1993, p. 137). Donna Haraway more explicitly follows this up in her text "we have never been human", to which I will now turn.

1.2 Haraway: "we have never been human"

Haraway explicitly takes the process of knowledge production up in her work[31], as well as how "technoscience" comes about and materializes our understandings of

"naturecultures". Therefore it is rather important to explore how different discourses about technoscience are figured, to be able to expose where certain terms come from, and how the empty signifiers of human/non-human, nature/culture, we/them get their power-laden connotations. In order to point this out and criticize the above-mentioned anthropocentric Man of Reason, Haraway decentres Da Vinci's Vitruvian Man – the white masculine man of "Perfect Proportions" that has come to be a figure for Renaissance humanism and modernity – by introducing a cartoon of Da Vinci's "Vitruvian dog" in her book *When Species Meet* (Haraway, 2008, p. 8).

Moreover, along similar lines to Latour, Haraway argues that the world is materialized through interactions between different actors, agents and actants (both human and non-human), which shows that this "we" can also be thought more widely than a human "we". In actively thinking about the constitution of a more open "we", she provides 'becoming with' companion species as a positive development in this direction: "All of these are figures, and all are mundanely here, on this earth, now, asking who "we" will become when species meet." (Haraway, 2008, p. 5) Hence, Haraway's "we" is left open and ambiguous, seems to be undetermined, and more flexible compared to the "we" that Latour refers to. This is due to the fact that her "we" is constituted through encounters and interactions, as such meaning it is more of a process rather than a fixed predicament, and includes humans as well as non-humans, subjects as well as objects.

Haraway takes Latour's Great Divides up as well in her work, and actively tries to bridge or overcome them. She does so for instance through her configuration of the cyborg, a hybrid between human and machine, which is introduced as a way to overcome diverse great divides, such as the ones between nature/culture, human/non-human. She additionally uses the figure of the dog in her book *When Species Meet* (2008) to rethink the relation between different species (including humans), and proposes a situated becoming with companion species: "To knot companion and species together in encounter, in regard and respect, is to enter the world of becoming with" (Haraway, 2008, p. 19). Such becoming with entails an affirmative interconnectedness between different species, based on mutual respect, care and regard. It is through these encounters of interconnectedness that "we" become; "we" exist through our becoming with others. In this world of becoming with, "*who and what are* is precisely what is at stake." (Haraway, 2008, p. 19) Through this approach Haraway seems to more explicitly take up this question of "we", considering it as a process of becoming.

Therefore, it is important to think about who and what constitutes this process of a unified "we". If this "we" has never been human (and never modern either), then there must be an assumed "we" that has constructed and thinks of itself as human, invented by a certain group of people or type of species, to distinguish itself from others, in order to position itself as superior to them. Perhaps this "we" exists in all the modest witnesses[32] that have come to rule in science, or is sustained by what Haraway refers to as the "philosopher's human". She talks of the "knowledge that we have never been human and so are not caught in that cyclopean trap of mind and matter, action and

passion, actor and instrument. "Because we have never been the philosopher's human, we are bodies in braided, ontic, and antic relatings" (Haraway, 2008, p. 165). Who is this philosopher's human? What are those characteristics such as "bodies in braided, ontic and antic relations" about? What does Haraway refer to when she takes up these terms? Perhaps that "we" interpreted as the human species, are not a unified "we" that is separated from others as "we" like to think, and as such does not exist; instead "we" are all intertwined, and become with others through the acts of encountering and relating.

Moreover it is significant that she talks about this in terms of "knowledge", for knowledge is power, as Foucault has attested. Hence, this stress on *knowing* that "we" have never been human indicates that she knows something that others do not. Apparently "we" have never been human, but not everyone knows this, or wants to know or believe this: what does this implicate? What does it imply about people who actively believe in their own humanity or human-ness? I think what Haraway wants to provoke here is an awareness of the status that "we" ourselves as humans grant: the idea that 'we humans' are the only beings that get "to hold all the 'goodies' like agency, intentionality, rationality, feeling, pain, empathy, language, consciousness, imagination, and much more" (Barad, 2012, p. 27). "We" thus think that "we humans" are the only ones capable of being rational, having agency, having a consciousness and knowing the difference between what is good and what is bad.

Thus, by exposing that what "we" have come to understand as the rationalist and modern human (the assumed "we") – a separate entity, more powerful than all the others – Haraway reconfigures the idea of the human and encourages us to rethink this assumed category in relational terms. Compared to Latour, Haraway seems to think more interactively about what and who she refers to when speaking of "we", and involves the active constitution of this "we" in her project as becoming with. "We" then exists as, and in, alliance and encounters between different species and actors, whether subjects, mold, bacteria or dogs.

1.3. Colebrook: "we have always been post-Anthropocene"

In April 2014 Claire Colebrook was one of the speakers at a conference devoted to Anthropocene Feminism, at which environmental issues were discussed from a feminist perspective. The Anthropocene is here used to refer to the current geological epoch that is defined by scientists as being marked by the significant global impact that humans have on the planet. Negative geological developments, such as climate change and global warming, can then be viewed as a result of this human domination.

In thinking about the Anthropocene, and the issues that come with it, Colebrook very much focuses on the question of "we" that is central in this article. What renders the Anthropocene problematic in her view is that when "we" speak of wrecking the planet, "we" only mean that "we" have wrecked it for "us", which only refers to a certain type of "us".[33] Who is this "we"? And who is this "certain type of 'us'"? I think what Colebrook means here is that part of the human population only covets profit and

power, and it does so through dominating other people (think of the unequal division of labour: slavery, bad working conditions, a continuing wage gap between upper and lower classes, men and women). This type of "us" has now come to realize that the earth is a non-renewable resource and that this is bad, not for the planet in itself, but for the ends to which they want to use it, thereby continuing the idea of the environment as a resource, serving human exceptionalism.

A feminist approach is therefore highly needed according to Colebrook: she describes feminism as generated by one overarching question, which is the question of "who?" Whose feminism and for whom? Subsequently the question can be asked: whose Anthropocene is it: and who does the "anthropos" refer to? It is therefore important to ask *which* humans come together in certain events, whose "anthropos" we are talking about, and to ask what history lies behind it. According to Colebrook the domination of humans by other humans is closely entangled with the domination of earth. "We" started wrecking the planet when "we" ended massive slavery at the beginning of industrialization, which has come at the cost of the planet. Added to this is the importance of a geological scale: the very possibility of the division of labour that occurs *with* the appropriation (such as industrial agriculture) of the planet, and that this division of labour is no longer (merely) between master/slave, man/woman, as well as between human/non-human. Therefore, the idea of the Anthropocene has had a major influence on difference thinking, according to Colebrook. Difference has been fetishized, up to the point of indifference:

> One of the dominant motifs of the Anthropocene is climate change, which (as Bruno Latour has argued) closes down the modern conception of the infinite universe, drawing us back once again to the parochial, limited and exhausted earth. It might be worth redefining all those hyper-modern proclamations of a post-human and post-racial future as hypo-modern, as refusals of the species' bounded temporality. Nowhere is this more evident than in the seemingly modern fascination with sexual difference. It is the possibility of transcending sexual difference — of arriving at indifference — that has always been harbored as the human species' end.(Colebrook 2014)

Through this process, the relations between three problematic binaries are reconfigured: humanity in relation to post-/in/non-humanity, temporality in relation to history, and sexual difference in relation to gender. Therefore, feminist and other scholars can use the anthropocentric moment to reconfigure and deconstruct the binaries that have been held as the condition of the humanist modern Man of Reason.

A difference with Haraway and Latour is that Colebrook is much more performing in her approach, and provokingly, asks her audience what "we" are becoming, while implementing irony and jests in adding the issue of the Anthropocene to the modernity and humanity mix. For instance, she critically talks about the constitution of a certain "we", that is problematic in itself, while jokingly referring to Toyota Prius-driving people, who merely want to clean their consciousness in order not to feel guilty about the state of the planet. This Prius-driving "us" can thus be viewed as a western and

middle class group that is aware of the exhausted condition of the earth, and proclaims to change it, but continues to damage the planet, only it does so through fake and greenwashing solutions of capitalism, by merely participating in feel good consumerism.

Additionally, the representation of the Anthropocene in current dominant narratives has created the illusion of a unified human species, that is *so* dominant and whose influence is *so* significant, that it is capable of destroying the planet. According to her the Anthropocene age thus has had the effect of fetishizing difference, as if there is one singular inscriptive difference, that has now come to erase all other differences, which shifts the scale away from local political problems to the anthropocentric question of how "we" as humans are going to survive. It thus creates the illusion of a unified human species, thinking of itself as no longer part of the eco-system but destructive in and of itself. Differences between subjects are thereby erased and humanity is seen as opposed to the eco-system in which it lives. But are we really that important? "Are we really the only species that makes a mark on the planet?" Colebrook critically asks. Hence a revived human exceptionalism has taken place, which indicates, in the words of Haraway (2008, p. 11):

> [T]he premise that humanity alone is not a spatial and temporal web of interspecies dependencies. Thus to be human is to be on the opposite side of the Great Divide from all the others […] the institutionalized, long dominant Western fantasy that all that is fully human is fallen from Eden, separated from the mother, in the domain of the artificial, deracinated, alienated, and therefore free.

It is this fantasy, that is inherently racist, patriarchal and Eurocentric, that holds the human at its centre, which the Anthropocene seems to have legitimated.

Hence, Latour, Haraway and Colebrook each provide a different understanding of what constitutes this "we" and in what ways. Haraway's idea of "we", an entangled process of becoming with companion species, seems to be a critical extension of Latour's critique on modern humanism. Colebrook seems to follow up both Latour and Haraway, specifically the latter's question concerning the human-ness of this "we", by taking up the critical perspective from the Anthropocene. She mocks an assembled "we" that the idea of an Anthropocene has constructed: a unified human species, capable of wrecking the planet. Hence, where Latour and Haraway aim to critique dominant positions of modernity and humanity as constructed, it seems that Colebrook wants to concentrate on exposing the assumed "we" that backs up current ideas of the human's exceptionalism.

2. Conclusive remarks: post-modern, post-human, post-Anthropocene?

As my account has shown, Latour and Haraway (as well as Colebrook in a less literal and explicit manner) refuse and criticize the labels of modernity and humanity.

As Latour proclaims, "we" have never been modern, therefore we can never be post-modern either: "we have never begun to enter the modern era […] they [referring to postmodernists] claim to come after a time that has not even started!" (Latour, 1993, p. 47). In a similar way, Haraway (2008, p. 17) clearly distances herself from the term "posthuman":

> I never wanted to be posthuman, or posthumanist, any more than I wanted to be postfeminist. For one thing, urgent work still remains to be done in reference to those who must inhabit the troubled categories of woman and human, properly pluralized, reformulated, and brought into constitutive intersection with other asymmetrical differences.

Closely reading this quote it seems that Haraway thinks of the prefix "post-" as indicating that something is over. Thus she argues against a "post-" approach, because she argues that the humanist project, as well as the feminist project, is still very necessary. Although I agree with their necessity, I do not think that post-humanism indicates that thinking about the "human" is no longer necessary.

This is where I would like to propose a different reading of the "post-": as a more affirmative and open approach to these labels, which enables not only a rethinking of modernity, humanity and the Anthropocene, but also a different reading of the "we" that has been constituted through these terms. Instead of seeing the "post-" as getting rid of, dismissing, or coming after, it could also be interpreted as mainly thinking *beyond* modernity, humanity, or the Anthropocene, and can thus expand the scope of analysis, opening it up towards other worlding forces, and different kinds of actors too. Such an approach is already used by Colebrook who argues that "we" have always been post-Anthropocene: not in order to dismiss the Anthropocene, but rather to show that there are other ways to think about the planet in relation to the human. If "we" open up to other readings of the current geological impact, beyond its relation to the human only, "we" can see that humanity might not be as dominant, significant or exceptional as it likes to think of itself.

In conclusion I would like to return to the quote of Deleuze and Guattari that I posed at the beginning of this article, which has helped me in seeing and treating the different texts as assemblages. As Deleuze and Guattari argue, texts function as assemblages that exist only in relation to other assemblages and have no predetermined essence or meaning. It does not make sense to grasp a certain meaning or understanding, but instead is more sensible and relevant to examine a text to see what it becomes *with*. Along similar lines I have compared the different forms of "we" that Latour, Haraway and Colebrook take up in their considerations, by bringing their texts together. A closer examination of their different texts has helped me in figuring out what Latour, Haraway and Colebrook refer to when they talk about "we". This has productively demonstrated that this "we" is not always fixed, taken for granted, and does not necessarily assume a unified modern, human species as opposed to all other modes of existence. This is a positive and relevant direction for feminist theory to go in, for it enables a "we" that is

more inclusive and open, that helps to reconfigure the place of the human, to make room for other species to meet and become with.

Notes

[26] Scholars who have written on Latour and Haraway in relation to each other and to feminist thinking are for instance Maria Púig de la Bellacasa and Iris van der Tuin.

[27] This is additionally due to limited space and time.

[28] In using the term response-ability I refer to Donna Haraway's and Karen Barad's hybrid inter-connection between "response" and "responsibility", as a possible way to open up space for others to respond in responsible ways. This entails a mutual egalitarian and respectful relation between my reader(s) and me (Barad, 2012, p. 48).

[29] Karen Barad takes up the notions of intra-activity and agential realism in her work to analyse the materiality and agency of non-human actors and agents, to contest its supposed 'difference from' the norm of humanity. If "we" – here used as referring to humans – take nature seriously, we will see that "all sorts of seeming impossibilities are indeed possible, including the queerness of causality, matter, space, and time" (Barad, 2012, 29).

[30] Genevieve Lloyd analyses the "Man of Reason" as a figure to refer to the Cartesian maleness (and to a certain extent the whiteness) of Western philosophy.

[31] For instance in *Modest_Witness @ Second Millennium.FemaleMan Meets OncoMouse: Feminism and Technoscience* (1997) as well as in the article "Situated knowledges: The science question in feminism and the privilege of partial perspective" (1988). In "A Game of Cat's Cradle: science studies, feminist theory, cultural studies" (1994) she talks of the "natural-cultural gravity well of technoscience" to analyze this process of knowledge production too (Haraway 1994, p. 60).

[32] Haraway's "modest witness" refers to the holder of unmarked, normative positions; it is a subject who, to retain his modesty, must be invisible, for this modesty is one of the founding virtues of modernity. This figure of the modest witness reflects a practice of speaking from nowhere, a biasing embodiment, disregarding to ground and embed one's knowledge and perspective and is further elaborated upon in Haraway's book *Modest− Witness@ Second− Millennium. FemaleMan− Meets− OncoMouse: Feminism and Technoscience*. Psychology Press. 1997. Print.

[33] Colebrook, Claire. (2014) "We Have Always Been Post-Anthropocene". Anthropocene Feminism Conference. Center for 21st Century Studies, University of Wisconson-Milwaukee. Milwaukee, April 2014. Lecture.

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A Posthumanist Microethnography of Multiculture: Olfactory Assemblages in Rome's Banglatown

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Elisa Fiore

Radbound University, Nijmegen

Abstract

The present article draws from a wider research project conducted in the months of February and May 2015 in Tor Pignattara, one of the twelve urban zones constituting the V Municipality of the city of Rome. The project, which takes the shape of a multisensory, posthumanist microethnography of multiculture, mainly attempts to investigate how affective urban materialities are capable of organizing and co-participating in the iterative reconfigurings of everyday experience with/in the locale. In particular, it looks at how material social practices such as racialization, gendering and classing intra-act (Barad 2007) in the production of constitutive in/exclusion(s) with/in it. After a brief introduction about the context of the research and the process of gendered racialization by which it is currently invested, this article proposes feminist new materialism as a theoretico-methodological framework that counters the epistemological identity politics responsible for the essentialization and reification of constituencies in the locale. By conceiving identity structurations as more-than-human assemblages given by the intra-action of human and nonhuman actants, feminist materialism challenges their assumed discreteness and poses them as co-constitutive, dynamic and overlapping historical formations rather than as pre-existing givens. In fact, it accounts for the enactment of the nonhuman in the materialization of what there is. This article proposes a feminist new materialist reading of food and kitchen odors in Tor Pignattara as a tool to denounce the arbitrariness of the dichotomous thinking that structures life in late western modernity.

Keywords: posthumanism; nonhumans; gender; race; intra-action; feminist new materialism.

Introduction: Rome's Banglatown as a fractured and contested borderland

Tor Pignattara is one of the most multicultural areas of the city of Rome. According to official data issued by the Statistics Office of the City of Rome, on the 31st of December 2013, there were 8,732 registered foreign nationals residing in the locale,[34] out of a total population of 47.680 (18%). Of this 18%, 1,838 are of Bangladeshi origin, i.e. 3.9% of the total population and 21% of all foreign nationals. As the data shows, Tor Pignattara is today home to a large Bangladeshi community, officially the largest and oldest Bangladeshi community residing in the Italian territory (Bisio, 2013; Casu, 2008; Pompeo & Priori, 2009; Pompeo, 2011; Priori, 2012;), so much so that nowadays it is commonly referred to as Banglatown.[35] Their arrival can be traced back to the early 1990s, when mainly young, single, highly educated males searching for fortune and social compensation in Europe were attracted by Italy's softer and more favorable immigration rules – the 39/1990 Law, also known as "Martelli Law." This influx was initially directed towards Rome and in particular the suburban area of Tor Pignattara, its attractiveness being the high availability of lower quality and cheap housing. In the 1980s and 1990s, in fact, Tor Pignattara underwent a residential, commercial and productive evacuation following the process of de-industrialization and tertiarization of Rome that changed the geography of the city and triggered a process of suburbanization of its population (Fusco, 2013). The Bangladeshi community started acquiring a stable character in the early 2000s, testified by a steady increase in the number of applications for family reunification visas (Bisio, 2013; Casu, 2008; Fioretti, 2011; Pompeo, 2011; Priori, 2012).

Like many other culturally diverse locales, Tor Pignattara/Banglatown is a disputed and conflicted territory, where invisible albeit concrete boundaries are constantly built, maintained, fostered, destroyed, moved, negotiated, mocked, and revised. Dominant representations situate the locale with/in the Roman suburb/periphery, and reduce it to a collector of (im)migration that is consequently associated with exoticized difference and decay. These "grand narratives" (Lyotard, [1979] 1984) inform and structure everyday experience and perception in the locale: (im)migration is blamed for all the locale's evils – crime, decay, drug dealing, sexual harassment/violence – as well as for its state of cultural, social and infrastructural impoverishment – "(im)migrants do not vote" is a recurring leitmotif to explain the institutional disinterest in the destiny of Tor Pignattara/Banglatown.

As the Banglatown of Rome, Tor Pignattara is generally understood as an area that looks, smells, eats, dresses, prays, speaks and 'buzzes' like a foreign, exotic land, that has nothing to do with Italy and Italian-ness. The concentration of Bangladeshi nationals, albeit extremely limited, is often labeled as an "invasion" (Bisio 2013), and the widespread feeling of dispossession on the side of local dwellers surfaces in vehement and violent reactions to small incidents, which at times acquire a dramatic character. Such is the case of Muhammad Shahzad Khan, a 28-year-old Pakistani man

who was beaten to death in the street on the evening of the 18th of September 2014 by a 17-year-old Italian boy. The reason behind his killing, as reported by witnesses, neighbors and police (Angeli & Salvatore, 2014; Leogrande, 2015; Santoro, 2015), was 'simply' that the young Pakistani was singing the Koran.

The Bangladeshi settlement is mostly perceived as shamelessly and unapologetically appropriating the space of the locale. The 'dispute' mostly concerns the establishment of two basement mosques that every Friday gather dozens of men praying on the surrounding sidewalks, their particularly smelly dietary culture based on heavily fried and spicy food, and the noisy public celebrations on the occasion of national festivities. This article argues that such perceived 'invasiveness' and 'aggressiveness' has engendered over the years a process of gendered racialization that simultaneously racialized and feminized Tor Pignattara and the Bangladeshi community residing there. Due to its alignment with exoticized/exoticizing non-whiteness, Bangladeshi–ness was racialized and externalized from the Italian space (El-Tayeb, 2006, 2013). Furthermore, the public, media and institutional narrative started describing Tor Pignattara/Banglatown as a "far west" (Cifelli, 2014; Mari, 2014; Mattioli & Burrocacao, 2014), a "jungle" (Santoro, 2015), a "labyrinth" (Santoro, 2014), and a "borderland" (Wu Ming, 2015). The deployment of such language of "imperial progress" (Mcclintock, 1995, p. 120) and the depiction of Rome's suburb as epistemological problems and anachronistic spaces of regression within modernity's spacetime, produced an alignment of the suburb with the figuration of the colony and, hence, its parallel feminization. The trope of the suburb as uncivilized, disorderly and labyrinthine recalls the feminized virgin land of colonial narrative (Fanon, 1965; Mcclintock, 1995; Said, 1978). Journalists, writers, politicians and dwellers venturing – or relocating – into the suburb were then seen as masculinizing agents bringing light and order into such unenlightened swarm. Through the scopophilic power of voyeurism and the "imperial archive of the spectacle" (Mcclintock 1995, p. 82), the feminized and racialized suburb could be reclaimed as a male and middle-class territory, a land for male knowledge and power to conquer.

It is not an accident, in fact, that an opposite process emerged, starting from the mid-2000s, aiming to re-masculinize and re-racialize (as white) Tor Pignattara/Banglatown. This dynamic takes the shape of a rather aggressive gentrification process promoted by both institutional and civil society actors. Its rather paradoxical and contradictory traits produce a tension between a 'do-gooder' kind of narrative that romanticizes the locale, its diversity and multiculturalism, simultaneously promoting neoliberal and neocolonial values and ideals that, *de facto*, maintain racialized hierarchies in place. The promotion of a consumption-based sense of community as a tool to revive the locale's 'exhausted' sociality, produces a re-evaluation politics that turns the regenerated areas into commodified spaces of consumption (Palipane, 2011; Pompeo, 2011), where cultural diversity is used as a marketable commodity and transformed into a palatable, non-confronting version of multiculturalism (Pardy, 2009).

Gentrification, in other words, can be seen as a counter-process of masculinizing racialization that re-habilitates and re-includes the area into a symbolic *telos* of progress, by promoting a requalification that simply expands the center – the masculine, white space of Italian-ness – to the disadvantage of the periphery. This is achieved through the "boutiquing" (Zukin, 2009) and upgrading of the commercial and leisure landscape, the proliferation of night bars and artists ateliers, the aestheticizing of run-down walls through commissioned street art, the sanitization of space through the dismantling of local street markets and ethnic fast-food stalls/stores. By doing so, gentrification perpetuates the same racialized hierarchies harking back to imperialist and modernity discourses.

As it appears, then, the context under analysis is deeply fractured and polarized along the lines of a humanist identity politics rooted in neoliberal, (neo)imperialist discourses of difference. In the following section, it will be shown how a feminist new materialist framework can help us extricate ourselves from the confines of such rigid understanding of reality, and steer away from a kind of research still too enmeshed in the same identity politics that are fracturing the locale, essentializing constituencies, and reinstating the status quo.

A new materialist approach to analyze identity politics and the "ideology of f(r)actions"

Being interested in observing how race and gender are mobilized and co-participate in shaping everyday experience in the locale, and reveal the complexity of identity structurations, I chose to 'converse' with those things and bodies that are generally seen as inert when it comes to social issues. This brought me to conceive race and gender as more-than-human assemblages given by the 'intra-action' (Barad 2007) of all different manners of (human and nonhuman) actors.

According to feminist philosopher Iris van der Tuin (2015, p. 33), feminist new materialism moves beyond epistemological identity politics, and as

> a practice of negotiating matter, materials, materiality, and materialism forges a breakthrough of feminist empiricism and feminist postmodernism that works towards "more promising interference patterns" (Haraway, 1997, p. 16). […] When the non-human object of knowledge is conversed or corresponded with, we step out of the frame of humanist identity politics while the identity political framework – the primary location of the horizontalization program – is expanded.

By working with and negotiating the so-called '4Ms' (Lehmann in van der Tuin, 2015), it is possible to move away from a hierarchizing and verticalizing identity politics, to embrace a diverse, wider and thus horizontal politics of agency/identity, focusing on relations and patterns of relations. Such theoretico-methodological shift, as it will be thoroughly explained in the following section, operates a decentering of the human subject as the sole holder of agency, through which the enactment of the nonhuman will eventually be accounted for. Drawing from Donna Haraway's (1988)

politics of the subject that foregrounded new feminist materialist concerns through the "'complexification' of the way matter comes to be defined" (Hinton, 2014, 100), new materialism proposes a (re)conceptualization of agency that allows us to understand how bodies and meanings come to matter. It enables a historicization of boundaries and separations to see how they sediment, materialize, persist, and contradict each other. Finally, it enables the production of accountable knowledge that places the relationship between knower and known, subject and object at the center of the knowledge produced, thus operating a reworking of the notion of ethics from human attribute to a "politics of possibilities," that is "ways of responsibly imagining and intervening in the configurations of power" (Barad, 2007, p. 246). For my project on Tor Pignattara/Banglatown this meant quite simply accounting for our 'implicatedness' in the iterative materialization of what there is, and distribute value more generously by embracing a diverse politics of agency.

Identity structurations as more-than-human assemblages

Looking at race and gender through a feminist new materialist lens means considering them as "material social practices […] constituting 'bodies-in-the-making and contingent spatiotemporalities'" (Haraway in Barad, 2007, p. 224), rather than as preexisting, fixed attributes of certain (marked) bodies. This shift is intended to stress the context-dependent and changing nature of identity, as opposed to a deterministic notion of it that sees categories of identity as discrete, extra-discursive, non-historical referents located in the biology of the body. Such a rigid understanding of identity and difference traps subjects into a bounded spatiality and progress/future-oriented teleology, which becomes the normative framework in which meaning is shaped (Winnubst, 2006). Therefore, this work intervenes in furthering understanding of the entangled relationship between identity categories and those spatio-temporal practices and frameworks that feed the systems of domination of late modernity. By reading these categories as material social practices, feminist materialism challenges their assumed discreteness and poses them as co-constitutive, dynamic and overlapping historical formations that transcend the humanist sphere of agency.

Feminist new materialism defends an ontology of categories that shows them to be embodied and material events, or 'machine assemblages' with a different spatio-temporality than the self/other scheme of Hegel (Saldanha, 2006; Puar, 2012).[36] Such project calls for a different kind of thinking, one that functions differently from the closed economies thinking of our western modernity. As argued by French philosophers George Bataille (1988-91) and Bruno Latour (1991), in fact, the severance from a more general -perspective contributes to the perpetuation of systems of dominations through a persistent future temporality, and a geometrical conception of space, upon which the ideal of the modern subject is founded. Both philosophers send out a call to think in "general economies" (Bataille in Winnubst, 2006, p. 3), to retie the "Gordian knot" (Latour, 1991, p. 3) that keeps the world together, in order to resist modern politics of

domination. By doing so, they argue, it is possible to question current geometries of power that constrain identities into rigid, pre-constituted spatio-temporal-material molds, and query the division between matter and discourse, nature and culture, as the starting point for deconstructive critique.

By shifting the focus from individual, separate entities, to relationality and "phenomena" – "the ontological inseparability or entanglement of the object and agencies of observation" (Barad, 2007, 309) – feminist new materialism accounts for the enactment of the nonhuman in what comes to matter. As a result, a shift from 'mere' epistemology to "ethico-onto-epistem-ology" (Barad, 2007) is operated, i.e. an appreciation of how ethics, knowing, and being, are interweaved and co-participate with/in the making of the world. Determinism – and with it relativism, individualism and representationalism – will have to make way for an indeterminate, iteratively dynamic reality depending on the enactment of each and every phenomenal entity – be it human or nonhuman. This way, 'insignificat' events like the sudden materialization of a particular kitchen odor will be shown to co-participate in the contingent emergence of identities, so as to interrogate how inclusions and exclusions come to matter, and keep an eye out for f(r)ictions rather than f(r)actions.

Multisensory microethnography to account for the enactment of the nonhuman

Given all previous considerations, the research methodology that seemed to best fit the context under analysis, and its structuring conditions, is given by the intra-active workings of two different but overlapping methods, which are very much focused on relationality, spatiotemporal configurations, and the enactment of the apparently insignificant.

Firstly, there is a kind of mobile ethnography that human geographer Cheng Yi'En (2013, p. 2) defines as walking ethnography, i.e. a mobile and embodied practice that "offers insights to the multiple splices of time-space narratives." As an inherently rhythmic experience constituted also through the sensorial aspects of the researcher's body, walking ethnography mobilizes "urban materialities as affective materials for organizing mundane experience and urban mobilities as heterogeneous and rhythmic" (ibid). By working with, and through, affect, walking ethnography accounts for matter's "vibrant" nature (Bennett, 2009) and agency, and for its co-participation in the structuring of everyday (urban) experience. Through affect, urban materialities can influence the capacities of a body – intended here as a given assemblage – to act, and thus orient and reorient this embodied, mobile conversation through attractions and distractions. Walking ethnography, hence, always happens in conversation with other bodies and things.

This very last aspect introduces the second method employed in this research, i.e. multisensory microethnography (Renold & Mellor in Coleman & Ringrose, 2013). This

method is a multisensory practice that is constituted through the sensorial aspects of the researcher's body, and a microethnography insofar as it tends to focus on the small events of everyday experience. By exploring the ways in which race and gender "work on, in and across bodies and things" (p. 24) in the locale, multisensory microethnography allows us to see how subjectivity extends 'beyond the individual and towards a collective and connected affective assemblage of other bodies and things' (p. 25), thus accounting for the enactment of the nonhuman.

The proposed methodology encourages the researcher to be "enmeshed in the social space of the location" and thus "transcend the visual bias of observation" (Palipane, 2011, p. 10) by engaging in embodied activities with (human and nonhuman) others, such as eating, talking, sitting and, of course, walking. Being in conversation with other bodies and urban materialities through walking and sensory perception allows not only for the agency of things to emerge, but also for the entanglement and relationality between those things, and the researcher/knower to be observed, so as to understand what kind of space they contribute to create with their own doing. The exploration of "affects associated with the micro-intensities of everyday life," and "the multisensory dimensions of place, including [the researcher's] 'gut reaction'" (Renolds & Ivinson, 2014, p. 365) contributes to question the myth of disembodied research as objective, and proposes feminist objectivity based on partial perspectives and situated knowledges as the only way to have objective vision on the issues under analysis (Haraway, 1988). The focus on affective intensity is particularly apt for studying assemblages and phenomena rather than single objects as it allows us to account for their characterizing tension between movement and capture, flow and fixity, so as to "trace the ways in which the virtual is actualized, and may be actualized differently" (Coleman & Ringrose, 2013, p. 11).

In the following section, I will illustrate the case of kitchen odors in Tor Pignattara/Banglatown, so as to show both the workings of this posthumanist kind of embodied microethnography and the co-constitutive role of a volatile nonhuman actant in the iterative reconfigurings of the locale.

Fragrant assemblages: a new materialist analysis of food smells

Tor Pignattara/Banglatown is a fragrant space. Food smells in particular are an overbearing presence in the locale: they flood the streets, fill staircases and elevators, make you feel hungry and sometimes angry. Strong food odors in the locale are often synonymous with racialized difference: it is the Bangladeshis who are accused of smelling, using spices, over-frying their food and thus intoxicating and corrupting the sensorium of Tor Pignattara. As a result, it is not uncommon to witness or hear stories about unpleasant and rather distressing incidents involving kitchen smells and next-door neighbors that paint a picture of (essentialized) olfactory incompatibility between Italians and Bangladeshis, and maintain a polarized identity politics in place.

During my fieldwork, for example, I had a conversation with an Italian man who lives in a predominantly Italian building, where there is only one Bangladeshi household. As he recounts, neighborly relations in that building are reduced to the bare minimum: a polite and forced greeting upon random encounters in the elevator or along the stairs. Except when he takes the elevator around lunchtime and finds himself sharing that cramped little space with one of the other Italian residents. In those occasions, it often happens that the embarrassing elevator silence is broken by the usual annoyed comment "these Bangladeshis!" or "what a stench of fried food!" generally accompanied by wrinkled noses and rolled-up eyes. The racializing utterance enunciated upon the sudden appearance of that particular smell clearly performs a grooming and bonding function, i.e. it is aimed at setting up alliances and testing allegiance to one's own group.

Another striking story from my fieldwork is that of a young Bangladeshi woman who was constantly harassed by her Italian (female) neighbor because, once again, the smell of fried food would not stay put in her apartment, but travel through pipes, cracks, and openings directly into the neighbor's home. The violence unleashed by the fragrant invasion of space reached a shameful peak when the Italian woman, one day, rang her neighbor's doorbell and physically attacked her. In that moment, the Bangladeshi woman was holding her newborn baby in her arms. The shock produced by the escalation of aggression pushed her to report the incident to the police, a thing which did not yield any response on their side. Soon after, she figured that moving to a new apartment in a different area of the city was the only way to protect her child from the reiteration of such violence.

The physical and symbolic violence unleashed in these two incidents proves that kitchen odors are key factors in the emergence of identity political dynamics in the locale. The unruliness of kitchen odors in Tor Pignattara/Banglatown, which exceed the boundaries of the (Bangladeshi) home, dissolves the boundary of the home – the symbolic space of the private and the self – and thus challenges the self/'other' divide that is deeply ingrained in western modernity's dichotomous thinking and individualistic notion of the bounded subject (Barad, 2007; Haraway, 1988, 1997; Latour, 1991; Winnubst, 2006). In those situations, smell(s) act as "apparatuses of bodily production" (Haraway, 1997) through which race and gender structurations come to matter, and the traditional division between marked and unmarked bodies (Haraway, 1997; Puwar, 2004) along the lines of the nature/culture divide gets reinforced and perpetuated. Incidents like the ones described above reveal the age-old equation rel(eg)ating smell and smelliness with/in certain kinds of marked bodies, thus seemingly confirming the need for them to be contained, disciplined and administered.

The long history of smell management throughout western modernity (Corbin, 1986; Classen *et al.*, 1994; Lefebvre, [1974] 1991; Mcclintock, 1995) testifies to the fact that smell has been aligned with the primitive and the uncontainable, and thus actively participated in the structuration of marked identities throughout the modern world. The criticism of odors was part of the much wider criticism of all the tendencies

suspected of leading to 'degeneration,' which should be understood as a swaying from the modern disembodied subject norm. Only degenerate and excessive bodies – racialized, gendered and classed – were gifted with, or plagued by, foul and strong odors, which were often considered intrinsic to their specific groups, and almost as inalterable as skin color. Given their assumed naturalness, odors became fully part of the "somatic norm" (Puwar, 2004) defining such groups, thus further reducing marked embodiments to their *soma* and biology: the filthiness of black skin, the reek of menstruation and lactation, the stench of manual labor.

However, as media scholar and artist Laura Marks (in Papenburg & Zarzycka eds., 2013) maintains, violent reactions triggered through olfactory sensation, like the ones reported above, show that "cultivated odors operate across a membrane from the material to the symbolic, the asocial to the communal" (p. 146). In other words, smelling is a material social practice through which olfactory experience emerges as historical and contingent, but still a medium of shared knowledge by virtue of its educability. The passions – affect – conjured through the material social practice of smelling, signal a moment of gathering force, in which "a person feels the great pressure and potential of the virtual – of the broad realm of possibilities one of which can be summoned into being" (p. 154). The intra-action of those fragrant and oily particles with the racialized olfactory regime of the locale, produces the materialization of racializing violence – physical and symbolic – as a way to resolve the situation of indeterminacy, restore the self/'other' dialectic and contain the 'contamination.'

The porous and shifting nature of identity boundaries in Tor Pignattara/Banglatown contributes to its iterative materialization as a spacetime of mixture, involved in the dissolution of "racially inflected subjectivities and active in the formation of novel subjects and innovative modes of affiliation" (Rhys-Taylor, 2010, p. 21). Nonetheless, within western modernity, this is picked up as the feminine and racialized 'other,' an unruly body itself in need of being administered and bound through the deodorizing process of gentrification. Unbridled and unregulated multiculture, and the con-fusion it entails, is understood as intrinsically dangerous, and a potent metaphor of the social decay that the ethnicized/racialized 'other' might cause in the established order (Classen, 1992; Rhys-Taylor, 2010). The deodorizing mission of gentrification through the elimination – or, anyways, strict management – of racialized odors takes on the role of masculinizing agent of history, enabling the exit of the suburb-as-colony from its savage state through the West's civilizing mission. Through an identity politics of containment, gentrification domesticates the body of the suburb, and promotes the imperialist body politics of the modern subject.

Conclusion

In this article, I have shown how a feminist new materialist engagement with the olfactory dimension of multiculture contributes to account for the nuances of social formations in Tor Pignattara/Banglatown, and foster a more ethical engagement with

those histories, space(s) and materialities co-participating, together with 'us,' in the iterative materialization of the locale. In particular, the incidents here illustrated highlight the racialized olfactory regime emerging through the intra-action of the unruly nature of (food) smells and the internalized trope of marked bodies as excessive. The racialization of modernity's olfactory regime contributes to racialize odorlessness – to be intended as the absence of odors foreign to the dominant cultural order – as masculine and white. Gentrification's effort to eliminate excessive odors thus charges the aesthetic – sensory – space of the multicultural suburb with the symbolism of nationhood, and reinstates the domestic/colony divide enmeshed with/in the imperialist body politic aimed at preserving the modern subject as the norm.

By stressing the entanglement of both human and nonhuman actants in Tor Pignattara/Banglatown, I was able to 'take a step toward a more ecological sensibility' (Bennett, 2009, p. 10), i.e. embrace a diverse politics of agency capable of distributing value more generously, and fostering ethical and wiser interventions into such renewed ecology. Rather than trying to describe the reality of the locale, this work proposed a practice capable of fostering our sense of responsibility and accountability for what there is, and what there will be. The "naturalcultural contact zone" (Haraway, 2008, p. 7) of olfactory sensation proved to be an extremely valuable tool in this new materialist investigation of multiculture. The embodied and affective nature of olfactory perception[37] acknowledges the inextricability of perceiver and perceived, and shows the self to be an enfolded mass of spatiotemporal intensities traveling back and forth through spacetime. Subjectivity, then, results from "intricate and multidirectional acts of association" (p. 31), as a multidirectional form of entanglement that questions the geometrical conception of spacetime proper to western modernity.

Notes

[34] Throughout the article, I will refer to Tor Pignattara/Banglatown as a locale following Anthony Giddens' (1986) definition of 'regionalized locales, [i.e.] physical territories structured in time by social rhythms' (in De Landa, 2006, p. 95). This is intended to stress the practiced dimension of Tor Pignattara/Banglatown as a spacetime structured by routinized social practices.

[35] According to official data issued by the City of Rome (Statistics Office) in 2013, the Chinese is the second largest minority with a population of 1.546 (3.2%), followed by the Romanian (1.118 nationals, 2.4%), the Pilipino (757 nationals, 1.6%), the Egyptian (376 nationals, 0.8%) and the Peruvian (349 nationals, 0.7%).

[36] The philosopher Georg Wilhelm Friedrich Hegel (1807), in his book *Phenomenology of Spirit*, wrote about the notion of "self-consciousness" as an independent subject defining itself against an other equally independent subject. Even though Hegel stresses the relational nature in the mutual definition of self and other, he still understands them as two polar opposites, one the negation of the other, and thus

asserts that identity is mediated through difference. The other-from-the-self – or the object as opposed to the subject – is defined by Hegel as objective in itself, self-evident, i.e. it is seen as a conglomerate of universal, separate qualities/attributes, bound together within a clearly delimited space-time region/location. Such conception is evidently informed by an understanding of the world resting upon representationalism and individualism, i.e. the idea that the world can be divided into representations and entities to be represented, and that these entities are separate, bounded and provided with intrinsic characteristics.

[37] Smell and the other proximal senses – taste and touch – "link us to the material world, indeed bringing it close to or into our bodies" (Marks in Papenburg & Zarzycka eds., 2013, p. 149).

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‘Our atheists are pious people.’ Stirner and Nietzsche on the relationship between religion and science

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Paul Stephan

Goethe-University, Frankfurt am Main

Abstract

Atheism is commonly justified by opposing religious belief to scientific reason. By using ideas and arguments found in the works of Max Stirner and Friedrich Nietzsche it is argued that atheisms justified in this manner ignore the inner connection between religion and science; both religion and science are modes of abstraction from immediate sensuality, and are logically and genealogically linked. It is shown that this insight could open the space for a new reciprocal understanding, establishing a common ground between religion and science.

Keywords: radical atheism; Stirner; the Ego; religion.

Introduction: ‘Standard’ and ‘Refined’ Atheism

The most common form of atheism, which I will therefore refer to as ‘standard atheism’, is based upon an argument which can be reconstructed in a syllogism like this:

a) Our best scientific theories represent, more or less, a true picture of the world.
b) Religious beliefs – amongst them the proposition that there exists an entity called ‘God’ – contradict those theories.

Therefore:

a) Religious beliefs are untrue.

This argument lies at the core of the recent movement of 'New Atheism', with leading protagonists such as Sam Harris, Michael Onfray, and Richard Dawkins. Dawkins sees religion as a mere 'delusion'[38], a harmful and evil by-product of biological evolution[39] that should be erased from the world.

There are many obvious objections to this argument. Principally, it is not clear if it is legitimate to claim that modern science can give an overall picture of the world. If there are not certain boundaries to scientific explanation, how can we account for certain phenomena that lie at the core of our common world-view but which cannot be explained by science, such as human freedom or morality?

I will, however, address this debate only indirectly in this article. Instead I want to take a step back and ask if the distinction between religion and science, that is supposed by both opponents and adherents of 'standard atheism' is valid at all. Further, I will investigate if there is a close link between our ordinary modern, secularized world-view, with science as its highest or 'purest' expression on the one hand, and pre-modern, metaphysical word-views, with religion as its highest or 'purest' expression on the other hand.

While Dawkins & co. would strictly deny such a link,[40] more moderate tones have been emerging in the religious philosophy of Jürgen Habermas, a philosophy that he has been developing in several talks, discussions, articles, and interviews over the last few years.[41] Habermas raises the question of whether secular modernity does not depend on normative sources that it cannot produce by itself, but have to be provided by religious institutions. This dependency is, however, *external* for Habermas; secular modernity stands on its own feet as it is, both logically and genealogically, independent from any footing in religious traditions. Habermas does, however, open the door to claiming a much stronger, *internal* dependency.[42]

In this article I will take up the latter trail; I want to give an argument that supports the view that there is an internal relationship between religion (at least in its Christian form) and science, that is ignored both by 'standard atheists' and by many supporters of religion. In order to undertake this I will use, maybe surprisingly, arguments I find in the works of two philosophers who are generally considered to be the most radical atheists of the 19th century, if not of overall Western philosophy: Max Stirner and Friedrich Nietzsche. They both defend an atheism that I would call 'refined atheism'. They do not simply take the position of 'objective truth' and rebuke religion from it, but show that the relationship between religion and scientific atheism is too complex to be reduced to a mere right/wrong-dichotomy; religion is atheist in itself and (scientific 'standard') atheism is in itself religious. Thereby, they point towards a more fundamental question than that of whether religion is true or not: if we really wanted to be true atheists we would also have to reject any claims to truth at all.

Religion vs. the Ego-ness of the Ego: Max Stirner

Max Stirner is a rarely discussed theorist in contemporary philosophy. The reason for this is that his main claim could seem to be completely mad, childish, and absurd: that the whole existence of the world depends on my Ego, to which, accordingly, no moral claims at all possess any binding power. By looking at this apparently rather bizarre consequence, one could easily overlook, however, the arguments that Stirner gives in his quite lengthy main work *The Ego and Its Own*[43] in order to support them. In opposition to Nietzsche, who wrote most of his books in an aphoristic, metaphorical style that makes it hard to see much argumentation in them, Stirner follows a quite clear-cut Hegelian style of reasoning, making the book a rather classical systematic philosophical treatise.

Stirner's central argumentative figure, which he develops in the first and critical part of *The Ego and Its Own*, works as follows: both on an ontogenetic and on a phylogenetic level, human consciousness makes the same logical development. In the first stage – the stage of polytheism and childhood – consciousness is bound to the force of the senses and thereby the outer world. It lives purely in the particular. This stage is a prison for consciousness. In order to break free of this it negates the realm of pure, immediate sensuality in a process of idealisation; it constructs a 'higher', 'over-sensual' world that is governed by universality and abstraction, ideals and morality. Stirner calls this second stage the stage of monotheism and youth. The problem that arises in this stage is that the means by which consciousness has realised its own self-emancipation – idealisation – turns against its own creations; it discovers that they are still too sensual, too particular, too concrete. A constant process of idealisation, creation of new ideals, and new idealisations take place, at the end of which nothing remains except the movement of negation itself: this is the abstract Ego, the thinker who is identical to the non-personal movement of thinking as the process of constantly overcoming the sensual.

At this point, something which can be called a 'catharsis' sets in: behind the thinking, the thinker becomes aware that the truth behind his or her thinking is his or her true, concrete Ego. Stirner's own language becomes a bit misleading and confusing at this point: this true, concrete Ego cannot be grasped by any concept, as it stands behind any concept as its creating force. Stirner clearly states that not even the concept of the 'transcendental I' that can be found in Fichte is capable of grasping the true Ego, as Fichte's Ego is still a universal concept.[44] Neither can the true Ego be reduced to its sensuality; it is the master both of its sensuality and its rationality. Therefore, the language of an impersonal creative force would seem to be much more adequate to describe it than the language of the 'I'. At the end of the book Stirner explicitly states:

> They say of God, 'names name thee not'. That holds of me: no *concept* expresses me, nothing that is designated as my essence exhausts me; they are only names. […] I am *owner* of my might, and I am so when I know myself as *unique*. In the

> *unique one* the owner himself returns into his creative nothing, of which he is born." (EO, 324)

The last sentence remains ambiguous, however, as it is still *the owner's* creative nothingness as if it could be his personal property. The Ego is just like the almighty monotheist God, who is not truly borne by something other, but gives birth to himself – whereby Stirner falls prey to all the contradictions and difficulties that are connected with the conception of *creatio ex nihilo*.

These self-inflicted confusions and contradictions point to the core of Stirner's philosophy: in order to remain able to speak about what he wants to say Stirner is – obviously enough – still dependent on using concepts that he finds in the tradition and does not create himself. In order to become what it truly is, Stirner's Ego has to go through the stages of sensuality and idealisation. It remains always dependent on that which it wants to exclude from itself. Stirner seems to completely overlook this point and this is what makes his philosophy so weak. If one wants to save some of Stirner's ideas one would have to draw a more complex picture of the relationship between the creating force and that which is created by it. This is exactly the point where Nietzsche comes into play. Before discussing this, however, I want to make clearer what we can learn from Stirner concerning the relationship between science and religion.

Religion is a ubiquitous phenomenon for Stirner; it is any form of perceiving an entity as somehow independent from me. Therefore, anyone who still accepts an entity to be independent from him or her can be called religious, even if this 'something' is nothing more than the pure movement of thinking; he would still not perceive himself as the true uncreated creator of every entity. This is the reason which Stirner gives for claiming that '[o]ur atheists are pious people' (EO, 166).

Of course, it would be easy to argue that this definition of religion is much too broad, and any claim about the relationship between science and religion based on it would be much too imprecise. Therefore I want to focus on the more specific things Stirner has to say about the relationship between Christian religion and science. According to him, both have in common that they rely on the principle of idealisation as described above, on the assumption that the particular in respect to the sensual should be overcome, in favour of the universal, in respect to the ideal. This is not just a structural similarity, but there is a genealogical connection insofar as science is the continuation of Christian religion. These two points seem to be highly plausible. Every science is based on certain fundamental presuppositions that it cannot prove within itself. Further, it has to work by abstracting the immediate particular sense data to universal laws. This method of reducing the particular to the universal is just the same method that Christian religion uses, in comparison to pre-Christian religions, when reducing an infinite plurality of gods and goddesses to one God, and a plurality of laws to one law. It is the same method that ancient philosophy developed in order to reduce the world to certain basic principles; a development which took place independently from Christianity but was easily melted together with it.

Naturally, one can be sceptical about how Stirner presents his argument. Compared to Stirner's claim that all pre-Christian cultures can be unified under one single conception and compared to childhood on a phylogenetic level, Hegel's strong historical claims appear as detailed, evidence-based historiography.[45] In any case, historical accuracy is rather evidently not the main concern of Stirner; it is to analyse a logical structure inherent to Western culture – idealisation, its meaning, and its internal contradictions. To what extent other cultures may already have known idealisation – and it is quite obvious that idealisation is not just a phenomenon of Western culture but of human civilization in general – is a secondary question in this respect.

Religion and Science as Asceticism: Friedrich Nietzsche

There are deep methodological differences between Stirner and Nietzsche. While Stirner writes in a very systematic, Hegelian style, and was also deeply influenced by Hegel,[46] Nietzsche's great philosophical teacher was Schopenhauer, and he preferred a highly anti-systematic, sometimes even non-philosophical style for expressing his thoughts.

The opposition of Hegel and Schopenhauer shapes the whole philosophical opposition between Stirner and Nietzsche. While Stirner remains in the language of subjectivity, although his 'I' is more an impersonal creative force than an actual subject in any comprehendible sense of the word, Nietzsche explicitly attacks subjectivism and the notion of an 'I' in favour of an impersonal creative force which lies behind any subjectivity, for which he uses several names and metaphors of which no single one seems to be sufficient for him.[47]

The most striking philosophical similarity of Nietzsche and Stirner is, however, their akin views on science and the Christian religion. In Nietzsche-scholarship it is often overlooked that Nietzsche's criticism of Christian religion has a 'dialectical' structure that makes it very similar to Stirner's[48]: just as for Stirner, for Nietzsche, modern atheism (including his own kind of atheism) is the result of the self-sublation of Christianity, he does not simply ompose his view on to religious views.[49]

This has to do with the fact that with the 'death of God', Nietzsche does not mean only the secularisation of the Western world that he encountered in his life-time. This would be the interpretation of the crowd at the marketplace that does not understand the madman in the famous aphorism 125 of *The Gay Science* (2001, 119 f.). Their basic failure is that they do not understand the real depth of this event; the 'death of God' does not only endanger the existence of churches but the existence of Western culture as a whole. In this sense it is truly *our deed*, as it points right to the core of our culture, and is not something that comes from the outside or is accidental.[50]

This is so because Nietzsche, just like Stirner, assumes that Western culture is basically a culture of idealisation. While Nietzsche, in opposition to Stirner, does not think that idealisation is fully absent in other cultures, he nevertheless claims that in Western culture idealisation has an entirely different meaning. While in other cultures,

like that of the ancient Greeks, idealisation was always bound back to sensuality, the main form of idealisation being art, in Western culture the realm of ideals becomes somehow independent from the senses; idealisation itself becomes the main ideal of all life, an end in itself instead of one pleasant form of human consciousness amongst others.[51] To put it in other words; Western culture is the culture of Truth, it is dominated first by philosophy and religion, later by its most 'pure' form, modern science – it is a culture reigned over by the 'ascetic ideal'.[52]

Within Western culture, Nietzsche sees just the same self-destructive tendency that Stirner described; the process of idealisation goes so far as to destroy the ideal of idealisation[53] itself, by means of scientific enlightenment. This process of self-destruction of Western culture is exactly what Nietzsche calls the 'death of God'. 'God' is just a name for the ideal of idealisation itself.[54] This is the reason why he can state in aphorism 377 of *The Gay Science* that even 'we' as the most 'free spirits' have a belief that forces us to destroy all ideals – it is the belief in science itself (2001, 241 ff.). As for Stirner, also for Nietzsche, atheists are pious people.

There is a collection of posthumous fragments with motifs resembling the just finished *Gay Science* under the title *Tautenburger Aufzeichnungen für Lou von Salomé*. Here Nietzsche expresses his thesis of the self-sublation of religion in the following pointed way in three subsequent aphorisms: '*Der Freigeist als der* religiöseste *Mensch, den es jetzt giebt'*, '*Gott hat Gott getödtet'*, and '*Die Moral starb an der Moralität'* (1977, 26; § 74-76).[55] In Nietzsche's own view he did not murder God; God murdered himself.[56]

Differently from Stirner, Nietzsche sees 'the death of God' as a highly ambiguous event. On the one hand, it refers to a cultural catastrophe; since the process of idealisation destroyed both any ideals and any connections to sensuality, Nietzsche sees the danger of a deep nihilism.[57] On the other hand, he strongly affirms the death of God as it frees consciousness from any boundaries it might have, and makes the way free for a new age of experimental freedom in which new ideals can be created.[58] Here we have to note another decisive difference between Nietzsche and Stirner: while Stirner, following Hegelian tracks, sees history as a progress from bondage to freedom, comparing the state of complete bondage to childhood and the state of total freedom to adulthood, Nietzsche has an entirely different view of history. Childhood is for him the metaphor for the highest form of human freedom, and the adult who wants to become free from moral boundaries has to become somehow 'childish' again.[59] Further, while Nietzsche seems to think that our modern era gives the opportunity of a freedom never before reached in human history, he clearly states that there were other free individuals and groups in history before, and that there will be unfreedom again, as childhood cannot remain an enduring state but has to lead towards the foundation of new ideals, therefore the coming-back of a new age of idealisation, a new self-sublation of this age, and so on, and so on.[60] This is the historical aspect of the famous doctrine of the 'Eternal Recurrence'. For Nietzsche there is no 'end of history' but the eternal recurrence of the same basic patterns of human civilization.[61]

This different view on history from Stirner naturally implies an entirely different picture of the relation 'science – religion – atheism'. While Nietzsche clearly praises atheism and seeks, just as Stirner, a state of pure freedom from any moral boundaries, he neither thinks that this 'state' can be a permanent one, nor that it can be completely reached. Idealisation is a necessary part of human existence and ideals can always become new gods; or even one God which represents The Ideal.[62]

Summary

The main conclusion of Stirner and Nietzsche's arguments as presented so far is that atheism is an intrinsic danger to Western culture, a result of Christianity itself. Christianity is in itself an atheist religion, a religion that sublates itself. Put the other way around, in scientific atheism, Christianity, insofar as it is the religion of idealisation, is still at work, and scientific atheism sublates itself when completely denying Christianity. As long as we have not found an entirely different way of relating to idealisation there is no way in which this contradiction can be solved. It is possibly *the* inner contradiction of Western culture.

This insight should make both atheists and Christians more sympathetic towards each other. Both science and Christianity are based on the fundamental assumption (which cannot be scientifically 'proven' in any way) that idealisation is valuable in itself, that we should honour religion or respect Science and belief in them. On the other hand, this opens up the stage for a much more radical criticism of Western culture as a whole, which goes beyond the opposition between atheism and religion.

Both Stirner and Nietzsche share the assumption that this 'beyond' is the realm of a nameless, impersonal creative force, which constitutes ideals, and even idealisation itself, while not itself being an ideal. For Stirner, freedom means to become aware of this force and to become identical with it. Nietzsche, however, would describe it in an entirely different way: the force necessarily manifests itself in ideals of various kinds; therefore, while freedom in its negative significance is somehow connected to freeing oneself from any kind of ideals and becoming identical to the impersonal creative force, in its positive significance freedom is also the active creation of new ideals through the encounter with the active force. Thus, there is no way out of the constant interplay (or even war) between ideals as manifestations of the force and of the force itself.

While Nietzsche criticises Western culture for being too alienated from the active force – which is just another way of describing its nihilism – and therefore proposes a reopening of Western culture towards it, he is, on a 'meta-level', aware of the fact that there might, and will be, a re-closure after the re-opening and so forth.

As we have seen above, Stirner explicitly gives his Ego the same attributes that are usually given to God. The use of prophetic language in *Thus Spake Zarathustra* also should not be understood as mere satire, but as a trial by Nietzsche to really establish a new kind of faith: faith in the 'Will to Power', 'eternal return', and 'Super-/Overman'.[63] In *Ecce Homo* he calls himself 'a disciple of the philosopher Dionysos' ((1954b), 812; §

2). The radical atheism of Stirner and Nietzsche leads to a new kind of religion in both.[64] A 'religion', however, that is aware of the fact that it cannot grasp the essence of the world completely, that does not reduce the transcendence of that which is beyond human consciousness to pure immanence. This could be taken as a definition for authentic religion – a religion that is aware of itself as a construction (even if this authenticity may not be possible at all times).

Conclusion

It can be concluded that there is no hard distinction between science and religion regarding human creative-interpretative practice, but only a difference between an authentic and an inauthentic stance towards these practices of creation-interpretation. Dawkins, and other 'standard atheists', have an inauthentic stance towards their own practice. While Ludwig Wittgenstein, for example, admits that something 'inexpressible' exists which cannot be represented by language, but presents itself,[65] Dawkins presupposes that modern science gives the only plausible world-view which he describes as follows:

> An atheist in this sense of philosophical naturalist is somebody who *believes* [my emphasis; PS] there is nothing beyond the natural, physical world, no *super*natural creative intelligence lurking behind the observable universe, no soul that outlasts the body and no miracles – except in the sense of natural phenomena that we don't yet understand. (2006, 14)

It is striking that Dawkins uses the term 'belief' in this context. Not only here, but throughout his book, Dawkins describes his conviction that science is something that has an emotional, non-scientific background. He is a good follower of the ideal of idealisation, who has devoted a main part of his life to the fight against what he sees as opposed to this ideal. He is, however, not consequent enough: his belief in science is not self-reflective. He admits, for example, that one has to use non-argumentative, manipulative means to fight against religion.[66] He sees these means, however, as necessary only because religion uses irrational means. Yet how did he himself (and other atheists) become atheists in the first instance? They must have been convinced by irrational means as well. Thus, why is science the pure truth and religion pure delusion?

On the one hand, Dawkins insists against agnosticism: 'There is a truth out there and one day we hope to know it, though for the moment we don't.' (ibid., 47) On the other hand, he states from his biological point of view:

> 'Really' isn't a word we should use with simple confidence. […] 'Really', for an animal, is whatever its brain needs it to be, in order to assist its survival. And because different species live in such different worlds, there will be troubling variety of 'really'. What we see of the real world is not the unvarnished real world but a model of the real word, regulated and adjusted by sense data – a model that is constructed so that it is useful for dealing with the real world. (ibid., 371)

What else should be the ultimate foundation of science other than sense data, than our natural way of dealing with the world as the kind of animals we happen to be? Even if we somehow transcend these foundations by the use of scientific methods and tools, how would it be in principle possible to ever leave them? It is not possible – if there is no 'real' there can be no 'scientific real' and accordingly no truth, even after millions of years of research.[67]

There is, of course, always some inauthenticity at work in our attempts to creatively interpret the world, and this may even be necessary. Nietzsche would be the first to highlight that fact. This tendency towards inauthenticity, however, is dangerous insofar as it blocks our openness towards the world and towards other perspectives towards the world. Insofar as a certain way of interpreting the world also represents a certain ideology, it is also an ideological way of looking at the world that blocks different views on society, and even any feeling of radical discomfort within society at all.[68]

This way of conceptualising the relationship between science and religion may make it possible to set the discussion between religion and science on a new level that may prove more productive than earlier attempts. For example, a more dialogical relationship could be established towards modern Islamism, if it was looked at it as not something entirely different to secularised culture, but as representing a certain emotional drive that is also present within secular culture, namely the same drive for idealisation that lies at the foundation of both science and Christianity. That does not mean that it might not be good to fight against Islamism, but even in a fight one should never perceive one's enemy as somehow 'evil' or inferior to oneself, but remain holding a deep respect for the different perspective of the other that can always teach one something about oneself. Declaring the Islamists to be absolutely evil and totally different to our own good societies does not only seem to be just too similar to the way they talk about Western culture; it is obvious enough that secularised Western societies are not perfect even according to their own standards, and there are many reasons to have a deep feeling of discomfort within (post-)modern culture.

The same goes for the debate between secularism and Christianity within secularised culture. Especially we, as scientists, should not treat religious people (or adherents of a more 'naïve' faith than us) as somehow 'mad', or 'evil', but as finite beings trying to cope somehow with the essential contingency of life. Of course, we can expect the same respect from them. Despite all concessions, Habermas' approach seems to be half-hearted in this respect. He acknowledges religion only insofar as it possesses a useful function for secular discourse (which is not even necessary), and demands religious participants in common discourse to play this supportive role, and translate their convictions in secular terms (even if secular participants should help them). As far as I can see, from a strict post-metaphysical point of view, as I have tried to develop in this essay, there follows a strong presumption of equality between all sorts of consciousness. All convictions are mere constructions, no one can claim to be superior to the other in principle. In the dialogue between secular modernity and religion, *both* sides should try to translate their convictions into the language of the other. Thus,

scientific or otherwise secular convictions, can be translated into more religious language, even if they may seem completely 'obvious' to us. The interpretation of Western culture presented in this article could be a way of undertaking this process of reciprocal translation in order to foster mutual understanding; despite all their differences, secular and religious participants could agree that they both share a common mistrust in particularity, sensuality etc. and prefer the conceptions of idealisation. This might not seem much, but it is a starting point at least. From a secular point of view, this implies the acknowledgment of religious, rationally unjustifiable, foundations of one's own world-view; for a religious person this may just be another way of defining the inner core of monotheist belief. If this effort is not taken, and one still tries to find a common ground of understanding, secular mainstream thought may, as Habermas fears, become somehow ripped from its essential core, and may fall prey to a disastrous nihilism that can already be observed in current Western culture, while religion may be in danger of isolating itself and becoming sectarian or even fundamentalist.

Further, one should attempt to keep a dialogue open with forces that reject the ideal of idealisation completely. In order not to confuse the main argument I have treated the concept of 'idealisation' as something more or less purely intellectual. Yet indeed it is, for both Stirner and Nietzsche, not just a form of consciousness but at the same time a way of living that implies certain sacrifices that one has to take upon oneself in order to become a rational subject. While both Stirner and Nietzsche acknowledge that there are good reasons and great benefits of this way of living, they at the same time remember these sacrifices, and point to the self-contradictions that are connected with them.[69]

Notes

[38] Cf. the title of his most popular book on this topic, the best-seller *The God Delusion* (2006).

[39] Cf. the section *Religion As A By-Product of Something Else* in 2006, 172 ff.

[40] Dawkins even denies that there is any inherent link between our modern morality and religion. (Cf. the chapter *The Roots of Morality: Why Are We Good?* in 2006, 209 ff.)

[41] Habermas began to engage in the issue of religion and its relation to modern, rational, secularized discourse in his acceptance speech for the Peace Prize of the German Book Trade in 2001, *Faith and Knowledge* (2014). A discussion between him and the future pope Benedict VXI., then cardinal Joseph Ratzinger, took place in 2004 and was published in English under the title *The Dialectics of Secularization: On Reason and Religion* (2007). In the following years two additional discussions were documented in anthologies, a symposium in Vienna (Langthaler / Nagl-Docekal 2007), and an interesting encounter between Habermas and several Catholic theologians in Munich (Habermas *et al.* 2010). Several essays and interviews by and with Habermas

concerning this topic are collected in the anthologies *Between Naturalism and Religion* (2008) and *Nachmetaphysisches Denken II* (2012). Some English-speaking commentaries on this debate are collected in the comprehensive anthology *Habermas and Religion* (Calhoun / Mendieta / VanAntwerpen (2013)). Habermas is currently preparing a major work on religion under the title *Versuch über Glauben und Wissen* ('Essay on Faith and Knowledge') (cf. ibid., 707).

[42] The question, if the relationship between Western secular discourse is external or internal, is the main point of disagreement between Habermas and his Catholic opponents in Habermas / Ratzinger (2007) and Habermas et al. (2010). While his opponents highlight the essential historical and logical connection between Christian faith and modern discourse (as I will – however from a different point of view – in this essay), Habermas denies it. This evidently leads them to very different conclusions; while Habermas sees the role of religion in a secularised discourse as merely supportive, and demands religious participants in the discourse to translate their claims into a language intelligible to non-religious participants (even if he also wants the secular participants to engage in helping the religious to translate them and acknowledges a certain peculiarity of religion), his Catholic opponents seek to defend a more equal relationship between both forms of discourse, and for the independent truth of religion which does not have to be justified to secular common-sense. I will return to this issue in the concluding section of this essay.

[43] I will cite *The Ego and Its Own* (Stirner 1995) using the abbreviation EO.

[44] 'Fichte's ego too is the same essence outside me, for every one is ego; and, if only this ego has rights, then it is "the ego", it is not. But I am not an ego along other egos, but the sole ego; I am unique.' (EO, 318 f.)

[45] Widukind De Ridder even goes so far as to read the whole first part of Stirner's book as a parody of Hegelian philosophy (2008).

[46] Lawrence S. Stepelevich even states that Stirner's 'formal acquaintance with Hegelian philosophy and Hegelian philosophers [was] much more extensive than that obtained by *any* of the Young Hegelians' (1985, 603).

[47] The most important of course being the famous 'Will to Power' which he introduces as a quasi-metaphysical principle in *Beyond Good and Evil*, while at the same time explicitly stating that it is only an interpretation (1954a, 405 f.; § 22) and a mere 'attempt' (ibid., 421 ff.; § 36). Another name for this force seems to be just 'Life'.

[48] A remarkable counter-example is the excellent comprehensive study by Claus Zittel, *Selbstaufhebungsfiguren bei Nietzsche* (1995) in which he analyses in great detail the different figures of self-sublation in Nietzsche's whole work (for the connected self-sublation of morality, science and religion cf. especially ibid., 83-96).

[49] For example, Christopher Hamilton completely overlooks this point when he says that 'Nietzsche murdered God' (2007, 169).

[50] Martin Heidegger rightly stresses this point in his essay *Nietzsche' Word: 'God Is Dead'* (2001): 'Nietzsche's word ['God is dead'; PS] gives the destiny of two millennia of Western history.' (ibid., 160)

[51] Cf. aphorism 143 of *The Gay Science* (Nietzsche 2001, 143 f.).

[52] Nietzsche analyses the 'ascetic ideal' and the sublimation of the Christian ideal into modern science in the most detail in the third part of *The Genealogy of Morals* (1956, 231 ff., esp. 289 ff.; § 25).

[53] This term, while not used by Nietzsche, should resemble his term '*Sittlichkeit der Sitte'* which he first introduces in *Daybreak*, aphorism 9 (1971, 17 ff.).

[54] 'In "God is dead" the name "God", thought essentially, stands for the supersensory world of ideals[.]' (Heidegger 2001, 165) This process is described maybe most pointed by Nietzsche in the section *How the True World Finally* [which is the 'supersensory world' that Heidegger has in mind; PS] *Became a Fable* in *The Twilight of the Idols* (1899, 124 f.).

[55] 'The freethinker as the *most religious* human being that currently exists', 'God murdered God', and 'Morals died from morality' (my translations).

[56] In all passages cited so far Nietzsche clearly treats the 'death of God' as something that he only observes or comments on, not something that he does. The same goes for aphorism 343 of *The Gay Science* (2001, 199).

In Aphorism 153 of *The Gay Science* (2001, 132) Nietzsche brings, similar to the 'madman' of aphorism 125 (ibid., 119 f.), a 'homo poeta' on the stage of his book that declares 'I myself have now in the fourth act slain all gods, out of morality!' (ibd., 132) Here again Nietzsche explicitly distances himself from the murdering of God and hints at the idea of the self-sublation of religion through the same morality that it brought into life.

[57] This is the version Nietzsche gives in aphorism 125 of *The Gay Science*.

[58] This positive interpretation of the 'death of God' is expressed in aphorism 343 of *The Gay Science* (2001, 199).

[59] Nietzsche develops this idea in a quasi-dialectical way in the speech *The Three Metamorphoses* in *Thus Spake Zarathustra* (1954c, 23 ff.). In *Beyond God and Evil*, Nietzsche develops this topic further by asserting that '[t]he maturity of man […] means, to have reacquired the seriousness that one had as a child at play.' (1954a, 456; § 94)

[60] 'Perhaps the most solemn conceptions that have caused the most fighting and suffering, the conceptions "God" and "sin", will one day seem to us of no more importance than a child's plaything or a child's pain seems to an old man; – and perhaps another plaything and another pain will then be necessary once more for "the old man" – always childish enough, an eternal child!' (1954a, 442; § 57)

[61] This historical reading of the doctrine of the 'Eternal Recurrence' is developed e.g. in the first aphorism of *The Gay Science* where Nietzsche speaks of the 'new law of ebb and flood' (2001, 29) that implies that there is an eternal interplay between the

comical and the tragic in order to preserve life. There will always be a change between the comical eras and those where tragic predominates, each one dialectally becoming the other.

[62] This seems to be the reason why Nietzsche speaks of 'the moment of the shortest shadow' (1899, 125) (not, as one may suspect, the complete absence of shadow) in the comment on the last sentence of *How the True World Finally Became a Fable* which describes the final stage of the development of the 'true world': 'We have done away with the true world: what world is left? perhaps the seeming? ... But no! *in doing away with the true, we have also done away with the seeming world!*' (ibid.)

[63] Nietzsche even describes faith as something explicitly valuable and necessary for a productive, creative, authentic life, when talking to the inhabitants of the 'land of culture': 'Unfruitful are ye: *therefore* do ye lack belief. But he who had to create, had always his presaging dreams and astral premonitions – and believed in believing!' (1954c, 131) Zarathustra himself (who does not contradict) is referred to as 'the most pious of all those who not believe in God' (ibid., 289) by the old pope.

[64] Some interpreters such as Eugen Biser, in his very insightful study *Nietzsche. Zerstörer oder Erneuerer des Christentums?* ('Nietzsche. Destroyer or Renewer of Christianity?'; my translation) even goes so far as to claim that Nietzsche in the end would not want to destroy Christianity, but only to defend what he sees as true Christianity against Paulinian doctrine. While I see clearly the possibility and productivity of such a reading, I do not support it on two grounds: 1) This 'true Christianity' (which would be more or less identical with the teachings of Zarathustra) does not have much to do with what is normally considered Christian, it is even in many aspects exactly the opposite. 2) It is correct to say that Nietzsche, especially in *The Anti-Christ* (2005), distinguishes between Paulinian and original Christianity, and directs his critique primarily against the first. It is, however, also clear that he criticises Jesus himself and that there is a dialectic between Jesus and Paul. For a different account which stresses the differences between Jesus' and Nietzsche's philosophy, cf. Bellioti (2013).

[65] 'There is indeed the inexpressible. This shows itself.' (Wittgenstein (2006), 29) This seems to be exactly the point where Wittgenstein becomes surprisingly similar to Nietzsche – he remains bound, however, in the strange dualism between scientific, self-evident sentences and 'the inexpressible' that Nietzsche (and Stirner) try to undermine.

[66] For example, he tolerated the title *Root of All Evil?* for a documentary he did for Chanel Four (which clearly implies that religion is – or at least could be – the root of all evil) despite the fact that in fact he does neither believe that religion is the root of all evil nor that there could be a root of all evil in principle (2006, 1). Here his faith in truth and truthfulness is shown to have a boundary. He would surely strongly condemn similar behaviour by religious missionaries.

[67] Of course, our scientific world-view is highly plausible as it allows us to interact with nature in an – apparently – very efficient, successful way. But this has nothing to do with it being true in the strict sense of the term.

[68] For Habermas, this ability to point towards something that is missing in the current social order is one of the most valuable features of religion, that should also be appreciated from a secular point of view (Cf. the title of Habermas *et al.* 2010).

[69] In conclusion I would like to thank all the various people who helped me in some way or other to complete this article. First of all Frederick Myles, who helped me to improve this text (not just) on a linguistic level. For the deep discussions about Stirner, Nietzsche, Feuerbach, Marx etc. I want thank Georg Spoo. I also should not forget to mention the always helpful advice and support of Christoph Menke, the supervisor of my MA thesis on Nietzsche's critique of Truth, the participants of the annual Nietzsche-workshop organised by Helmut Heit and Hannah Große Wiesmann, and my friends from my local Nietzsche reading-group in Frankfurt am Main.

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James Burton

The Philosophy of Science Fiction: Henri Bergson and the Fabulations of Philip K. Dick

London: Bloomsbury Academic, 2015

Pulse: A History, Sociology & Philosophy of Science Journal, 2016, Issue 4

https://sciencestudies.ceu.edu/node/44253

Fani Cettl

Central European University, Budapest

Judging from the title, it might seem this is a study about how to read Philip K. Dick's novels with the help of Henri Bergson's philosophical ideas, but Burton refreshingly offers much more than this. He sets up his framework by arguing for a fundamental instability between science and fiction, and relatedly, between science and religion. Pointing out how conventionally, philosophical as well as modern scientific discourses have frequently defined themselves precisely in opposition to the fictional, he is interested in exploring what he sees as an intricate entanglement between the two, and proposes to do this by putting side by side philosopher Bergson and sci-fi writer Dick. The link between the two authors is not directly historical, but rather intellectual: both refused to choose sides between materialism and spiritualism, immanence and transcendence, and worked "at the edge of the known".

In this framework, Burton identifies the key mutual premise in Bergson and Dick's work as one of "immanent soteriology": a quest for immanent (rather than transcendent or otherworldly) salvation, through fabulation from pernicious mechanization in the modern age. Though not sharing the same historical context, Bergson and Dick wrote and raised ethical concerns in response to the similar outcomes of modern mechanization and industrialization. Bergson did so both prior to and in the context of WWI, whereas Dick did so after WWII. Burton intriguingly guides the reader in illuminating Bergson through Dick and vice versa. Bergson grounds his views in evolutionary biology and theorizes that human war-instinct in modernity gets completely out of hand through the operations of intelligence, namely the construction of machinery and the mechanization of humans. Mechanization in this context, as Burton explains, means "the reduction of the living to mechanical or non-living status" (32), which is in some ways an intricate aspect of life itself, but which escalates in modernity. Crucially for Bergson, what counteracts intelligence (and helps to keep the war-instinct under control) is that which he calls the fabulation function, as a biological propensity to open up all closed social forms. This is how he understands the origin of religion, quickly adding that religious fabulations commonly end up in closed morality, but also that fabulation always keeps working towards opening it up. Burton builds on

Bergson's undertheorized idea of open fabulation to argue that Dick's novels perform precisely this ethical work of opening up any closed social structure in the narrative to its excluded others. This is done by fabulating alternative worlds and destabilizing the boundaries between real and fictional worlds for the characters, but crucially also for the reader. In this way, the novels enact little moments of immanent salvation (or we could argue, critical insights) for both the reader and the protagonist, and Burton offers analyses of numerous examples to support this argument. Arguably the most famous one is *Do Androids Dream of Electric Sheep* (1968) and its film adaptation *Blade Runner* (1982), in which the reality of the android-hunter Rick Deckard, in which humans possess empathy and slave androids do not, and therefore can be killed, unmistakably crumbles and turns into fiction. He is left navigating the new, unstable world (in which even his own identity as human is no longer certain), whilst the reader/viewer also starts questioning the human-android boundary.

Another important part of Burton's argument about Bergson and Dick's immanent soteriologies is that, although the moments of salvation are experienced in the immanent reality, they are triggered through transcendent media. The figure of the mystic, and more particularly St. Paul, is for Bergson and Dick exemplary of the relationship of a transforming human to an exterior force or intelligence that triggers insight. Through a somewhat extended detour through Badiou and Agamben's contemporary views on the figure of St. Paul, Burton concludes that such a relationship to the transcendent that is embodied by the mystic is to be understood as performative. That is, it is not a relationship of one exceptional individual to one true God (and thus exclusionary), but rather potentially anyone's opening up through fictionalizing towards an exterior, quasi-transcendent agency, be it understood as god or chance, alien or android. For Bergson and Dick, it is necessarily a nonhuman element that opens up the human reality towards the possibility of salvation, as well as a non-mechanistic element, which "reveals the human as always-already in part nonhuman, technological, objectified" (133).

While Burton, through a lucid exposition of Bergson and a careful analysis of Dick's novels, convincingly argues for their compatible views of salvation from modern mechanization through fictionalizing, at times it seems that "modern mechanization" is used in an overgeneralizing sweep, as if modern life in itself is simply mechanized for the worse, which puts the mechanical and the living at odds. As I wrote above, Burton discusses mechanization in the sense of the reduction of the living to the mechanical or the non-living, and this is certainly applicable to the themes of modern mechanized warfare, or the exploitative effects of industrialized work (epitomized by the slave robot). However, other modern and contemporary developments commonly understood as mechanization could be brought to the discussion, such as biotechnologies, digital technologies, sophisticated communication and transport machines. These have become so integrated with modern life that it becomes difficult to speak of the boundary between the mechanical and the living. Are all these developments to be subsumed under some totalizing notion of negative mechanization, or should this notion be unpacked more carefully and noted also for its possibly positive aspects? If we go back

to *Do Androids Dream*, and put for a moment aside that the androids are slave workers, we can note that the construction of artificial intelligence, which completely destabilizes the boundary between the mechanical android and the living human, is enabled precisely through biotechnology. It would be desirable to have some discussion by Burton on how Bergson and Dick might think of these other various aspects of mechanization, and whether they might see them not only as negative. Nevertheless, Burton's study is innovative, elegantly written, and not only will it be of interest for scholars of cultural studies and philosophy, but also for science studies scholars.

Walloch, Karen L.

The Antivaccine Heresy: Jacobson v. Massachusetts and the Troubled History of Compulsory Vaccination in the United States

Rochester: University of Rochester Press, 2015.

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Sandipan Mitra

Department of Sociology, Presidency University, Kolkata

Walloch's work offers an intriguing study of the history of vaccination in the United States, based on a rich corpus of sources ranging from government documents to newspaper reports, legislative proceedings, judicial records, church papers, and pamphlets. The central objective of the book is to develop a precise and nuanced characterisation of antivaccination in Massachusetts by interrogating both public anxiety and medical uncertainty about vaccination (p. 2-4). The first two chapters outline the complex trajectory of vaccination in nineteenth-century United States. Vaccination was introduced in America soon after its inception in England and was readily accepted by the medical elite. Initially, vaccination seemed promising since it induced a much milder disease than variolation, the older way of inoculating smallpox, which in spite of conferring immunity and reducing mortality was unable to prevent periodic resurgence of epidemics. However, cheap and easy availability of the vaccines to the masses was impeded by the absence of state sponsorship, lack of infrastructure and commitment on the part of the responsible authority, and, additionally, personal and proprietary disputes. While primary vaccination was accepted, at least in the wake of outbreaks, a general apathy and even downright hostility persisted with regard to revaccination. Such widespread abhorrence of vaccination, combined with insistence by physicians and public health experts, compelled some states to enact strict laws to exact compliance.

The second chapter tracks the different substantial changes which vaccination underwent during "the course of its first one hundred years, as physicians tinkered with various sources for vaccine lymph and tried out all sorts of techniques and instruments" (p. 215). In the next chapter, Walloch undertakes a thorough investigation of the 1901-02 smallpox epidemics in Boston and Cambridge. In both cities, the health departments responded with utmost immediacy to subside the outbreaks, but given the civilians' poor status of vaccination, their efforts were ineffective. As the situation deteriorated, there was growing cynicism among the masses about the competence of the health department and the validity of vaccination as the best preventive measure. A strong

public opinion was built in favour of the older sanitary methods, but the health authorities remained adamant in their refusal to adhere to quarantine. Chapter four gives a vivid description of how people, who were not antivaccinationists, resisted vaccination using "all sorts of wily tactics" which involved women invoking gender to avoid inspection of vaccination scars (p. 79). Public confidence in vaccination was severely undermined by stories about infection, injury and death from vaccination, which were publicised by antivaccinationists. Reports of a sharp rise in cases of tetanus after vaccination puzzled even the medical experts and urgency was felt for state control of vaccine production.

Antivaccination featured as one of the most important controversies of America at the turn of the twentieth century. Around this time, a loose network of antivaccinationists in Boston consolidated themselves in a well organised society to lobby for the abolition of compulsory laws, and to advocate the harmfulness of vaccination. In the fifth chapter, by closely reading the personal histories of a number of antivaccination activists, Walloch assembles the varying motivations that brought them together to fight what they perceived as a 'scientific dispute' (p. 113). These thoughtful and socially reputed antivaccinationists, whom Walloch prefers to call populists, were not antigovernment libertarians. They supported traditional public health measures like quarantine, segregation, and surveillance, and wanted the state to ensure better living and working conditions (p. 102). State intervention in the personal realm of health matters was not the only point of contention for the antivaccinationists: they also questioned the legitimacy of the scientific authority of a selected few over medical issues like vaccination. In Walloch's analysis, the antivaccinationists were actually critical about the entire gamut of medical reform and the research agenda promoted by a privileged class of physicians who sought to monopolise American medicine (p. 113).

Compared to the provaccinationists, the Massachusetts antivaccinationists held a fundamentally different outlook on health and disease that was grounded in mid-century therapeutic nihilism. They saw "disease as a manifestation of systematic imbalance or distress" and "thus argued for therapeutics that sought to restore the balance by nurturing the body's innate powers to resist disease" (p. 114). This signified the transition that the conceptualisation of disease causation was undergoing within the domain of medical science around this time. Although the antivaccinationists were harshly criticised by their opponents as irrational cranks lacking the faculty of reason, they were successful in garnering a considerable amount of public sympathy since legal compulsion was viewed by many as a subversion of the democratic ideals of personal liberty. Throughout the rest of the book, Walloch presents in great detail how the conflict between the two contending groups unfolded and intensified. During the fall of 1901, the strife took the form of a one-to-one crusade between Boston's leading antivaccinationist, Dr. Immanuel Pfeiffer, who campaigned for absolute personal liberty over one's medical decisions, and Durgin, Boston's supreme custodian of public health. Each personified "two important strains of reform that had emerged in the late nineteenth century, populism and progressivism" (p. 127). The failure of Pfeiffer

initially strengthened the provaccinationists who used him as an "object lesson for vaccination" (p. 144) but his case didn't yield much credit to them in the long run.

In the seventh chapter, Walloch documents the little success which the antivaccinationists achieved in bringing up the issue of mandatory vaccination to the floor of the Senate. Although they ultimately didn't succeed in amending the statute to allow a medical exemption for adults in the same way as that accorded to schoolchildren, the voting pattern, according to Walloch is revealing in terms of giving "an unique opportunity to gauge the extent of sympathy for Antivaccination in Massachusetts" (p. 146). Here Walloch also tries to map the public fervour created on this occasion, pointing at the united will of the people over the matter. She even makes visible how history had failed to register the intricacy of this legislative process, obscuring the fact "that nearly one-half of the legislature initially supported modification of the law" (p. 162).

Although no law mandated forced vaccination, health officials often sought coercion to vaccinate people when persuasion alone did not work. They cracked down more upon men of colour, homeless, and immigrants, who were deemed to pose a threat to public health. The eighth chapter explores, in Walloch's words, "the ways in which health officials used their legal authority to limit opposition to vaccination" (p. 164) and even made the antivaccinationists undergo criminal prosecution. While the relatively well-off people with the appropriate nexus could afford to avoid vaccination by seeking legal protection, the poor had no choice but to comply with the stringent vaccination sweeps. The final chapter deals with the landmark 1905 judgement of the Supreme Court of the United States, which upheld the rightful discretion of the state to exercise police power for the sake of the greater good in a well-ordered society. However, the decision did not resolve the controversy over compulsory vaccination. In the ensuing years the antivaccinationists concerted their opposition with yet more vigour, and at a later point of time, even the Massachusetts State Legislature started reverting against its hitherto unwavering stance.

The book is a notable contribution to the history of public health in America and the history of science at large. Its most distinctive feature is Walloch's in-depth assessment of the antivaccinationists, who for so long had been noted only in passing by historians of medicine. Walloch, who approaches the problematic nature of vaccination at the intersection of civic affairs and municipal politics, brilliantly argues how the civilians who refused to get vaccinated were actually reacting "both to local events and to a controversy that had been a century in the making" (p. 10). Yet given that the book seeks to understand vaccination primarily from the perspective of the population who were on the receiving end of public health policies, Walloch could have engaged more with the category of 'public' itself. Nevertheless, Walloch successfully highlights that the division of the contending groups was not aligned to simple prejudices: instead they both attempted to appropriate distinct scientific paradigms of thought.

Jeffrey T. Nealon

Plant Theory: Biopower and Vegetable Life

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Georgios Tsagdis

Westminster Law and Theory Lab

Already for long, animal studies have ordered the day; animated the heart of philosophy of nature. Nealon's work on plant studies arrives as a fecund contribution to the growing shift of emphasis on the call to think of life at its 'lowest' instance, as such, *from the ground*. *Plant Theory: Biopower & Vegetable Life* is a topical book that places itself in the midst of a compelling theoretical landscape.

Announced in the subtitle, the vantage point of this undertaking will be the intertwining of life, the life that plants show forth and which they problematize vis-à-vis power structures, with these very structures—the common name of this intertwining being *biopower* (xv). Duly, Foucault enters stage. The charge against the thinker of biopolitics, of an exclusive interest in humans at the expense of animal life, is set into relief (3). Nealon is prepared to look closer. With Foucault, he observes: "biology *creates*, rather than *discovers*, this object of study called life" (5). This nineteenth century creation does not jettison the animal; rather, it incorporates animality into the core of biopower "*as the template for life itself*" (7). Accordingly, the exclusion of life at work operates at the expense of animals, rather than plants.[70] "The tabulated space of [the] order"[71] of plants is appropriated by wild animal desire, that force of life that biopower will have to control, structure, organize, manage.

Following thus the logic of biopower, we discover in animals 'life companions'[72] rather than 'others' ("those figures excluded, forgotten, wholly unlike us but that we still depend on absolutely") (11). In this logic, plants delimit the true horizon of otherness. Yet the limit is hard to sustain. Another human, an animal, or a plant, appears *at once* both other and a companion. Soon indeed, the figure of a companion who is not other, and an-other who is not a companion, emerges as the impossible task of thought. Certainly, limits, thresholds and boundaries must be thought anew. It is not *merely* deconstruction, thoroughly misunderstood, but science itself, which makes a clear cut divide between the animal and vegetal ever-more problematic, and which asks us to rethink, sharpen, and reconfigure, our categories in order to ask the "open and hazardous" question: "what counts as an ethically compelling form of 'life'?" (12)

Here, Nealon pauses to counter Agamben's appropriation of Foucauldian biopower. Modern capitalist democracies are not concentration camps. However while the fates of men are decided by bureaucratized biopower, the lives of animals seem subject indeed to Agamben's holocaust biopolitics: "the feed animals are made to die, while the dwindling populations of 'wild' animals are merely left to live" (23).[73] Vegetable life provides for Nealon a step beyond this violent antinomy. Agamben himself discovers in plants the barest of bare life, yet abandons his discovery (25).

Nealon returns thus to Plato's *Timaeus* and soon Aristotle's *De Anima* to retrace the history of this life. Aristotle denies plants a *telos* or finality. Plants grow without a higher purpose, until they can grow no more; they strive towards no ideal form (32). The function of this blind life however is not restricted to plants. A certain reading of Aristotle divides the human soul into three: the vegetative soul of growth, the animal soul of sensation and the sentient soul of reason (35). Accordingly each one of us is plant, animal, and human, at once: each one, within, companion and other.

Aristotle and Plato counterpoint Foucault's reading of modernity where plants appear as pure exteriority. The Aristotelian interiority that constitutes the vegetable soul posits the plant as the grounds of human soul. This interiority, which structures the continuum of man and plant, Nealon rediscovers in Heidegger (45). Curiously however, Heidegger's notorious distinction of the world-less (*weltlos*) stone, the world-poor (*weltarm*) animal, and the world-forming (*weltbildend*) man, leaves plants without a proper ground, without a proper relation to the world. Still, the world-poverty of the animal, which guides its behavior "within an environment, but never within a world,"[74] the animal's captivity in this environment, seems a sufficient temporary abode for the plant. Alive, yet captive, the plant questions, no less than the animal, our alleged freedom: the freedom to form a world. After Derrida, we seem to say: "The plant that therefore I am" (45). Nealon presses the question of captivity through the parable of the cave in the Platonic *Republic*. How are humans in this allegory of captivity different from plants and animals? (45) Is the philosopher the only true human? Postulating a specific difference won't suffice. At the very least the philosopher should manifest more than the essence of humanity, arriving, that is, as the hidden essence of all life. This won't suffice either.

Thus Nealon turns to Derrida's under-examined *Glas*, where the two columns of the text create a mutual challenge of infinite tension. On the left, Hegel's animal desire effectuates dialectical sublation against Genet's plant desire on the right, which seems to lead nowhere (69). Derrida accordingly places the discourse on sexual difference at the heart of the Hegelian philosophy of nature. In this reading, the undifferentiated pre-sexualized human, as much as the human female *as* female, shares in the peaceful substance of vegetation. "So for Hegel the plant must be 'animalized' in the same way that the woman must be manned, the family must be nationed, and mere matter must be lifted up by spirit: without that sublating moment there's nothing but cancerous 'natural' growth, without regard to betterment or higher ends, nutritive life without a 'world'" (68-9).

For Derrida the peace that pertains to the refractory growth of the plant turns it into "a kind of sister" (70). Neither the woman of desire, nor the brother of revolution,[75] the 'sororal' plant stands for a life bereft of *eros* and politics. The fullness of the analogy's implications is hard to maintain. In Nealon's reading, the employment of Genet against Hegel in *Glas* constitutes a rare moment in Derrida's work where the plant turns against the animal, not for a share of attention, but in order to claim the totality of life, challenging the dominance of the spirit, born of animal-human desire, by transforming vegetal innocence into a sovereign force (71). Among the countless implications, a question takes centre stage: is it possible to imagine an innocent sovereignty, a sovereign innocence? (71)

Nealon discovers instead a violent vegetable sovereignty in Derrida's last lecture. At the end of the cycle of *The Beast and the Sovereign*, Derrida reads *physis* with Heidegger as *Walten*, rather than *Wachstum*. Nature manifests itself as the sway of an originary violent presencing, rather than mere growth (73). Accordingly, nature constitutes a world which philosophy tries to wrest from literature, or at least a certain literature, for which there are only islands; no nature as such, no animal or plant in general, only specific beings. Nealon does not tarry with Derrida's double, impossible, commitment both to a world and to absolute singularities.

Prefiguring the passage to Deleuze, *Walten* comes to comprise both the absolute past and the posthuman future, when *physis* will eventually usurp the throne of humanity, which has violently displaced nature to enter the Anthropocene. *Walten* comes to designate thus the potential hidden aspect in the critique of correlationism, a critique leveled not least against all forms of biocentrism. Nealon accepts the premise of speculative realism in order to show that a certain correlation of (animal-human) life and world is disturbed by the vegetative in Derrida (80). This interruption of the correlation assumes its force from the fact that plants are denied a singular phantasmatic world, and accordingly are excluded from life (74-8). Ultimately, "plant life does not name the specific kingdom Plantae for Derrida, but plant life functions as an intense figure for this disturbed, violent power of emergence on which everything depends." (79) Plants become another name in the Derridean series of the X of the real (*différance, pharmakon, chōra*, the trace, the *always already*, the performative, auto-immunity, originary technicity, the event, and so on), manifesting "the impossibility of transcendence, atemporal, 'full' presence." Plants are here a conceptual figure "for the power of emergence," the power that initiates the production of a world (79).

This production follows a different trajectory in Deleuze and Guattari, who both urge us to "follow the plants." Nealon's final move will be to follow precisely this "vegetal model of thought." True to Deleuze and Guattari's intention to abolish all metaphor, Nealon thinks anew the vegetal nexus of the rhizome, which "has become a template for discussing virtually everything *except* plant life" (85).

The non-metaphoric function of the rhizome becomes apparent in its contrast to the figure of the tree which (albeit at times actually rhizomatic), becomes the metaphor of metaphor: the metaphor of the movement from the sensible to the intelligible, that reduces life to organisms and worlds, the essence of which is hiding in a root or origin (92). While the tree imposes the verb *to be*, the rhizome produces the series of "and, and …" that process of life that forms individuals and their territories (93), exposing the lie of unity, the lie of a "world as a series of hidden possibilities" (88), in favour of multiplicities (93).

Deleuze and Guattari draw on Simondon's notion of individuation; becoming (becoming-animal, becoming-plant…) does not set the individual free from determination, but rather determines it *as* an individual. Becoming is thus not opposed to being: it is, rather, the way in which being structures itself (86). Individuation doesn't emerge from or relate to a prior phantasmatic world, but takes place as the shaping of an environment in which the territory and the individual emerge together (86-7). Accordingly, "the self does not undergo modifications; it is itself a modification" (93). Life does not progress in accordance to a hidden, originary pattern "of mass evolutionary descent," but each time "through the singularities of filiation" (94). Life is thus not the generality of an 'itself', but always a singularity, an individuating striation (96), which produces at once the territory and the individual which inhabits it (96). Life does not emerge from an access to a hidden world, yet neither is it contained in the individual organism, which could be in possession of its singular world and its own individuation. Rather, life is dispersed across everything, beyond organisms, along the interstices of their interrelations; life in this sense is inorganic (95). Here the aporias of interiority are abolished along with the hope of exteriority.

The political significance of the rhizome becomes evident in Žižek's criticism, which locates in it the capitalist logic of flows of capital, goods, and labour (101). Indeed, if we follow Deleuze's reading of Foucault, it becomes clear that the passage from societies of *sovereignty* to *disciplinary* societies is only temporary. The societies of *control* that constitute our immediate future will comprise of evermore open-ended, flexible forms of power (102). Capitalism is much more effective in and through societies of control, which instead of forming the individuals into specific roles, through institutions, re-territorialize human assemblages, operating on people's relation to themselves, in every possible micro-action (103). Clearly, "neoliberalism is a much more effective means of social control, than sovereignty or discipline ever was precisely because of its commitment to 'openness' and flexibility" (103-4).

At the same time however, the self can function as the privileged locus of political and ontological resistance. If life tends to resist its appropriation, it will resist nowhere more strongly than in the self: *here,* anarchists and finance executives have equal access to strategies of deterritorialization (104-5). The significance of rhizomatics rests thus first and foremost in its diagnostic potential (105). The rhizome offers the best way to think about the capitalist territory it intends to transform. Although "Walmart takes territory from mom-and-pop stores in precisely the rhizomatic way that switchgrass

overtakes a meadow […] as a diagnosis it doesn't seem to follow that rhizomatics is an inherently dangerous political notion" (105). In turn, Nealon summarizes the diagnostic contribution of this project. "In the end *Plant Theory* will perhaps have argued nothing other than this: the vegetable *psukhe* of life is a concept or image of thought that far better characterizes our biopolitical present than does the human-animal image of life, which remains tethered to the organism, the individual with its hidden life and its projected world" (106).

What happens when life opens to the vegetable soul seeking a plurality that, for Michael Marder, constitutes "a political space of conviviality" (91)? Rather than expanding "humanism's noble aims of liberation for all beings," that is, for all singularities, Nealon seeks to recast biopolitical and environmental impasses, by thinking the functions that structure life into such singularities (107).

A series of specific biopolitical considerations configure the coda of *Plant Theory*. First, if plants share with animals almost everything that is invoked to grant the latter rights, how can one decide on the protection of animals over and above plants? How does this sharing of life functions translate into politics and ethics? How should, for example, one eat anything, if no moral ground supports vegetarianism anymore? Second, how is one to think of the disappearance of phytoplankton, not out of the anthropocentric fear that Nealon evokes (111), the fear of a collapse of earth's total ecosystem, with its implication of the end of man, but with regard to the phytoplankton *itself*: precisely as all the questions of the vegetal self return. Third, the largely unknown horror of vegetal biopolitics is juxtaposed with the familiar horrors of feed-animal abuse (112). Among the countless cases of manufacture, possession, and marketization of plant life, Monsato's is invoked. "The company doesn't sell seeds, it just rents them, for one season, and it remains the permanent owner of the genetic information contained in the seed, which is divested of its status as a living organism and becomes a mere commodity" (113). A new biopolitical thought is needed for capital's ever-deepening investment of life.

Ultimately, Nealon confronts Cary Wolfe's question: "Do we extend [Derridean] 'unconditional hospitality' to anthrax and ebola virus, to SARS?" His response recognizes the impossibility of an immediate answer. Unconditional hospitality, like the structure of the Derridean trace, is not something to be simply decided. "The challenge is to account as fully as possible for various forms of violence, not to renounce the violence of choice or life altogether" (117). The immediacy of decision is complicated, but not precluded. Its possibility presupposes, for Nealon, following Foucault, a break with the "blackmail of the Enlightenment" between submission to a sovereign calculation of life and the reign of chaos. After Simondon, Deleuze, Guattari, and Esposito, take on this false bifurcation of finished singularities and the abyss, which must give way to a thought that examines the ways in which trans-individuation is already invested with power (118). To the bleak paraphrase of Fredric Jameson: "right now we're far better equipped to imagine extinction—the end of the world—than to

imagine an alternative to global neoliberal capitalism" (121), *Plant Theory* arrives as an alternative of imagination.

Notes

[70] With Derridean reticence, the generalizing, perhaps totalizing, words 'animal' and 'plant' are used provisionally and tentatively, attentive to claims of singularity.

[71] Foucault M., *The Order of Things* (London; Routledge, 2002), 277.

[72] The work of Donna Haraway is here in view. Cf. *When Species Meet* (Minneapolis; University of Minnesota Press, 2008).

[73] Cf. Charles Patterson's *Eternal Treblinka: Our Treatment of Animals and the Holocaust* (New York; Lantern Books, 2002).

[74] Heidegger M., *The Fundamental Concepts of Metaphysics: World, Finitude, Solitude* (Indianapolis; Indiana University Press, 1995), 239.

[75] Derrida J., The *Politics of Friendship* (London; Verso, 2005).

Biographical Notes

Fani Cettl
Central European University, Budapest

Fani Cettl is a PhD candidate in the Department of Gender Studies, CEU. Her PhD project looks into the politics between humans and non-humans in the 19th century narratives by Mary Shelley and H.G. Wells. Her research interests include historical and contemporary science fiction, Gothic fiction, biopolitics, posthumanism, ecocriticism, as well as the demarcations between science and non-science. Her favourite activity is singing in choirs.

João 'Cão' Duarte
Center of Philosophy of Sciences of the University of Lisbon (CFCUL)

João 'Cão' Duarte works in action-research with scientific culture, acting as researcher in Philosophy of sciences and facilitator in a citizen science project of participation in science research. He has a BSc in Biochemistry by the University of Coimbra, Portugal since 2006 and a MSc in History and Philosophy of Sciences by the University of Lisbon, Portugal since 2015. His main research interests are the dynamics of participation in science research; Science, ethics and politics; and the Heuristics of science research. João is currently applying for the interdisciplinary Frontiers of Learning and Discovery – Frontiers of Life Sciences doctoral school, part of the Programme Bettencourt, hosted by the Center for Research and Interdisciplinarity in Paris, France.

Elisa Fiore
Radbound University, Nijmegen.

Elisa Fiore holds a Research Master in Gender and Ethnicity from Utrecht University (Netherland). In September, she will start her PhD at the Institute of Historical, Literary and Cultural Studies at Radboud University (Nijmegen, Netherlands) with a project on the gentrification of Amsterdam's Indische Buurt and Rome's Tor Pignattara. The aim is to understand in what ways gentrification is contributing to race- and class-based in/exclusions through the reorganization of the sensory qualities of the two neighbourhoods"

Martin Grünfeld
University College Dublin

Martin Grünfeld is a PhD student in Philosophy at University College Dublin (funded by the Irish Research Council). His research is focused on the poetics of scientific writing. It revolves around a series of reflections on the relationship between one of the dominant ways of expression in contemporary science, namely the research article and the possibilities for thinking. His research draws specifically on the work of Rancière and Foucault, but takes place in an intersection between continental philosophy of science, sociology of knowledge, comparative literature, and aesthetics. He is also involved in the project ”The Difference of Philosophy”, which through a series of seminars seeks to debate the relationship between philosophy and society.

Sandipan Mitra
Presidency University, Kolkata

I am a postgraduate student of Department of Sociology, Presidency University (formerly Presidency College), Kolkata, India. For my M.A. dissertation, I am working on the Pulse Polio Campaign of India. My research entails an ethnographic study of the rural public-health infrastructure through which I wish to interrogate the concepts of state, locality, community, health and well-being. I am broadly interested in the agrarian history of Bengal, agrarian studies, sociology of education and the political economy of the Indian society.

Paul Stephan
Goethe-University, Frankfurt am Main

Paul Stephan has studied Philosophy, Sociology, and German Studies at Goethe-University, Frankfurt a. M., and University College Dublin. He has recently finished his studies with a thesis on Nietzsche’s critique of Truth supervised by Christoph Menke. Besides Nietzsche, his research focusses on Left Hegelianism, Existentialism, Critical Theory, and Post-Structuralism. Currently, he is preparing a PhD thesis on the conception of authenticity in Kierkegaard, Stirner, and Nietzsche.

Tabitha Taylor
Central European University, Budapest.

Tabitha Taylor is an MA student in philosophy at Central European University, Budapest, having received her BA in philosophy from the University of Bristol. Her main research interests are in metaphysics, specifically philosophy of time and philosophy of freedom and moral responsibility. Tabitha is currently working on her MA thesis, which defends a compatibilist view of moral responsibility, which she will defend in June 2016.

Georgios Tsagdis
Westminster Law and Theory Lab

Georgios Tsagdis is Fellow at the Westminster Law & Theory Lab and teaches at the Sociology Department of the University of Surrey. His work operates across theoretical and disciplinary intersections drawing on 20th Century, Contemporary and Ancient Greek Philosophy. His Archeology *of Nothing* is revised for publication, while his new project examines the function of the negative in the ontology of matter from Plato to New Materialisms. In other recent research, he explores various themes in the historic encounters of philosophy and nature, from the figure of the animal in the Platonic corpus to post-humanism and parasitism. He has written on the question of love with reference to theological, political and feminist discourses. His essays have been published in various book collections and international journals, among which *Parallax* and *Philosophy Today*. Since 2014 he has been organizing the *Seminar of Neoplatonic Studies*, a London intercollegiate study and research group, hosted at the Warburg Institute. He is editor and contributor of the *Plotinus Archive*, a virtual polyphonic commentary on the *Enneads*

Karijn van den Berg
Utrecht University

Karijn van den Berg is a Research Master student in Gender and Ethnicity, based in the Netherlands. She is a feminist scholar focussing on the intertwinement of feminism and environmentalism, which she brings together in her thesis in relation to the transnational movement La Via Campesina. She makes use of an actor-centred approach that focuses on the subjects affected by climate change versus those that cause it, in order to concentrate on the intersectional power dynamics at play. Additionally she is part of Utrecht-based research collective (Un)usual Business, that focuses on mapping 'commoning' practices and community economies in the context of Utrecht. Karijn's research is informed by feminist and postcolonial theories and entangles theoretical, practical and political realm.