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11

As ANT is getting undone, can Pragmatism help us re-do it?

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Abstract

This chapter takes up the adage that "concepts are going downhill all the time" to explore whether and how this harsh but possibly fair judgement applies to the concepts, and methods, of actor-network theory (ANT). My charting of the undoing of ANT is undertaken purposefully, with the express aim of identifying tasks for a redoing of ANT. The first half of the chapter discusses the quintessential ANT idea that there can be "no re-composition without de-composition." I argue that this conceptual coupling elaborates the American pragmatist concept of "the problematic situation." But ANT added two decisive elements: (a) Problematic situations can generate new entities (variable ontology); (b) the problematic situation is a force of "heterogenization": Its constituent entities are marked by boundary-crossings. I then consider how both these propositions proved too much, for ANT, for social theory more widely, and, in a manner of speaking, for the world. The second half discusses three specific undoings of ANT, each of which has to do with the resurfacing, both empirically – in the world – and methodologically – as problems for research – of categories that ANT claimed to have put to rest – which I rather grandiosely sum up as: (1) Interpretation is back. (2) Society is back. (3) Epistemology is back. If we are to move on from these redoings of modern critical theory's guiding concepts, I propose that we should focus on ANT's experimentalism – its affirmation that knowing the world and changing the world are intimately connected – and that it has this in common with other experimentalisms, in sociology, the sciences, social movements, tech culture and the arts.

Introduction

Actor-network theory (ANT) has been a giver of many gifts. It has produced new analytic vocabulary, research protocols, many memorable slogans and dictums, and a distinctive intellectual style. It has identified future directions of travel for thought. It has shown philosophers and ethnographers alike that there is a way of being in a field while not being *of* the field (Kelly, 2012). ANT has taken the famous British talent for self-depreciation a step further, by turning it into an embodied research practice, as in the case of the celebrated sociologist of technology describing his meeting with a company director in a deserted reception area while slouching uncomfortably in a chair that was too low (Law, 1994). However, as the German social and media theorist Erhard Schuttpelz put it rather brutally, 'all concepts are going downhill all the time.' I'm afraid that this extends to methods, and that the concepts and methods of ANT are no exception, and in these notes, I would like to sketch out briefly why I think ANT is not escaping this harsh but possibly fair fate, and what we might do about the inevitably challenging repercussions. However, it is also appropriate to note here that, in a variation on ANT's many slogans, there can be 'no re-composition without de-composition!' My charting of the undoing of ANT in this chapter is undertaken purposefully, with the express aim of identifying tasks for a redoing of ANT, which I will list in the conclusion.

Un- and redoing in ANT and Pragmatism

Indeed, one of the most generative, and possibly enduring, set of terms offered by ANT is that of 'composition' and 're-composition.' The idea, briefly put, is that something must get undone in order for it to be done. This does not only extend to the associative coupling which today can surely be called Latour (2005) speak – to assemble is to reassemble – but also to specific modalities of enquiry – or knowledge practice: To research is to re-search (Rogers, 2013), and to invent is to reinvent (Lury and Wakeford, 2012). Crucially, further- more, the undoing of things in order for them to be redone, ANT style, does not only happen in spectacular moments, in periods of the so-called great transformations; composition and recomposition is the way of many practices, institutions and formations most of the time. The double movement of un- and redoing then does not only signal that an epoch-defining rupture may be unfolding but can equally indicate that a mundane process is underway.

This latter insight is central to the intellectual challenge that ANT poses to reifications and naturalisations of all sorts, to engrained habits of thought and action across the domains of science, politics, religion, economy and society, where it is still the default to presume the autonomous existence of entities (reality, the people, god, society, etc.), and that their legitimacy – their right to endure – is predicated on a pregiven autonomous existence. (This, in turn, has the consequence that many institutions today continue to be heavily invested in bracketing or even denying the ways in which the aforementioned entities are marked or even informed by practices, technologies or environments.) For ANT, by contrast, the autonomy of any entity is best treated as an accomplishment, one likely to depend on sup- porting arrangements and support acts, which are not just 'social' but include environmental entities previously categorised as nature, and which, when they cease to be operative, herald the undoing of the autonomy of said entity, and possibly of said entity itself, which will then require a redoing of some sort.[1]

In insisting in this way on de- and recomposition as a formative process that occurs across domains, ANT places itself in direct continuity with Pragmatism, the American philosoph- ical and sociological tradition[2]: Like ANT, early 20th-century philosophers like Charles Peirce, William James and John Dewey had as one of their principal objectives to challenge naturalism and reification, and it was to this end that they developed a relational ontology – briefly put, the proposition that processes of association are critical to existence and the coming into existence of things. Like ANT, moreover, John Dewey (1938) identified 'prob- lematisation' as a defining operator of these processes, not only in knowledge, but also in politics, morality and art. The undoing of entities – the loosening of associations – in order for them to be redone – for *different* associations to enter into the making of said entities – is not a mechanical process, but a profoundly risky one, one that puts entities and their relations *at stake*. As John Dewey (1908) put it, in the problematic situation, a 'conflict of tendencies' makes itself felt, one that can only be resolved by 'changing conditions.' To which ANT added: ...*and* by bringing different entities, and the possibility of their existence, into the mix. For both Pragmatism and ANT, problematisation is not some clean, authored process, in which to define or frame a problem is always already to render it solvable, but an unsettling occasion, on which the appearance on the scene of an entity that was previously disregarded unsettles the existing roles, relations, environments and capacities of agents and/or categories (they are *not* acting, *not* 'in control,' *not* having it covered), and necessitates their requalifica- tion. While most of this was already contained in Dewey's concept of the problematic situa- tion, ANT added the multiplication of entities as a key dimension of this process. In studies of technoscience, the invention of biological, military and moral entities – the vaccine, the bomb and the pregnancy test – problematisation was shown to operate not only on roles, relations, environments and capacities of actors, but to enable the coming into being of new entities.

Even if I got to know ANT before I started reading American Pragmatism, the former for me is in many ways a redoing of the latter, with some important twists. Much can be said at this point, but what makes ANT most decisively different from Pragmatism, in my view, above and beyond its aforementioned commitment to variable ontology – the possibility of new entities coming into existence – is its commitment to heterogeneity, to heterogeneous composition, and the heterogenisation of domains. This can be loosely summed up as the insight that most things that matter arise out of association of entities deriving from diverse domains – science and politics, medicine and religion, engineering and culture, the home and the street. Some of ANT's most well-known slogans point in this direction: Science is politics by other means (Latour, 1993); engineering is sociology by other means (Latour, 1996). In ANT, it becomes clear that an associationist ontology, one which posits ongoing de- and recomposition, if consistently

pursued, does not only unsettle institutional investments in naturalism and reification *within* different domains, but equally challenges institutional boundaries *between* domains, such as between science and politics, society and technology. If we pursue processes of association, including dis- and reassoci- ation, we end up, not only with recognition of the hybrid character of much that exists in this world, but also with an insight into the ongoing reality and generative capacities of boundary-crossings.

To be sure, the notion that adopting an associationist ontology means pursuing or even affirming boundary-crossing is not unfamiliar to Pragmatism: Dewey (1991/1927) famously wrote that industry gives rise to new types of associations 'which break existing forms.' Still, for Pragmatists like Dewey, situations are ultimately containable within bounded conditions, as problem-solving follows problematisation as surely as night follows day. The moment in which the endurance of things and relations are put at stake – the moment of problematisation – in Pragmatism is a passing moment, and one, moreover, that can be as- signed a designated place in a cycle of enquiry: It is at the beginning, as the problematicness of a problematic situation first becomes apparent, that 'a conflict of tendencies' makes itself felt, or 'something seems to be missing' (Dewey, 1908). In the Deweyian schema presented in the Logic of Enquiry, however, at the end of the cycle of enquiry – or mobilisation, or creation – humpty dumpty *will* have been put back together again.[3] Which is to say, Dewey's problematic situation had inscribed into it the expectation that decomposition will and should be followed by recomposition. ANT's notion of hybridisation points towards a dynamic that is more complex, one where entanglement renders the imposition of boundar- ies ever more challenging, and the ambivalence of some of ANT's proponents about precisely this notion of hybridisation suggests that they do not have Dewey's confidence on this point.

Even if ANT introduced the proposition of hybrid networks, and later, heterogeneous assemblages, much work conducted under this banner is very much like Pragmatism in its commitment to contain the moment of problematisation. ANT adopted from Dewey the idea of enquiry as cycle, and ANT, too, boxed in problematisation in a 'first phase' – the moment of the opening up of an existing proposition, say the combustion engine (Callon, 1980) – to be superseded by a 'next phase' of translation and then stabilisation of the new network. It's one reason why Latour's 'We've never been modern' remains an important book. Here, problematisation is shown to exceed efforts to contain it, not just on the institu- tional level – which Dewey recognised with his point noted earlier about the need to break existing forms – but also on the ontological level: In Latour's account, problematisation is the operator of a process of entanglement, as connections between distributed entities turn out to proliferate from the moment of problematisation onwards ('the climate is changing'; or in a contemporary example, 'AI is changing how institutions think'), gaining the capacity to disrupt established categories (there is nature, here is society; here is technology; there is de- mocracy and the rule of law, etc.). Hybrids prove ever harder to contain. The recomposition or renewal of categories will leave these very categories transformed, as they are undeniably and indelibly marked by the boundary-crossings of their constituent entities.

However, it seems to me that here we reach a fork in the road and a path not taken, at least by ANT. Most of its proponents are not *that* interested in pursuing notions of boundary-crossing, the unsettling of presumptions of agency or the renewal of categories as entailing their transformation. Some of the most well-known inheritors of ANT, today, are located in the social studies of markets, digital media studies and in urban and architectural research, and in each of these cases, ANT is arguably deployed in order to elucidate a bounded domain. More precisely, this inheritance of ANT – that its successful uptake takes the form of the renewal of sub-disciplines – suggests that domains and methodologies must be clearly bounded in order for them to receive the ANT treatment). The further elaboration of ANT as a methodology of heterogeneous mapping, and as an agenda of heterogenisation, seems des- tined to be undertaken from a located, and to an extended 'domain specific' vantage point.[4] As the authors of the 1999s volume on the aftermath of ANT were clearly aware, ANT, as a more general approach or 'logic of enquiry,' is unlikely to escape the logic of de- and recom- position. Without further ado, I therefore would like to briefly discuss how I think ANT is being undone today and how it could, perhaps, be redone. In doing so, I will also touch on the few points of similarity and difference between ANT and Pragmatism noted earlier. For the sake of convenience, I will concentrate on three specific undoings of ANT as a general approach, each of which has to do with the resurfacing of categories, both empirically – in the world – and methodologically – as problems for research – that ANT claimed to have put to rest: (1) Interpretation is back. (2) Society is back. (3) Epistemology is back.

ANT's undoings: interpretation, society and epistemology

One of the legacies of ANT is its appetite for neologism, its commitment to replace familiar terms from the sociological and philosophical lexicon with new ones: Collective for society, trace for data, and actant for actor and object. These attempts at substitution entailed the ban- ishment of certain key categories, including the three listed in this section title. I would like to propose here that these terms are ready to be reactivated, or have already been reactivated. This clearly puts me at risk of making a megalomaniac argument.[5] If I think this is worth it, it is because I am strongly, and increasingly stubbornly, convinced that some core assumptions of ANT – not least the notion that it is possible for researchers to 'follow traces,' and that this does not involve or require buying into any given 'theory,' at least not initially – have lost some of their efficacy, and even, are ceasing to be tenable. And, more importantly, that facing this challenge – that our propositions are going downhill, to speak with Schuttpelz, today possibly even more so than yesterday – is critical if we, or others, are to get some- where with the task of redoing ANT in the face of its undoings. The challenge or danger is as follows: Each of the three key words identified in my short but heavy list earlier has been shown, by ANT *and* Pragmatism, to lead away from associationist ontology into a split world (dualisms!), where it is all too easy to succumb to reification. Keeping this danger in the front of our minds should then also help us to keep what is to be gained from the redoing of ANT firmly on the horizon.

Interpretation is back

Earlier, I defined ANT as an associationist ontology, but the approach is probably best known for its proposal to extend agency to non-humans, and its commitment to include objects, in- frastructures and environments as active elements in social life. One important consequence of this, and one with which many anthropologists and some sociologists have taken issue, was the bracketing, in ANT, of the role of *interpretation* in social life, as well as in social research. ANT qualifies humans and non-humans as actants: They leave their trace in the world not through expression ('what they say'), but by way of their actions ('what they do'). And the role of ANT itself was not to offer interpretation, but to assemble traces into descriptions or accounts. However, one of the defining issues in the area of science, technology and society, today, precisely concerns interpretation, or more precisely, the reworking of the boundary

between interpretation and action. As computation has emerged as a defining element in technological and scientific infrastructures, issues of intelligibility are once again in the fore- ground. Contemporary debates about bias are a case in point. In recent years, algorithms have been exposed as discriminatory, as they amplify the racist and sexist assumptions latent in the data from which they learn to detect patterns, such as databases recording police arrests (Eubanks, 2018), while in science the allegation of bias is treated by some as a 'cheap' trick deployed by subalterns who are trying to get in by policitising science, and in so doing debase the value of knowledge.[6]

In some respects, today's debates about bias seem highly susceptible to ANT treatment: 'bias' tends to be defined as an attribute of an actor (be it human or non-human), or an effect of an analytic operation, and both these conceptions of bias are highly reductive, as they tempt us to disregard the *process* by which bias emerges from relations *between* machines and humans, and many other legal, environmental, moral entities, besides. However, at the same time, an understanding of these relations in terms of 'actants,' as ANT would propose, does not enable us to grasp the problematic denoted as 'bias' either: It is rather the *labelling* of actors that is at issue here (Becker, 1963; Hacking, 1986). The deliberately thin categories of actant and trace are too ephemeral if the aim is to express the normative effect that comes with the negation of difference/the other.[7] *To get at the latter, we need to follow through the production of bias as an interpretative process.*

In the wake of controversies about bias, a seemingly ANT-like challenge surfaces: Do we blame society, or science and technology for these discriminatory effects? Surely, these con- troversies provide opportunities to point out that it must be both, that associations between humans and machines produce at least some of these discriminatory effects? ANT certainly has something important to contribute to these debates insofar as it compels us to widen the range of possible answers beyond the binary, to say either both or neither. It can show us the limits of an understanding of the politics of technology that treats bias as either subjective attribute or an objective effect. The problem is that the ANT manoeuvre of letting the hy- brid emerge – it's both! – does not appear sufficient to account for this type of problematic

situation: It is not only on the level of *association between humans and non-humans*, but from a dynamic of *interaction between entities and categories* that problematic effects arise here. *To say that bias emerges from hybrid networks doesn't articulate the problem.* Pointing to network formation between entities, or even, the situated enactment of entities, does not quite get us there. It does not really allow us to specify the process by which actors qualify their relations to others through the application of *categories*. To uncover that kind of operation on alterity – and by extension diversity – as something that is negated or affirmed, amplified or disavowed, we need to recover the qualities of interpretative process, the process by which a category gains a hold on an entity. This relative blind spot of ANT for interpretative effects has long been highlighted in feminist science studies (Leigh Star, 1990) but today's digital forms of circulation enable significantly more interactive and amplificatory interpretative circuits, requiring renewed engagement with this process and their effects.

The social is back

This brings us to the vexed but unescapable issue of the social. ANT is closely associated with what others with a taste for ceremonial declarations called the 'Death of the Social' (Rose, Baudrillard) and for which more constructively and/or creatively minded scholars minted other terms: the post-social (Knorr-Cetina), the more-than-human (Braun and Whatmore). In Latour's provocative appropriation of Tatcher,

'there is no such thing like society." However, at least from where I am writing in the UK, the social seems to be very much back on the agenda. As Will Davies (2015) noted, the last years have seen a proliferation of new 'socials,' as the label social is being slapped onto a variety of technical or commercial sounding propositions, from social media, to social innovation, social technology, social market- ing, social bonds, social enterprise, social design, social listening and so on. To be sure, many of these new socials prove to be all too thin labels covering over a proposition that has much more to do with technology than with society: To add 'social' in practice often means to dis- place services away from public institutions and into alternative and – oh irony – hybrid ar- chitectures, realised with the aid of a mix of public and private funding, and more often than not involving digital platforms (for a more detailed discussion, see Marres and Gerlitz, 2018). In other words, the social in this vocabulary becomes an near-synonym of the displacement of the facilitation of 'togetherness' from a public responsibility to a profit-making activity, and as such pretty much means the opposite of what social policy, social housing, etc., used to mean in the 1960s. However, if we probe deeper, it becomes clear that 'sociality' is not only a public-facing label but equally denotes a methodology. As Kieron Healy, Bernard Rieder and Wendy Chun have forcefully reminded us, sociological methodology – from Simmel's triadic closure and Merton's homofily – has crucially informed the methods materialised in the 'new' social innovation paradigm (for a discussion, see Marres, 2017).

What does this mean for ANT? At the very least, it means that rejection of the very term ('social') has become unviable as an *empirical* strategy: The rise to prominence of social tech- nologies clearly falls within the domain of study that ANT was designed, lest we forget, to elucidate: Science, technology and innovation. However, arguably more challenging is that the proposition of social technology – whether or not we find it credible or acceptable – is threatening to undo some of the propositions of early ANT, not least the notion of the 'lab- oratization of society.' In early work by Latour, Callon and Law, the extension of scientific infrastructures beyond the laboratory was assumed to make society more like science. How-ever, when we consider how distinctively social methodologies are being operationalised in technological and analytical architectures across society today, it becomes clear that the opposite effects may equally arise. As platforms operate on the basis of liking and friending, social life becomes more like 'society' as imagined by sociologists: Preoccupied with reputa- tion, pursuing the accumulation of social capital. Laboratisation does not make social life re- semble a laboratory, but is resulting in the reformatting of activities in social sciences' image (reputation as currency, anyone?). However, at the point where we can see how the laborat- isation thesis is being unsettled today, we can learn something important from Pragmatism: One of the lasting contributions of John Dewey has been to insist that experimentalism does not just denote a scientific paradigm, that it does not just belong to the sciences (Marres, and Stark, forthcoming). It is equally an approach in politics, morality and aesthetics. As the British novelist Joanna Kavenna puts it: 'If you're uncertain you will test all the parameters. If you're certain you will protect the citadel. The former is where things can shift because you have tested all the possibilities.'[8] The proliferation of experimental propositions across society and culture indicates not simply that the realm of science is being extended. They may equally denote the growing resonance of experimental traditions from literature, the arts and politics.

Epistemology is back

ANT has been closely associated with the ontological turn, the move – very briefly put – of locating entities and processes first on the plane of existence, and only then on the plane of knowledge. But clever readers and authors of ANT were quick to point out that it's not that straightforward. ANT is not existentialism. When you try doing so in relation to an actual example, it turns out to be really hard to separate knowing from existing, and that, indeed, became ANT's point (as indeed, it was Pragmatism's before that). Never- theless, ANT joined fellow travellers like the philosopher Richard Rorty in embracing a deflationary approach to theories of knowledge (Lynch, 2013). Actor-network theorists have been very unforgiving about epistemology; it was and long remained one of their primary targets, coming right after Durkheimian sociology, and for a younger generation of actor-network theorists seemed mostly irrelevant, as other settings, from parliament to architecture studios, took the place of research and development laboratories as favoured research sites. Early ANT had sought to undo epistemology by dissolving its foundational problems, according to the following recipe: (a) Identify a general problem of epistemology (how do we access reality?); (b) empiricise it – in other words, turn it into a research-able problem – by translating it into a phenomenon that could be observed ethnographically, in a field site and then, (c) make the philosophical problem disappear by respecifying it in practical terms. Following this recipe, in its more adventurous moments, ANT sought to dissolve the great foundational problems of epistemology: There is no 'gap between subject and object.'

I'm afraid this has reasons that would require a book of its own, but today it would be a mistake to attempt to make such foundational problems simply disappear. How do we know? How does the public know? Instead, these questions must be asked again and again, and can't be asked often enough. The rise of fake news and growing evidence of attempts at opinion manipulation online has put the normative question of the validity of knowledge claims, above and beyond the empirici-sable question of relevance, back on the agenda: Deception and duplicity abound in today's digital architectures, demonstrating the need for the identification not just of sources that are active, topical and engaged (the measurement of relevance in which search engines excelled), but the determination of validity conditions for knowledge claims (Bounegru, Marres and Gray, 2018). Campaigns against knowledge, in particular public knowledge, have too many allies today, and it seems unlikely that these can be satisfactorily dealt with by a strategy of deflation.

But here, too, Pragmatism can come to the rescue: For intellectuals like Dewey, the objective was never deflation. While his principal target was indeed epistemology, and most of all, the intolerance of doubt that epistemology was used to justify, his strategy was never to abandon the valuation of knowledge as a normative project: Pragmatisms' project was to *re-construct* the problems of philosophy. They used methods of re-specification, and highlighted the relational and situational character of even the most seemingly abstract phenomena and processes, as a way not of collapsing but of requalifying problems of knowl- edge, not in order to make epistemology disappear (deflate it), but in order to relocate them in relation to life, and, thus, to transform our understanding of the relation between the problems of knowledge and the problems of the world, and of society. They insisted that the distance between these different types of problems is often smaller than philosophers and sociologists, and scholars and 'people' – those committed to abstract knowledge and those committed to 'keeping it real' – like to believe. To re-specify problems of epistemology in field settings does *not* mean that empirical research can take the place of epistemology. Rather, the pragmatists were the precursors of empirical philosophy (Mol, 2000). Compo- sition and recomposition, in Pragmatism, denote not only a process of recombinant asso- ciation between humans and non-humans, but equally a methodology for the valuation of abstract entities, like truth.

Conclusion

These notes are brief and sketchy, but the point I am edging towards is that of an experimental approach to social and cultural enquiry.[9] Both Pragmatism and ANT sensitised us to new ways in which representing and intervening (Hacking, 1983) are combined in societies 'marked by the invention of science and technology' to use Isabelle Stengers's helpful phrase. The process of getting to know the world and changes in existing conditions in the world are intimately connected, this is what the concept 'the problematic situation' tells us, and is signalled by the twin notions of de- and recomposition. However, as Pragmatism recognised much earlier on, experimentality extends across domains, it operates

not just in the domain of science, or innovation, but society too must be invented (Marres, Guggenheim and Wilkie, 2018), and so must democracy, and the arts, and culture. Commitment to these objectives does *not* necessarily mean that 'the world must become more like science.' The question rather is how different the recomposed collective is, can and is allowed to be from its previous iteration, and what tests can be organised and/or designed in order to establish whether and how this affirmation of diversity 'holds,' and can be made to hold, in empirical reality. Pursuing this question is likely to require engagement with experimental traditions beyond Pragmatism or ANT and indeed beyond the university narrowly defined, bound up as it must be with the diversification of the very collective we still like to label 'research community.' As Bruno Latour brought out his hammer and nails to set to work on ANT's coffin 20 years ago, it may be tempting for the rest of us to leave the burial ritual to him and his close collaborators. However, as time passes, I'm more and more convinced that if we are to get somewhere in the redoing of ANT, then the job of its undoing must be taken up not just by its inventors, but by many more of us.

Notes

1 In a conversation with Graham Harman (Latour, Harman and Erderly, 2011), keen to identify a feminist aspiration in early ANT, I referred to this as a 'metaphysics of the crutch.'

2 Several other contemporary approaches in the social sciences and humanities claim to be inspired by Pragmatism, and even use it to name their approach, like the French sociologists of the Epreuve, Boltanksi and Thevenot. Another case in point is post-Habermasian Frankfurter school. It is cer- tainly striking that very different schools of thought claim this common ancestry, and I do think that, on this point at least, ANT *is* 'different' insofar as it is one of the few, perhaps the only ap- proach that remained committed to the ontological register in which a pragmatist like Dewey wrote. I'm not sure, however, that there is that much to gain from debating the differences between the various versions of pragmatist sociology claimed today, at least not, if the aim is to evaluate ANT's viability as a contemporary intellectual programme, as is my aim here.

3 This is not to say that Dewey did not acknowledge the possibility of enduring failure. But his con- ception of the problematic situation as an occasion for enquiry (knowledge formation) in the Logic of Enquiry supposes problem-solving as the horizon (in contrast to continuously and endlessly unfolding problematisations). With thanks to the editors for their comments.

4 In other work, I have discussed how the concept of problem-solving of Pragmatism must be replaced with the concept of issue formation, a process marked not only by the formation of cross-boundary associations but the expression of antagonism – I would now call it diversity – throughout this process. This has various consequences, including for how we understand the relation between empiricism – which problem-solving prides itself on – and critique – which is a necessary ingre- dient of issue formation. However, on this point too, I think we move away from ANT, insofar as ANTers themselves tend to avoid either critique or the discussion of it, putting their substantive commitments – be it their feminism, ecologism or postcolonialism – into the foreground instead.

5 Even worse, I have a number of further possible undoings of ANT on my list, with which I will not bother the reader in further detail, but I include it here: 4. Border-crossings can no longer be contained in the sub-political domain if they ever could. 5. Engineering is not, in fact, sociology by other means. 6. The Internet is not a hybrid forum. 7. The experimental paradigms by which we're increasingly governed today do not facilitate hybrid forums either.

6 The latest attempt to pull a Sokal on 'grievance studies' is a relevant example here. https://en.wiki pedia.org/wiki/Grievance_Studies_affair.Seealsowww.wired.com/story/why-men-dont-believe- the-data-on-gender-bias-in-science/.

7 Some ANTs are very aware of this problem and one way they have addressed this is by claiming not

traceability but storytelling as their register of choice. However, if we, the scholars, define our craft as storytelling, why can't our actors? It seems to me that this proposed solution threatens to undo the ontological turn, or to render it less consequential insofar as it threatens to replace empiricist trace-following ANT with interpretation, without re-negotiating their relation.

8 Joanna Kavenna, HowtheLightGetsIn 2018, Philosophy Festival, Hay-on-Wye, 26 May 2018.

9 Whereas others proposed that addressing ANT's shortcomings requires its transformation into a (object-oriented) metaphysics, I propose that ANT's radical empiricism– it's insistence on on- going re-composition – must be translated into a experimentalist methodology (for a discussion, see Latour, Harman, Erdely, 2011).

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