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# Regulating Hybrid Monsters?

## The Limits of Latour and Actor Network Theory

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The increasing scope and rate of techno-scientific innovation threatens to disrupt some of our fundamental categories of experience. How we understand ourselves and our bodies, our relation to the environment and other realms of the non-human, is changing with respect to processes like genetic engineering, cloning and organ transplantation. It is difficult to respond to the challenges presented by these technological developments. To what extent can we rely on older frameworks, such as religion or humanism, that sustained our sense of values and ethics? How can we balance the needs and desires of the individual over against the larger culture? What roles ought the market and the state play in the development and regulation of the techno-sciences? Can liberal democracy survive in a context where some individuals are able to reconstitute their bodies, their health, and their life spans radically, giving them little in common with others who remain unable to do so?<sup>1</sup> Should liberal democracy (to the extent that it exists) survive at all?

The work of Bruno Latour, and in particular the Actor Network

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1. For more on this latter question, see B. Turner, 'Culture Technologies and Bodies: the Technological Utopia of Living Forever', *Sociological Review*, vol. 55, 2007, pp. 19–36.

Theory with which he is associated, provides one means of engaging with these issues. Latour argues that many of our current predicaments have arisen through a grave epistemological error. Modernism has maintained a strict divide between science and nature, where the political emancipation of humanity has been grounded in the scientific domination of nature. This, according to Latour, ignores the essential hybridity of the world wherein the realms of the human and non-human are constantly intertwined. Furthermore, this artificial separation has allowed the proliferation of hybrids to accelerate, ignored by modern discursive regimes that fail to understand their constitutive role. For Latour, a more accurate understanding of our situation can be generated by considering how we engage with the world in terms of constantly shifting networks where neither humans, nor nature nor objects can be separated out or given agential priority.

In decentering the primacy of the human, Actor Network Theory explores the role of non-human influences in our increasingly technologically constituted world. Latour's theorization of hybridity is able to capture a situation where the boundaries between human and non-human are blurred, while his desire to replace social analysis with an analysis of networks certainly speaks to many realms of life where our subjectivity and modes of engagement with the world are subject to a multiplicity of associations and temporary assemblages. Most recently, Latour has begun to theorize a radical form of democracy that attempts to fully encompass the plurality of connections that govern our mode of life. All this ought to make Latour's work eminently suited for analysing our contemporary condition. Actor Network Theory has proved to be incredibly popular, spreading across a multitude of disciplines and contexts, from nursing to engineering, philosophy to town planning. At this point one might ask what critical potential lies in a theory that so readily assimilates itself across such a variety of domains. However, Latour has gone on to question the very legitimacy of the critical gesture, arguing for its replacement by an assemblage of concerned parties within an expanded democracy.

In this article I explore the efficacy of such a strategy as a means for engaging with the techno-sciences. Reference will be made throughout to examples in the techno-sciences, particularly biotechnology, as a means of revealing the uses and limits of Latour's work. While other critics of Latour have raised concerns

over the tendency for Actor Network Theory to favour already existing relations within networks, thereby foregrounding Actor Network Theory's inability to theorize relations of power,<sup>2</sup> I want to question the status of the network itself — both as a means of describing the state of affairs that now exists and the means for changing it. My concern with Latour's work goes beyond attempting to understand or figure politics within the actor network to questioning the 'flat' ontology implied by the network itself. Against this flatness, where all modes of living and engaging with the world are simply constituted as forms of association across a series of points, I want to argue for a multi-levelled or layered ontology. I argue that important distinctions occur according to the degree of abstraction through which social relations, modes of communication and modes of enquiry are constituted. The flat ontology of Actor Network Theory refuses to recognize any kind of qualitative difference between these levels — for example, that there is only a difference in degree rather than in kind between face-to-face communication and extended forms of virtual communication, or that there is no ontological distinction that might be found in the difference between gift and commodity exchange. By contrast I want to claim that qualitative differences do exist and that they help shape our values. If, following Latour, we wish to set up a democratic forum where matters of concern can be debated and discussed, these differences ought to be recognized, not methodologically flattened out.

### Substance or Interpretation?

While Actor Network Theory depicts a world constructed through the relation between human and non-human hybrids, this is not the same as embracing the notion of a posthuman future. Latour, when asked about the posthuman during a debate with Steve Fuller, seemed unwilling to engage with the term at all.<sup>3</sup> Undoubtedly, Latour would reject the historicizing assumptions of the term. In

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2. Perhaps the best-known critique of Latour's work from a perspective well disposed towards the notion of hybridity, but critical of Latour's blindness to power, is Donna Haraway's. See Haraway, 'The Promise of Monsters: A Regenerative Politics for Inappropriate/d Others', L. Grossberg and J. Radway, *Cultural Studies*, London, Routledge, 1992.

3. C. Barron (ed.), 'A Strong Distinction between Human and Non-humans is no Longer Required for Research Purposes: A Debate between Bruno Latour and Steve Fuller', *History of the Human Sciences*, vol. 16, no. 2, 2003.

fact Actor Network Theory deliberately avoids such macro categories, with Latour claiming that 'midnight has struck for [the] sort of social theory [that uses] ... such easy to grasp entities such as "Late Capitalism", "the ascent of civilization", "the West", "modernity", "human history", "postcolonialism" or "globalization"'. Clearly the 'posthuman' would be on such a list. As a 'theory' Latour's work, and Actor Network Theory more generally, presents itself as a relatively modest endeavour. It deals with hybrids and networked encounters, and takes into account the constitutive role of objects, but it has little to say about the wider conditions of possibility that enable such encounters to take place. However, alongside the modesty of Actor Network Theory's method, Latour's recent works show signs of becoming increasingly grandiose in making broader claims that are dismissive of all other forms of interpretation.

Indeed it would seem that there are two kinds of Actor Network Theory. On the one hand there is the constrained microanalysis of specific situations studies, as found in *Laboratory Life* and *Aramis: The Love of Technology*. On the other hand there are works like *We Have Never Been Modern*, *The Politics of Nature*, and *Reassembling the Social* that project Actor Network Theory as a universal theory. Such works are at pains to reveal the inadequacy of all other modes of understanding. Significantly, these do little to engage concretely with rival theories. Nor do they contain specific examples of how Actor Network Theory might effectively reveal the complexity of situations, or how Actor Network Theory might handle what Latour refers to as matters of concern. In its conception of a world governed by networks of human and non-human actors, in its essentialization of hybridity, and in its hostility towards larger contextual categories such as capitalism, social form, race and culture, Actor Network Theory has gone beyond microanalysis to construct itself as a master discourse, one which demands to be engaged with as such.

Actor Network Theory attempts to overcome what Latour sees as a major shortfall of modernity — the slicing of a continuous hybrid reality into separate analytical domains. Latour claims that modernity has been misinterpreted through a series of false dichotomies; the largest, nature/society, legitimizes a whole series of others: subject/object, fact/value, micro/macro, structure/agency, and so forth. One result of this division is that those operating under the terms of 'the modern constitution' fail to recognize the

existence of hybrids or the practices that allow them to proliferate. By contrast, Latour argues for an ontology that is both relational and material, its substance made denser by the inclusion of non-human objects. By understanding that the world is produced through a series of heterogeneous collectives or networks of human and non-human actors, we are better placed to determine a framework through which hybrids might be regulated. The unacknowledged proliferation of hybrids will be replaced by a regulated and collectively approved production.

Within this relational ontology, however, the line between substance and interpretation is fuzzy. Latour has always been vague on questions of historical periodization — especially the distinctiveness of our own time — and it is worth noting that he has dropped the somewhat epochal prefix ‘post’ from his recent writings. Latour’s equivocation on this issue points to a significant tension around the precise importance of the reconstituting practices of the techno-sciences. For instance, while Latour argues that the difference between himself and Ulrich Beck is that, in relation to modernity, Beck emphasizes a change in substance, while Latour emphasizes a shift in interpretation,<sup>4</sup> we find that things are not so clear. As we have seen, Latour tends to legitimize Actor Network Theory through reference to the increasing number of hybrids in the world.<sup>5</sup> Latour recognizes that we face the danger of an uncontrolled ‘proliferation of hybrid monsters’, and that we ‘are going to have to slow down, reorient and regulate the proliferation of monsters by representing their existence officially’.<sup>6</sup> Yet he essentializes the notion of hybridity, famously claiming that ‘we have never been modern’.<sup>7</sup>

Given that Latour admits that at this point in history we face the very real danger of a proliferation of hybrids, we are entitled to ask whether such dangers can simply be pegged to a general failure of interpretation. Rather, could it be that something like a qualitative shift is also at work, one driven by a particular direction of the techno-sciences? To pursue this question would be to explore the material changes that enabled the carving up of modernity into the distinct epistemological domains that underpin what Latour calls

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4. Latour, ‘Is Re-modernization Occurring ? And If So, How to Prove it?: A Commentary on Ulrich Beck’, *Theory, Culture and Society*, vol. 20, no. 2, 2003, p. 41.

5. See B. Latour, *We have Never Been Modern*, London, Harvester Wheatsheaf, 1993, p. 12.

6. Latour, *We have Never Been Modern*, p. 12.

7. Latour, *We have Never Been Modern*.

'the modern constitution'.<sup>8</sup> While marxism might look to the material practice of commodification and link it to the kind of analytical fetishism Latour writes about; or while Heidegger might relate such a division as indicative of the historical shift in the mode of revealing towards *Gestell*<sup>9</sup>; Latour says little about the conditions of possibility for the creation of 'the modern constitution'. The conditions of possibility of the analytical divisions that enabled us to falsely understand ourselves as modern are left under-theorized in Latour's work.

This tension between substance and interpretation is also evident in *Reassembling the Social*. Here Latour moves from his earlier position, which rejected all aspects of social theory, to now claim that traditional sociology is acceptable for stable situations, while Actor Network Theory is best suited for situations in which 'innovations proliferate', where new networks and means of association are being produced.<sup>10</sup> At this point we need to ask, is Actor Network Theory then, merely an *overdue* response to a world that was never divisible in the way the modern constitution supposed it to be? What then of these new situations of increasing instability — what is their status? And what happens when a situation changes from stability to instability? Ultimately it appears that Actor Network Theory is merely a default methodology, one that leaves the sources of qualitative change under-theorized.

### The Rejection of Critique

As well as being unwilling to engage in any form of large-scale historicization, Latour has come to reject the role of critique on the part of social and cultural theorists. Latour believes that social explanations (the basis of critique) are limited. He also rejects any politics based around denunciation, equating the act of criticism with iconoclasm, while he himself is an iconophile, interested in the mediations and translation that things move through. He advocates a 'non-critical' mode of practice, more akin to anthropology than critical theory.

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8. Latour, *We have Never Been Modern*, p. 10.

9. M. Heidegger, *The Question Concerning Technology and Other Essays*, New York, Harper and Row, 1997.

10. B. Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory*, Oxford, Oxford University Press, 2005, p. 11.

In works written after September 11, Latour repeatedly questions the role of the critical theorist, seeing criticism as purely negative and even on par with the delusions of the conspiracy theorist:

Of course we in the academy like to use more elevated causes — society, discourse, knowledge-slash-power, fields of forces, empires, capitalism, while conspiracists like to portray a miserable bunch of greedy people with dark intents, but I find something troublingly similar in the structure of the explanation ... what if explanations resorting automatically to power, society and discourse had outlived their usefulness.<sup>11</sup>

Latour's rejection of critique is on one level easily dismissed as provocation. He never seriously engages with the critical theories of feminism, postmodernism or postcolonialism. Instead we get statements like, 'is it really the task of the humanities to add deconstruction to destruction after 9/11?'<sup>12</sup> Yet the rejection of critique goes beyond rhetoric to the core of Actor Network Theory. Critique works through reference to an outside, to larger structures, such as class, gender, capitalism, society and the like, all of which Latour rejects. What might be gained through such a move?

For one thing it allows Latour to move beyond any simple politics of denunciation. In relation to the techno-sciences, it allows for a more complex reading of how new technologies are intertwined with contemporary practices. As the world moves towards a state of increasing complexity, where both the uses and patterns of technological use become more varied and multiple, any simple critique of technology that relies on a distinction between humanity and technology, or society and nature, seems increasingly inappropriate, even naïve — for example, Francis Fukuyama, in *Our Posthuman Future*,<sup>13</sup> argues that biotechnologies need to be strongly regulated because, in substantially altering what is 'natural' they change the current social order — which stands, for conservatives, as the desirable 'end of history'. Fukuyama attempts to locate what is fundamentally human in a genetically derived essence. Works like Fukuyama's that condemn biotechnology because it violates nature and the human essence do not

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11. B. Latour, 'Why has Critique Run out of Steam? From Matters of Fact to Matters of Concern', *Critical Inquiry*, vol. 30, no. 2, 2004, p. 226.

12. Latour, 'Why has Critique Run out of Steam?', p. 225.

13. See F. Fukuyama, *Our Posthuman Future*, Farrar Straus and Giroux, 2002, p. 101.

account for the degree to which humanity has always been technologically constituted (or hybridized), or provide a means through which the now complex entanglements between the human and the non-human might be articulated.

By comparison, Actor Network Theory seems more able to describe our changing situation. The limits of the modern dichotomized worldview are revealed through the increasing fusion of the human and the non-human, but also through the way biotechnologies shake up the thoroughly modern dichotomies of Left and Right. Biotechnology has split traditional political formations. Those on the Left who feel uneasy about biotechnology — either from a sense that it alters our fundamental humanness, or that it represents the final commodification of human life — often find themselves in the same camp as religious and political conservatives. Others, on the materialist Left, see such technologies in terms of emancipation and human progress, the issue of who has political control of technologies being the only substantive one. The ongoing split on the Right between moral conservatives and economic libertarians is only exacerbated by the contemplation of a biotechnological future. Such fragmentation indicates the limits to which questions concerning biotechnology can be resolved along orthodox political lines — or any other ‘modern’ perspective. As Nikolas Rose has argued: ‘the classical distinction made in moral philosophy between that which is not human — ownable, tradeable, commodifiable — and that which is human — not legitimate material for such commodification — no longer seems so stable’.<sup>14</sup>

However, while Actor Network Theory is able to move beyond simple denunciations of techno-science, its rejection of critique can itself be placed within a specific material context. As we have seen there is some confusion in Actor Network Theory over questions of substance and interpretation. It is unwilling to say much about the material contexts that govern modes of inquiry. This can be applied to Actor Network Theory itself. Its universality, its replacement of critique with an emphasis on descriptive adequacy (the test of Actor Network Theory is whether it can ‘tell a good story’, as Latour continually points out), is indicative of the changing status of knowledge in our culture. The move from critical and interpretative modes of knowledge to knowledge that is increasingly policy driven and ‘post-disciplinary’ illustrates the

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14. N. Rose, ‘The Politics of Life Itself’, *Theory, Culture and Society*, vol. 18, no. 6, 2001, p. 15.

fusion of intellectual practice with capital.<sup>15</sup> In this altered climate, the success of Actor Network Theory, according to critics like Steve Fuller, results from its 'strategic adaption to the democratization of expertise'.<sup>16</sup> Latour's method represents the culmination of knowledge generation within the 'client-driven environment' in which the university now operates as one site amongst many for the generation of market-orientated research.<sup>17</sup> The unwillingness of Actor Network Theory to articulate any normative context from which to evaluate situations allows it to operate successfully across disciplines. It also means that its self-avowed methodological radicalism is matched by a largely affirmative stance towards the current situation, to the extent that its abandonment of critique and description of the world as a series of evolving networks shares an affinity with information-driven capitalism. While Latour rejects the claims of postmodernism, it is clear that Actor Network Theory's successful adaptability across disciplines can only arise in a situation which sees the university 'reduced from a transcendental condition for the possibility of critical inquiry ... to chance encounters and temporary alliances'<sup>18</sup> driven by market imperatives — the very essence of Lyotard's postmodern condition.

If Latour's work is able to shake off some of the baggage of the 'modern constitution', there remain serious shortcomings in his approach in terms of being able to engage with questions of historical transformation. Latour takes what is a historically derived mode of activity — the actor network — and superimposes it as virtually a whole ontology. This cuts Latour off from productive and useful aspects of his own work — for instance the importance of 'enfolding' in his work on technology. At the very point at which one might be able to harness the strategy based around enfolding, we find that Latour's commitment to a flat ontology prevents us from deriving any real use from it. Similarly with 'hybrids', which Latour admits are a matter of real concern, he provides no framework by which we might attempt to judge a useful from a dangerous hybrid. In terms of future possibilities in

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15. The fusion of intellectual techniques with capital, and the reconstitution of the university has been a long-held preoccupation of the *Arena* editors. For a comprehensive analysis of this see the various essays in S. Cooper, G. Sharp and J. Hinkson (eds), *Scholars and Entrepreneurs: The Universities in Crisis*, Melbourne, Arena Publications, 2003.

16. S. Fuller, 'Why Science Studies Has Never Been Critical of Science', *Philosophy of the Social Sciences*, vol. 30, no. 1, 1999, p. 5.

17. Fuller, 'Why Science Studies Has Never Been Critical of Science', p. 9.

18. Fuller, 'Why Science Studies Has Never Been Critical of Science', p. 18.

the techno-sciences, Actor Network Theory cannot outline a set of strategies whereby we might decide to pursue or reject a possible path. Ultimately, whatever its merits as a descriptive mode of analysis, I want to say that a major problem with Actor Network Theory is its projection of a specific techno-material process as a general ontological condition through which it consequently derives its potential politics, thereby occluding other modes of association — and other politics derived through them.

In order to argue this in more depth I will examine Latour's notion of enfolding, outlined in an essay on morality and technology. I argue that the concept of enfolding that Latour associates with a technological morality provides an opening through which we might be able to reflexively think about technological change. However, Latour's abandonment of historicized and constitutive frames prevents him from realizing this opportunity. The problems associated with shedding such interpretative frames (including an inability to come to terms with questions of power within networks) will be explored with respect to Latour's understanding of modern and premodern forms of hybridity. Ultimately, I argue that Latour's solution to regulating the proliferation of hybrids — the creation of an expanded forum in which multiple collectives can speak — is limited precisely because he has rejected the very means by which we might judge the value of one form of hybridity over another — the idea of qualitative difference within social form, and material practices conducted at different scales and degrees of abstraction.

### **Morality and Technology**

Given that the question of the posthuman invariably invokes moral as well as technical issues, Latour's essay 'Morality and Technology' is worth examining.<sup>19</sup> Starting with the idea of human beings' originary technicity, Latour rejects the notion that technology is either a form of domination or a neutral instrument. Technology always exceeds functionality: it is never simply mediated as it enacts a displacement of itself and the user. This essential modality of displacement means that all claims to mastery are doomed to fail. For Latour, 'the use of a technique changes the

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19. B. Latour, 'Morality and Technology: The End of the Means', *Theory, Culture and Society*, vol. 19, nos 5/6, 2002, pp. 247–60.

original intention, because we have changed the end in changing the means'. Given this, the traditional moral division between ends and means also collapses. Technology thus enables a productive *contingency*. For Latour, '[t]he detour will betray your most imperious desires ... How far we are from function, from domination, from instrumentality' Latour writes, concluding that 'there are no masters anymore'.<sup>20</sup> One might respond here by claiming that our high-tech society is one where a lack of mastery exists largely in the form of an undesirable ontological insecurity, where contingency is the new means of domination.

These qualms aside, the essence of technology as a kind of detour is observable in the case of something like embryonic stem-cells. Research in mice reveals a range of possible therapeutic applications (a mouse with spinal injuries was able to move again after stem-cell therapy). All that is needed for therapeutic cloning is some skin and a human egg. However, scientists tell us that there are simply not enough eggs ('spares' from IVF programs) available for research purposes. What to do? Most likely, the answer involves the exploitation of poor women, probably in the Third World. Such a dilemma touches on many peoples' concern with biotechnology — the use of some people as resources for the technological enhancement of others. However, biotechnology itself may answer this dilemma. Nobel laureate Paul Berg claims science ought to be able to isolate the biochemicals in an egg and transfer them directly to the skin cell, thus creating a new egg from a skin cell. No need to collect eggs when you can create new ones from skin cells.<sup>21</sup>

However, as soon as biotechnology 'solves' one problem another is created. For as soon as you can create embryos from skin cells you move one step closer to removing humans from the reproduction process altogether. As Latour notes, 'we have changed the end in changing the means'. If you can create embryos from skin, all you need is an artificial womb (not in itself that difficult to create), and you have isolated human reproduction from human embodiment. Thus for every problem that biotechnologies create, they find a solution. However, it is a solution where 'the moral quandary has been replaced by an extracorporeal biochemical process, no longer strictly defined as human'.

This example reveals the degree to which Latour is able to

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20. Latour, 'Morality and Technology', p. 252

21. R. Brave, 'The Body Shop', *The Nation*, vol. 274, issue 15, 22 April 2002, p. 25.

articulate the contingent possibilities of technological processes and how intentionality is undermined through the detours of technological encounters. In theory, we can keep solving these problems until we find ourselves in a world we cannot live in. The question of the posthuman arises at this point: how many times can we resolve problems through the technological simulation of embodied processes and still remain human amidst the detours and displaced intentions? Latour writes: 'without technological detours, the properly human cannot exist'.<sup>22</sup> Given, however, that we face a situation of potentially monstrous hybridity, detours can also project us unwittingly towards an undesirable form of the posthuman. Can Actor Network Theory provide the resources to deal with this situation?

Latour claims that these contingent relations accumulate within technologies themselves via a process of enfolding — the regime he calls proper to technology. All technologies encompass a triple enfolding — of times, spaces and actants. Something as simple as a hammer contains a set of heterogeneous temporalities enfolded within it — cosmological, geological, industrial, according to the techniques that shaped it. Similarly, a series of heterogeneous spaces is enfolded — from the forest to the backyard workshop. Actors too become displaced and enfolded when using technologies. Humans are constituted of and for other things, rather than the measure of all things.

This awareness of enfolding underscores Latour's conception of the relation between morality and technology. However, the proliferation of technologies and technical systems has obscured these relationships between the differing temporalities and spaces enfolded into technology. The task of morality is to open up, and consider the possibility of reversing, these obscured foldings. Morality engages with technology in any situation where, as Latour puts it: 'whenever we want to go fast by establishing tracks so that a goal can race along them whistling like a high-speed train, morality discloses the tracks and recalls to existence all the lost sidings'.<sup>23</sup> Morality, then, is concerned with preventing forgetfulness — perhaps not quite a forgetting of Being, but of the heterogeneous conditions of possibility that underscore any technological artefact.

Morality traces the lost sidings, the detours that never held, the

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22. Latour, 'Morality and Technology', p. 256.

23. Latour, 'Morality and Technology', p. 257.

marginalized and forgotten forms of association. At a general level this idea is clearly important, and one can trace variations in the work of thinkers like Heidegger and Benjamin. In relation to Latour we need to ask what the status of these heterogeneous times, spaces and relationships might be. How might they be used to 'slow down' the hybrids that stem from a goal-orientated techno-science? Given the emphasis that Latour places on 'slowing down', we might expect that a category of experience such as time might be given constitutive capacity. Instead we are told that 'every contemporary assembly is polytemporal ... and that time is a provisional result of the connection among entities'.<sup>24</sup> Like the social, then, time is not analyzed as a constitutive form within Actor Network Theory. Rather, time is contingent and multiple, recognized primarily as an empirical phenomenon.

Yet it is possible to think of time differently. Of course we live in an era of multiple senses of time, but rather than think of time simply as a provisional result, or remain within a realm of heterogeneous temporalities, we can analytically separate more or less abstract senses of time and explore how they constitute different modes of being in the world. We can theorize these forms of time as cultural dominants within different social and historical formations — from tribal, with a less abstract sense of time (seasons, cyclical rhythms, ritual time), to modern (measured clock time, calendars, scientific measurement), to contemporary time (technologically abstracted and disembodied forms of virtual time). Different temporalities overlap in all of these social formations. One form of time does not simply replace another, rather certain modalities of time are dominant within different social formations — the analogical and seasonal time of tribal communities, the empty calculable time of modernity, the virtualized times of the present.<sup>25</sup> More importantly, such times are connected to modes of engagement with the world.

Think of our normative assumptions about ageing and the body and the sense of this as a relatively natural process that occurs over time. Compare this to the abstracted notions of time envisaged by regenerative medicine — the idea that the body will be able to be perpetually regenerated at a cellular level. Then link this to another

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24. Latour, *We Have Never Been Modern*, p. 74.

25. For a detailed discussion of these different modalities of time within different social formations, see P. James, 'Time, Space, Calendars and Maps', in *Globalism, Nationalism, Tribalism*, London, Sage, 2006, pp. 158–75.

kind of abstract time — the speculative economy and the massive pension funds that have been invested in the speculative *futures* of the biotech industry on the basis that regenerative medicine will soon live up to its promise.<sup>26</sup> Then think of our current situation, of the market (including the black market) in organs, not simply to save lives but to extend youth and the vitality of bodies beyond their normal limits. Here we move from a less abstract notion of one's own body and the bodies of others, to the more abstract reconstitution of bodies' reassembled outside of the self, and of the other as a resource for this process. It is possible to see time and embodiment as part of a set of more or less abstract frameworks that govern (rather than determine) behaviour.

It is not possible to distinguish between such relationships in Actor Network Theory. Latour has admitted that Actor Network Theory is unwilling or unable to account for the differences in types of association. For instance:

ANT [Actor Network Theory] places the burden of theory on the recording not on the specific shape that is recorded. When it says that actors may be human or unhuman, that they are infinitely pliable, heterogeneous, that they are free associationists, know no differences of scale, that there is no inertia, no order, that they build their own temporality, this does not qualify any real observed actor, but is the necessary condition for the observation and the recording of actors to be possible. Instead of constantly predicting how an actor should behave, and which associations are allowed a priori, ANT makes no assumption at all ...<sup>27</sup>

To do justice to the morality made possible through tracing the folds of different associations and assemblages requires a theory able to make a distinction between them. Arguably Actor Network Theory does not provide us with the concepts to do so. As Frederic Vandenberghe remarks in relation to Actor Network Theory:

Do we know how to retrieve and actualise the lost possibilities of the past? ... all too often we analyse the past from the point of view of the present, starting with

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26. M. Cooper, 'Resuscitations ? Stem Cells and the "Crisis of Old Age"', *Body and Society*, vol. 12, no. 1.

27. B. Latour, 'On Actor Network Theory: A Few Clarifications', <[www.nettime.org/Lists-Archives/nettime-l-9801/msg00019.html](http://www.nettime.org/Lists-Archives/nettime-l-9801/msg00019.html)>, <[www.nettime.org/Lists-Archives/nettime-l-9801/msg00019.html](http://www.nettime.org/Lists-Archives/nettime-l-9801/msg00019.html)>, 1997, accessed 4 October 2007.

contingency and 'interpretative flexibility' but eventually ending up with determinacy and self-referential closure or some vague spatial fluidity; all too rarely we analyse the present from the point of view of the oppressed past and those who are excluded in the present.<sup>28</sup>

It forecloses the possibility of such exploration because of the one-dimensional ontology of the actor network, which is expansive in the range of associations it allows, but restrictive in the quality of interpretation it gives to them.

It is here that one might suggest a different trajectory to the one made by Latour. The idea of enfolding is highly suggestive, yet I argue that Latour unnecessarily constrains its analytical force. If the whole point of enfolding is to trace the conditions of possibility that allow for a particular technological practice to manifest, it seems that Latour prematurely closes off what can be found by ignoring qualitative distinctions of scale, structure and so on. I would contend that we can agree with Latour concerning the connection between morality and tracing the 'lost sidings', but that this process of enfolding might be thought differently.

Such a position would argue that terms such as 'scale' and 'levels' are in fact crucial, not only in terms of how the social realm is constituted, but also for coming to terms with the full significance of enfolding. Indeed many articles have appeared in this journal<sup>29</sup> arguing for a concept of the social that is based on the intersection of different levels of social integration, space-time extension and modes of practice. The distinction between networks dominated by face-to-face communication, as opposed to disembodied communication, is surely a qualitative distinction, as is the difference between premodern and postmodern social formations

28. F. Vandenberghe, 'Reconstructing Humants: A Humanist Critique of Actant-Network Theory', *Theory, Culture and Society*, vol. 19, nos 5/6, 2002, p. 63

29. This general position has developed through reference to the broad position of the *Arena* editorial group whose work on the theorization of composite layers of social life and the question of intellectual practice has provided a general position from which this specific discussion takes its starting point. In particular, the work of Geoff Sharp, whose theorization of the issue of 'constitutive abstraction' in relation to the question of intellectual practice, has been particularly important. See, in particular; G. Sharp, 'Constitutive Abstraction and Social Practice', *Arena* (old series), no. 70, 1985, pp. 48–82; 'Extended Forms of the Social', *Arena Journal*, no. 1, 1993, pp. 235–6; 'Keywords: the Network', *Arena Magazine*, no. 10, 1994, pp. 46–7. See also, for elaborations of Sharp's thesis within different contexts: J. Hinkson, 'Post-Lyotard: A Critique of the Information Society', *Arena* (old series), no. 80, 1987, pp. 123–55; P. James, *Globalism, Tribalism, Nationalism: Bringing Theory Back In*, London, Sage, 2006, A. Caddick, 'Witnessing the Bio-tech Revolution', *Arena Journal*, no. 8, 1997, pp. 59–90.

where different modalities of time, space and embodiment predominate. The point, however, is less abstract forms of communication, exchange and social integration are *enfolded* into the more abstract forms. Often the identities and relations constituted within earlier forms are taken for granted or exist at points of contradiction, such as in the humanist assumption that subjects are the same whether they exist in low- or high-tech communities, co-operative or market-based societies, or the postmodern projection of the subject that is 'always already' multiple throughout history. It is important to recognize, however that historically prior forms of organized being do not disappear — flattened out into a one-dimensional ontology where their differences can only be registered empirically. If contemporary technologies allow for different forms of time, space, embodiment and social integration to manifest, then a key task for morality is to trace the lived values and conditions of understanding that were gathered up (or enfolded) within these previous forms, and reflexively ask to what extent might they be reconstituted, or indeed whether it is desirable that they are reconstituted within new material practices. As we shall see, Latour's unwillingness to think in terms of qualitative difference in the way I have briefly outlined lessens the range and, I would contend, interpretative force of his approach. It also leaves him open to accusations of being unable to account for politics and power in contemporary networks.

### **The Imperial Ambitions of the Network in Theory and Practice**

Despite all Latour's claims of inclusiveness for Actor Network Theory, quite a lot is excluded. Latour claims 'that modern societies cannot be described without recognizing them as having a fibrous, thread-like, wiry, stringy, ropy, capillary character that is never captured by the notions of levels, layers, territories, spheres, categories, structure, systems ... Literally there is nothing but networks'.<sup>30</sup> Latour's network is no longer governed by traditional conceptions of distance and proximity. It is as if Latour has taken Heidegger's description of the technological *Gestell* and stripped it of its evaluative capacity. If Heidegger was to bemoan that 'all distances in time and space are shrinking', Latour would argue that

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30. Latour, 'On Actor Network Theory: A Few Clarifications'.

networks simply reveal the conceptual limitations of distance as an evaluative concept. What matters is the encounter, not its scale or the constitutive distance between actors. The fact that it is only in a technologized culture that abstract encounters acquire enough prominence to make such claims seem feasible is overlooked.

Indeed, despite Latour's attempts to de-technicize the concept of networks, it is telling that his examples of how networks erase the distinction between something like distance and proximity are almost exclusively to do with modern technologies (long-distance telephones, oil pipelines, optical cables and so on). One might be able to describe all forms of associations as networks in a general sense, but the idea of networks, and indeed the features Latour ascribes to them, only make sense fully in a technological world of extended networks that abstractly frame a whole gamut of material practices.

The same issue applies to questions of scale. Latour writes that:

networks allow us to dissolve the micro–macro distinction that has plagued social theory from its inception. The whole metaphor of scales going from the individual, to the nation state, through family, extended kin, groups, institutions etc. is replaced by a metaphor of connections.<sup>31</sup>

The tension mentioned at the beginning of this article between a substantive shift and a mere recognition of a long-standing condition is evident here. One might argue about whether historically constituted groups such as family, kin and nation are as important as they once were, but the fact that they can be bypassed at all and replaced by a more generic theory of associations is clearly due to the rise of high-tech networks of media and communication. This change is left under-theorized within Actor Network Theory. Unregulated hybrids, like the new category of risks, are empirically recognized but their conditions of possibility are inadequately explored.

While Latour wishes to posit actor networks as an ontological condition, and thus not restrict them to technological networks, it is surely the case that the latter are increasingly becoming the dominant mode by which we engage with the world. Such networks are historically produced, they are not innocent, and indeed they work as a means of ordering. The reconstitutive capacities of the network are both under-theorized by Actor

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31. Latour, 'On Actor Network Theory: A Few Clarifications'.

Network Theory and enacted through it in the sense that the difference between associative forms is erased when everything adopts the guise of an actor network.

In this context the network metaphor enacts a kind of ontological imperialism. To exist within the network is to adopt a particular way of being to the exclusion of other ways (where scale and other qualitative differences matter). As James Tully observes, the idea of the contemporary network

is not an ideology or worldview in the traditional sense. It is rather the opposite: a mode of being that is skilled in and accustomed to *worldviewing* ... interacting with and negotiating a kaleidoscope of shifting ideologies and worldviews ... it is not a neutral, all inclusive medium ... *It substantially modifies the pre-network forms of subjectivity* it includes, transforming them into contingent and malleable worldviews, civilizations, codes, programs, and 'scapes', yet paradoxically placing beyond question its own background horizon of disclosure of the world as a complex system of contingent and programmable networks.<sup>32</sup>

Latour's ethnographic methodology never considers the status of the network itself. While humans and non-humans have always been entangled, contemporary networks reconstitute prior modes of association and make them over in their image. Actor Network Theory performs the same kind of violence in theory by collapsing different forms of social encounter (including those with non-humans) into a generalised actor network.

Half-remaining within the language of Actor Network Theory we can ask — is there a difference between more or less abstractly constituted networks? In *Reassembling the Social* Latour dismisses the distinction between the abstract and the concrete as meaningless.<sup>33</sup> Yet one can clearly differentiate the times, spaces and associations of say, an indigenous connection to land with, at the other end of the spectrum, an activity such as property speculation with its highly abstract connection to land. And while Actor Network Theory has been critiqued in terms of its inability to think through the issue of power within networks, little has been said concerning how the very idea of the actor network — unable

32. J. Tully, 'Communication and Imperialism', *CTheory*, published 22 February 2006, accessed 23 July 2007, <[www.ctheory.net/articles.aspx?id=508](http://www.ctheory.net/articles.aspx?id=508)>.

33. Latour, *Reassembling the Social*, pp. 60–2.

to think through issues of qualitative difference — enacts a more fundamental form of problematic power. This is the ontological violence of Actor Network Theory's flat ontology, which collapses all forms of association into a single abstract level. Paul James has observed how such collapse cuts us off from crucial alternatives:

The abstraction of the modes of exchange and communication — as well as all other modes of practice — is linked to the exercise of power, including the acquisition of wealth and control over others ... more abstract modes of practice give access to techniques and technologies of power that qualitatively outstrip more concrete modes. This suggests that a politics of communication and exchange entails asserting the foundational importance of more embodied modes of practice ... this is not to suggest that abstract systems of codification are a problem in themselves, but it is certainly to argue that uncritically worshipped dominant systems have the potential to pervert what it meant to be human.<sup>34</sup>

Arguably Actor Network Theory's flat ontology, irrespective of the intentions of its practitioners, ends up in such a state of uncritical worship. In a slightly different vein to the above, Steve Fuller has observed Actor Network Theory's affinity with the metaphysics of capitalism. The level of abstract analysis that knows no difference between humans and machines, resembles, according to Fuller, the material process of commodification which 'enables the exchange of human and machine labour on the basis of such systemic values such as productivity and efficiency'. Fuller goes on to suggest that Latour's *We Have Never Been Modern* might have been 'We Have Never Been Socialist', thereby capturing the neoliberal climate that 'makes ontological levelling seem so attractive'.<sup>35</sup>

### **Modes of Hybridity: The Significance of Different Forms of Life**

The advantage of maintaining a flat ontology for Latour is that it avoids the kinds of pejorative distinctions that have permeated much of modernity — the first being that between humans and

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34. P. James, *Globalism, Tribalism, Nationalism: Bringing Theory Back In*, London, Sage, 2006, p. 136.

35. S. Fuller, 'Why Science Studies Has Never Been Critical of Science', p. 21.

non-humans, and the second the division between 'us' and 'them' — which is to say the West and the others, who Latour calls the 'premoderns'. Latour naturally rejects any crude dichotomy between a rational and a savage mind. Instead, he invokes a principle of symmetry to measure the difference between two cultural formations, writing that:

We westerners cannot be one culture among others, since we also mobilise nature ... thus at the heart of relativism we find the question of science. If westerners had been content with trading and conquering, looting and dominating, they would not distinguish themselves radically from [others], But no they invented science, an activity totally different from conquest and trade, politics and morality.<sup>36</sup>

This 'illusory' image of a separate science is that which props up the difference between the West and the rest. Without it, the two cultures enter a more symmetrical relation. This image of scientific culture is what has enabled the division between the cultures. 'It has, for example, been stated in terms of a radical break in human consciousness [and for Latour] is hagiographic in most cases and plainly racist in more than a few others'.

Yet there is still a difference. We are not modern, perhaps, but we are not 'them' either. Latour marks the difference in the following way. The West (the non-moderns) are great due to their 'daring, their research, their innovativeness ... the ever-increasing scale of their actions ...' The pre-moderns are defined negatively due to their caution and restraint — limits on experimentation with hybrids. Such limits are considered by Latour as 'harmful, dangerous, and quite simply, immoral'.<sup>37</sup> The West has achieved whatever greatness it has by our willingness to hybridize ourselves, while the non-West is judged lacking by its determination to set limits on the proliferation of hybrids.

Significantly, this difference is presented as one of size, not kind. Modern science is not presented as an epistemological break but rather a capacity to 'multiply the nonhumans enrolled in the manufacturing of collectives'. Premoderns are like scientists without the devices that enable them to enrol more actants. There are no other differences of note. Yet as Mark Elam observes, Latour

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36. Latour, *We Have Never Been Modern*, p. 97.

37. Latour, *We Have Never Been Modern*, p. 140.

does not simply map relations, but orchestrates them as well. He 'is for some ways of non-modern life and against others: aligned with some communities and placed in opposition to others'.<sup>38</sup> In his attempt to establish symmetry, and still mark the distinction between us and them, Latour has also shed some significant analytical perspectives. I would argue that by collapsing all forms of connection into a single ontological level — that of the actor network — Latour's method renders us unable to determine either a sense of qualitative change or a qualitative distinction between types of networks.

We may wish to accept some of the possibilities of the techno-sciences, but if we lose any means of distinguishing between modalities of social being we will understand ourselves differently, and perhaps be predisposed towards treating others differently. The 'immoral' premoderns maintained caution, limiting their expansiveness. They *also* inhabited a culture often more grounded in relations of reciprocity, itself governed by different spatio-temporal frameworks. We may be in a situation to determine the degree to which we want to remain within such frameworks, but to do this we have first to recognize them. Actor Network Theory's flat ontology renders such differences invisible.

How are we to judge the particular use and application of current and emerging techno-sciences? While Latour rejects the levels metaphor, I submit that we can remain attached to his principle of morality — of being able to trace (and possibly reverse) the foldings of times, spaces and actors — through *precisely* such a layered approach. If we think of the enfolding process as one that occurs vertically (in terms of broader, generative structures), as well as horizontally (across the network), we are better placed to see the effect any ensemble of technological relationships may have on the way we engage with the world.

In relation to biotechnologies a limited example of this would be Richard Titmuss' pioneering study *The Gift Relationship: from Human Blood to Social Policy*, which attempted to distinguish between different modalities of blood donation, namely gift from commodity exchange. These tissue distribution systems contained different forms of value, exchange and ways of constituting sociality. *The Gift Relationship* was a response to an emerging neo-liberal paradigm

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38. M. Elam, 'Living Dangerously with Bruno Latour in a Hybrid World', *Theory, Culture and Society*, vol. 16, no. 4, 1999, p. 6.

linking the market with the commodification of human tissue. And, while Latour argues against qualitative forms of scale such as the nation, Titmuss' study revealed the way in which populations are constituted at various levels, *including* that of the nation-state, often donating blood because they identified themselves as part of the fate of the nation. The book has been cited as a key factor in Thatcher's failure to marketize the blood donation system in the United Kingdom, and used as evidence in US Congressional hearings to prevent the sale of human organs.

From an Actor Network Theory perspective there are problems with Titmuss' work, to the extent that it assumes a bounded subject able to donate an undifferentiated tissue sample to another like-individual. The fact that human tissue can now be differentiated into further products which can be stored, modified, and have their value increased, suggests that the discrete nature of the human gift is unsustainable to the extent that it spirals off into a variety of networks and bio-technological-commercial assemblages, all of which do different things. Furthermore, Actor Network Theory theorists have rejected the notion of frames like neo-liberalism, with Michel Callon going so far as to assert that capitalism does not exist as a useful explanatory category<sup>39</sup> — that it is merely an illusory invention of political economic critics.

Yet much of this criticism of Titmuss focuses on his assumptions concerning the bounded nature of the subject and the object. One can retain an analytic distinction between gift and commodity economies that still encompasses an assemblage between subjects and objects. Such a distinction does not necessarily rely on human essences, nor the 'modern' division between subject and object. Indeed Frederic Vandenberghe's criticism of Actor Network Theory relies upon the meaningfulness of this distinction. Maintaining the interrelation between humans and non-humans, Vandenberghe critically distinguishes between the gift economy and the commodity economy. The former 'emphasizes qualitative relations of reciprocity between humans and tends towards the personalization of things' while the latter 'objectifies things as property, promotes the reification of persons and turns them into strategically operating humans'.<sup>40</sup> Like Titmuss, Vandenberghe argues that the gift economy performs the social bond, while

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39. M. Callon (ed.), *The Laws of the Markets*, London, Blackwell, 1998.

40. Vandenberghe, 'Reconstructing Humans', p. 57.

commodity economy severs that bond. The overdetermination of social power in non-humans, stems, according to Vendenberghe, precisely from a failure to account for the broader relational structures in which things are embedded.

To say this is not necessarily to make *exchange* the only underpinning of the social bond, but it is to suggest that relations between humans and non-humans can take place within different constitutive levels, a theoretical possibility to which Latour remains closed. In contrast to Latour, there are not simply 'longer or shorter networks', there are layers of associations — from tribal to national to global, from the concrete to the abstract, from the face-to-face to the disembodied. Within different social formations these layers intersect in different ways — and different possibilities, different priorities emerge under the dominance of various layers.

By contrast, Latour undercuts the possibility for a reflexive approach to 'monstrous hybrids' by not allowing for this sense of ontological difference. To say this is not to argue that we move entirely from one kind of ontological frame into another over time. Rather it is to claim that at any time social life is composed of the intersection of a number of such frameworks, each more or less abstract in terms of how subjects and objects are constituted. What some refer to as the 'posthuman' represents an emerging framework that stands at the furthest degree of abstraction. Our sense of embodied self, our relations with others, our relation to death and temporality, may be radically altered if techno-hybrids allow the transcendence of what were once regarded as natural (even if they were always constructed) limits — limits which also have grounded human culture and society. In this sense the question of techno-morality is linked to questions of scale.

### **The Democratic Regulation of Proliferating Hybrids?**

Latour's concern with the proliferation of hybrids has led him to argue for a forum through which they might be regulated. In 'The Politics of Nature' he considers just how this might be done. Latour develops his own version of 'political ecology' — a philosophy that seeks to reject the idea of nature as an external source of truth outside of society. This idea consolidates Latour's critique of 'the modern constitution'. The main aim of political ecology, however, is to develop a democratic forum that would recognize the 'complex associations of entangled socio-natural beings, instruments

and practices that constitute different natures'.<sup>41</sup> These new collectives would allow a whole range of human and non-human actors to represent and articulate 'matters of concern'. Instead of a single nature, political ecology recognizes that there are many natures — constructed, complex, and shifting assemblages. Latour wishes to extend the methods he has used within the field of science studies into democracy itself to discover and allow the various collectives to speak:

By refusing to tie politics to humans, subjects or freedom and to tie Science to objects, nature or necessity, we have discovered the work common to politics and to the sciences alike, stirring the entities of the collective together in order to make them articulable and to make them speak. There is nothing more political than this activity and nothing more scientific.<sup>42</sup>

In attempting to achieve this aim, Latour has produced a constitution, with Houses of Parliament, rules for representation, responsibilities of different actors and so on. The emphasis is to expand representation to all entities that exist within actor networks. This sounds appealing to those who welcome the prospect of an expanded democracy. However, there are, even at this highly abstract level of formal analysis, a whole series of questions that arise. Firstly, there is no necessary correlation between expanding the number of agents and increasing the range of possible agency. Indeed one cannot help but wonder how much agency could manifest within such an ultra-liberalized realm. The question of power that has always plagued Actor Network Theory arises again here: Latour never considers the contexts that allow certain actors to speak and be heard over others. As Anthony Iles notes:

The smoothing of the material world into so many things elides the reality of material as property, commodity, use or exchange value. Things are alienation as much as they are facilitation. Latour's analysis ignores the reality that asymmetry of means and access is structured by power, by the designated assembly, protected and affirmed by the rule of law and of property.<sup>43</sup>

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41. J. Wainright, 'Politics of Nature: A review of three recent works by Bruno Latour', *Capitalism, Nature, Socialism*, no. 16, 2005, p. 116.

42. Latour, *Politics of Nature*, p. 89.

43. A. Iles, 'Remnants of Democracy', <[www.metamute.org](http://www.metamute.org)>, created 23 March 2006, accessed 20 March 2008.

Secondly, despite Latour's emphasis on expanded representation and pluralism, there are practices of exclusion that occur. Casper Jensen has pointed out a tension in Latour's schematic model for the new democracy 'between [a] general focus on negotiation, openness and becoming, and its intertwinement, at specific moments, with strongly moralistic claims'. The openness and tolerance of Latour's model has its limits. For instance:

This 'we' is variable in its geometry; it changes with each iteration. Unless we are dealing with repetitious collectives that already know, have always already known, of what they are composed — but these collectives, whether on the right or the left, whether based on racial identity, the nature of things, humanism, or the arbitrariness of the sign, do not belong to the realm of political ecology ... their metaphysics is experimental but identity-based. We are only interested here in the collectives whose composition is going to be modified with each iteration ...<sup>44</sup>

While it is one thing to be critical of essentialized identities and fixed representations, it is another to be dismissive of a range of collectives all the way from humanism, at one end, to deconstruction, at the other. Despite the rhetoric of tolerance, it seems we are back with the immodest mode of Actor Network Theory that rejects all other interpretative frameworks. Given that Latour admits that he is interested only in certain collectives over others, and given that we have seen how Actor Network Theory refuses to recognize the qualitative distinction between material practices existing at different levels of abstraction, constituted according to differences in scale, we ought to feel suspicious about just how open Latour's political ecology really is. The inability of Actor Network Theory to make distinctions between types of associations in terms of the qualities derived from scale, depth, relative boundedness and so on leads to a problem in terms of value and judgement. By what criteria would we determine the importance or even the right to exist of one hybrid assemblage over another?

I would argue that Latour's work ought to be complemented with a more wide-ranging understanding of the contribution of techno-scientific practice towards social and cultural transformation. The possibilities contained in current techno-scientific practice

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44. Latour, *Politics of Nature*, p. 173.

present a useful challenge to us because they force us to take our long-held and taken-for-granted assumptions about nature, humanity and the social, and theorize them within a reflexive framework. The capacity for technology to reconstitute human actions and values goes beyond the question of extension, in the sense of technology simply extending the means to satisfy needs. Latour's work on technology foregrounds the possibility of the detour, the risk, the contingent, and the impossibility of mastery as a modern illusion. However, it remains unable to fully meet the challenge of regulating new and monstrous hybrids. While it is true that technologies can be challenged and appropriated within a democratic framework (indeed this is the principle behind Latour's political ecology), the question of how the values that underpin those represented within the parliament are themselves subject to transformation as we move into a more abstract technological society needs more attention. We have to ask wider questions about the cultural shift that has been enabled through the increasing dominance of reconstitutive technologies. Such a shift gives rise to a more abstract mode of being-in-the-world. This means that the settings that have always grounded a sense of a co-operative ethic are destabilized in the move towards the generalized heterogeneity that underpins the dominant form of the actor network within contemporary capitalism. To what extent we can live co-operatively within the diminishing presence of those prior settings is a question that, at the very least, needs to be considered. Unfortunately, the ontological levelling that underpins Latour's work and Actor Network Theory in general robs us of the very critical resources needed to grapple with the complexities of a hybridized future.