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Techno-animism in Japan: Shinto Cosmograms, Actor-network Theory, and the Enabling Powers of Non-human Agencies

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Abstract

In a wide range of contemporary debates on Japanese cultures of technological practice, brief reference is often made to distinct Shinto legacies, as forming an animist substratum of indigenous spiritual beliefs and cosmological imaginations. Japan has been described as a land of Shinto-infused ‘techno-animism’: exhibiting a ‘polymorphous perversity’ that resolutely ignores boundaries between human, animal, spiritual and mechanical beings. In this article, we deploy instances of Japanese techno-animism as sites of theoretical experimentation on what Bruno Latour calls a symmetrical anthropology of nature-cultures. In staging a dialogue between actor-network theory and Japanese techno-animism, we show how Shinto cosmograms provide an enlivening and alternative diffraction device on several of the ontological motifs manifested in Latour’s work. In particular, by mobilizing the territory of a ‘new’ animism debate in anthropology – manifested in the work of Philippe Descola and Eduardo Viveiros de Castro – we attempt to infuse Latourian ‘multinaturalism’ with new, other-than-western analytical energy. Extending actor-network theory, we argue, Shinto cosmograms offer an interesting vantage point for interpreting the immanent, affective, enchanting and enabling powers of non-humans in contributing to collective life. By thus broadening the ‘cosmopolitical’ imagination beyond Latour’s own European-Catholic frame of reference, Shinto techno-animism offers up a wider reflection on contemporary entanglements of

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science, politics, ecology and cosmos. This reflection, we conclude, opens up a new intellectual territory, allowing us to trace techno-animist streams of thinking both 'East' and 'West', beyond the confines of the scientific naturalism indigenous to European thinking.

Keywords

actor-network theory, cosmogram, non-modernity, Shinto, techno-animism

Japanese Techno-animism as Non-modern Settlement

In her book on *Millennium Monsters*, cultural anthropologist Anne Allison (2006) investigates 'global imaginations' through a consideration of 'Japanese toys'. Allison argues that toys such as Pokemon, Mighty Morphin Power Ranger and Sailor Moon share the distinct property that the characters are animated. This characterization relates not only to the genre of *anime*, a specific Japanese style of video cartoon, but also to the observation that Japanese toy figures are imbued with life and agency. The broader point is that Japanese narratives routinely make spirits, robots and animals co-habit in the world in ways that ignore boundaries between human and extra-human realms. The crossovers exhibited by Japanese toy culture are symptomatic of what Allison calls an 'animist unconscious' deeply embedded in Japanese social life. That this 'unconscious' is at ease with mixing advanced technologies and spiritual capacities suggests that the animism at hand is of a different kind than the one usually discussed in anthropology. Japan, Allison suggests, is home to 'techno-animism'.

Allison is not alone in arguing that there is something distinct about Japanese ways of handling relations between human, animal and technological worlds. In fact, illustrations abound, from widely varying sources. Within animal ethics, for instance, articles from the American *Institute for Laboratory Animal Research Journal* discuss Japanese ways of honouring the animals killed as part of laboratory research. According to Chang and Hart (2002: 12f.), practices of 'offering a service' (*kuyoo*) to dead animals, encouraging an attitude of respect for their contribution to research, is 'conventional in the Buddhist or Shinto religion in Japan'. In the domain of robotics, Robert M. Geraci (2006) points to the phenomenon of 'spiritual robots', arguing that Buddhist and Shinto ideas incline the Japanese to 'afford sanctity to robots'. In some notable instances, spiritual connections are entirely explicit: at the central cemetery in Yokohama, a robot priest donning Shinto robes can be seen performing occasional consecrations (Geraci, 2006: 236–7). More anecdotally, journalistic stories of electron microscopes in Japanese universities with Shinto amulets attached to them, and rocket scientists praying for success at a Shinto shrine near Tokyo, abound (Nelson, 2000).

In this article, we engage Japanese techno-animism as a site of theoretical experimentation, allowing us to challenge *and* re-invigorate Bruno Latour's symmetrical anthropology of nature-cultures (Latour, 1993). This project aimed to demonstrate that western societies *have never been modern*, without drawing the implication that they were therefore *pre-* or *post-*modern. Latour's seminal interventions in the anthropology of science should be credited with conjuring a world beyond the mechanistic scientific 'naturalism' usually said to characterize western modernity (Bennett, 2001). In later work, Latour (2010) adds that his project requires a *positive* specification of what 'the moderns' have been, and might wish to become, through a close reconsideration of European history. This is so especially since we are now all caught up in that troublesome *diplomatic* situation known rather clumsily as 'globalization'. Timely and richly textured as this project is, however, empirically Latour tends to stay close to 'home', in France and the US (Tsing, 2010).

This is a shame for different reasons. Empirical opportunities for exploring the implications of symmetrical anthropology in other-than-western contexts seem rich indeed. Analytically, such instances provide interesting entry-points for productively challenging actor-network theory itself. By requiring this intellectual formation to be more attentive to different ways of handling (quasi-religious) nature-culture relations, we suggest, such engagement might relieve actor-network theory of some of its implicit Eurocentric biases, the possible remnants of Latour's early training in biblical exegesis (Latour, 2010: 600). Indeed, one critic has suggested that Latour cannot offer any relevant distinction between cosmologies of Christianity and animism (Holbraad, 2004). Although this criticism is in our view too hasty, it is nevertheless fair to point out that – even while insisting that '*we* have never been modern' – Latour has never explored how non-western animistic traditions might be indicative of *different* kinds of non-modern settlements; he has simply pointed to the *necessity* of carrying out such exploration (e.g. Latour, 2010: 604).¹

Certainly, increasing empirical attentiveness and analytical flexibility seems incumbent in a global situation characterized by flows and networks that respects neither the geo-political boundaries of any particular nation-state nor the cosmological presuppositions of any particular culture. Recognition of the challenges posed by such global flows – analytical as well as socio-political – would seem to be part of the minimal requirement for what Latour (following Isabelle Stengers, e.g. 2010) calls 'cosmopolitics'. Cosmopolitics, as we will show, requires attention to people's more-than-human attachments; it is what happens to cosmopolitanism once the question of non-humans beyond naturalism is afforded due attention (Latour, 2004).

One striking thing to note about the instances of Japanese techno-animism referenced is that practices of techno-science do not appear

radically separated from spiritually informed ideas of worldly cohabitation. When laboratory scientists pay tribute to the souls of dead animals, for example, they are not relating to these animals as brute materiality or scientific objects to be manipulated from a stance of detached neutrality. Instances of Japanese techno-animism, in short, seem to run contrary to espoused western-modernist notions, according to which science is very specifically demarcated from religious practices. While clearly no modernist, even Latour himself notes, in reference to Catholicism (Latour, 2002), that science and religion are as far removed as can possibly be imagined, coexisting without any contact, *like frog and nightingale*. The problem posed by Japanese techno-animism, then, is the extent to which this Latourian settlement, while explicitly aiming to by-pass modernity, may still reflect a particular European-Catholic history.

To further the symmetrical aspirations of actor-network theory, the present article engages with a formation that we call Shinto techno-animism. We suggest that this formation indeed signals a different non-modern settlement from the one encountered and described by Latour in the contemporary West. 'Non-modern' is taken here in the technical Latourian sense: it implies neither pre- nor postmodernism, but simply refers to any situation which, while presumably modern, in practice does not conform to the ontological separations of society, nature and religion (Latour, 1993). Given the prevalent co-presence of techno-science and animism in Japan, we wonder whether, compared with Latour's depiction of modernism and non-modernity, we are here witnessing a quite *different trajectory for bypassing modernity*? Given that 'animistic' Shinto, whatever else it might be, is characterized by disrespecting the boundary between what western modernists call 'nature' and 'culture', what might actor-network theory – which has garnered much strength from challenging precisely that distinction – learn by focusing attention on it (see Latour, 2010: 602)?

In order to stage this encounter, we mobilize two theoretical territories: the 'new animism' debate in anthropology is placed alongside sociological discussions concerning the relations between Shinto, nationalism, nature and politics. What is particularly relevant about the 'new animism' debate is that anthropologists such as Philippe Descola and Eduardo Viveiros de Castro, over the last decades, have begun to re-energize the previously discarded concept of animism. Bringing these arguments to bear on our Japanese cases allows us to specify the concept of *techno-animism*. Locating our argument in the Japanese context, however, also poses a variety of problems. Most centrally, reference to Shinto is invariably tainted by the affiliation of this 'indigenous religion' with early 20th-century Japanese modernization, including hyper-nationalist identities.² As a consequence, for most contemporary commentators Shinto can be seen as hardly anything *but* a rhetorical banner wielded

in the name of Japanese (proto-)fascism. To create intellectual space for engaging Shinto-inspired techno-animism we thus need to clear some analytical ground.³ We do so by defining our interest in Shinto as *ontological*, as having to do with the specification of what, following John Tresch (2007), we refer to as Shinto *cosmograms*.

Although our main purpose in this article is not to contribute to studies of Japanese political ecology, one consequence of our argument is that it frees Shinto from the burden of simply and exclusively signalling an ominous politics. While using Shinto-inspired techno-animism to challenge and develop symmetrical anthropology, we also hope that our argument may help to open up the notion of Shinto itself, enabling its potential recuperation for more worthwhile cosmopolitical projects than those with which it has been historically affiliated. In particular, we want to consider whether Japanese techno-animism offers (to anthropology, science studies and beyond) an attractive alternative model of the many 'enabling' powers of non-human agencies (cf. Strathern, 1996). What, we ask, would be the implications of diffracting Latourian actor-network theory thinking through the prism of Shinto cosmograms?

The 'New' Animism Debate and Japanese Techno-animism

The *locus classicus* for the concept of animism is Edward B. Tylor's *Primitive Culture* (2010 [1871]); since his seminal contribution the concept has had a winding and troubled history. Taken to refer to 'religious beliefs involving the attribution of life or divinity to such natural phenomena as trees, thunder, or celestial bodies' (Tylor, cited in Bird-David, 1999: S67), the original impetus of the concept was to describe how 'primitive' people made sense of and related to the non-human world. Primitiveness was evinced in the animistic misattribution of life, soul and agency to material entities governed by natural laws, like rivers or thunderstorms. Already in 1902, in *The Varieties of Religious Experience*, William James (mockingly) summarized this view:

There are plenty of people today – 'scientists' or 'positivists', they are fond of calling themselves – who will tell you that religious thought is a mere survival, an atavistic reversion to a type of consciousness which humanity in its more enlightened examples has long since left behind and outgrown. If you ask them to explain themselves more fully, they will probably say that for primitive thought everything is conceived of under the form of personality. The savage thinks that things operate by personal forces . . . (James, 1963 [1902]: 118–19)

To describe this 'mere survival', the concept of animism was adopted in academic disciplines such as ethnology and psychology. Gradually, as

well, it also took on a popular life in everyday language (Bird-David, 1999: S67).

As anthropology became increasingly attentive to, and critical of, its own practices of evaluating cultures against western norms and expectations, the idea of animism became something of an embarrassment. The concept has, however, seen a late revival. Rather than dismissing animism due to its historically derogatory connotations, some anthropologists have aimed to re-specify the term. In particular, the work of Philippe Descola and Eduardo Viveiros de Castro has been central in defining the contours of a 'new animism', in a set of arguments that have also been followed attentively by Latour (2009a). Indeed, Latour (2004) refers affirmatively to both anthropologists when arguing his alternative 'politics of nature'.

Philippe Descola (1996) engages in a project of categorizing the ways in which different societies organize relations between human and non-human actors. In Descola's scheme, four kinds of nature-culture 'complexes' can be distinguished: totemism, animism, naturalism and analogism. Whereas totemic organization posits a dichotomous relationship in which "'nonhumans" provide a repertory of labels for social classification' (Descola, 1996: 95), naturalism provides the modern western variant, where humans are depicted as part of a nature that scientific methods provide a privileged vantage point for understanding. Analogism posits a world of separate entities, where humans and non-humans share neither physical shape nor inner life. Finally, the distinctive quality of animism, according to Descola, is that it projects human characteristics onto nature. Descola notes that, in fact, 'naturalism is never very far from animism'; a point that is richly illustrated, in the Japanese context, by Gregory Golley's (2008) tracing of relations between scientific ecology and Japanese literary culture. Inspired by Latour, Descola suggests that while naturalism 'produces actual hybrids of nature and culture which it cannot conceptualize', animism 'conceptualizes a continuity between humans and nonhumans which it can produce only metaphorically', that is, by way of ritual or, indeed, literature (Descola, 1996: 89).

A similar kind of categorization serves as a backdrop to subsequent debates, in which animism is set up in clear contrast to western epistemology. Anthropologist Nurit Bird-David argues that animism should not be used as an accusatory term that points to the flawed or backward epistemologies of indigenous people. Rather it should be interpreted as 'relational epistemology'. In her view, such thinking is in accordance with current environmentalist ideas that move beyond mind-body dualisms and undermine any strict separation between people and the material world. In this line of argumentation, attentiveness to the life-worlds of animist peoples ties in with certain kinds of western science as an approach that facilitates critical engagements with dominant modernist

ways of dividing up the world. Anthropologist Alf Hornborg (2006: 21) makes a similar argument, proposing that animist and relational epistemologies 'pose a challenge to Western knowledge production'. Both Bird-David and Hornborg emphasize the relational characteristics of animism; an argument that allows them to couple a redefined concept of animism with contemporary ecological understandings, and depicting animism as a kind of indigenous eco-cosmology.

Yet two criticisms must be raised against assuming animism and relational epistemology to be *identical*. First, Hornborg himself proposes that animism is not, in fact, an exclusive property of specific indigenous cultures, given that it also runs rampant in the West (in the shape of machine fetishism). In this sense, the categorical distinction between animism and naturalism is questionable. Second, for both Bird-David and Hornborg, animism comes to signal the synergistic relation-making capacities of people who live in and with – rather than against – their non-human environment. Relatedness, in short, becomes an epistemological plus-word. In a commentary on Bird-David's paper, Eduardo Viveiros de Castro notes that relation-making comes to stand as what absorbs difference and creates sameness. Paradoxically, Bird-David rejects dualism as a property of western reductive thinking, but by contrasting this with the relational epistemology of animism, her analysis exhibits a 'dislike of dichotomies [while] dichotomizing incessantly' (Viveiros de Castro, 1999: 79).

Viveiros de Castro ties this peculiar argumentative form to the epistemological level at which Bird-David's discussion is pitched, one that aims to elucidate how indigenous people 'know' their worlds. The affinity between ecological sensitivity and animism can only be posited at the level of a general epistemology, in which case the former comes to validate the 'cognitive naturalness' of the latter. For Viveiros de Castro, however, animism is not an epistemological issue, but relates rather to questions of ontology – literally what the world that different people inhabit *is composed of*. This starting point leads to an interest in relations *both* as what collects human and non-human forces *and* as what differentiates them, through processes that may take multiple, sometimes predatory and violent, forms.

Viveiros de Castro's criticism is specifically directed at Bird-David,⁴ but it holds for Hornborg and Descola as well. Somewhat incongruously, Hornborg (2006) ends an otherwise Latourian argument for recognizing animism in the West by insisting that it is still of key analytical importance to *retain* the distinction between nature and culture (and thus of people and things). Yet, *why* this should be significant remains unclear. In Descola's case, it is obvious that the 'schemata of praxis', which he uses to categorize broad types of nature-culture complexes, precisely exemplify what Viveiros de Castro (1999: 79) mocks as the 'Kantian ideal' of modern anthropology. If Descola's analytical end-point is

proper classification, this runs directly counter to Viveiros de Castro's ambition to provide a 'theory of people's ontological auto-determination' (Viveiros de Castro, 2011: 128) – that is, their ability to form innumerable worlds that will precisely *not* fit into generalized schemes based on western science.

This 'multinatural' ambition is explicitly affiliated with Latour's (1993) proposals for studying worlds that 'have never been modern'. Indeed, Latour has been insistent on the importance of suspending western indigenous naturalism as the basic assumption in social studies of science (retained, in inverted form, even in social constructivist positions). In this context, Latour has made use of Viveiros de Castro's concept of multinaturalism as an alternative to multiculturalism. But whereas the Latourian position clearly outlines what we ought to *move away from* – that is, naturalism – his analysis of what we might be *moving towards*, or, indeed, what is already *present elsewhere*, is far less developed.

The case of Japan, we suggest, is particularly interesting in this context for two reasons. On the one hand, the Japanese case offers a challenge to analyses that locate relational animism as the 'other' of modern dualist thinking. As we indicate below, contemporary Japanese practices problematize this idea, since they fuse the animistic with the modern in unexpected ways: notably by bringing animism into scientific and technological practices. Further, as critics of Shinto in Japan have shown, this animism is far from 'pristine' – not least due to its historical affiliations with Japanese fascist modernity; to this day, Shinto remains highly politically contested.⁵ The Japanese case thus exemplifies animism in a high-tech version quite distinct in the contemporary world. We index this particularity by using Ann Allison's term 'techno-animism', which points to the juxtaposition, or the welding together, of the technological (and thus presumably modern and cultural) with the animistic (and thus presumably pre-modern and natural).

The fusion of the technological with the animistic poses a challenge not only to the new animism debate but also to the idea of Descola's modernist naturalism; and, in turn, to Latour. If Japanese scientific, technological and cultural production is not only hypermodern but also (in some measure) animist, then modernity, too, must be seen as a multivalent form, one that may not even adhere to Latour's dual processes of hybridization and purification (into 'nature' and 'culture'). Put simply, we argue that it makes a difference whether, like Latour, one starts from a (European) situation of strong purification pressures or whether one follows a (Japanese) trajectory where human, natural, technological and spiritual forces appear to intermingle more freely (see Nakazawa and Latour, 2000). Such a Japanese trajectory, we surmise, will foster a rather different *sensibility* towards hybrids – which is not to say, however, that it *contradicts* the general non-modern project outlined by Latour. Rather, we believe that the study of high-tech Shinto

animism facilitates the *extension* of such a sensibility and, consequently, allows for the development of new insights into the characteristics and capacities of actor-network theory.

The question opened up by Japanese techno-animism is this: what happens to actor-network theory – an analytical formation that has garnered significant strength from showing how western nature–culture dualism hides its own hybridity – when it encounters a situation where such hybridization is quite explicit (cf. Strathern, 1999)? Our suggestion is that Japanese techno-animism allows us to identify different *modes* of human–nonhuman cohabitation, thus infusing new energy into the analysis of non-modernities outside the Euro-American orbit. In particular, we argue that these modes activate a distinct set of sensuous and aesthetic attachments to things, thereby allowing us to explore the *affective* dimensions of hybrids. These are precisely dimensions to which Latour’s actor-network theory has been criticized for paying insufficient attention (see Navaro-Yashin, 2009). This suggestion, however, hinges on how a phenomenon such as Shinto may be approached analytically. Specifically, it requires attention to the vexed political history of Shinto over the last century, a history that has long precluded Shinto from being taken seriously *as* animism.

Shinto Nature, Shinto Nation: From Ideology to Cosmograms

These days, one does not have to be a devout post-humanist to notice that relations between nature, culture and nationhood are unstable and mutable. The question is what one does with such recognition. This issue is particularly relevant in the Japanese context and nowhere as important as when dealing with Shinto, a historically variable placeholder for a multitude of practices and interests. Scholars of Japanese cultural modernization have demonstrated how Shinto, through a series of rhetorical manoeuvres, became tethered to a hyper-nationalist project as a ‘non-religious state ideology’ (Thomas, 2001: 188). Gregory Golley (2008: 8) summarizes such a critical argument by noting how Japanese literary interpretations in the early 20th century showed a ‘turn to the reactionary ideology of cultural self-defense’ – based in part on Shinto mythology – and thus exhibited a ‘profound moral failure’.

Tight interconnections between putatively Shinto-inspired conceptions of nature and fascist state ideology or, as Golley says (2008: 8), ‘the problems of nationalism, imperialism, ethnic and racial oppression’, has cast a long shadow over Shinto. At issue has been the suspicion that the invocation of nature in political ideology ‘is always the mark of traditional, conservative, if not right-wing, ideals’ (Thomas, 2001: ix). The critical import of these arguments is that what is called Shinto, far from being a ‘nature religion’ with a self-grounding relational

epistemology is, rather, part of a symbolic machinery used to repressive political effect. Taken literally, this view of Shinto culturalizes the term completely, emptying it of all nature *as well as* religion. In this view, at the end of the day, natures and religions are simply *expressions* of cultural politics. Far from facilitating our aim to characterize Shinto as illustrative of an alternative non-modern nature–culture complex, it entails that any attempt to take Shinto seriously enrolls the analyst as part of a dangerously essentializing argument about Japanese cultural uniqueness.

But this is not a necessary analytical consequence. Gregory Golley, for example, summarizes the over-determination of nature–culture relations by politics only to dismiss this position. Instead, he argues that more than one possible modernity was at stake in the defining moments of Japanese political history; each related to different ways of dealing with nature and culture. Julia Adeney Thomas concurs on this point. In *Reconfiguring Modernity: Concepts of Nature in Japanese Political Ideology* she notes how she ‘had assumed that a naturalized politics was the antithesis of modernity’. Her analytical starting point was that ‘people who justified society’s power structures or limited the possibilities open to individuals through reference to some form of nature [...] seemed to reveal a dangerous, even malevolent, archaism’ (Thomas, 2001: 15). What she found, however, was that multiple concepts of nature underpinned divergent forms of culture and politics, ‘sometimes with critical intent and sometimes as a way of asserting a national identity for Japan’ (Thomas, 2001: 219).

These formulations leave us with some analytical difficulties. The notion that Shinto has a *solely* ideological function is quickly put to rest by the arguments made by Golley and Thomas. Yet other important questions remain. On the one hand, Golley interestingly details how western conceptions of science – for example Einsteinian physics and ecosystems thinking – deeply influenced Japanese modernity. Whatever expressions we are currently witnessing of nature–culture complexes in Japan, they certainly do not provide direct access to a Shinto ‘unconscious’ (in Allison’s dubiously psychologizing term). Rather, we are required to engage practices that are mediated through layered sets of ideas of both foreign and Japanese origin. This conceptual hybridity raises the question of whether it is possible to claim that *anything at all* is distinct to Japanese conceptions of nature compared with western ones. At the same time, the recognition that nature–culture relations in Japan have taken historically diverse forms poses the question of the extent to which any coherence can be claimed for a specifically *Japanese* concept of techno-animism.

It is symptomatic that, in the context of Shinto, scholarly debates on animism and on political ideology hardly ever meet.⁶ The latter studies have little need for engaging new interpretations of animism, given that

their analytical assumption is that nature and religion are primarily expressions of ideology. Meanwhile ‘new animists’, such as Bird-David, have little use for critically examining the ideologies of animism, given that her ambition is to valorize the non-antagonistic relational epistemology said to characterize the eco-worldview of indigenous peoples. Thus, these analytical categories appear mutually exclusive. Yet, we suggest, it is productive to consider Shinto in the light of the new animism debates. It allows us to pinpoint why important aspects of Shinto fade from view in discussions of Japanese modernism.

Our general point can be stated like this: just as animism has been given a more interesting life when the term was freed from its connotations of epistemological backwardness, so Shinto may turn out to be a far more diverse and interesting phenomenon than is often assumed if it can be conceptually freed from its historically over-determined connotations of political regression.

When Gregory Golley focuses on the multiplicity of natures in Japanese modernism it is noticeable that his level of engagement is not only political but also epistemological and *naturalistic*. He shows how western scientific conceptions of nature were translated into Japanese literary and ideological contexts. He demonstrates this ideational overflow in considerable detail; yet his analysis assumes that *a real nature*, made available by science, forms the basis for cultural interpretations. Indeed, this presupposition underpins his rather bizarre criticism of Latour:

In fact, Latour’s groundbreaking work in science studies has consistently emphasized ‘social’ reality over objective or ‘external’ reality, a position that has served as a thoughtful and useful corrective to postmodernism’s curiously celebratory abandonment of reality altogether. But in denying reality its ‘outsiderness’, Latour’s realism – what he calls ‘radical realism’ – has abandoned any possible understanding of ‘society’ that extends *beyond* the human community. (Golley, 2008: 185)

This argument posits an ‘external’ reality, as specified by modern physics, against a social reality that Latour is assumed to be exclusively interested in. The criticism is spectacularly wrong-footed because it reads symmetrical anthropology as social constructivist (oriented to social reality) and – thus – as non-symmetrical and human-centric. The whole point of actor-network theory, however, is rather that practical ontology (Jensen, 2004), understood as the material-semiotic composition of ‘nature–cultures’, is exactly what is at stake in emerging networks.

As other criticisms of actor-network theory have shown, this point is difficult to grasp if one is committed to some version of scientific naturalism characterized precisely by its ontological fidelity to the

nature–culture dichotomy. Golley’s project of reading Japanese literature as demonstrating a particular form of realism is indeed energized by such a naturalist project. Yet, paradoxically, this evacuates the possibility of taking seriously how Shinto, past and present, may be a co-shaper of Japanese practices of engagement with ‘natural things’, whether in ‘religious’ or ‘scientific’ settings. Consequently, most of Golley’s analysis shows how Japanese modern literature drew from western naturalism in the form, for example, of the theories of Einstein, Haeckel and Darwin.

We agree with Golley that the Japanese context provides an occasion to query some of Bruno Latour’s analyses. Yet, to our minds, the form of that criticism should be the *inverse* of the one he makes. The problem with actor-network theory is not that it is incapable of taking nature seriously in its extension ‘beyond human community’. The problem is rather that the theory has not experimented *enough* with characterizing the multiplicity of (fully material and ‘external’) nature–cultures outside the western orbit. Put differently, the trouble with actor-network theory is *not* that its commitment to naturalism is questionable, but rather that its animistic resonances have been insufficiently explored. This problem is obviously related to the issue we have just remarked upon: namely, that it has been difficult for social and political theorists to view the animism of Shinto as *anything but* political ideology.

This difficulty is exhibited, for example, in sociologist Joan Fujimura’s (2003) otherwise interesting analysis of the discourses of Japanese molecular biologists. Noticing the presence of Shinto views on ‘all living things’ in these discourses, Fujimura immediately dismisses this content as a strategically reinvented (and culturally nationalist) tradition. Likewise, in her work on Japanese high-tech toys referenced in the introductory section of this article, Allison (2006: 12) makes only fleeting reference to ‘Shintoism’⁷ (alongside Buddhism) as part of the ‘historic backdrop’ to her interest in techno-animism. As noted, Allison goes on to locate this animist sensibility, which she depicts as percolating ‘the post-modern landscape of Japan today’, in characteristic 21st-century media imaginaries such as Pokemon (Allison, 2006: 21). However, she pays hardly any attention to how this ‘postmodern landscape’ might be seen as *illustrative of* contemporary Shinto-related practices. In failing to pursue the question of Shinto in much depth, both Fujimura and Allison seem to us to be missing an opportunity for theorizing through encounters with ‘other worlds’ (Zhan, 2009).

Yet, how to enable such an encounter? Clearly, we cannot aim for a general characterization of Japanese Shinto as ‘culture’ or an animist ‘unconsciousness’. However, neither will a purely political or ideological analysis suffice. Instead, following John Tresch (2007), we define our approach as one of tracing a Shinto *cosmogram*.

In anthropology, a cosmology entails not only a classificatory system for ingredients and relations of the world but also an understanding of its 'affective and aesthetic dimensions' (Tresch, 2007: 84). Inflected by science and technology studies, Tresch takes concrete practices and relations with material things as a starting point for elucidating ontological relations. Here, the term 'cosmogram' designates the ways in which 'an ordinary object may contain an entire cosmos' while, equally importantly, 'a cosmos may be treated as just another thing' (Tresch, 2007: 84).

Taking its starting point in specific objects or practices, tracing a cosmogram involves paying attention to the location of entities within a 'cultural choreography', in which they are 'continuously exposed to contestations, additions, deletions and replacements' (Tresch, 2007: 93). The notion of 'continual exposure' to contestation makes clear that cosmograms do not evade the questions of political inscription that analysts of Shinto have abundantly identified. At the same time, however, cosmograms can be seen as an antidote to cultural universalization, given their inevitable specificity and divergence. What is generalizeable across cosmograms is not based on cultural mores, but instead on shared *patterns of relations*. It is at this level of ontological patterns, then, that we aim to designate the specificities of a techno-animist cosmogram, as a supplement to the ones elucidated so far by actor-network theory.

Accordingly, we rely in the following on a set of illustrations of the ways in which practices and objects are interrelated in contexts of Japanese animism and aim to pinpoint important affective and aesthetic dimensions of these processes. These are illustrations that highlight not only how an animist sensibility is consequential for a variety of practices, but specifically how it interacts with scientific and technological imaginations. In a 'modern' setting like contemporary Japan, the latter aspect is central, because too much is lost from analytical sight if, in John Tresch's evocative phrase, we 'deny technological things their own demented onto-poetics' (Tresch, 2007: 89).

A cosmogram, we might say, is a practical ontology; and because practical ontology is always a matter of emergence and hybridity, there is no need to posit any underlying analytical first principle that would determine what exactly Shinto techno-animism *is* or, centrally, *what it can turn into*. Certainly this means that discursively nationalist manifestations are also *part of* the contemporary Shinto complex. However, it is by no means the *only* part of it; Shinto, we venture to show, is a multi-valent formation, in ontological, political as well as affective terms. Focusing on some often-overlooked aspects of Japanese practical engagements with a variety of 'things' allows us to make these *different* aspects of a Shinto cosmos visible, thereby 'making a case for the clearing they hold open for what is, what has been, and what might be' (Tresch, 2007: 99).

Shinto Cosmograms: Locating (Techno-)Animist Legacies

As pointed out by sociologist John Clammer in his studies on the 'politics of animism' (2001, 2004), Japan is probably the only major industrialized country in which widespread discussion of animism is still a part of ordinary intellectual discourse. The vitality of the concept is manifested in anthropological and neo-ecological ideas, traceable to important thinkers of the (early) modern period;⁸ and animism continues to inspire alternative conceptions of nature, science and politics among Japanese intellectuals, artists and activists.⁹ In one way or another, discourses of animism invariably occur in reference to Shinto, the 'vast and many-sided' indigenous substratum of Japanese popular religion (Maraini, 1983: 52). While Shinto cosmology is extremely multifaceted, containing notions of purity and impurity, creation, fertility and community, we follow Clammer (2001: 218) here in interpreting Shinto as a complex and specific form of animism. It is in the shape of a vital animism, within a complex, modernized and advanced techno-scientific country, that Shinto holds interest for us as a vehicle for rethinking relations with the non-human world.

Generally speaking, a core feature of animism is that spirits are located and embodied in things (Garuba, 2003: 266; see also Thomas, 2001: 188–9 on the deliberate efforts to dematerialize Shinto by the early 20th-century Japanese state). Along such lines, Shinto posits a radical 'personalization' of the universe, with both human and non-human worlds consisting in a plethora of 'spirit beings' known as *kami*, the boundaries between which are vague and interchangeable (Clammer, 2001: 226). Human beings, ancestors and more-or-less anthropomorphized gods can be *kami*, but so too can foxes, trees, thunder, rice, stones, mountains and waterfalls.¹⁰ According to Shinto principles, gods, men, animals, plants and inanimate objects are mutually permeable entities, appearing as a unified and dynamic field of existence, characterized by particular forms of immanence and vitalism (Maraini, 1983). As a socio-cultural phenomenon, moreover, Shinto animism takes place in material practices, whether oriented towards ritual, towards features of the surrounding ecology, or towards modern-day technologies. In these ways, as Clammer notes (2001: 223), Shinto forms an indigenous knowledge system, alive and well in contemporary Japan in the shape of everything from life-cycle rituals and religious festivals (*matsuri*) to aesthetic renditions of nature, indigenous people's struggle for land rights, scientific discourses and intellectual work related to (contested) Japanese worldviews.

Together with Buddhism, Shinto continues to inspire ontological conceptions of the world, according to which (what in western parlance would be) 'nature' and 'culture' are seen as mutually co-constituted around continuities, intermediaries and frequent boundary-crossings

(Eisenstadt, 1995). Animals, for instance, often play the role of messengers between deities and humans, the fox being associated with *Inari*, the rice god, and monkeys being associated with sacred mountains (Ohnuki-Tierney, 1989). In recent years, the distinct roles afforded non-human agencies in Shinto has experienced cultural revival, cast as an 'ecologically benign' view of human sociality – also a topic of current 'western' preoccupation. As a dynamic body of practices and beliefs, however, Shinto animism – with its fascination for 'things that change form' (*bakemono*) between human and non-human, this-worldly and otherworldly – has arguably haunted modernizing drives in Japan ever since the Meiji transition to bureaucracy, technology and rationality from the 1870s onwards (Allison, 2006; Thomas, 2001). However fleeting, this 'ethnoscience' (Clammer, 1995: 80) clearly warrants closer attention in the context of multinaturalism.¹¹

As noted, however, this ambition runs into some difficulties. Apart from the moral stain of ultra-nationalist State Shinto, popular (*minzoku*) Shinto may well belong among the least understood religions in the world, its 'amorphous, localized and diversified' character making it not only difficult to formalize but also to study anthropologically (Clammer, 2001: 218ff.). It has been suggested that, in pre-modern Japan, 'Shinto' (the term itself is of later origin) might be better seen as 'ecology' than 'religion' (Golley, 2008: 275), forming highly diversified fields of cosmological practices, relating human groups to the animated more-than-human world of ancestors, gods, animals and striking features of the landscape such as rivers, trees, and mountains. With the advent of modernism, the basic cosmological tenets and practices associated with Shinto have been continuously reinvented, notably blending, in syncretistic style, with various Buddhist and 'folk' elements. All of this makes it difficult to 'locate' Shinto with any precision – something equally true, we should note, for western interpreters and 'ordinary citizens' of contemporary Japan.

In our attempt nevertheless to locate Shinto cosmograms with significance to contemporary worlds of Japanese techno-science, we follow sociologist Tsurumi (1992) in associating such legacies closely to specific instances of intellectual engagement with, and critiques of, Japanese modernizing drives. This method should be seen as a heuristic tool for specifying Shinto cosmograms at the level of their concrete material-semiotic relations, rather than some abstract 'Japanese culture'. Our invocation of the practices of specific intellectuals does not signal a covert form of human-centrism. Rather, we deploy these examples as *access points* that allow us to articulate more distributed and diffuse other-than-human ('cosmic') attachments. Our reference to examples, like the controversial case of biologist Imanishi Kinji, that *clearly* involve ethico-political contestation is meant to underscore that, while State and popular Shinto have intermingled throughout modern Japanese history,

ultra-nationalist State Shinto always represented only *one extreme* form of Shinto manifestation. Other forms of Shinto ‘ontopoetics’ (in Tresch’s terms) were always simultaneously present and active; our interest is in paying due attention to such forms.

In view of the inherent ‘materialism’ of animist practices, the uncovering of Shinto-infused ways of relating can only proceed through encounters with their ‘thingly’ manifestations – be they trees, animals, robots or high-tech toys (Garuba, 2003; Henare et al., 2007). In some of these instances, notably the animal memorial services, it is virtually impossible to tease apart Shinto from Buddhist influences. If we choose to emphasize Shinto rather than Buddhist cosmograms, in spite of the ‘undecidability’ of their relative contributions, it is thus because of the *explicit* animism of the former. Moreover, in some cases, such as the famous robot dog AIBO, the very *notion* of Shinto – as distinct from more ‘diffuse’ techno-animist impulses – is itself contested (Kubo, 2010). We reiterate, therefore, that our argument is not that Shinto ‘over-determines’ all animist manifestations in Japan. More modestly, we argue for the analytical and empirical importance of taking seriously how Shinto registers as *part of* the hybrid situation. As we work our way through four historical sites and their Shinto cosmograms, these points should become progressively clearer.

Shinto Legacies, Past and Present

In searching for alternative Japanese natures bearing the imprint of popular (*minzoku*) Shinto, one suitable place to start is with Minakata Kumagusu (1867–1941), the famous microbiologist nowadays considered a forerunner of the ecological movement in Japan (Sadamichi, 1999). A cosmopolitan character with encyclopaedic knowledge of natural history, folklore and religion, Minakata’s name is intrinsically tied to his concerns, in the early 1910s, with preserving local Shinto shrines, including their rich forest-based flora and fauna, in the face of the national government’s contentious policy of shrine mergers (Thomas, 2001: 188ff.). Heading the so-called ‘anti-amalgamation of shrines’ movement, Minakata – together with folklorist and government official Yanagita Kunio (1875–1962) – petitioned for an end to this policy, alongside writing hundreds of articles and letters on topics ranging from fungi constellations to the role of spirituality in society. Throughout his practices, Minakata stressed the ecological importance, to all human and non-human life, of the concrete and immediate places of Shinto worship. As such, his work embodies the sense in which, as Clammer (2001) notes, the diffuse and place-based character of popular Shinto turned it into a source of resistance, not only to the centralizing tendencies of the (fascist) state, but also to projects of techno-scientific universalism.

In promoting a view of the natural community of plants, animals, forests and human ideals, as organized around local Shinto shrines, Minakata may be seen as inculcating a 'deep' ecological sense of the immanent vitality of human and non-human co-habitation in specific places (see Sadamichi, 1999). More specifically, his concern with the biotic qualities of Shinto places of worship lingers on, albeit under radically transformed political circumstances, in current-day concerns with practical nature conservation in Japan. With many of the more than 80,000 shrines surrounded by forests, how to sustainably manage such 'sacred forests' – including the famous ones at Ise and Kasuga (Perl, 2008) – is becoming an important site of Shinto-infused ecology, giving rise also to new place-based resistances to land development (Omura, 2004). Characteristically, the environmentalism manifested in attempts to preserve scenic and communal shrine landscapes does not oppose human activities against some pristine 'wild' nature. Rather, human intervention is valued here as a source of ecological cultivation – as witnessed also in more general concerns with the restoration of 'village forests' (*satoyama*) in rural Japan (Tsing and Satsuka, 2008).

Our second site of Shinto legacies intersecting with Japanese techno-science returns us to the memorial services for laboratory animals with which we began – this time via the historical interlocution of (in-)famous primatologist Imanishi Kinji. The history of science has documented how Japanese primatology developed in ways distinctly different from its western counterpart, influenced not least by the Kyoto School of Imanishi Kinji since the 1950s (see Asquith, 1991, 2002; de Waal, 2003). Pamela Asquith (1991: 89) summarizes this difference by noting that, unlike their western colleagues, Japanese primatologists were led early on to investigate complex social relationships (like kinship and family life) among primate groups, because 'animal minds and souls' were simply 'assumed to exist'. It is therefore no coincidence when, alongside services for insects and birds, Iliff (2002) points to the monkey memorial services (*sarukuyoo*) performed annually since the 1970s at the Primate Research Institute in Kyoto University as particularly noteworthy in today's world of biological sciences. The cosmogram of monkey memorial services, we might say, serves as a marker of wider historical interrelations among biologists and their animals in the Japanese context – even as the practices themselves have now entered transnational circulation, including to North America.

Imanishi is a particularly contentious figure in the recent history of Japanese techno-science. Early in his career, he was sufficiently implicated in war-time scientific expeditions to colonial Manchuria for a long-lasting moral stain to be attached to his name.¹² Later on, Imanishi's theories on the prevalence of cooperative over competitive relations among animals and insects brought his school of thought into conflict with the Darwinian biological establishment, culminating in the

1980s with allegations on the pages of *Nature* over allegedly ‘anti-scientific’ views prevalent in Japan (Itō, 1991).

Recently, however, Imanishi’s thinking has experienced renewed appreciation (Asquith, 2002). Molecular biologist Yoshimi Kawade (2001), for instance, credits Imanishi with pioneering a scientific tradition of ‘bio-sociology’, resonating with Jacob von Uexküll’s theory of *Umwelt*. Kawade (2009) suggests that bio-sociology amplifies the criticism of mechanistic biology by considering all of life, human and non-human, as possessing an innate organic sociality. Following Tsurumi (1992), we argue that Imanishi’s bio-sociology in part represents his techno-scientific codification of certain animistic styles of thinking characteristic of popular Shinto.

Our third site of Shinto techno-animist legacies brings us straight into contemporary Japanese popular culture: as is well documented (Bigelow, 2009; Boyd and Nishimura, 2004), world-famous *anime* director Miyazaki Hayao fuses Shinto imaginaries and modern-day environmentalist tropes in several of his films, most prominently the 1996 *Princess Mononoke* and the 2001 *Spirited Away*.¹³ As Bigelow notes (2009: 60), Miyazaki here literally re-animates the folkloristic tradition of Shinto, in order to evoke experiences of wonder and intimate connectedness in nature. In an interview, Miyazaki states that, although, unlike his grandparents, ‘my generation does not believe that *kami* exist everywhere – in trees, rivers, insects, wells – I like the idea that we should all treasure everything because spirits might exist there’, because ‘there is a kind of life to everything’ (quoted in Boyd and Nishimura, 2004: 4). Within Japan, apart from his *anime* films, Miyazaki is known also as an ecological activist, promoting the conservation of *satoyama* forests. In both artistic and political practice, Miyazaki is thus important in reclaiming select existential and ecological legacies of popular Shinto from the lingering stain of totalitarian ideology. As ‘technologies of perception’ (Bigelow, 2009), Miyazaki’s movies emerge and *move* as instances of high-tech Shinto cosmograms for the 21st century that are reinventing animistic attachments.

We end this brief sketch of techno-animist legacies by invoking some other-than-human interlocutors: in the domain of contemporary Japanese robotics, mechanical animals such as AIBO-the-dog and Paro-the-seal may well presage the full integration of robots into family life (Kubo, 2010). Indeed, as a strategically self-styled ‘robot country’, home to the majority of the world’s ‘intelligent’ autonomous robots, Japanese relations to these advanced mechanical beings often come across as perplexingly optimistic and anxiety-free to western observers (see Geraci, 2006). In debates on Japanese ‘robot mania’, cultural scholars almost invariably cite Shinto (and/or Buddhism) as an influence, claiming for instance that: ‘robots ... are “living” things within the Shinto universe’ (Robertson, 2007: 377). More directly, through

Swiss-born Sony engineer Frédéric Kaplan, notions of Shinto have been almost literally 'in-scribed' into AIBO. For Kaplan, the Japanese 'affection for robots' bears clear traces of Shinto mythology, which, unlike Christianity, poses no great divide between 'the natural' and 'the artificial' (Kaplan, 2004). These views enjoy circulation, including in Japanese writing, where they provide a fertile context for claims about the distinctness of Japanese relations to robots vis-a-vis 'the West'.¹⁴

With pet robots like AIBO-the-dog, qualities of aliveness do indeed shape the practices of both developers and users in particular ways. Whereas Sony engineers look for 'sophisticated' automation along artificial intelligence lines, owners interpret the behaviour of pets in much more intimate terms: their 'baby' AIBO 'likes' particular TV programmes, reacts to certain musical styles and even evinces sadness at the funeral of a family member (Kubo, 2010). Whatever we make of the 'deep' Shinto legacies claimed by Kaplan, figures like AIBO are clearly techno-animist, with boundaries between the human, the animal and the mechanical permeable rather than fixed. Certainly, such impulses are mediated through layers of family and industrial histories – as well as by the particularly cosmopolitan movements of Kaplan, an engineer from Europe. However, before we write off reference to Shinto as simply the 'exoticizing' (and marketeering) perspective of a westerner, it should be noted that wider invocations of 'Shinto', *including among Japanese roboticists and AIBO owners*, seem to stand in for an otherwise hard-to-verbalize sense of *wonder* in the face of new playful robot–human encounters – encounters that, to all intents and purposes, seem as prevalent in Japan as anywhere else in the world (see Pettman, 2009).

While these four divergent sites – associated respectively with the names of Minakata Kumagusu, Imanishi Kinji, Miyazaki Hayao and AIBO-the-robot-dog – are heterogeneous, we mobilize them here as differently actualized cosmograms indicative of Shinto techno-animist legacies in contemporary Japan.¹⁵ What is exhibited in different ways across the four sites are various continuities, permutations and intermediaries between human, spirit, animal, plant and mechanical states of beings. Such practices seem to lend themselves to displays of veneration for *particular* non-human beings – witnessed, for instance, in the *sarukuyoo* memorial services. As we discuss in the next section, however, we should not conflate such practices with any 'worship' of pristine, American-style Nature (see Cronon, 1995). Rather, what Japanese techno-animism entails is a vivid sense of the pragmatic interplay of human and non-human agencies, in terms of their mutual fertility and – eventually – killing. This act, after all, is what instigates the *sarukuyoo* services.

On this note, we return to the main problem posed in the introduction: how might these trajectories of Japanese techno-animism be made to interfere with the non-modern settlement depicted in the actor-network

theory of Bruno Latour? In particular, if Latourian actor-network theory in part reflects specific European histories including historical relations between science and religion, what happens to actor-network theory when diffracted through Shinto cosmograms?

Actor-network Theory Diffracted: Enabling Alternative Non-modernities?

... the reconsideration of animism ... opens a dialogue between 'religion' and ecology and suggests models of the universe beyond those of conventional science. (Clammer, 2001: 241)

For the innovative social theorist of Shinto cosmology John Clammer, animism facilitates a re-linking of religion and ecology, thereby opening up the prospect of 'a modernity whose roots in nature are left uncut' (Clammer, 2001: 243). Meanwhile, the no less innovative theorist of actor-networks, Bruno Latour, has recently argued that 'the growing interest in ecology has had the unexpected effect of granting new relevance to a theology interested not so much in the salvation of humans as in the salvation of the whole creation – non-humans included' (Latour, 2009b: 459). This prospect is designated by Latour as 'ecothology'. In order to approach the question of alternative non-modernities, it is instructive to look a bit more closely at the commonalities and differences between these two diagnoses of science, ecology and the cosmos.

What is certainly shared is the sense that conventional science fails to provide models with which to think a 'sustainable cosmos'. In stark contrast to naturalist views, both Clammer and Latour offer to the spiritual realm ('religion' or 'theology') a very significant role. At this point, however, differences also emerge. To Clammer, the *telos* is seemingly to develop a modernity that regains its ground in nature. Latour, on the other hand, argues forcefully that modernization is beside the point:

We are all now witnessing the immensely complex renegotiation of values and features that the end of modernization has made possible and that the word 'globalization' covers rather clumsily. But one thing is certain: the planet will no longer be modernized. Something radically different is going on. (Latour, 2009b: 460)

Indeed, given Latour's (1993) aversion to the modernist settlement, and its strict partitioning of the scientific and the spiritual, something radically different *will have to be* going on. To delve into worlds of Japanese techno-animism only to emerge with a new *modern* settlement, surely cannot be satisfying. Disregarding the self-conscious western parochialism of Latour's ecolotheology (2009b) – which relies on distinctions between Protestantism and Catholicism – in the present article, we have

simply followed his advice to find ways in which spirits and divinities do not have to be ‘squeezed into the subjective mind’, but can rather be located in a medium ‘more conducive to innovation’ in our relations to the *pluriverse* (Latour, 2010: 604). In other words, we have aimed to extend his search for non-modern ontologies relying on entirely different (quasi-)religious nature–culture complexes.

In Deleuzian terms, what we have done so far is to reference a number of *actual* Japanese instances in which competences among humans, technologies, animals and gods are distributed rather differently from Euro-American practices. Articulating the Shinto cosmogram, however, additionally requires interpreting the *virtual* patterns of these practices and their relations to actor-network theory concerns. To elucidate such patterns, we are concerned here – like Clammer (2004: 102f.) – not with shared animist commonalities but with showing how Shinto cosmograms and their affiliated practices ‘affirm, exemplify and continually keep open the channels to a metaphysical and ontological reality’ in specific ways, far removed, for instance, from the ‘animism’ of New Age environmentalists. Rather than following Clammer in learning from Shinto how to ground modernity in nature, however, we are interested in practices that allow us to define different ways of having never been (and continuing to not be) modern; that is, in different non-modernities.

Throughout our analysis, we have associated Shinto with a certain bypassing of the strong nature–culture dualism of western modernism, and stressed the themes of human/non-human continuities and boundary-crossings. This is what Kasulis (2004) calls the capacity of Shinto to generate experiences of ‘immanent connectedness’, that is, experiences of the cosmos as intimately imbued with extra-human life (*kami* and *tama*, the ‘vital life-force’).¹⁶ Kasulis (2004: 166) further maintains that mainstream doctrinal Christianity has tended to exclude such ‘panentheism’, a holographic model according to which ‘spiritual forces’ (or *kami*) are literally *in* everything. Such experiences do not flow effortlessly from a ‘cultural worldview’; rather, they form part of material cosmograms, whether explicitly related to common sites of Shinto ritual or not. Indeed, the example of rituals that honour the animals killed as part of laboratory research may be viewed in these terms as sites where the immanent connections between techno-scientific and animal fates are expressed, affirmed and extended as sources for renewing the future.

To further specify this connectedness, we associate Shinto with a sense of *affective* and *aesthetic* charge, manifested towards the vitality of specific places (cf. Curti, 2008). This argument connects in intriguing ways to the ecotheology of Latour, given that one meaning of ecology is the ‘study of home’. Indeed, Latour (2009b: 472) characterizes current European experiences in these terms: ‘The moderns ... have no world to reside in. They are homeless.’ In the Japanese context, the confluence of ecology with place-based affectivities provides one way of interpreting

the particular environmentalism – quite distinct from those western notions of ‘wild’ Nature critiqued by Latour (2004) – manifested in concerns for the shrine-filled (‘sacred’) forests (*satoyama*) in rural Japan. Here, dwelling is not simply about repeating the past; rather, it concerns the imaginative renewal of a more-than-human ‘home’.¹⁷ Such imaginative renewal, importantly, may require a certain ‘channelling’ through emotional and aesthetic conditions. As noted by Curti (2008: 103), Shinto sensibilities suggest that ‘only through imagination and affect can a connection to the landscape as a living and becoming thing be first indirectly channeled and touched’. This affords one way of interpreting the ‘technologies of perception’ at work in Miyazaki Hayao’s (re-)animations.

It connects, also, with the themes of awe, wonder and mystery, as qualities that are often invoked in narratives of *kami*-imbued objects and events (Kasulis, 2004). Aesthetically pleasing landscapes may inspire a sense of awe in humans; as may, indeed, the surprise encounter with an attractively strange and playful robotic creature like AIBO-the-dog. Indeed, some analysts (e.g. Geraci, 2006) suggest that Shinto legacies provide for an integration of robots into society in a manner void of the alienation and fear with which mechanical beings have been greeted in the West. The very term ‘techno-animism’ is intended to convey this continued capacity for *enchantment* in non-modern, techno-scientific life (see Bennett, 2001). It is no coincidence, then, that we borrow the term from Allison (2006: 10), who associates the techno-animistic imaginations of Japanese *anime* with a ‘polymorphous perversity’, of morphing and moving across territories of worldly and otherworldly, mixing humans, spirits, robots and animals in playful and ambiguous ways. What Bennett calls the ‘spirit of generosity’, directed towards the enabling powers of animals, robots and cyborgs, arguably finds stronger resonances in Japanese Shinto cosmograms than it ever has in a Christian, European imagination.

Carefully situated histories, we stress, are needed to unearth the *specific* enabling powers – arising at the intersections of Japanese techno-science and Shinto animism – that we are here suggesting. However, to briefly recapitulate, Euro-American commentators nowadays highlight the previously reviled thinking of Imanishi Kinji for showing ‘remarkable foresight’ into later developments in ecology, primatology and anthropology (Asquith, 2002: xx). Within primatology, for instance, Frans de Waal (2003) argues that the ability of this Japanese tradition to perceive social affinities between humans and primates should be credited with helping to overcome the spectre of anthropomorphism. Thus, de Waal writes: ‘if we [western primatologists] no longer perceive anthropomorphism as the problem it once was ... then we are employing techniques from the East initially mocked and resisted by the West’ (de Waal, 2003: 295). Recast in our vocabulary, de Waal points to a capacity to

experience immanent connectedness amongst humans and primates that has helped overcome western naturalist biases.

We have attempted here to stage a dialogue between actor-network theory and Japanese techno-animism. This dialogue gains force, we believe, not only from the explicit interest taken recently by Latour in themes of animism (2009a) and ecotheology (2009b), but from a more general convergence of sensibilities when it comes to bypassing the scientific naturalism indigenous to European modernity. Diffracting actor-network theory through the prism of a Shinto techno-animism may help to articulate a more attractive, or at least quite different, version of non-modernity. Across divergent sites, this alternative non-modern settlement exhibits traits related to Shinto cosmology: continuities across the nature–culture boundary experienced as an immanent connectedness of humans and non-humans; the affective and aesthetic charging of imaginatively renewing more-than-human homes; and the capacities for enchantment manifested in morphing across human, spirit, robot and animal worlds. In Deleuzian terms, these virtual patterns become actualized in specific cosmograms relating to contemporary Japanese techno-science. Our suggestion is that such cosmograms manifest a rather different *sensibility* towards productive and affective hybridities than the one embodied in actor-network theory.

Of course, even if we succeed in creating some space for animist Shinto to *exceed* (and trouble) the taint left on Shinto by nationalist political projects, our depiction of human/non-human affinities still risks lending itself to cultural clichés, the most common being the idea of some ‘Japanese’ (or ‘Asian’) harmony with nature (Kalland, 1995; Tsing and Satsuka, 2008). This stereotype, we should note, is *equally popular* among western *and* Japanese ‘new age’ environmentalists, eager to promote Shinto as an ecologically benign worldview. It is quite alien, however, to the sense in which we invoke Shinto ontologies here. First, it is almost banal to note that Japanese modernizing drives have had their own environmentally destructive consequences (e.g. Dauvergne, 1997; Thomas, 2001). More importantly, whereas animistic Shinto practices may lend themselves to veneration for *particular* non-human beings (trees, robots, primates), this simply cannot add up to any ‘worship of nature’ as such, given the way Shinto cosmograms crisscross the very nature–culture distinction. Rather, value attaches, we might say, to specific place-based ecologies of humans and non-humans, including their pragmatic and vital interdependencies, in life *and* death. In this situation, Tsurumi (1992) seems to us to be on to something important when suggesting that ‘animistic views of nature hold significant potential to contribute to the search for ... a relatively non-violent science and technology’ (quoted in Clammer, 2004: 96).

In our own twist on a classic Latourian trope, then, Shinto techno-animism is interesting because it provides new and fruitful avenues for

challenging and extending actor-network theory practice. We think that the exploration of Shinto cosmograms – characterized by qualities of immanent connectedness, affective and aesthetic charging, imaginative renewal of more-than-human homes and polymorphous enchantment – provides a promising starting point for engaging differently and productively with the issue of ‘ecotheology’ (Latour, 2009b). Shinto techno-animism, in short, seems to us to warrant more attention in future global conversations on the symmetrical anthropology of divergent non-modernities.

Conclusions: Techno-animism, East/West?

We have mobilized Japanese instances of Shinto techno-animism as an enlivening site of theoretical experimentation on what Bruno Latour (2004, 2005, 2009b), following anthropologist Eduardo Viveiros de Castro, has suggestively dubbed ‘multinatural’ cosmopolitics. In contemporary societies heavily infused with discourses on ‘global environmental risk’, multinaturalism is a welcome and expansive intellectual agenda. It is welcome, because too much science and policy continues to be based on assumptions about the absolute unity of universal Nature; assumptions that are breaking down in increasingly obvious ways within a host of ecological controversies (Blok, 2011). Multinaturalism is also expansive because the concept opens up questions of how natures and cultures are ‘co-produced’ and articulated in different virtual patterns or ‘cosmograms’. A ‘cosmopolitical’ aspiration that requires engaging seriously divergent nature–cultures, rather than subsuming ontological multiplicity under assumptions of (epistemological) unity, seems fitting for the times.

In making this argument, we see ourselves as both extending and questioning Latour’s take on multinaturalism. We are extending the project, since Latour explicitly advocates the enumeration and articulation of divergent nature–cultures. Yet, Latour’s own meditations on issues of multinaturalism and cosmopolitics remain centred on ‘western’ experiences. At no point in *War of the Worlds* (Latour, 2002), for instance, does Latour seriously address questions of how to create peaceful coexistence ‘across natures’, with such (non)-modern, other-than-western collectives as the Amerindians, the Chinese, the Papua New Guineans – or the Japanese. In terms of actual empirical engagement, then, Latour’s cosmological interests have been largely confined to Euro-American settings. This makes his task of enabling the gradual ‘composition of a common world’ (Latour, 2004) rather too easy, since it does not require him to pay the full ‘diplomatic’ price of multiplicity. Equally important, it has unnecessarily deprived Latour’s project of many resources that could be activated in considering multiple ‘non-modern’ settlements.

Our suggestion has been to look more closely at one of the most vibrant animist traditions in the contemporary world, coexisting in

intriguing ways within the hyper-techno-scientific context of Japan. At this juncture it is worth noting that the very term 'multinaturalism' as used by 'Amerindianist' Viveiros de Castro (1998, 2004) has rather different ethnographic connotations than it has for Latour. To Viveiros de Castro, multinaturalism connotes a specific feature of Amerindian animist ontology, which presumes spiritual unity among humans and non-humans who are differentiated only along lines of corporeal diversity. Hence the play on 'multiculturalism' (one nature, many cultures) which Amerindian multinaturalism inverts (one culture, many natures). From what we call the capacity of Shinto to generate immanent connectedness in a more-than-human world, it seems clear that something analogous is at stake in this Japanese (techno-)animism. However, we refrain from suggesting that Shinto ontology posits any *single* unity. Instead, we stress the continuities, intermediaries, and frequent boundary-crossings in between human and non-human domains. *Animisms* are divergent; they come in the plural.

In the context of studies in science and technology, our discussion points to the fruitfulness of paying closer attention to 'cosmological' dimensions of techno-science. Japanese techno-animism entails some rather more intimate relations between the spiritual and the scientific, we suggest, than the mutual indifference of *frog and nightingale* to which Latour (2002) gestures. By articulating Shinto cosmograms, our aim has thus been to broaden the imaginative space of non-modernity, in order to encompass a wider diversity of techno-cosmic settlements. At the same time, in engaging sociological discussions on nationalism and nature in Japanese modernizing drives, we seek to create some space for 'popular' Shinto to be relieved of the burden of *simply* signalling an ominous politics. By giving the term a more nuanced set of animist connotations, we point to the multivalent ethico-pragmatic character of Shinto; while nationalist over-coding remains part of its legacy, it *also* embodies an alternative politics of the polymorphous enchantments of non-human agency that warrants more attention.

Going further, we suggest that Japanese techno-animist cosmograms form potentially valuable diffraction devices not only for actor-network theory, but also for wider reflections on contemporary entanglements of science, technology, ecology and cosmos. They offer an analytic sensibility, and an experimental language, for inquiring into some of the affective and enabling powers of techno-scientific non-humans contributing to collective life. In doing so, our reflections join an expanding range of attempts to reassess the meaning of 'life' along vitalist and materialist lines, as embodied in certain European philosophical lineages (e.g. Bennett, 2010; Braun and Whatmore, 2010). Ultimately, however, our engagement remains more anthropological than philosophical; while eschewing notions of a homogenized 'Japanese culture', we still insist on the importance of history and location to the specific animist

cosmograms encountered here. Tellingly, Latour (1996) once explained the breakdown of the Aramis transport project in Paris by a failure on the part of French engineers to ‘love technology’. If current discourses on Japanese pet robots, *anime* cyber-pleasures and virtual dating algorithms are anything to go by, Japan would seem an obvious place in which to search for such ‘techno-romances’ (see Pettman, 2009)!

Conversely, however, we end by reiterating that invoking techno-animism is not meant primarily as a contribution to ‘Japanese studies’. Rather, the issue is to by-pass the twin perils of Orientalism and Occidentalism *in the same move*. Accordingly, our effort is *also* about learning from encounters with thought-provoking instances of Japanese techno-animism that may encourage Euro-Americans to start taking more seriously the widespread animistic practices in the West. Rather than adopting a strategy of ‘provincializing Europe’ (Chakrabarty, 2000), that is, we view Japanese techno-animism as a tool with which to potentially *exoticize* European naturalist practices more thoroughly than even Latour has so far been capable of.

Hornborg’s (2006) notion of ‘scientific animists’ is interesting in this respect. Could it be, for instance, that this category expands beyond Gregory Bateson, to include such heterogeneous figures as Imanishi Kinji, Minakata Kumagusu, Jakob von Uexküll, Gilles Deleuze – and, indeed, Bruno Latour? If this were the case, the whole idea of parcelling techno-animist streams of thinking into boxes of Japan and Euro-America, East and West, would start to look rather dubious. Instead, a whole new intellectual and cosmo-diplomatic territory of ‘comparative animisms’ would open up (cf. Jensen, 2011), deeply enmeshing a variety of non-modern nature–cultures around the world. Might this be the ‘radically different’ thing opened up by symmetrical anthropology once, as Latour says, ‘the planet will no longer be modernized’? While we cannot know, we think it is at least worth trying it out.

Notes

1. Latour has, in fact, shown related interests: prior to the 2005 World Exposition held in Aichi, Japan, he was interviewed by Japanese anthropologist Nakazawa Shin’ichi on the theme of non-modernism (Nakazawa and Latour, 2000). Latour here calls for more dialogue between Japan and Europe under the rubric of a ‘symmetrical anthropology of nature’; our own intervention picks up this promising thread.
2. This problematic situation has been extended since the 1970s by the analytical association of contemporary Shinto references to the cultural nationalism of *nihonjinron* (see Yoshino, 1992).
3. This, in turn, raises another set of vexed questions, to do with specifying what exactly is meant by a ‘Shinto-inspired’ techno-animism – given that, as noted by one reviewer, not all (techno-)animistic beliefs in Japan will (or should) be called ‘Shinto’. We return to this issue in the section ‘Shinto Cosmograms’.

4. Whereas Viveiros de Castro views the epistemological approach to animism as misguided modernism and is therefore arguing against a dichotomization of animistic and western thinking, Bird-David (1999: S87) interprets him as 'rising to the defense of modernist understandings'. This misunderstanding is no doubt related to the difference involved in conceiving of anthropology as dealing with cultural epistemology or multinatural ontology (see Viveiros de Castro, 2004).
5. See the following section for a discussion of the sensitive cultural politics of Shinto. As we continue to indicate, our argument does not pertain to 'Japanese culture', but to Japanese techno-animism; we are talking about cosmograms, not homogenized and essentialized 'cultures'.
6. The main exception to this rule is the British Tokyo-based sociologist John Clammer (e.g. 2004), whose work is discussed in the following section.
7. In line with several interpreters of Japanese religious views, we prefer in this article to use the term 'Shinto' rather than 'Shintoism', in recognition of the fact that Shinto is a highly praxis-based and non-codified form of religious belief, thus hardly constituting an '-ism' in any traditional sense.
8. We are thinking here, in particular, of figures such as Yanagita Kunio, Minakata Kumagusu and Imanishi Kinji (Tsurumi, 1992). We return to the legacies of Minakata and Imanishi later in this section.
9. One rather prominent recent example – to which we will also return shortly – is the work of world-famous *anime* director Miyazaki Hayao.
10. Alongside heterogeneity, the sheer size of the Japanese *kami* population is often stressed: according to popular legend (and media reports), Japan is the country of 'eight million gods' (that is, Shinto *kami*). Every now and then, gods are said to gather in great numbers at particular places – a motif also informing Miyazaki Hayao's movie *Spirited Away* (Bigelow, 2009).
11. In his otherwise perceptive and inspiring work on Japanese animism, Clammer (1995, 2001, 2004) fails to make this connection, noting instead (correctly, we believe) how issues of animism have tended to receive little systematic attention in anthropological theory. In noting that 'the politics of nature is actually ontology' (2001: 240), however, his work can still be said in important ways to prefigure our discussion in this article. Yet, we prefer to diffract Shinto animism through Latourian 'non-modernism' rather than 'western' postmodernism.
12. Imanishi was sent to Manchuria in 1942 and to Mongolia in 1944, as a scholar of Kyoto Imperial University, conducting and supervising ecological as well as anthropological fieldwork.
13. The reference to Shinto is immediately present in the Japanese title of this movie: 'spirited away' is the English translation of '*kamikakushi*', literally meaning to be concealed via the act of *kami*.
14. Kaplan is the author of a book published in 2011 under the Japanese title (here translated): *Can Robots Become Friends? The Strange Relationship between Japanese People and Technology*.
15. These, of course, are not the only relevant domains of Japanese techno-science in which issues of techno-animism may prove significant. The work of Margaret Lock, for instance, on issues of organ transplants, brain death and wider bodily and medical practices, points to a number

- of intersections with Shinto-informed ideas and practices (see e.g. Lock, 2002: 215).
16. Kasulis distinguishes between ‘existential’ and ‘essentialist’ forms of Shinto spirituality, in ways strongly overlapping the distinctions previously introduced between ‘popular’ and ‘State’ Shinto. In line with our previous discussion, we focus here mostly on the ‘existential’ dimensions.
 17. This theme of imaginative renewal of more-than-human homes can be fruitfully linked to the famous ritual of *shikinen sengu*, where the buildings of the important Ise Shrine are demolished and then rebuilt, to the last detail, every 20 years. For a discussion on Japanese conceptions of change and continuity related to this Shinto practice, see Perl (2008).

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