

# INTRODUCTION

## Minor Traditions, *Shizen* Equivocations, and Sophisticated Conjunctions

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**Abstract:** This introduction examines the interrelations between the possible existence of multiple nature-cultures and the indisputable existence of distinct anthropological traditions. After offering some preliminary remarks on the problems with nature-culture, the article offers as an example the complex translations required for the Western idea of nature to gain foothold in Japanese anthropology. Patched together from Western and Chinese notions, Japanese ‘nature’ remains equivocal to this day. This equivocation, however, has also been generative of minor anthropological traditions. As this suggests, the advance of different concepts into new territories holds the potential for shaping ‘sophisticated conjunctions’ in which traditions are mutually modified, allowing new forms of nature and culture emerge.

**Keywords:** diverse anthropologies, Japan, minor traditions, nature-cultures, *shizen*, sophisticated conjunctions

This special issue was prompted by the 50th Anniversary Conference of the Japanese Society of Cultural Anthropology (JASCA), held in Chiba, Japan, in May 2014, in conjunction with the International Union of Anthropological and Ethnological Sciences (IUAES).<sup>1</sup> The conference’s theme, “The Future with/of Anthropologies,” offered an occasion to reappraise the state of the art of contemporary anthropologies and to reflect on where they might be headed. The issue examines the interrelations between the possible existence of multiple nature-cultures (or alternatives to that distinction) and the definite existence of diverse anthropological traditions. In different ways, the contributors reflect on the entanglements of a variety of analytical traditions and ways of engaging with different forms of nature-culture. Doing so, they offer various perspectives on how future anthropologies might respond to the long shadows cast by the Western nature-culture distinction.



Even in the West, the dichotomy between nature and culture is far from straightforward. As Marilyn Strathern (1980: 177) noted decades ago: “No single meaning can in fact be given to nature or culture in western thought; there is no consistent dichotomy, only a matrix of contrasts.” Once one turns to the nature-culture complex from non-Western anthropological perspectives, the ‘matrix of contrasts’ becomes even more tangled (Viveiros de Castro 1998; Wagner 1981). After reviewing some recent arguments about the existence of multiple nature-cultures, we proceed to consider how these discussions overlap with, and are diffracted by, the existence of diverse anthropologies. For illustration, we dwell on the complexity of nature and culture in the context of Japanese anthropology. This focus allows us to pinpoint some key issues that arise when one examines (partial) connections between diverse anthropologies and multiple nature-cultures.

## **Do ‘They’ Have Nature and Culture?**

Several decades of work in feminism, anthropology, and ecology have criticized the Western cultural inclination to ‘dominate’ nature (e.g., Merchant 1983). Increasingly, however, the dichotomy of nature and culture has itself come under fire. Most significantly, this has occurred as part of the simultaneously unfolding ‘ontological turns’ in anthropology (e.g., Holbraad et al. 2013) and in science and technology studies (STS) (e.g., Jensen 2012; Mol 2002; Pickering 1995). While societies generally distinguish between human and non-human domains, these differences do not usually map onto the Western contrast between nature and culture (Strathern 1980). Yet the conceptual importance of that distinction remains central to much anthropology.

One consequence of assuming a separation between nature and culture is that ethnographic material will appear to elicit relationships between them. Fields such as ecological and environmental anthropology advertise by their very names the promise of ‘bridging’ domains (see also Latour 2004). However, the dichotomy is also operative in political and economic anthropology, where nature figures as the ground upon which the dramas of culture unfold. Another consequence is that people’s activities can be characterized either in terms of their cultural treatment of natural environments or in terms of environmental influences on society and culture. For example, if indigenous people treat plants, trees, and landscapes with certain forms of ‘respect’, this can be described as living harmoniously ‘with nature’ (e.g., Bird-David 1999). Such forms of analysis pave the way for broader claims about the differences between indigenous holism and Western nature-culture dualism.

Scholars like Strathern (1980) and Eduardo Viveiros de Castro (1998) have carried out a long struggle to escape the parochialism of seeing all the world’s peoples reflected in a Western image. Famously, they developed forms of anthropology that took the practices and cosmologies of people not simply as ethnographic ‘information’ that could be theoretically processed using the standard anthropological repertoires, but as conceptual starting points for widening, redefining, or challenging them. Below, we consider what

such a challenge looked like during the initial appearance of ‘nature’ in Japan. First, however, we situate the discussion in relation to Bruno Latour’s diagnosis of modernity.

## Have ‘We’ Ever Been Modern?

In *We Have Never Been Modern*, Bruno Latour (1993) famously argued that Western modernity is premised on a strict separation between nature and culture. Since this separation can never be maintained in practice, not even in the ‘modern’ West, however, he argued that in reality no one has ever been modern. Latour was by no means inattentive to the strenuous attempts to shore up the nature-culture distinction. But in his diagnosis, these efforts simply cover over the multiple ways in which ‘moderns’ continuously undo, mix up, or hybridize their categories.

Whether one turns to commerce, politics, technology, or society, one finds ‘nature within’ (from the minerals of our infrastructures to the animals harnessed to sustain human livelihoods). Reversely, whether one turns to natural parks, ocean beds, or the Antarctic, one finds ‘culture within’ (from laws and regulations to tourism and resource extraction). In short, one can examine neither natural nor cultural ‘domains’ for long without coming face to face with a multitude of entities that cross the line and act in a sphere where they are not supposed to belong. Although the modern world claims to be dual, it is thus, in fact, a multiplicity.

In a parallel effort, Andrew Pickering’s (1995) *The Mangle of Practice* dispensed with the nature-culture distinction and put in its place a ‘dance of agency’ in which an open set of elements engaged in unpredictable encounters. Much of Pickering’s later work has pointed to the dangers of modern approaches that are capable of imagining nature only as a set of entities to be rationally controlled (see, e.g., Pickering and Guzik 2008). Increasingly, Pickering has sought out minor traditions in support of an imagination of co-existence based on flows of becoming. Such minor traditions might also be elicited in the form of diverse anthropologies.

## Diverse Anthropologies and Minor Traditions

It goes without saying that anthropology takes multiple forms. There are also various conventional ways of categorizing this diversity, including by substance and theme, temporality and development, or national tradition. In the American context, Franz Boas famously developed the four-field approach. In this classification, anthropology was viewed as a set of domains, each with its own set of problems and concerns. Later developments, however, made this classification appear ever more tenuous.

Gender studies questioned the distinction between nature and nurture, between sex and gender, and between the physical-biological and the socio-logical-cultural (e.g., Ortner 1972). Multispecies anthropology pointed to the

mutual shaping of people and their animal companions and raised questions of shared communication and forms of cross-species 'kinship' (Haraway 2006). At the same time, science and technology studies offered analyses of the conceptual instability and variability of the distinction between nature and culture, both in general (Latour 1993) and within particular forms of scientific inquiry (Knorr Cetina 1999). Each of these developments suggests that any substantive typology of general anthropological domains must be viewed with considerable skepticism.

Another way of characterizing the diversity of anthropologies proceeds by correlating time and theoretical development. Genealogical rather than thematic, this kind of story line narrates changes from evolutionary approaches to functionalism, structuralism, and symbolic and political anthropology, ending with an explosion of approaches after the 1970s, the debris of which has not yet settled and probably never will.

Finally, the idea of national traditions is regularly invoked. Thus, French anthropology is said to be inclined toward abstraction, as exemplified by structuralism, while English anthropology has a penchant for empiricism, American anthropology in the tradition of Boas is culturalist, and German approaches have romantic traits (Barth et al. 2005). Notably, this way of accounting for anthropological diversity centers on the traditions of a few countries. Rarely is it imagined that other anthropologies could exist, or perhaps even *do* exist, which rely on premises that are at variance with those that emerged in the Euro-American centers (but see Ribeiro and Escobar 2006).

In their study of Franz Kafka, Gilles Deleuze and Félix Guattari (1986: 16) argued that 'minor writing', rather than describing what is written in a small or otherwise insignificant language, characterizes "that which a minority constructs within a major language." Following this line of thought, we might be on the lookout for minor anthropologies with conceptual and descriptive styles that are different from those of the major traditions, without, for that matter, being radically detached from or incommensurable with them. The question, as Deleuze and Guattari suggested, is rather how such traditions create their distinctiveness from a marginal position 'within'.

While minor traditions are inflected by major ones, it is worth noting that the influence is not one-way, since the latter have also been shaped by encounters with initially foreign intellectual environments. Thus, Boas traveled from Germany to the US and brought along the idea of *Kultur*, which had such a formative effect on American cultural anthropology. Lévi-Strauss's encounter with the Americas in the 1940s led to the development of French structuralism while also being formative for Brazilian anthropology. Around the same time, the French sociology of Durkheim and Mauss were exported not only to the UK but also to Japan (Aruga 2000; Kuper 1996). In one sense, these exchanges can be seen as a sort of gradual convergence of sets of previously unrelated interests. Yet behind the façade of shared disciplinary projects, radical differences in style and interest persist. This is where we might search for minor anthropologies.

In Japan, as we shall see, the precursor of present-day anthropology emerged at the point of convergence between folklore studies (*minzokugaku*), known for its extremely descriptive style, and French social theory (Aruga 1939, 2000).

In time, this initial convergence led to new forms of diversity. Particular styles of description and analysis were recreated in encounters with dominant traditions, but they did not so much lose distinctiveness as gain it in a different form. Diversity was never abolished.

## ***Shizen* Equivocations: Nature Goes to Japan**

Until the post-Meiji period, the notions of nature and culture were foreign to Japan. Even after they were introduced, the terms appeared disconnected. To this day, their immanent relationship, which appears so obvious to Westerners, often remains obscure, even to Japanese social scientists (Yanabu 1977). Around 1900, after nearly 50 years of discussion, *shizen* (自然, Chinese *ziran*) was established as the proper translation of ‘nature’ (see also Satsuka 2015: 19–20, 175–189). The problem was how to create an equivalence between ‘nature’ and the existing Chinese concept. In Chinese thought, things have propensities to develop and change as part of complex configurations (Jullien 1995). In order to retain harmony in the universe, it is important to abstain from intervening in these unfolding processes. Classic works, such as those by Lao-zi, used *ziran* to describe these immanent forces, and the term was thus specifically contrasted with any order created by human activity. When nature arrived on the Japanese scene, this use was well established among both state-sponsored Confucian political theorists and critics of feudalism (Maruyama 1974).

In Japanese, *shizen* is conventionally contrasted with *sakui* (作為), an action or artifact that is changed according to human will. Superficially, the contrast resembles the dichotomy between nature and culture. According to the translator and literary critic Yanabu Akira (1977), the decision to translate nature as *shizen* hinged on just this similarity. However, within the semantic field other contrasts gave the concept a very different inflection. For one thing, *shizen* was used as an adjective or adverb, not as a noun (*shizen-na* and *shizen-ni* roughly mean ‘spontaneous’ or ‘spontaneously’). Moreover, the term referred neither to a general domain nor to a collection of entities (Saegusa 1968). For example, *shizen* could be used to characterize not only non-human processes but also human states. Being in a state of *shizen* (*shizen-tai*) means having a relaxed mind or body. In traditional, vernacular Japanese, and in stark contrast with the Western idea of a passive nature, the meaning of *shizen* can thus be roughly translated as ‘spontaneous becoming’. Here is a key difference, for whereas nature, seen as a resource for human ingenuity, ‘matches’ with culture, *shizen* and its opposite *sakui* are mutually incompatible: wherever there is human effort, there is by definition no *shizen*.

In the early twentieth century, *shizen* gradually became a noun that could be used to denote things in the universe. Eventually, as noted, it became the common neologism for nature (Saegusa 1968). However, the original meaning has not vanished. The situation can be illuminated by the notion of ‘equivocation’, which Viveiros de Castro (2004) uses to denote situations in which people disagree without knowing that they do so, either because they use the

same word for radically different purposes, or because they assume that their different words ‘really’ mean the same thing.

While Viveiros de Castro is mainly concerned with ethnographic encounters between Westerners and non-Westerners, the case of *shizen* indicates that such equivocations can be internalized in words and concepts. Along these lines, Yanabu has argued that even when *shizen* is used ‘formally’, for example, in literature or social science, the ‘contradiction’ between nature and *shizen* is often felt as a strange kind of gap between words and content, which is nevertheless rarely raised to the point of conscious reflection. Unbeknownst to most speakers, we might say, the concept contains an internal equivocation. We examine below the role that this equivocation has played in the emergence of certain minor traditions within Japanese social science.

## The Minor and the Major

If Japan offers an interesting case for examining the relation between diverse anthropologies and multiple nature-cultures, it is, among other reasons, because the country offers a sort of reversal of Western anthropology. Whereas Western anthropologists aim to unlearn the nature-culture distinction through encounters with non-Western Others, Japanese anthropologists had to gradually learn the distinction in situations where the ‘alterity’ came from ‘the West’.

As Julia Thomas (2001) has argued, the new concept of nature integrated diverse notions and imaginaries about land, climate, and livelihood in a way that turned the Japanese landscape into the basis for national identity. Commentators have argued that Japanese nature was part of nationalist projects from the early twentieth century (Ivy 1995; Sakai 1997), the same period in which the new meaning of *shizen* took form. Since scholars were involved in this naturalization of nationalism, the formation of new major traditions within the Japanese social sciences was based on correlating the new nature with a nativist politics. Yet not all intellectual developments were subsumed by the majority tradition. *Shizen* equivocations also facilitated the emergence of minor traditions.

Yanagita Kunio, the founder of Japanese folklore studies (*minzokugaku*), deliberately resisted the introduction of social science methods. His popular *The Legends of Tono*, published in 1910, emphasized the close ties between traditional lifestyles, rural landscapes, and spirituality. This work profoundly influenced the Japanese nostalgic imagination and prepared the grounds for a naturalized view of national identity. Yanagita also established the particular descriptive style of Japanese folklore studies, which freely traces connections among entities including people, spirits, and land. Yanagita’s ([1930] 1993) *The Social History of the Meiji and Taisho Era*, for example, covers extremely variable topics, from the color of new garments to the cultivation of cotton and morning glory. It was entirely indifferent to distinctions between nature and culture.

As sociology and anthropology gradually ‘modernized’ under Western influence, Yanagita’s unruly style was destined to recede to a minor position. A

few years after the publication of *Social History*, Aruga Kizaemon, Yanagita's younger collaborator, adopted the social theory of Durkheim and Mauss to systematically analyze the structure of Japanese rural societies. This break with folklore studies marked the beginning of the domain of the social as an object of Japanese ethnography (Aruga 1939, 2000).

Even so, Yanagita's *Social History* continues to influence Japanese social science to this day. Although it fails to conform to the format and expectations of modern social science, and despite having hardly any recognizable analytical structure, it is still used in introductory courses to sociology and anthropology. This persistent popularity, we think, is indicative of the co-existence of certain discrepant predispositions in Japanese social science. On the one hand, Japanese scholars have long sought to modernize their disciplines by adopting Western approaches and theories. On the other hand, 'tradition' continues to provide a kind of implicit aesthetics, which focuses on the elicitation of tiny details and encourages roaming freely across empirical terrain.

Indeed, this aesthetico-descriptive style was deployed by later generations, including by the historian Amino Yoshihiko, for purposes that were different in equal measure both from Yanagita's original writings and from interpreters who aimed to shore up Japanese nationalism with evidence from folklore. Since the 1980s, Amino (e.g., 2012) has written numerous books that challenge the mainstream view of national identity by describing the empirical diversity of farmers, nomads, outcasts, and outlaws. Influential far beyond the confines of Japanese history, Amino's body of work has given rise to something like a paradigm shift in the social sciences.

It is telling that Yanagita was an avid reader of *L'Année Sociologique* and developed his style of folklore in conversation with, and as a deliberate alternative to, the cutting edge social theory of the time (Aruga 2000). Adopting a strategy resembling Gregory Bateson's (1972) 'complementary schismogenesis', which designated a contrastive and non-competitive mode of response, Yanagita dealt with the intrusions of French social theory not by articulating counter-theory but by creating the descriptive aesthetics of *minzokugaku*. However, this was not the only path taken.

In the 1950s, Japanese social science was under reconstruction as part of the general US-directed effort to modernize higher education. One outcome was the emergence of the now famous Kyoto School of ecological anthropology, for which the founder of Japanese primatology Imanishi Kinji—famous and controversial due to his studies of kinship and social structure among primates—was an important inspiration. Faced with American modernization theory and the post-war revival of Marxism, Imanishi's student Umehao Tadao ([1957] 2003) developed an ecological approach to human history. He saw the development of human societies as analogous to ecological succession, whereby the vegetation of a given space 'naturally' develops, for example, from grasslands to shrublands to forest. Excepting exogenous disturbance, succession was thus a unilateral process, the endpoint of which would be a highly stable climax vegetation.

On this theoretical premise, Umehao argued that both European and Japanese modernization was based on a kind of spontaneous development, which

he called ‘autogenic succession’. In contrast, China and the Middle East were inhibited from modernizing because of external disturbances, such as invasions by pastoral people. For Umesao, these processes evidenced multilateral development paths that could simultaneously be contrasted with Marxism and forms of modernization theory that assumed linear progress. Umesao’s hypothesis aroused much controversy. In tandem with the decline of Marxism after the 1970s, however, his correlations of societies and their environments became very popular in Japanese public debate. Meanwhile, the influence of the Kyoto School’s socio-ecological approach also increased within anthropology. Exemplifying Bateson’s (1972) ‘symmetrical schismogenesis’, Umesao sought competition with foreign social theory. Rather than deploying a contrastive mode of response, like Yanagita, he escalated rivalry by adopting what Bateson would call similar ‘norms of behavior’. Yet what is most interesting about Umesao’s socio-ecological approach for our purposes relates to the *shizen* equivocation.

As noted, Japanese intellectuals tend to interpret ‘nature’ in line with the traditional Chinese sense of *shizen* as emergent dynamism. Famously, the 1880s Japanese introduction to Darwin’s writings explained natural selection not as a selection by ‘nature’ but as an operation of immanent force (Yanabu 1977). Similarly, Umesao’s concept of autogenic succession was premised on the idea that ecological transformation unfolds immanently within an ecosystem. Thus, even as the Kyoto School developed a specialized vocabulary, inspired by Western ecology and in direct competition with it, its core concepts embed Chinese traces of nature as spontaneous becoming. Autogenic succession is, in effect, a modern inheritor of the *shizen* equivocation.

In different ways, folklore studies and socio-ecology were both responses to the transformations wrought by the introduction into Japanese social thought of Western nature. Both were interwoven with the politics and policies of nationalist nature and, thus, with major national traditions. Yet both also became involved in complex processes of alignment with and differentiation from imported major traditions, becoming minor in the process. As for ‘nature’, even as it gradually became integral to Japanese anthropology, it has never been able to take over the semantic field.

## Japanese (Non-)Modernity

James Ferguson (1997: 169) has observed that anthropology is obsessed with locality—ideally, locality that is “muddy, tropical, disease-infested.” Places “that have not experienced development” are regularly seen as the “most anthropological” (ibid.). Behind this thriving cliché lies the notion that people in those locales are barely influenced by Western conceptions and modes of life, which is just why they offer ideal pedagogical sites for unlearning modernity. In this light, Japan appears as a singularly poor anthropological location: it is far too modern and hardly disease-infested at all. Indeed, since the Meiji ‘restoration’, Japanese society has often been perceived, both from within and from without, as the ultimate modernizer.



It is also common to characterize Japan in terms of proliferating hybrids and mixtures (Clammer 2001). Yet if Japan is at once unabashedly hybrid *and* modern, this runs counter to Latour's (1993: 30) argument that 'the modern' is characterized by "a total separation between nature and culture." Paradoxically, Japan appears fully modern although, from Latour's perspective, it lacks the distinguishing feature of modernity (Jensen and Blok 2013).

Above we have hinted at some explanations of this peculiar situation. Instead of modernity replacing tradition, the case of Japanese social science shows minor traditions burrowing through—and operating from within—major (imported) ones. Instead of purifications and hybridizations of modern nature and culture, Japanese (non-)modernity is infused with *shizen* equivocations. The entry of Western traditions in Japan, then, did not just eradicate minor traditions, it also helped to create them (see also Jensen and Morita 2012; Kasuga and Jensen 2012). The introduction of novel concepts such as 'nature' and the 'social' (imported with French social theory) generated conceptual frictions (Tsing 2005) that, in turn, led to the formation of new equivocal terms (e.g., *shizen*) and also to challenges to Western social theory in what only seemed to be its own language.

Meanwhile, the aesthetic affiliated with Yanagita's folklore ran as an undercurrent, at once offering to mainstream social science a target against which it could define itself and a descriptive style and aesthetic vision that continue to influence it. This situation is illustrative, then, not only of ethnographic diversity but also of diverse forms of anthropology, whose distinctions cannot be mapped onto substantive, temporal, or national classifications because they cut across them.

Over the last century, thematic orientations, conceptual genealogies, and national disciplinary traditions have become entangled in increasingly complex ways. The occasional intersections but otherwise parallel lives of major and minor anthropologies have contributed to the emergence of new approaches in particular locations and to the reassertion of the significance of older ones (in updated form) in others. Indeed, the entanglements of major and minor anthropologies might be characterized in terms of co-existing swirls of time and space (cf. Serres and Latour 1995). Or, as Strathern (1992) might say, perhaps we are living in an era where there is simultaneously more novelty and more tradition.

## Sophisticated Conjunctions

The present moment testifies to a relativization, if not a collapse, of both nature and culture. It is no longer clear that there is 'one' of either. Indeed, it is no longer certain that nature and culture constitute encompassing domains at all (Strathern 1992: 215n41). It is as if nature and culture have either exploded or imploded. One response to this situation takes the form of calls to move beyond the two cultures of humanities and science (Snow 1959) to new forms of interdisciplinary integration of the cultural and the natural (Nowotny et al. 2001). The premise of interdisciplinarity is that forms of knowledge can be

enhanced by integration and combination, for example, by developing shared problems or cross-cutting themes. Thus, the natural sciences can add knowledge of nature to the knowledge of culture produced by the social sciences, and vice versa.

Our examination of diverse anthropologies and of the nature-cultures they elicit reveals the limitations of this approach. Natural scientists are themselves already busily engaged in imagining and producing both nature and culture. Conversely, as we have highlighted, anthropology also deploys varied conceptions of nature. Whether we look to different countries and peoples or examine different anthropological traditions, we invariably find patterns of many cultures and many natures. Rather than an interdisciplinary puzzle, to which each discipline contributes a few pieces of knowledge that somehow miraculously add up, this is an image in which each discipline produces many whole worlds, the incongruence of which can be confidently assumed.

In this situation, no one is able to decide in general which kind of nature or culture should matter and why. Nor does anyone have access to any neutral ground from which to determine whether and how different worlds should be brought into dialogue. Given that nature-cultures proliferate in all directions, the aspiration to 'integrate' disciplinary knowledge appears fundamentally flawed. Yet this does not mean that diverse anthropologies and their multiple nature-cultures are doomed to live parallel lives. As Barbara Smith (2012) has suggested, scholars are able to produce 'sophisticated conjunctions' of knowledge if they remain scrupulously attuned to, and reflexive about, their different conceptual orientations and assumptions. Nor are such conjunctions achievable only by university researchers, for as Strathern (2004: 551) has observed, ongoing societal transformation has itself become "a factor in the production of knowledge and its interventions form one of the platforms for the applications of knowledge."

There is thus a recursive and co-evolving relation between the kinds of natures and cultures propagated by intellectual discourse and the realities that they describe (Jensen and Winthereik 2013). Looking backward, what appear to be distinctive traditions and styles turn out to be products of moving ideas and people (Clifford 1992; Mohácsi and Morita 2013). The 'traditional' Chinese concept of *ziran*, too, is the result of a long history of East Asian exchanges (Amino 2012; Hamashita 2008; Morita 2013). Looking ahead there are also many new opportunities for lateral movements across practices, disciplines, settings, and problems, as well as novel ways of connecting what might seem to be disparate concerns (Maurer 2005).

## **The Contributions**

With the present issue, we seek to bring such opportunities and movements to light. Obviously, we are unable to deal with anthropological diversity and its multiple ways of tackling nature-culture in its entirety. We have simply gathered a range of scholars from very different traditions who come to terms with, or find ways around, nature-culture complexes. In illuminating the multiplicity of nature-cultures, they are also creating sophisticated conjunctions.

Beginning in the West, Strathern's contribution, "Naturalism and the Invention of Identity," focuses on the ways in which early modern Europeans, particularly John Locke, came to separate out natural and cultural relations and on the consequence of this separation for later understandings of kinship. Thus, her article traces the relation between this complex history and the emergence of the common Western distinction between nature and culture.

Moving between Western physics and Fijian religious movements, Naoki Kasuga's article, "Between Two Truths: Time in Physics and Fiji," works through a set of contrasts between their ways of imagining time. This analytical contrivance provides Kasuga with an opportunity to pose hard ontological questions back to physicists and Fijians—and also to anthropologists involved in the 'ontological turn'.

The next three articles unfold within Western science, the supposed realm of naturalism. In "Natures of Naturalism: Reaching Bedrock in Climate Science," Martin Skrydstrup draws on an ethnography of research in Greenland to examine the different inflections that climate scientists give to naturalism in the course of their work. Taking us to the Amazon, Antonia Walford's "Raw Data: Making Relations Matter," finds the very notion of raw data as bits of extracted pure nature oxymoronic. Rather than raw, nature is full of relations from the get-go, and they must be carefully removed from data to make it amenable to scientific analysis.

As suggested by its title, Heather Anne Swanson's article, "Methods for Multispecies Anthropology," examines the potential of experimenting with methods across disciplinary boundaries. Focusing on salmon fish ear bones, Swanson argues that anthropologically unconventional methods, such as otolith analysis, might enrich anthropology while contributing to an emergent minor anthropology that centers on entangled multispecies histories.

Continuing the focus on human-animal relations, Kazuyoshi Sugawara's article, "A Theory of 'Animal Borders,'" illustrates how the classical tradition of Kyoto School anthropology is being transformed in the twenty-first century. Drawing scholars like Dan Sperber, George Lakoff, and Maurice Merleau-Ponty into conversation with G|ui foragers of the Central Kalahari Desert, Sugawara offers a novel perspective on how relations and borders are established between people and animals.

Our own contribution, "Delta Ontologies: Infrastructural Transformations in the Chao Phraya Delta, Thailand," examines a history of entwined relations between technical infrastructures, traveling scientist-entrepreneurs, and galactic polities. This interplay has generated two contrasting yet intercalated delta ontologies—one terrestrial, the other amphibious.

Finally, Andrew Pickering's article, "The Ontological Turn: Taking Different Worlds Seriously," engages in the daunting task of figuring out what it means to inhabit different worlds. Differentiating his ontological approach from anthropological ones, Pickering develops the notion of 'islands of stability' to characterize how particular material and performative tracks make it possible to get wildly different 'grips' on reality.

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## Notes

1. The original participants were Geoffrey Bowker, Casper Bruun Jensen, Naoki Kasuga, Eduardo Kohn, Atsuro Morita, Andrew Pickering, Hugh Raffles, Marilyn Strathern, and Kazuyoshi Sugawara.

## References

- Amino, Yoshihiko. 2012. *Rethinking Japanese History*. Ann Arbor: University of Michigan Press.
- Aruga Kizaemon. 1939. *Daikazoku Seido to Nago Seido: Nambu Ninohe-gun Ishigami-mura ni okeru* [The institutions of large household and 'Nago' in Ishigami Village in Nambu Ninohe District]. Tokyo: Attic Museum.
- Aruga Kizaemon. 2000. "Aruga Kizaemon Saigo no Kowa" [The last lecture by Aruga Kizaemon]. In *Aruga Kizaemon Kenkyu* [Aruga Kizaemon studies], ed. Ryukichi Kitagawa, 3–84. Tokyo: Toshindo.
- Barth, Fredrik, Andre Gingrich, Robert Parkin, and Sydel Silverman. 2005. *One Discipline, Four Ways: British, German, French, and American Anthropology*. Chicago: University of Chicago Press.

- Bateson, Gregory. 1972. *Steps to an Ecology of Mind*. New York: Ballentine Books.
- Bird-David, Nurit. 1999. "'Animism' Revisited: Personhood, Environment, and Relational Epistemology." *Current Anthropology* 40 (S1): S67–S91.
- Clammer, John. 2001. *Japan and Its Others: Globalization, Difference and the Critique of Modernity*. Melbourne: Trans Pacific Press.
- Clifford, James. 1992. "Traveling Cultures." In *Cultural Studies*, ed. Lawrence Grossberg, Cary Nelson, and Paula Treichler, 96–117. New York: Routledge.
- Deleuze, Gilles, and Félix Guattari. 1986. *Kafka: Toward a Minor Literature*. Trans. Dana Polan. Minneapolis: University of Minnesota Press.
- Ferguson, James. 1997. "Anthropology and Its Evil Twin: 'Development' in the Constitution of a Discipline." In *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. Frederick Cooper and Randall M. Packard, 150–175. Berkeley: University of California Press.
- Hamashita, Takeshi. 2008. *China, East Asia and the Global Economy: Regional and Historical Perspectives*. Ed. Linda Grove and Mark Selden. London: Routledge.
- Haraway, Donna. 2006. "Encounters with Companion Species: Entangling Dogs, Baboons, Philosophers, and Biologists." *Configurations* 14 (1–2): 97–114.
- Holbraad, Martin, Morten Axel Pedersen, and Eduardo Viveiros de Castro. 2014. "The Politics of Ontology: Anthropological Positions." *Cultural Anthropology*, 13 January. <https://culanth.org/fieldsights/462-the-politics-of-ontology-anthropological-positions> (accessed 6 March 2017).
- Ivy, Marilyn. 1995. *Discourses of the Vanishing: Modernity, Phantasm, Japan*. Chicago: University of Chicago Press.
- Jensen, Casper Bruun. 2012. "Anthropology as a Following Science: Humanity and Sociality in Continuous Variation." *NatureCulture* 1 (1): 1–24.
- Jensen, Casper Bruun, and Anders Blok. 2013. "Techno-animism in Japan: Shinto Cosmograms, Actor-Network Theory, and the Enabling Powers of Non-human Agencies." *Theory, Culture & Society* 30 (2): 84–115.
- Jensen, Casper Bruun, and Atsuro Morita. 2012. "Anthropology as Critique of Reality: A Japanese Turn." *HAU: Journal of Ethnographic Theory* 2 (2): 358–370.
- Jensen, Casper Bruun, and Brit Ross Winthereik. 2013. *Monitoring Movements in Development Aid: Recursive Partnerships and Infrastructures*. Cambridge, MA: MIT Press.
- Jullien, François. 1995. *The Propensity of Things: Toward a History of Efficacy in China*. Trans. Janet Lloyd. New York: Zone Books.
- Kasuga, Naoki, and Casper Bruun Jensen. 2012. "An Interview with Naoki Kasuga." *HAU: Journal of Ethnographic Theory* 2 (2): 389–397.
- Knorr Cetina, Karin. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.
- Kuper, Adam. 1996. *Anthropology and Anthropologists: The Modern British School*. 3rd ed. London: Routledge.
- Latour, Bruno. 1993. *We Have Never Been Modern*. Trans. Catherine Porter. Cambridge, MA: Harvard University Press.
- Latour, Bruno. 2004. *Politics of Nature: How to Bring the Sciences into Democracy*. Trans. Catherine Porter. Cambridge, MA: Harvard University Press.
- Maruyama Masao. 1974. *Studies in the Intellectual History of Tokugawa Japan*. Trans. Mikiso Hane. Princeton, NJ: Princeton University Press.
- Maurer, Bill. 2005. *Mutual Life, Limited: Islamic Banking, Alternative Currencies, Latent Reason*. Princeton, NJ: Princeton University Press.
- Merchant, Carolyn. 1983. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. San Francisco: HarperSanFrancisco.

- Mohácsi, Gergely, and Atsuro Morita. 2013. "Traveling Comparisons: Ethnographic Reflections on Science and Technology." *East Asian Science, Technology and Society* 7 (2): 175–183.
- Mol, Annemarie. 2002. *The Body Multiple: Ontology in Medical Practice*. Durham, NC: Duke University Press.
- Morita, Atsuro. 2013. "Traveling Engineers, Machines, and Comparisons: Intersecting Imaginations and Journeys in the Thai Local Engineering Industry." *East Asian Science, Technology and Society* 7 (2): 221–241.
- Nowotny, Helga, Peter Scott, and Michael Gibbons. 2001. *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty*. Cambridge: Polity Press.
- Ortner, Sherry B. 1972. "Is Female to Male as Nature Is to Culture?" *Feminist Studies* 1 (2): 5–31.
- Pickering, Andrew. 1995. *The Mangle of Practice: Time, Agency, and Science*. Chicago: University of Chicago Press.
- Pickering, Andrew, and Keith Guzik, eds. 2008. *The Mangle in Practice: Science, Society and Becoming*. Durham, NC: Duke University Press.
- Ribeiro, Gustavo Lins, and Arturo Escobar, eds. 2006. *World Anthropologies: Disciplinary Transformations within Systems of Power*. New York: Berg.
- Saegusa Hiroto. 1968. "Shizen." In *Sekai Dai Hyakkajiten* [Great encyclopedia], vol. 10, ed. Tatsuo Hayashi, 229–231. Tokyo: Heibonsha.
- Sakai, Naoki. 1997. *Translation and Subjectivity: On "Japan" and Cultural Nationalism*. Minneapolis: University of Minnesota Press.
- Satsuka, Shiho. 2015. *Nature in Translation: Japanese Tourism Encounters the Canadian Rockies*. Durham, NC: Duke University Press.
- Serres, Michel, with Bruno Latour. 1995. *Conversations on Science, Culture, and Time*. Trans. Roxanne Lapidus. Ann Arbor: University of Michigan Press.
- Smith, Barbara H. 2012. "Terms of Engagement: The Humanities vis-à-vis the Sciences." Keynote talk for the conference "Science and Method in the Humanities," Rutgers University, 2 March.
- Snow, C. P. 1959. *The Two Cultures*. Cambridge: Cambridge University Press.
- Strathern, Marilyn. 1980. "No Nature, No Culture: The Hagen Case." In *Nature, Culture and Gender*, ed. Carol P. McCormack and Marilyn Strathern, 174–222. Cambridge: Cambridge University Press.
- Strathern, Marilyn. 1992. *After Nature: English Kinship in the Late Twentieth Century*. Cambridge: Cambridge University Press.
- Strathern, Marilyn. 2004. "Laudable Aims and Problematic Consequences, or: The 'Flow' of Knowledge Is Not Neutral." *Economy and Society* 33 (4): 550–561.
- Thomas, Julia A. 2001. *Reconfiguring Modernity: Concepts of Nature in Japanese Political Ideology*. Berkeley: University of California Press.
- Tsing, Anna L. 2005. *Friction: An Ethnography of Global Connection*. Princeton, NJ: Princeton University Press.
- Umesao Tadao. (1957) 2003. *An Ecological View of History: Japanese Civilization in the World Context*. Trans. Beth Cary. Melbourne: Trans Pacific Press.
- Viveiros de Castro, Eduardo. 1998. "Cosmological Deixis and Amerindian Perspectivism." *Journal of the Royal Anthropological Institute* 4 (3): 469–488.
- Viveiros de Castro, Eduardo. 2004. "Perspectival Anthropology and the Method of Controlled Equivocation." *Tipiti* 2 (1): 3–22.
- Wagner, Roy. 1981. *The Invention of Culture*. Chicago: University of Chicago Press.
- Yanabu Akira. 1977. *Hon-yaku no Shiso* [Thought of translation]. Tokyo: Heibonsha.
- Yanagita Kunio. (1930) 1993. *Meiji Taisho-shi: Seso-hen* [The social history of the Meiji and Taisho era]. Tokyo: Kodansha.