MICROBES AND OTHER SHAMANIC BEINGS

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1. Colonized selves, decolonizing ontologies

1.1. Decolonizing ontologies

We can define ontology as the knowledge or understanding of being or reality. I prefer these terms over discourse, science, study, and many other alternatives, because in general these alternatives imply formalized approaches to reality. Understanding is a more inclusive, down to earth, dynamic notion, which captures the implications of ontology, its capacity to make worlds. Understanding and being are imbricated. Understanding a reality, we articulate what is known about it, what we perceive, and what we infer from those perceptions into something coherent, which we can act upon. On the other hand, quite literally understanding fundamentals being, becomes the basis for reality.

Like the God of Christians, reality, and science, ontology used to be employed solely in the singular and capitalized. While Christianity was thought to convey the ‘true knowledge’ of the ‘one true God’, so Science (singular and capitalized) was thought to be the rational, incremental process of acquiring knowledge: the understanding of the ‘true’ and ‘universal’ nature of Reality (again singular and capitalized); a process originating in Europe, enabling the progress of the West and, implicitly or explicitly, justifying its colonization of the rest of the world.

Anthropology as part of this enterprise would recognize isolated achievements of non-Westerners, such as the botanical knowledge of some Amerindian shamans. Nevertheless, these were frequently downplayed as local or situated forms of knowledge, and contrasted with the ‘universal’ character of Western Science. Moreover, the understandings of reality of shamans was frequently despised, because it included entities such as “souls” and “spirits”, which modernity had vanished from Nature or Reality. To make matters worse shamans attributed these entities to non-humans, even to inert or inanimate things like rocks. As is remarked by Descola (1996), these

entities and their characteristics still remain ever perplexing.

Over the last fifty years, anthropology has been conducting a profound critique of its position, its relation to its subjects of study and its relations to power. Through this reflexive process, anthropology came to recognize its own role in colonial and neo-colonial processes and to question its methods, its scientific pretensions, as well as the scientific enterprise and the process of development as such.

Post-colonial intellectuals revealed that colonialism involves the authoritative deployment of artistic, literary, academic, and scientific discourses, including anthropological discourses of the Other, as forms of epistemic violence, undermining how non-Western peoples perceive and understand themselves and reality. These colonization of thought underlays the control, suppression, and exploitation of non-Westerners even after they become politically emancipated.⁴ Real emancipation requires decolonizing thought, revaluating non-Western forms of art, of telling stories, of thinking and understanding the world.⁵

On the other hand, applying to natural scientists the methods anthropology developed to understand ethnosciences, Science and Technology Studies noticed that the claims of natural scientists are substantiated, and derive their strength from highly situated practices, articulating human and non-human actors through arduous processes of negotiated translation. These practices are possible under specific historical contingencies, they are embedded in social dynamics, such as the politics of the academy, and diverse conjunctures with finance, industry, and religion.⁶ Moreover, when different disciplines address ‘the same reality,’ they define and articulate it differently, often reaching dissimilar conclusions.⁷ Science stands for a plurality of different

⁴ (Spivak 1988)

⁵ (Césaire 2006 [1955])

⁶ (Latour 1999, 1987, 1988b)

⁷ (Mol 2002)

practices, views, and voices, which are frequently in disagreement. Thus, the universality and even the unity of Science, has been an idealistic aim rather than an achievement.

Examining the history of science in colonial and neocolonial settings, postcolonial historians of science demonstrated how Western scientific models and projects of development are frequently founded on ethnocentric assumptions which, cannot be generalized to conditions far removed from the working parameters in which the models were developed, leading to scientific stagnation and disastrous developmental failures. Like any other system of knowledge, Western sciences have a limited grip on reality. Furthermore, distant allegiances frequently draw the interests of scientists and developers, aligning them with those of the Western metropolis, in detriment of the ‘peripheries,’ and of knowledge itself. The recognition of these inadequacies and limitations resulted in the call for cognitive justice, for the recognition that there is a plurality of sciences, that other forms of knowledge may lay better claims to understanding the true nature of reality,⁸ thereby opening another trench for the decolonization of thought. Western sciences cannot be the yardstick to judge the validity of non-Western ontologies, i.e. the way non-Western realities are understood and constituted.

1.2. The ontological turn and its challenges

In the last years, these insights have led anthropology into the ontological turn. The realization that our interlocutors not only have different cultures but often dwell in radically different realities. Consequently, there are multiple ontologies, which might not be commensurable. Radical difference and incommensurability foster the study of ontological claims at face value, seeking to approach diverse realities and their understandings without privileging one (the Western) over the others. This bolder version of the classical relativistic principle of

⁸ (Visvanathan 1998, 2006)

anthropology (which encourages us to understand social practices and behaviours within their cultural context) extends relativism onto reality itself. It should be regarded as a point of departure for an anthropology seeking to understand what is being, what is the world, and how do we and our interlocutors know it.

As Holbraad⁹ points out, the ontological turn places the onus of proof in the anthropologist, who has to “reconceptualise a whole set of notions” to address whatever our interlocutors are dealing with. He indicates that we ought to give precedence to their understanding of reality over our interpretations of how they understand reality. If our concepts rise paradoxes, it is these concepts that we must reevaluate. He suggests we should reevaluate what things are: What is a stone? For it to have a soul or a spirit.

Following the epistemic principle of the ontological turn Vilaça (2005) and Holbraad, Pedersen, and Viveiros de Castro (2014) have supposed that to decolonize thought, it would be sufficient to uphold current shamanic and scientific ontologies as equivalent. They assume that by simply acknowledging their incommensurabilities, ontologies that have become subaltern, can be explained and defended in their own terms. Thus, they argue that a decolonization of thought should focus on non-biological conceptions of the body and the environment. Following this path, anthropology has enthusiastically assumed that non-Western realities, like those of shamanism are necessarily incommensurable with those portrayed by natural sciences.

However, as is noted by Descola biological and ethnobiological classifications and understandings most frequently coincide in their details.¹⁰ Furthermore, as is suggested by Latour in his comments to Eduardo Kohn’s *How Forest Think*, by itself an extended relativistic principle in anthropological epistemology does not necessarily empower non-Western realities or their

⁹ (Alberti et al. 2011)

¹⁰ (Descola 1996)

understandings:

“... how could an ethnographer, or, for that matter, a Runa scholar, equipped with such a philosophical anthropology *find ways to make his or her ontological claims understood in negotiating what a forest is made of*, when faced with forestry engineers, loggers, tourists, NGOs, or state administrators? *That is where the so-called ontological turn finds its moment of truth. Not on the epistemological scene but on the bittersweet attempts at negotiating alternative ways to occupy a territory*, being thrown in the world, designating who is friend and who is enemy.”¹¹ (Emphasis is mine)

Western and non-Western peoples increasingly coexist in the same places, partially sharing common realities. Even if these realities are articulated into distinct worlds and ontologies, they overlap and become subjects of dispute. Shamans and biomedical practitioners treating Amerindian or other communities, share the realities of health and disease in these populations. Because of these common grounds, they often end up competing or interfering with one another, potentially to the detriment of their patients.

In those disputes, a powerful side might seek to settle the issue unilaterally. However, such resolutions are often resisted, or contested.¹² Authority and influence over a reality, depend on the degree of specific understanding, the capacity to make this knowledge operational. For example, the knowledge about particular diseases, the ability to treat them, the availability of therapeutic means or apparatuses, and the capacity to communicate knowledgeability and mobilise patients, may ultimately grant authority to either shamans or biomedical doctors. Authority also depends on the capacity to translate operational understandings a language acknowledged by the counterpart. Although shamans have made multiple contributions to Western pharmaceuticals, the metaphysical or supernatural terms in which their knowledge is translated leads biomedical practitioners to continue to dismiss their practices as fake and superstitious.

I will argue that although questioning the reality of the stone is bold, the stone should not

¹¹ (Latour 2014)

¹² (Jokic 2015)

be the main source of concern for the ontological turn. After all, Amerindian shamans, anthropologists, and natural scientists can normally perceive rocks and acknowledge them as real, and therefore at least as partially commensurable. What is really troubling is: what is a soul or a spirit, for it to be in a stone? Because, strictly speaking the Christian religious notions of souls and spirits are incommensurable with naturalist understandings of both stones and humans.

Moreover, as Davi Kopenawa a Yanomami shaman, points out, it is anthropologists who translate the Yanomami *xapiri* as spirits,¹³ and as has been recognized since Lévy-Bruhl and is still quite evident,¹⁴ the translation is not very good. The Christian religious notions of souls and spirits are incommensurable with naturalist understandings of stones, and humans, but also with shamanic notions of ‘spirits’ and ‘souls’. What is problematic is the continuous translation of Amerindian notions through Christian religious terms, the subsequent reduction of Amerindian realities onto the realm of the supernatural, and of their ontologies onto Christian metaphysics. To such a degree that shamanism is reduced into the ‘belief in the existence and manipulation of spirits’, and ultimately it is assumed to be a matter of faith not of knowledge. What is troubling are the explanations built upon these translations and delivered by the anthropology of shamanism, not the explicative capacities of shamanism itself. This translation is a classic example of epistemic violence. Anthropology needs to address critically its theological missionary roots, how Christian categories affect its understanding of reality and its relations with the knowledge of its interlocutors.¹⁵

Anchored in theological language, anthropology has found itself at odds to address the corporeal and organismic characteristics of beings like *xapiri*. How could these beings have their

¹³ (Kopenawa and Albert 2013, 11)

¹⁴ (Willerslev 2011)

¹⁵ (Douglas 1984a)

abode human and non-human bodies, in objects and in artefacts? Anthropology has also faced difficulties to understand and acknowledge their pathogenicity, how could these beings cause diseases? Specially, how could they cause infectious-contagious diseases? But also, how could they be affect pregnancy, birth, or development? Furthermore, so far, anthropology has lacked the appropriate conceptual framework to consider seriously the causal relations shamanism establishes between the management of wildlife and that of health.

Praet (2009) who also notes the dilemma of translation, offers “monsters” as an alternative to spirits, gods, deities, and other similar terms. He provides an insightful etymology of the term. Nevertheless, this translation aggravates the problem. If the existence of spirits and gods is a matter of faith, monsters are generally not believed upon. On the other hand, this translation also fails to account for those crucial characteristics of these beings.

Perhaps we should leave notions like the yanomami *xapiri* untranslated. However, do they ever remain untranslated? Evidently no, Christian terms and their universalist interpretations continue to crawl into ethnographies and theoretical debates. On the other hand, if we could translate them, why should these notions remain untranslated while jaguars and trees are not.

On the other hand, these notions might have been translated already. As is pointed by Raj (2013), the call for cognitive justice, the recognition of the situated character of science, and I would add the ontological turn, have assumed that different ontologies or forms of knowledge have developed in isolation and somehow remained hermetically refractory, neglecting that a crucial locus for the development of knowledge is its circulation. Not its simple diffusion or its faithful transmission, but the negotiated process of its multiple reinventions.

At least since the 16th Century Amerindian, African and European cultures have undergone

intensive processes of hybridization or syncretism.¹⁶ At various times Amerindian knowledge may have been influenced by Western explorers, missionaries, and scientists, or by the policies devised after their work.¹⁷ However, those scientists and explorers were immersed in non-Western societies and were more likely to be influenced by their idiosyncrasies and ontologies.¹⁸ They drew data, inspiration and theories from extra-European sources, which frequently remained unacknowledged.¹⁹ Anthropology and history are only beginning to explore how syncretism has constituted the West, to examine the global histories of science.²⁰ Although this research is a promising start, most of the work exploring syncretism between the New and the Old World has concentrated in the Baroque or Enlightenment.²¹ The temporal bias of the literature limits the possibility to assess the true effects of the Encounter in the constitution of the West. Moreover, these late dates promote the deceitful impression that Europeans always ascribed to naturalism, and gave precedence to scientific thought over other forms of understanding the world.

Anthropology, history of science, and STS have largely neglected that natural history and natural philosophy were not the dominant discourses in Europe before The Encounter. Through the Middle Ages and the Renaissance natural philosophy was at best a handmaid for theology. The early European ambassadors of knowledge were missionary friars, who believed in the sacredness of religious icons, and credited faith above empirical or objective knowledge. This questions depictions of the encounter West-non-West that assume a naturalist or objectivist stance on behalf of the Europeans.²² Nevertheless, those same missionaries carefully collected Amerindian natural

¹⁶ (Gruzinski 2013, Sallmann and Gruzinski 1992)

¹⁷ (Gudeman et al. 1989)

¹⁸ (Wiener 2013, Latour 2010)

¹⁹ (Safier 2008)

²⁰ (Sivasundaram 2010)

²¹ (Bailey 2001, 2005)

²² (e.g. Latour 2010)

knowledge. In this way, missionaries and colonial officials participated of processes of and *purification* and *translation*,²³ whereby Amerindian knowledge was decontextualized, differentiated into moral and natural histories, adapted, repurposed, and appropriated.

The decolonization of thought proposed by the advocates of the ontological turn seems unsatisfactory because it assumes that natural sciences are indeed monolithic. It neglects the appropriation and influence of non-Western knowledge in the constitution of Western sciences and what might be worse subsumes Amerindian ontologies to those of European theology and humanism. I contend that decolonizing thought should also involve reclaiming it, recognizing how natural sciences are also rooted beyond the West and how they can also allow us to explore and to acknowledge the weight of non-Western ontologies, providing for closer fitting translations, stronger alliances with entities that have biopolitical leverage in the global scene.

This book argues that Amerindian shamanism might be better understood through notions that arose in the West only after Contact, such as the theory of contagion. The descriptions of shamanic beings match closely, and may be commensurable to the currently developing understandings of microbes. While the relations shamans propose fall nearer to the purview of ecology and medicine. Microbiology might facilitate a better *translation*²⁴ than the one the anthropology of shamanism has provided so far.

Anthropology has often regarded microbes with the same critical disbelief awarded to the “spirits” described to ethnographers by animist hunters and shamans. Thus, when microbiologists raise concerned alarms about the catastrophic consequences of our war on germs, or the rise of emerging diseases, these critical issues seem far removed from the reach and the interest of

²³ (Latour 2010)

²⁴ *Translation* has two meanings here, the traditional idea of transferring meanings from one language to another, and the Latourian usage: articulating or forging alliances between different actants.

anthropology. Only recently, researchers in science and technology studies (STS) have started to develop an understanding of how microbes and microbiologists mutually constitute one another and crucial dimensions of our everyday reality.²⁵

Nonetheless, STS and anthropology, have largely elaborated their insights on the presumption that instruments forcibly mediate human perception of microbes.²⁶ Continuing the traditional views of the history of science, microbiology is generally assumed to be a science without precedents and a reality incommensurable with those from the past and with non-Western medical traditions, such as shamanism. The estrangement of these worlds forecloses the possibility of understanding how these health and environment management traditions have contributed to the constitution of contemporary microbes and of microbiology.

1.3. Commensurability, translation, and deep decolonization: reclaiming knowledge

My overall intention is to develop a better translation, a translation that transcends Western popular knowledge of natural sciences and, as Holbraad proposes, acknowledges the degree of expertise involved in specialized trades like those of shamanic practitioners. Such translation should relate concepts but also articulate relations with beings in the world, establishing alliances that empower non-Western ontologies.

The validity and weight of a translation depends on the commensurability of the terms involved. This commensurability should be demonstrated to the counterpart. The demonstration of commensurability must evidence that there are equivalent epistemologies, granting access to the same realities. That is, the different understandings of reality are derived from experiences that can substantiate similar insights, or that there are modes of reasoning that can grant access to the

²⁵ (Latour 1988a, Paxson 2008, Paxson and Helmreich 2013, Tsing 2014, Helmreich 2009, Hird 2009)

²⁶ Helmreich and Paxson recognize that microbes are pseudo-perceptible. However, this does not lead them to question the rhetoric of the history of microbiology.

same conclusions. To ascertain whether microbiology is a suitable fit for shamanism, we should demonstrate that microbes can be found in the circumstances where shamans locate shamanic beings, and that they have similar characteristics. In the same way, to determine if some shamanic beings might correspond to microbes or to a construction involving microbes, a crucial step is to examine how shamans may come to experience the microbial world or infer its existence and workings.

Translation can be important aspect empowering non-Western ontologies. However, to proceed a step further in the decolonization of thought, we must reverse the process of purification to which non-Western ontologies have been subject, and which contributed to the growth of Western science. We should examine the genealogies of the ideas and practices of the fields of knowledge under comparison. Then trace and question the genealogies of these Western counterparts, to examine whether they were in contact, whether their histories retain traces of syncretism, and whether their histories can illuminate our understanding of the history of non-Western ontologies. This allows us to recognize continuities and transformations in their modes of thought, to note the correlations in their development, but more importantly it expands their realm of meaning and serendipitously connect them with other realms of knowledge.

In a way, I am employing Latour's methods to question the historiography he proposes, indicating a deeper history of microbes that transcends the narratives of the history of Western science. I am inverting the double movement of *purification*, and *translation* re-constituting *factish* from fetish and facts.²⁷

1.4. Description of the book

To explore the venues through which shamanism and microbiology might develop a

²⁷ (Latour 2010, 1993)

productive conversation this book develops a biocultural ethnohistory of shamanism and microbiology, through three parts. The **First part**, analyses shamanism, exploring 16th and 17th Century records of zemeism, shamanic knowledge and practices from the Circum-Caribbean area, showing the parallels of these understandings with the current understandings developed by microbiology. The **Second Part**, examines means of perceptual access to the microbial world that are available to shamans and are consistent with their descriptions and depictions of entities like masters of game. The **Third Part**, traces 16th and 17th records of Amerindian medical knowledge and a widespread Amerindian myth related to syphilis and other treponemal diseases, the syphilis pandemic of the 16th century and the reception and adaptation of Amerindian knowledge by European medicine.

The **First Part**, explores how Amerindian shamanism was framed, what it was and alternative translations. First, **Chapter Two** examines how anthropology understood, and misunderstood shamanism and Amerindian ontologies through a conceptual framework derived from Christian missionary activities, specifically through the classical category of animism. Then, this chapter examines how, in the last fifty years, some anthropologists have reframed our understanding of animic thought. It explores the further extension of animic thought involved in Amerindian perspectivism, discusses and makes a few amendments to this theoretical framework. **Chapter Three**, develops an ethnohistory of the shamanism of the Taíno and Callinago peoples of the Caribbean in their early contacts with Europeans. It examines European records of Amerindian understandings of the body, the environment, and the *zemies* or *çemijn* and other entities through which missionaries sought to translate their notions of gods, devils or spirits. This chapter, analyses these ontologies in their own terms, as well as the practices and remedies employed by *buhities* or *boyáicou*, the Caribbean shamans, whom these authors described

primarily as physicians, often, noting their medical accomplishments, while simultaneously classifying them as magicians, charlatans, and adorers of the devil. Having provided an analysis of early Amerindian shamanism in its own terms, **Chapter Four**, explores the possibility of translating these notions through contemporary notions of microbiology. The chapter starts tracing possible continuities of Amerindian ontologies, comparing the ethnohistorical ontologies with those described by more recent ethnographies. Then it examines the parallels between Amerindian shamanism and microbiology, demonstrating how microbiology is starting to describe the world in ways that correspond to Amerindian shamanism. Last, it addresses the objections to what could be seen as medical materialism, and to the historical contingency of microbes.

Having shown how the recent developments of microbiology correspond to Amerindian shamanic ontologies, **Part Two**, explores the epistemology of Amerindian shamanism. Departing from the Seventeenth century records of an Amerindian inclination towards empiricism, we examine what means shamans have at their disposal to perceive the microbial world, and show that their depictions of shamanic beings correspond to those perceptual means. The microbial world has been constantly before our eyes and under our noses. Microbes are perceivable on our skin and guts, tightly associated with our emotions, but can also be visible to our naked eyes. We explore how microscopic entities are visible as they flow through our retinas, how their images can intermingle with those of our macro-reality, of our dreams and fantasies. Shamanic practices involve sophisticated techniques that optimize these forms of perception of the microbial world. First, **Chapter Five** explores shamanic epistemologies addressing shamanic beings are not only conceptualized but perceived. **Chapter Six** questions neuropsychological interpretations which undermine these experiences, explaining them exclusively as neurogenic hallucinations. In **Chapter Seven**, we explore an alternative interpretation of shamanic vision, as a form of

microscopy afforded by the structure of the retina of humans and other mammals. We start exploring the anatomy and the physiology of eye. Then we trace the history of research on entoptic phenomena and its different interpretations. **Chapter Eight**, analyses entoptic microscopy, what characterizes the images produced by these phenomena, whether these images of the microscopic world correspond to the descriptions and depictions of shamanic visions, and what can be seen through this form of vision.

The **Third Part**, explores how Amerindian and European realities began to converge with the Encounter, and how 16th Century missionaries, explorers, and physicians translated Amerindian shamanic ontologies, adapting their naturalistic knowledge into European medicine, grounding the earliest *Theory of Contagion*, a scaffold for the development of microbiology. **Chapter Nine** analyses Pané's records of a Taíno myth of Origin: a version of the Pan-Amerindian legend of the Sun and the Moon, in which syphilis and other treponemal diseases play a crucial role. These myths describe diseases, those afflicted by them, their pathogens, and some of their treatments are as key players in the conformation of Taíno society. **Chapter Ten**, examines a Nahuatl version of the same story, recorded by Bernardino of Sahagun, which likewise identifies these diseases as the Sun regent of Nahuatl peoples. Sahagun also records descriptions, classifications, and treatments of these diseases, which aid in the interpretation of the myth. **Chapter Eleven** examines how Europeans came to share the realities of these diseases, traces how Amerindian shamanic ontologies and myths were translated and adapted by European physicians, influencing the formulation of the earliest theory of contagion in the West, constituting an ontological scaffold for the development of *Germ Theory* and ultimately microbiology. We examine current understandings of these treponemal diseases, showing how our current understanding is closer to sixteenth century Amerindian understandings.

Chapter Twelve winds together the insights from the book. We summarize pre-Contact Amerindian shamanic ontologies describing zemes and other shamanic beings, and their specific instantiation in the case of *Guaynara* or *Nanahuatl* the shamanic beings of treponematoses. We examine how and why missionaries and colonial officers translated Amerindian notions. The replication these interpretation in anthropological theory. We review shamanic epistemologies, and the interpretation of visions as partly derived from entoptic microscopy, other forms perception and communication with the microbial world. After that we examine, how shamanic beings like zeme were translated into semina, germs and microbes. We conclude with a discussion about the decolonization of thought, and of the remaining incommensurabilites between microbiology and shamanism.