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Many worlds, many nature(s), one planet: indigenous knowledge in the Anthropocene

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Abstract

This article explores the idea of many nature(s) and its implication for the studies of global environmental politics. It discusses the inadequacy of the nature-society dichotomy and argues for epistemological parity, as well as for the recovery of indigenous knowledge systems. Looking at indigenous knowledge uncovers many ways to consider nature and contributes to recast global environmental studies in the Anthropocene.

Keywords: Global environmental politics; Indigenous Knowledge; Nature-Society; Hybridity; Anthropocene.

Introduction

We live in one planet but in multiple worlds, or in a world of worlds (Ling 2014; Onuf 2013). International Relations, as a field of inquiry, has recently opened up to the idea of many worlds. Publications, conferences and scholars' involvement evidence it. However, less attention has been given to what this idea entails to global environmental studies in the age of the Anthropocene, or how we think about International Relations as a field of inquiry taking into consideration many worlds in one planet.

Human beings have changed the planet to such a degree that scientists have claimed that we now live in an era called the Anthropocene (Crutzen 2002). As such, we are living under a global environmental and social crisis caused by the exponential growth of human activities on the Earth System. The increasing pressure on ecosystems, soil and water, climate and the atmosphere has the potential to trigger sudden or irreparable environmental changes that can harm human and other living and non-living forms on Earth (Rockström et al. 2009). Rockström et al. (2009) identify

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and quantify boundary levels for key Earth System processes that cannot be transgressed in order to avoid unacceptable global environmental change. Overexploitation and excessive waste have resulted in the transgression of at least three planetary boundaries: climate, biodiversity, and the global nitrogen cycle.

Some scholars announce the end of nature pointing to how it is being wholly colonized by human beings (McKibbens *apud* Wapner 2010). According to them, conceptually and empirically, there is no nature (Wapner 2010). The paradox is that, for some, nature is considered a social force that gives sense and changes people's lives, and around which politics and policies happen. Nature and the environment are not yet at the core of International Relations as a field of inquiry, even though life on the planet has been threatened by climate and other global environmental changes as pointed above. Thus, the transition to the Anthropocene calls for a recasting of IR and other social sciences. This call coincides with the one for worlding IR, or for recognizing that we make many worlds (Tickner and Blaney 2012; 2013; Ling 2014). Perhaps, it is more precise to state that, as there are many worlds, there are many nature(s). The recognition of many worlds implies that there are many knowledge systems and different notions of nature that guide and engage agents towards the global environment. Instead of a "post nature" world (Wapner 2010), we argue that there are many nature(s) and illustrate this argument using a few examples of indigenous knowledges and conceptions of nature. From the start, we recognize that neither indigenous knowledge systems nor conceptions of nature are static or have a special essence. Both are results of diverse socio-historical processes. Considering many worlds means engaging with diversity and difference, thus our attempt to emphasize different ways of knowing and notions of nature in order to deal and to construct environmental politics and policies.

This article explores the idea of many natures[1] and its implication for the studies of global environmental politics in the Anthropocene. We do not claim for the creation of a new sub-area within IR but for the recognition that worlding IR implies appreciating many knowledge systems and, perhaps, many conceptions of nature. It is an attempt of a simultaneous move into greening and worlding IR. In this direction, we argue that considering indigenous[2] knowledge systems and indigenous conceptions of nature is an important step to re-think global environmental studies.

Leis (1999) argues that the international system constituted by sovereign states has become more and more inefficient to maintain order. The global socio-environmental crisis forces us to rethink the basis upon which we build politics. His argument resonates with the concept of Anthropocene, as he points to the change in the human condition on Earth. "Human beings have been animals capable of living in society (zôon politikon apud Aristoteles) for centuries, but now have ended up as "animals", whose society put into question their condition as living beings", (Leis 1999,31). In this sense, the natural world is part of politics, for it is affected by political decisions, as well as, it conditions and transforms politics. For Leis (1999), political

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1 We will use the term *natures* to mean different notions of nature, even though it is not proper English.

2 It is important to highlight that the global environmental changes in the Anthropocene pose enormous and unpredictable threats to life in the planet particularly for indigenous and local populations that depend on natural systems for their livelihood. Thus, we do not intend to romanticize indigenous peoples. The risks and threats are much greater for them. On the contrary, we want to call the attention to the importance of recognizing all dimensions of indigenous peoples' lives, including the epistemological one.

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theory needs to change, and, in our view, so do international relations theories. We argue that an epistemological reconfiguration of the field is required to take into account the transition to the Anthropocene in many worlds.

To our knowledge, the recent debates on worlding IR beyond the West have had limited impact on global environmental studies. Nevertheless, this body of literature brings to the forefront the idea of different knowledge systems and of epistemological parity among them. Different knowledge systems consider nature differently. Therefore, the idea of many worlds, many natures could be helpful to recast environmental studies within IR and not as a separate IR subfield.

Methodologically, we follow Ling's 'worldist' model of dialogics. Ling (2014, 2) presents the notion of 'worldism' as a model of dialogics which seeks creative speaking and listening among multiple worlds, as well as with Westphalian world to rebalance and re-center world politics. Such perspective uncovers the politics behind knowledge production in International Relations, looks for the ways marginalized or erased actors affect world politics, and highlights the actual ontological (and epistemological) parity between different knowledge systems. When writing about indigenous knowledge, we recognize that we do not represent indigenous voices. As non-indigenous, we could at the most be considered non-indigenous allies[3]. However, the main purpose is to call attention to, or to open the debate on the need to recast global environmental politics facing many worlds and the transition to the Anthropocene. Thus, this article dialogues with the literature of several disciplines from the Global North and the Global South and it is based on the premise of ontological and epistemological parities among different knowledge systems, particularly between scientific and traditional modes of knowledge.

We recognize that there are no essential or pure knowledge systems; they are all hybrid modes that resulted from historical interactions. In general, traditional knowledge refers to the long-standing traditions and practices of certain regional, indigenous, or local communities, encompassing the wisdom, knowledge, and teachings of these communities[4]. Some forms of traditional knowledge are expressed through stories, legends, folklore, rituals, songs, and even laws (Acharya 2008). Those forms are dynamic, change over time and are social constructions in the same way as scientific knowledge.

However, power unbalances have marginalized and turned multiple voices around the planet subaltern. As a field of inquiry, International Relations, has started to recognize those voices. In this sense, this study gives a worldist light to global environmental politics by bringing indigenous knowledge at stake.

We divide the article in three parts. Firstly, we discuss the nature-society relation, hybridity and the Anthropocene. Secondly, we consider indigenous ways of knowing in ontological and epistemological parity with western knowledge, and bring a few examples of indigenous' many natures. Finally, we explain why the recovery of indigenous knowledge and their many conceptions

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3   In the context of North America, Mihesuah and Wilson (2004) use the term non-Native allies to refer to non-indigenous writers who are sympathetic to the idea of "indigenizing the academy".

4   For the World Intellectual Property Organization (WIPO), "traditional knowledge is knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity."

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of nature is important for global environmental politics. We close the article by summarizing our insights and raising a few points to be further explored in IR and global environmental studies.

Nature – society, hybridity, and the Anthropocene

The society-nature dichotomy has structured the way in which states and societies have been organizing the political-economic and social systems across the globe. Most societies live within nation-states having their territories organized around the idea of national and subnational boundaries/limits that do not coincide with ecosystems or river basins. Nature and Western society have been constructed in a way in which time and space scales, and other dimensions do not coincide. Democracies are arranged around voters and candidates that represent only present generations; future generations and nature are not represented. Autocracies only represent themselves. Markets and profits structure economics and the patterns of production and consumption, so that the pace of exploitation of nature, extracting natural resources and disposing solid, liquid and gas residuals are much faster than nature's recovery capacity. There are human rights, but no nature rights except in a few pioneer political events[5]. In this sense, we share Leis' view that the society-nature division is the root of the socio-environmental crisis (Leis 1999), and below we explain why.

According to Rudy and White (2014, 121), a central tenet of modernity is the idea that society and nature are interrelated but are separate domains of reality. For Wapner, the dream of mastery has a long history in western thought. For many people nature is irrelevant to human flourishing, or even an impediment (Wapner 2010, 80), Wapner recalls Socrates telling that "nature is not his teacher" and that he valued only the knowledge of people in cities (Plato's dialogue Phaedrus *apud* Wapner 2010, 80).

The history of western societies and now, it seems, the history of most societies around the world, have been a move away from rural lives and from nature. Wapner asserts that the idea that humanity is at the center and that nature should be tamed, controlled and subjected to our wills operates in thought and practice of environmental skeptics (2010, 81). For them, human ingenuity will always find a solution and the true good, right, and beautiful can be found not in nature but instead in humans (Wapner 2010,104). Wapner names this belief as the "dream of mastery".

In this direction, Leis (1999, 57) argues that the dualist view of nature and society is one of the main characteristics of the western culture, particularly, of the modern era. Duality can be highlighted by the deep belittling of the wild animals and forests that happened in the first centuries of this era. In the XVIII Century, extensive deforestation happened in the territory of England, it is repeated in the rest of Europe, and so worldwide, driven mostly by European colonization. Leis (idem) emphasizes that some meanings for virgin forest in the XVII were: terrible, wild, desert,

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5 In Equator's new national constitution (2008) there is a reference to the rights of nature, including a Court to judge crimes against Nature. It is the first constitution in the world that recognizes rights of the Nature. Source: Fundaccion Pachamama, http:/therightsofnature. org/tribula-internacional-derechos-de-la-naturaleza/.

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gloomy, dark, uninhabited and plagued by beasts. Progress meant to move away from the forests, as men who lived there were considered rude and barbarian. The Cartesian paradigm established a radical separation between man, who had a soul, and the rest of creation, understood as inert material with no spiritual dimension, enabling the unlimited domination of humans over nature, which was required by the advance of the productive forces (Leis 1999, 58).

The society and nature dichotomy has helped to structure not only the way we organize our political economic systems and institutions, but also the division of labor between social and natural sciences. This dichotomy has powerfully influenced modernist politics whether liberal, conservative, socialist or fascist (Rudy and White 2014, 121, adapted).

However, there is a growing number of literature challenging this dichotomy. For instance, anthropologist Tim Ingold problematizes the division between humans, earth, sky and air, constructed by modern science. Ingold argues that the environment is not something that we can relate to, as the *Globe* on our shelves. "I cannot relate to the globe as an environment. It is too big. While the globe is measured, the environment is experimented. The globe has a climate, an atmosphere. The environment has weather, including sky, earth". Ingold argues that, in order to experiment the environment, it is necessary to live (or at least go to) in the open (Ingold 2011, 115). He argues that humankind needs to reconnect with nature, not relating to it, but being in nature and being part of it, starting by living "in the open" (meaning living near nature, wildlife).

Rudy and White argue that environmental politics, as a field of study and a practice, has had a complicated relationship with the worldview that separates society and nature. They remind us that at the same time that there is a recognition of the need to move beyond this worldview, "a great deal of environmental rhetoric in the affluent world has been premised on dualistic assumptions: the idea that the aim of environmental politics is to protect something called "Nature" from something called "Society"" (Rudy and White 2014, 121).

For Wapner (2010, 75), environmentalism in the United States has been based on the dream of naturalism, or the idea that humans should follow nature, look outside themselves to grasp the limits of human possibility and to find the source of wisdom, ethical instruction, and beauty. This dream has inspired North American environmentalism and is based on the association of nature with all that is good, beautiful, true or right. Nature is considered an ideal or an object of inspiration that animates the thought and politics of environmentalism and, as such it has disciplined practice and provided a direction for policy (Wapner 2010, 54).

Naturalism has had some political success. As Rudy and White pointed, successful dualistic framings contributed in bringing to public consciousness the need to protect natural resources from economic overexploitation, spectacular landscapes from environmental degradation and endangered species from a wide range of social activities (Rudy and White 2010, 121). However, naturalism does not make sense when human beings as a species have become a force that changes planetary systems.

Wapner (2010) argues that the twin dreams of naturalism and mastery reflect clashing worldviews of humanity's place on earth around which environmental politics has been polarized. It is important to notice that not only the dream of mastery, but also naturalism are both heirs

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of modernity. Pádua (2002, 28) asserts that we need to associate the genesis of the ecological sensitivity in the modern world with the modernity dynamic in larger perspective. The author (2002, 29-30) argues that the environmental thought since the XVIII Century can be viewed as moments in the process of consciousness building about the environmental dilemmas in the modernity universe. These moments were able to enunciate a global political problem whose gravity only now has been perceived. In his perspective, the idea of a comparative vision of the natural environments in planetary scale is behind the intellectual developments that originated the ecological thought. In this sense, Pádua argues that the environmental critique developed and continues to develop as endogenous questions to the universe of modernity.

The modern dreams of mastery and naturalism are premised on nature-society and other dichotomies of modernity. However, the increasing disappearance of the wild, the extent of human intervention in all ecosystems, and the conceptual end of nature are rendering both dreams anachronistic (Wapner 2010, 104-105). According to Rudy and White (2014, 121), "dualist understandings of society-nature relations do not reflect real socio-ecological processes and relations. Such understandings are incoherent in a world made up of dynamics ecologies that have mixed with human across centuries". Diegues (2008) criticizes the myth of an untouched nature, suggesting that ecosystems are the result of dynamic interactions between societies and nature (1994/1996). Ethno-biologists introduced the concept of "biocultural diversity" to contest the notion of distinct diversities, or of environmental diversity as something separate from human difference. They argue that the variation within ecological systems is inextricably linked to cultural and linguistic differences (Martin et al. 2012, 5).

Social constructivism signals the conceptual end of nature (Wapner 2010, 128), and the idea of Anthropocene announces a new era when human beings are a force that is entangled with the Earth systems. Without nature, how could we think about the environment, environmentalism or global environmental politics? The author claims that a new kind of environmentalism can emerge in the post-nature world based on new understandings of one's own and humanity's place on earth. Such understanding could rise through a middle path, a route into the post-nature world, and embraces a politics of ambiguity (Wapner 2010, 202). Thus, global environmental politics should be recast in the post-nature world in a way that bridges the society-nature dichotomy.

This idea resonates with the concept of hybridity, that is, things and specifically societies, natures and technologies are mixed up and mingled. Hybridity can be a way of thinking about society-nature relations and of recognizing how difficult it is to separate the basic building blocks of 'society' and 'nature' (Rudy and White 2014, 121).

According to Rudy and White (2014, 122-123), the term hybrid has historically been pejorative. However, it can be seen in a more positive light, for instance, key figures of post-colonialism have used the term hybridization to express the long-standing historical entanglements of human cultures, languages and politics (Homi Bhabha 1994 *apud* Rudy and White 2014, 123). Hybrid understandings of society-nature relations have dispersed beyond poststructuralist influences on the environmental social sciences and science and technology studies (Rudy and White 2014, 129).

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In this direction, Rudy and White assert that Crutzen and Stoermer's claim that our current geological era is best understood as the "Anthropocene" (Crutzen and Stoermer 2000 *apud* Rudy and White 2014, 129) has strong resonances with discussions of hybridity in the social sciences. The authors stress that the notion of Anthropocene captures two complementary ideas. Firstly, the impacts of modern society, through agriculture and urbanization, population growth and CO_2 emissions, are so great that humans can now be viewed as a geological force on the planet. Secondly, with the widespread and uneven social transformation of the planet there is no nature that is in any straightforwardly 'Natural' (Rudy and White 2014, 129).

Ontological hybridity for thinking about global environmental politics and the society-nature relation is not enough. It is important to consider the critical potential of a hybrid environmental and social sciences to uncover inequalities and power unbalances.

> Dualist worldviews, far from defending cultural universals, represent culturally, socially and historically specific ideas and relationships about society and nature. Such culturally specific modern ideas transposed onto the people and ecosystems of the Global South can produce and legitimate forms of coercive conservation (Forsyth 2003 *apud* Rudy and White 2014, 121).

Regarding IR studies, global environmental politics has been approached based on the society-nature dichotomy. Nevertheless, as asserted by Wapner (2010, 109), the defining categories of this dichotomy no longer make sense. "This rids nature and humanity of their theistic qualities, and prevent us from turning to them with confidence for fundamental insight when negotiating our way through environmental issues" (Wapner 2010, 109). For the author, it is the end of nature as it is the end of humanity as distinct and separate concepts or realms (Wapner 2010, 110). Thus, the way mainstream IR has considered "nature", as a separate realm that only impacts politics when there is an "issue," must change. The environment, or nature, is not a set of "issues", around which politics emerged. Such view can be misleading in the Anthropocene, when human systems cannot be separated from the earth systems.

Wapner (2010, 121-122) calls the attention to another dimension of the debate: globalization, for him the mixing of cultures "is enabling people to experience outside viewpoints on their own understandings (…) leading many people (…) to the abandonment of modernist certainties and an appreciation for contingency".

Such thought can be linked to the idea of hybridity and lead us to think about the existence of many worlds or multiple worlds, as stated by Ling (2014, 1):

> the hybrid legacies produced by subaltern to serve, and thereby survive, generations of foreign occupation by colonizing powers (…) Subalterns navigate nimbly among the Multiple Worlds of tradition and modernity, the sacred and the secular, native and foreign (…).

In Ling's view, world politics in IR theories are treated as if "Multiple Worlds neither existed nor mattered" (Ling 2014, 1). For the author, the most dangerous aspect of this is the

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epistemological denial of Multiple Worlds, or how the knowledge of Multiple Worlds and its ways of knowing are dismissed.

Ling's worldism reminds us of the existence and role of Multiple Worlds in making world politics. Worldism comprises modes of thinking, doing, and relating. The sources are histories, philosophies, languages, memories, myths, stories, and fables or the human condition (Ling 2014, 13). Ling's "Multiple Worlds intersect with and reframe Westphalia World to produce the kind of hybrid, creole, or mélange legacies we have today" (Ling 2014, 13). Besides and most importantly to think about world politics and the environment is that "Multiple Worlds reflect (…) relations with other forms of sentient life, e.g. earth and water, flora and fauna, mammals and fish" (Ling 2014, 13).

In our view, instead of "the end of nature", it would be useful to think of many natures and many ways through which ideas of society-nature relations are constructed socially, geographically and historically. Mapping 'Many Natures' leads us to question of how we have practiced and conceptualized global environmental governance/politics. In order to illustrate our argument, we will focus now on indigenous knowledge and indigenous ways to conceive and relate to nature. The aim is not to present a systematic and comprehensive overview or to catalogue conceptions of nature by indigenous peoples from different parts of the planet but to present a few examples. Further research is needed on many natures and how to recast global environmental politics in this light.

Indigenous knowledge and many natures

If we assume that there are many worlds, we could assume that there are many natures, meaning not only different understandings and conceptions of nature but also of the society-nature relations. Recognizing that goes beyond a "managerial" perspective in which indigenous or local knowledge is just something to be added to environmental policy, program or projects, instead, it is a claim for epistemological parity. Such means considering diverse knowledge systems in their own terms not detached from worldviews and cosmologies from which they originate.

As highlighted by Behera (2010, 104), modern Western belief systems have been premised on the separation of subject and object, and between human and nature. Rudy and White (2014) pointed out that dualist worldviews are not cultural universals. Thus, a 'worldist' (Ling 2014) way to approach environmental studies and global environmental governance conceptually, empirically, and as a political project would be to consider different ways to see nature and to conceive society-nature relations in actual ontological and epistemological parity with the Westphalian world. It is important to highlight that these ways of knowing and relating to nature should be considered as "ideal types" that could contribute to more reflexive and plural studies of global environmental politics and IR. As stated above, ontological hybridity is closer to what we call "reality". In fact knowledge systems are dynamic and change. However, because of power imbalances, indigenous ways of knowing were obscured and marginalized (Smith 1999), thus viewing them as ideal types is just an attempt to put them in dialogue with modern ways of knowing.

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The idea of many natures resonates with a post-positivist theorizing in International Relations which points to the importance of culture and identity for understanding world politics. Moreover, Behera (2010, 104) highlights culturally specific notions of temporality and space as sources of disjuncture between Western and non-Western modes of knowledge. She argues that modern Western belief systems are premised on instrumental relationships between human beings (subject) and nature (object).

Behera (2010, 105) reminds us that many non-Western cosmogonies do not approach nature in an instrumental way. Instead, the self, community and nature are seen as interdependent parts of a single whole. Their "understandings of the relationship between knowledge and the natural world, and of the social function of knowledge is markedly different". In the context of India, Behera looks to the Tagore to distinguish Eastern and Western notions of man's relations with nature. While the Western view is characterized by a break between object (things) and subject (man), kinship and continuity mark the East. Instead of the interaction of natural forces seen by science, the Eastern seer finds an eternal will working and manifesting itself in these forces. "The West would subdue Nature. The East would seek unity with Nature" (Tagore cited in Fenn Jr 1929, 318 *apud* Behera 2010, 105).

We argue that indigenous' ways of knowing and how they view and relate to nature is different from the Western ways. Such is not an essentialist claim about the value of indigenous knowledge, but a call to appreciate their ways of knowing and considering them in equal terms with science. To illustrate this point, we bring examples from Indigenous Peoples in Brazil and North America. This is not the result of a systematic ethnographic research but a worldist dialogue with bodies of literature that do not belong to IR.

Wilson (2004) claims that indigenous traditional knowledge offers a potential basis for rebuilding Indigenous communities. In our view, its recovery could also offer a basis for re-thinking global environmental studies. Wilson emphasizes that indigenous knowledge systems should be valued in their own terms as they simply know differently:

> (…) While generalizations are sometimes difficult across tribal boundaries, some commonalities remain. For example, Indigenous people seem to share a belief that our way of life, land, ceremonies, and language are of divine origin. That is, a divine force placed each Indigenous nation, or guided us, to a specific place that would be our own, and provided us with a set of original directions about how we were to live. This is at odds with anthropological explanations of how our "cultures" have been constructed (…). But as Indigenous people we "know" differently, we know these things are not imagined but are a reflection of our reality. (…) (Wilson 2004, 74)

Athayde et al. (2016) emphasizes that local knowledge is a starting point for participatory construction of knowledge or for engaging different knowledges to solve a specific problem. Such claim is in tune with Ling's worldist dialogics and the need to consider Multiple Worlds making world politics. Nevertheless, Athayde et al (2016) recognize that there are multiple barriers and constraints to transdisciplinary engagement between academic, technical, and indigenous knowledge

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systems, including epistemological, political, and financial constraints (Athayde et al. 2016, 17). Moreover, there is tension over authority and legitimacy of knowledge the same way as there is tension over control of land and resources (Berkes 2012, 14).

This discussion leads us to the studies of international relations through the lenses of the Decolonizing methodology. In this sense, indigenous academics from the Moari ethical group in New Zealand developed the Kaupapa Maori research, which situates under the Post-Positivist Critical Theory (Smith, 1999). According to Tuhiwai Smith, this research exposes the premises which underlines knowledge and which helps to maintain the power relations, and shows how the dominant groups construct the concepts of common sense and facts to provide an *ad hoc* justification to maintain the inequalities and the continuity of the oppression of the Maori indigenous peoples. For the author, the decolonizing methodology is used to explain human relations, through the purpose and perspective of the Indigenous Peoples. The Kaupappa decolonizing method is an anti-hegemonic research involving an ethical parameter such as social justice, being applied by students and universities such as Otago from New Zealand.

In fact, critical thought is an important initial step to emancipation and to listen to other voices. Wilson (2004) recognizes the contributions of Frantz Fanon and Paulo Freire on decolonization as well as the notion of praxis and the liberation pedagogy. For Wilson, however, such is not enough because even critical thought is premised on the nature-culture dichotomy. She reminds of the differences of Indigenous people's strategies for decolonization and empowerment, which involves recognizing indigenous ways of knowing and appreciating their differences, like, for instance, the non-separation nature-society, and the attribution of culture and consciousness to other beings.

Similarly to Wilson (2004), Berkes (2012, 11) points to the fact that many indigenous knowledge systems include spiritual or religious dimensions (beliefs) that do not make sense to science or fall outside the realm of science. Animists everywhere in the world impute life and spirit to parts of the environment that Western science considers inert. The author exemplifies with the case of some Dene (Athapascan) peoples of the North American subarctic who consider that, not only plants and animals but also rivers, mountains, and glaciers are alive.

> Tlingit and Tagish storytellers considered glaciers to be sentient and responsive, and attributed human-like characteristics to them. There are stories told about periodic surges of glaciers (a geophysical fact) but also about glacier responses to human folly, such as cooking with grease on the glacier or making disrespectful remarks (Berkes 2012, 11).

Recalling Indigenous' cosmovision and conceptions of nature, the Kaingang Indigenous Peoples from the south of Brazil still keep a relationship of respect and symbiosis with nature, based in a symbolic conception where human, natural and supernatural universes communicate and influence themselves reciprocally. For example, according to the Kaingang's vision, the kinship extends not only to human species but also to the natural and supernatural dimensions, establishing a degree of kinship to each of this Indigenous Peoples' interaction, including the elements from the natural world and with the spirits of the nature. Therefore, again there is no division within

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these worlds; their "inhabitants" are all so close to the level of relatives (Tommasino 2002, 100). As pointed by Rudy and White (2014), the nature-society dichotomy has powerfully influenced modernist politics whether liberal, conservative, socialist or fascist, but, it seems, has influenced less Indigenous Peoples' societies.

Berkes (2012, 10) points that there are similarities and differences between what he calls 'traditional' science and Western science. For him, the practice of science characterizes human societies. "Both Western and indigenous science may be considered, along with art, the result of the same general intellectual process of creating order out of disorder" (Berkes 2012, 10). For instance, the author states that there is much evidence that traditional people possess scientific curiosity, and that traditional knowledge does not merely encompass matters of immediate practical interest. Berkes recalls the work of Levi-Strauss, who avoids Western society's long-standing prejudice against non-Western cultures, especially those of "primitive" societies and prefers to call the latter 'prior' rather than 'primitive'; "it was no less scientific and its results no less genuine. They were secured ten thousand years earlier and still remain at the basis of our own civilization" (Lévi-Strauss 1962, 16 *apud* Berkes 2012, 10). However, we should bear in mind that colonialism and the present power structure have at best relegated indigenous knowledge[6] systems to an invisible position and at worst have destroyed them.

According to Mihesuah and Wilson (204, 5-6), indigenizing the academy means more than making the academy both responsive and responsible to First Nations goals of self-determination and well-being, and goes beyond an appreciation for diversity in color and gender. It means bringing diversity in thought, worldview and values. It is a reaffirmation of Indigenous epistemological and ontological foundations (Wilson 2004, 71).

We believe that epistemological parity is fundamental in order to uncover invisible actors or to hear other voices in the process of understanding global environmental politics. It is noteworthy to point that the effort to recover Indigenous knowledge within the academy may presume that it can be effectively transferable to an institution. However, there is much tribal knowledge inappropriate for the microscope, manuscript, or classroom. For example, anything dealing with the sacred should not be shared with those outside their own community or studied (Wilson 2004, 73-74).

Searching for existing knowledges and hybrid conceptions of nature, that are not dualist, we found the Tukano transboundary Indigenous Peoples[7] from the Brazilian and Colombian Amazon. According to them, the Universe's Grandfather created the world through seven layers. First, He created the forest and earth for the future generations to plant and feed themselves and grow fruits and wild animals. After the rain, the wind (to strengthen the pure air to breath), the water, the air, the clouds, the last layer were created, then human beings were created. The first human beings were created through a mix of forest and animals throughout the following ritual:

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6 It is important to highlight that Indigenous knowledge is one type of traditional knowledge. Traditional knowledge is a broader concept as it includes traditional communities' knowledge such as riverside communities, coconut breakers, fishers etc.

7 The Tukano transboundary Indigenous Peoples are the most numerous people belonging to the linguistic family Oriental Tukano with 10,000 indigenous inhabiting in the frontier region between Brazil and Colombia in the Uaupés watershed, in the São Gabriel da Cachoeira municipality and other cities at the very north west of the Brazilian Amazon.

the Universe's Grandfather searched for tree samples from the entire world that He had created, ordered a storm above them which turned them into human blood. The same procedure was made to all animals sample, turning it into human blood. The enormous storm came through a blow from the smoke of the Universe's Grandfather. This is why there are trees and animals in the forest with the same blood as human beings. Initially, this first set of human beings could marry animals. (Cabalzar 2003, 21-37). According to their cosmovision, the nature, animals and human beings were created together being one dependent on the other. This cosmovision shows how close the forest and nature are to the human beings and how difficult it is to separate culture from nature and to deny "consciousness" to other beings. This example evidences the contradiction with the meanings presented above for virgin forest in the XVII: terrible, wild, desert, gloomy, dark, uninhabited and plagued by beasts (Leis 1999, 57).

The Xerente[8] Indigenous Peoples are the surviving crowd in central Brazilian Amazon, after the occupation by the colonizers coming from the coast of Brazil. According to their cosmovision, a huge tree that holds up the sky is the sustainer of the world. Moreover, the world is constituted by elements with supernatural power that influence directly human lives. All the elements in the world (or environment), such as the rivers, forests and animals hold an independent soul. These elements are controlled by their corresponding supernatural spirit, that in turn, look after these elements (e.g. the *Kâtdê -kwa* takes care of the waters, the *Mrãitdê- kwa* looks after the forest, and Hêpárwawe is the most feared as it is the boss of all spirits). The spirits are considered the owner-controller of the respective element of nature, being capable of interfering directly in the provision and the success of the Xerente Indigenous Peoples activities as fishing, hunting, planning and harvesting. The spirits of the elements can also control the predatory actions from mankind by the creation of a spell against humans. According to their myth teachings, there must be a respectful posture with the environment also because through the interaction with the elements of the environment and their observation, it is possible to develop knowledge necessary to life. This myth establishes that, for example, the Xerente peoples have learnt to light fire with the Amazon jaguar; to weave using Buriti's fiber with the parrot; planting and harvesting were taught by the stars (Melo 2010). Therefore, the interaction of the Xerente Indigenous Peoples with the environment is not only intimal and respectful, but also a source of knowledge.

The indigenous conceptions of nature vary largely, as each ethnical group has its particular way to conceive nature and understand the relations established with it. However, one can say that there is something in common among all of them, which is that the "natural world" is, before all, a wide network of inter-relations between and among agents (human or non humans). This means that human beings are always interacting with nature and that this entity is not untouchable. Another example is the Yanomami Indigenous Peoples (north of the Amazon), who use the word *urihi* referring to Earth-Forest, meaning "living entity with a vital blow" and "fertility principle" mythologically originated. In this regard, *urihi* is inhabited by many spirits, among which the

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8   The Xerente currently count approximately three thousand inhabitants, living in the center of Tocantins state in the Brazilian Amazon, in two legally demarcated territories in middle of Brazil. Despite the numerous threats to their territory due to the introduction of hydro dams, paved roads, hydro ways and intensive agriculture, the Xerente livelihood, culture and traditions are still intensely related to the nature.

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Yanomami shaman spirits and its guardians also inhabit. Regarding the provision of food and protection against diseases, the Yanomami are confident that the survival of humans and humanity among society depends on the relations between the spirits of the forest. In this conception, the "nature" is a scenario that cannot be separated from human intervention.

In sum, indigenous knowledge can be characterized by being holistic, embedded and bounded in the local and by the importance of the community and moral values. Such knowledge is not constructed on the basis of dichotomies and divisions. There is no separation between nature and culture, or between subject and object. Thus, there is a non-instrumental approach to nature. Also, there is no separation among the physical, spiritual, emotional and intellectual dimensions nor there is the notion of different fields of knowledge that resulted in the divisions among academic disciplines. Moreover, as Berkes highlights, many indigenous and traditional knowledge systems tend to have a large moral and ethical context (Berkes 2012, 11).

Much more could be said about indigenous knowledge and their conceptions of nature, but for now we should ask what are the implications for global environmental politics in the Anthropocene? Whilst not being "environmentalists", indigenous peoples generally are conscious of their dependence on nature, not only physical but mainly, cosmologically. This is an epistemological aspect that should be taken into account and goes beyond the eco-indigenism discourse (Sissons 2005). We acknowledge that due to this conscious, indigenous peoples have developed ways of management of natural resources that have proven fundamental for the protection of ecosystems all over the planet, for example, to the protection and consequently preservation of Brazil's Amazon forest[9]. In fact, the majority of the Indigenous Peoples' territories in the Amazon basin hold in general the highest density of carbon, extraordinary humidity and pluvial rates[10]. Thus, there is a pragmatic reason to value indigenous knowledge and the International Law and many national law systems already recognize it. Our argument is that such recognition is not enough.

More important than to recognize the pragmatic role of indigenous peoples in the protection of forested areas, savannas, wetlands and so on, we should consider the values of indigenous' knowledge on its own terms. As Wilson (2004, 71) highlights, this recognition goes beyond an appreciation for diversity, but means bringing diversity in thought, worldview and values. Berkes (2012, 6) notes that ecological aspects of tradition cannot be divorced from the social and spiritual. The author speaks of "sense of place", which is closely related to how meaning and values are rooted in the land.

While the argument is quite abstract and to a certain extent philosophical, there is a political dimension to it, as for indigenous peoples knowledge is connected to land that is connected to culture and cosmology. Thus, epistemological parity among knowledge systems could be seen as a fundamental part of indigenous peoples struggles. For International Relations and global

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9   It appears that the Indigenous Peoples' large protected areas not only act as major obstacles to the advance of deforestation, but also encompass regional inhibiting effect, which means effective contributing to the reduction of deforestation outside its boundaries, especially when considering distances up to 10 km. As a result, they avoid the significant potential emissions associated to greenhouse gases (Ricketts, T. H., Soares-Filho, B., da Fonseca, G. a B., et al. (2010), Nepstad, D., Schwartzman, S., Bamberger, B., et al. (2006).

10 However, even with this high rate of humidity, the Amazon and the Northeast of Brazil constitute the "climatic change hot spots", which means that these regions are the most vulnerable regions to climate change of Brazil.

environmental politics studies, the way we construct knowledge and make worlds do matter. Recognizing that there are many natures upon which environmental politics is constructed stems from the recognition of many worlds in world politics. Moreover, as stated above, worlds and natures are hybrids and dynamic, so epistemological parity among different knowledge systems is a way to escape from the dichotomies of modernity for IR and global environmental studies.

Map 1. Indigenous Peoples territories in Brazil discussed in this article: The transboundary Yanomami and Tukano (North of the Brazilian Amazon), Xerente (central Amazon) and Kaingang (South of Brazil) ethnical groups. Source: Instituto Socioambiental (adapted)[11]
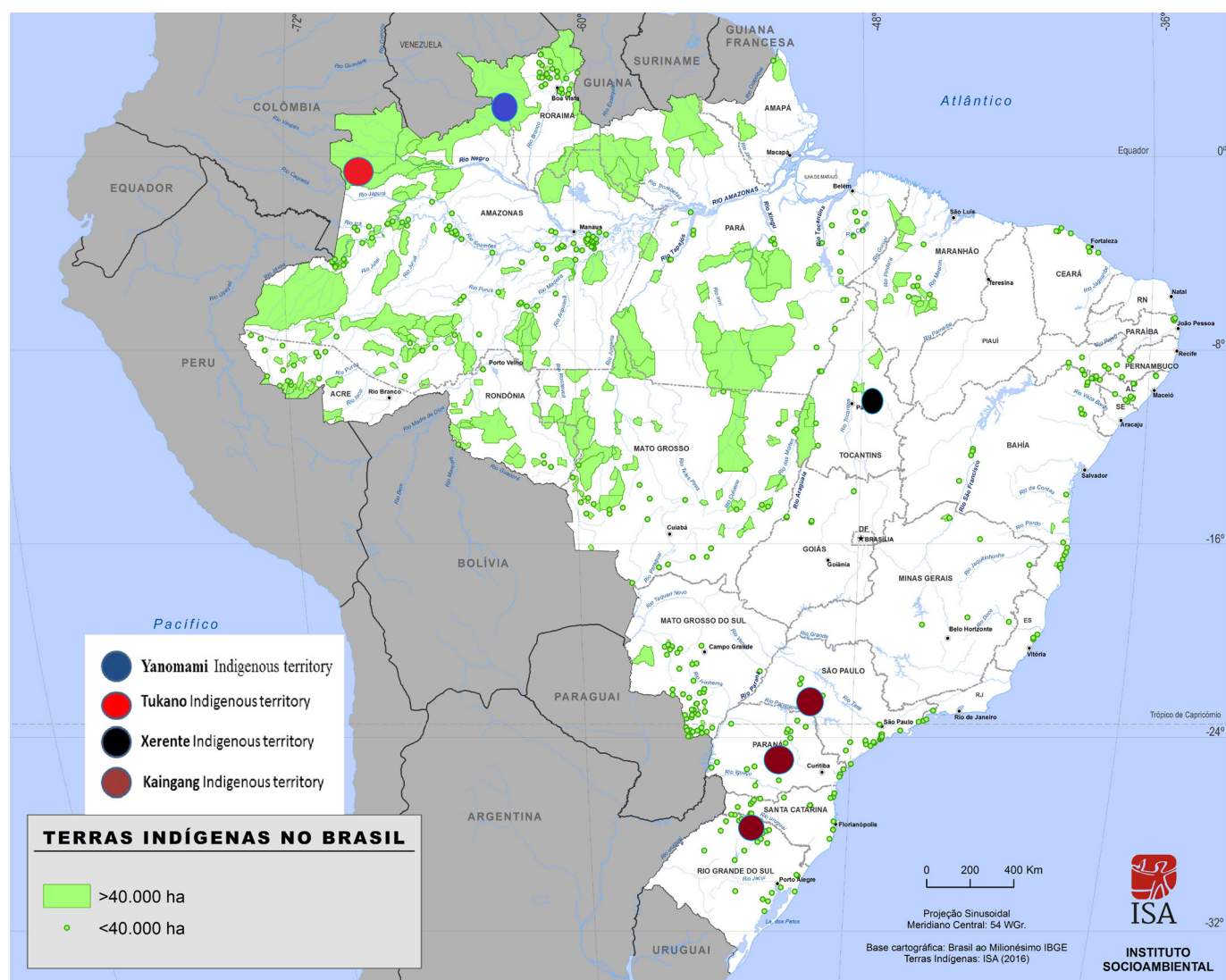
Conclusion

Our article argued that as there are many worlds, there are many natures, but only one planet. This argument comes from two separate bodies of literature. One refers to the recent trend of worlding IR (Tickner and Blaney 2012; 2013), and considering multiple worlds (Ling 2014).

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11 These examples were selected based on the availability of literature in Portuguese.

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The other points out to the transition to the Anthropocene and the idea of the conceptual and empirical "end of nature". Both sets of literature, taken together, lead us to the attempt to recast IR and global environmental studies.

As the planetary limits are being trespassed, we should take into consideration Leis' claim to redefine civilization, not as the emergence of a radical novelty, but as a transition moment and the nearing of two poles, or moment of resolution of the strong dualisms of the Western matrix (Leis 1999, 44-46). According to Leis (1999, 47), the ample spectrum of environmental theories and practices constitute a project, which he calls realist-utopian, because it can only happen by bridging and nearing opposite phenomena, or the harmonization of spiritual and material experiences, reconciliation of the transcendent and immanent plans.

We share the views of Berkes (2012) and Ling's (2014) worldism, in which one should look for other sources of knowledge, like stories and legends that are part of culture and indigenous knowledge (Berkes 2012, 6), also histories, philosophies, languages, memories, myths, and fables of the human condition (Ling 2014, 13).

We gave four examples of Indigenous Peoples conceptions of Nature and Origins of the Universe from Brazil (Yanomami, Tukano, Xerente and Kaingan) that evidence a kind of knowledge, which is holistic and not constructed on the basis of the society-nature dichotomy and other modern dichotomies like body and spirit. More research should be done in order to have a more encompassing and systematic view of "many natures". The examples only illustrated the argument and offered directions for further research.

In this direction, this article claimed for ontological and epistemological parity of indigenous ways of knowing, or modes of thinking, doing, being and relating to nature, or to many natures. As such, it attempted to apply the worldist methodology or mode of dialogics, but instead of drawing on Multiple Worlds for insights, experiences and guidance (Ling 2014), it drew on indigenous peoples' worlds just to bring a few examples. As mentioned above, indigenous conceptions of nature vary largely, as each ethnical group has its particular way to conceive nature and understand the relations established with it. However, one can say that there is something in common among all of them, which is that the "natural world" is, before all, a wide network of inter-relations between and among agents (human or non humans). The recovery of indigenous knowledge and of many natures is important not only to indigenous peoples, but also to the whole society and for the future generations. Furthermore, we argue that such recovery is vital for global environmental politics in the Anthropocene in many ways.

Firstly, considering that, as Indigenous peoples have unique knowledge of their homelands and ecosystem[12] (Wilson 2004, 83), there is a pragmatic reason to consider their knowledge in global environmental governance. Any policy, program or project designed to conserve biodiversity, to mitigate or adapt to climate change, to manage the forest or wildlife and so on should take into consideration traditional or indigenous knowledge to increase the chances of success. International Law has already recognized the value of indigenous knowledge, giving it a legal protection. In this

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12 Wilson (2004, 83) also mentions indigenous peoples' knowledge about medicines and healing practices.

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purpose, the Convention of Biological Diversity (CDB)[13], the World Intellectual Property Organization, and recently in December 2015, the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC), all have reached significant progress achieving consensus around a more robust language on the consideration of Indigenous knowledge. Regarding the 2015 Paris climate Agreement, parties stated:

> Adaptation action (…) should be based on and guided by the best available science and, as appropriate, *traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with* a view to integrating adaptation into relevant socioeconomic and environmental policies and actions [14].

Secondly and most importantly, bringing Indigenous knowledge systems into the Anthropocene is fundamental because Indigenous ways to conceive nature and to relate to nature can contribute to how we deal with the empirical and conceptual "end of nature" (Wapner 2010). We share the view of Athayde et al. (2016) and Leis (1999, 24), who asserts that the broad and complex solutions that are needed to cope with the global socio-environmental crisis transcend the capacities of science, technology (technique), and also of the existing political institutions. For Leis, the interrelation of the environmental problems with economics, politics and culture suggests that the solution encompasses a wide spectrum of levels of knowledge(s) and practices that include not only natural and social sciences, but also culture, philosophy, and religion in a broad sense. Also, the global and multi-sectorial environmentalism requires us to communicate with the past and the future. Besides, power transition and dispersion (Nye 2011) and the transition to the Anthropocene force us to rethink the basis upon which we build politics.

In sum, indigenous knowledge systems could contribute to recast global environmental politics/governance studies by bringing a more holistic worldview, so helping to overcome the dichotomies of modernity. As stated, this is not an essentialist claim about indigenous knowledge, but acknowledging that reality is hybrid and that knowledge construction should take paths that consider other ways of knowing. Moreover, we highlight the following points to be further explored.

First, we should notice that events towards nature are perceived through different lenses. On the one hand, as we have seen, for many indigenous peoples, other non-human (spiritual) beings and elements of nature have consciousness and culture. In many traditional cultures, the various elements of nature (e.g. river, forest, rain, sky, stars, animals, etc.) are each imbued with its corresponding soul, spirit and sacredness. This intense relation with the elements of nature

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13 Since 1992, CDB's article 8(j) states that Each contracting Party (Estate) shall, as far as possible and as appropriate: "Subject to national legislation, respect, preserve and maintain *knowledge,* innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such *knowledge*, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge innovations and practices".

14 According to Article 7.5 of the Paris Agreement (COP 21):"Parties acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, *knowledge of indigenous peoples and local knowledge systems*, *with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions*, where appropriate."

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makes a significant difference in human relations with nature, in particular in the greater respect for other beings and how events toward nature are perceived. Hence, where many people see "development", indigenous and traditional peoples can see mass destruction (Swift and Cock 2015), violation of sacred sites, sacrilege. On the other hand, nature is not untouchable. Human and non-humans are all part of the same network of interactions. Nonetheless, these interactions and relationships are constructed on different basis.

Second, more than different perceptions, the relation between nature and the environment becomes a relation to "nonhuman relatives". For the indigenous peoples, glaciers, rivers, mountains, plains as well as forests, deserts, savannas, and animals have life and spirit. Consequently, the "human-nature" is a relationship that starts from another baseline, one in which indigenous peoples input life and spirit to parts of the environment that Western science considers inert.

Third, the sense of sacredness that permeates the relation to nature is viewed as a venue for addressing the complexity of human-environment relations from a non-reductionist perspective. Furthermore, we could speak of a sense of unity between nature and humans. There is not a dichotomy, but a relation, or interactions among human and non-human relatives. Consequently, there is a greater respect for living and non-living beings.

In conclusion, we suggest that in times of "the end of nature" (Wapner 2010), perhaps, we should look for many ideas of nature to help us to go forward as there is only one planet that we inhabit. Looking into indigenous knowledge and culture can contribute to finding many natures to rely on in face of the challenges of the Anthropocene.

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