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Objectifying traditional knowledge, re-enchanting the struggle against climate change

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Weather forecasting by pastoralists, fire management and control over their territory by residents of tropical forest, sophisticated water management and selection of drought-resistant seeds by peasants in arid zones, nomadic adaptation strategies, observations of ice by inhabitants of the arctic, locally-adapted strategies for predicting and surviving cyclones on coasts or islands — these are just a few examples of traditional knowledge and practices that are passed down from generation to generation, and that could be mobilised in order to better understand and fight climate change. However, traditional knowledge was almost absent from climate change discussions until recently, despite its historical presence in other UN arenas such as the Convention on Biological Diversity, the World Intellectual Property Organization (WIPO), UNESCO and the Food and Agriculture Organisation (FAO). The Paris Agreement has changed this situation. Its preamble recognises “the rights of indigenous peoples” and the possibility for some cultures to conceptualise “biodiversity” as “Mother Earth”. Further, it includes an explicit reference to traditional knowledge in its adaptation section:

*“Parties acknowledge that adaptation action (...) 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.”* (Paris agreement, article 7.5)

This paragraph tells us several important things. First, as traditional knowledgeⁱ entered the climate regime via growing attention on adaptation, it is thus tightly linked with that concept. Traditional rural peoples have not participated in the general diagnosis of “global climate change”, but they are now recognised as knowledgeable observers regarding the assessment of its impacts and identification of adaptation strategies. Second, this new legitimacy given to traditional knowledge is part of a broader trend in climate governance since Copenhagen: bottom-up, situated approaches have replaced top-down efforts (see introduction). Third, this development is striking in that article 7.5 aligns western scientific knowledge with the traditional knowledge to guide “programmes and public policies” for adaptation. This alignment is rather unexpected, to say the least, as political actions within the climate regime are supposed to be based on a different set of global “sound” sciences, as synthesised mainly by the IPCC.

The narrow profile of knowledge considered as useful and the high “epistemic selectivity” (Vadrot 2014) of the climate arena have been strongly criticised. Indeed, climate knowledge has been almost completely dominated by specific disciplines from the natural sciences, such as earth systems science, atmospheric chemistry, physics, (paleo)geology, glaciology, and climatology, which are rooted mainly in Western countries and involve heavy instrumentation (satellites, calculators, etc.). And, when social scientists have been asked to comment on climate change, again the results were mostly global models, and under the influence of one key discipline: economics. This domination of complex and abstract models and global

meteorology data like “global mean temperature” or “tonne of carbon” has been criticised (Miller 2004) (Hulme 2010) for its tendency to “flatten the world” and to erase differences in human experiences, understandings, epistemologies, values and meanings of climate change (Pielke et Sarewitz 2005) (Salick et Ross 2009) (Beck, et al. 2014, Bellier 2013). That decoupling from the direct experience of climate change also blurs the territoriality and temporality of the problem and makes its political translation more difficult (Jasanoff 2010). Finally, the hegemony of global and abstract knowledge is strongly linked to an equally exclusive/excluding political order (Jasanoff 2004).

Hence, some authors are calling for a repolitisation and reterritorialisation (Aykut et Dahan 2015) of the governance of climate change, which will demand better inclusion of traditional and local knowledge in the assessment of climate change (Ford et al., 2012; Ford et al. 2016). In this context of contestation in the global arena, the “traditional knowledge” category functions as an “inverted image”, in that it is mainly defined and used in direct contrast to the mainstream definition of global, top-down sound science and governanceⁱⁱ. This strong opposition differs greatly from how the academic disciplines of Science and Technology Studies (STS) and Anthropology portray the complex relationship between science and traditional knowledge (Agrawal 1995) (Ellen, Parkes et Bicker 2000), (Hastrup et Skrydstrup 2015). However, this “purified” opposition, even if sketchy, has resonated with collective imaginaries during COP21.

How does the climate regime affect the traditional knowledge category, and conversely, how does the inclusion of traditional knowledge affect the climate regime? Using the “translation” concept (Latour 2005), we argue that this cross-translation process results from a kind of metaphoric barter. The climatisation of traditional knowledge leads to a form of strategic *objectification* through politics and science. This objectification contributes to empower different actors by advancing their individuals agendas while, the inclusion of traditional knowledge into the climate regime increases its *symbolic capital* (Bourdieu 1994), through narratives that give added soul to and contribute to “re-enchant”ⁱⁱⁱ this fundamentally technocratic arena.

Methodologically, our analysis is grounded on on-site ethnographic observation of almost thirty events at COP21, where traditional knowledge was discussed, in a systematic review of academic and grey literature (from UN bodies and NGO reports), and in interviews with key actors who promote traditional knowledge. Theoretically, we combine different lines of analysis with a strong constructivist perspective, inspired by STS and political anthropology. Clearly, we are not talking about the form of traditional knowledge “on the ground”, as “classical” ethno-scientists or anthropologists do. Rather, in line with the anthropology of international institutions (Müller 2013), anthropology of indigenous performance on the UN stage (Bellier 2013), and analyses of the use of knowledge and worldviews as political resources (Blaser 2009), traditional knowledge is analysed here as a category of global governance (Brosius 2006) with a strong political dimension (Dumoulin Kervran 2003) (Agrawal 2002)(Nadasy 2005). As Manuela Carneiro da Cunha did for the concept of culture (Carneiro da Cunha 2009), we can distinguish “traditional knowledge” as an ex-situ discursive and reflexive category, separate from traditional knowledge as a practice that is directly observable and performed in-situ. Yet between the grassroots communities and the international arenas, the category of traditional knowledge is mediated and politicised (Alexiades 2009) via various chains of translation by very different actors — including indigenous peoples themselves, academics, development brokers, and state delegates — with different meanings and political objectives (Brosius 2006).

The first part of the chapter deals with the climatisation of traditional knowledge, by analysing the work and interactions of principal spokespersons (indigenous people, scientists, parties to the UNFCCC) before and during COP21. According to their interests and agendas, and in order to align with global climate debates, these spokespersons perform two processes of politicisation and scientisation of the traditional knowledge category. In the second part, we explore the effects of traditional knowledge “narratives” upon the climate change regime, and their ability to re-enchant it through new story-telling, actors and solutions.

1. Political and scientific climatisation

We first aim to explain why traditional knowledge has recently gained such high visibility in the climate arena, and to answer some basic questions such as “Who speaks for traditional knowledge in a global conference like COP21? With what kind of political agenda? How does its climatisation influence this knowledge?”. To do so, we will illustrate how the different agenda of indigenous peoples’ organisations, scientists and States tend to have two main impacts on traditional knowledge: *politicisation*, when its defence is a way to transform the power structure among actors, and *scientisation* when this defence is focused more on epistemic and management issues. These two modes of climatisation are maintained together but are prioritised differently by the key players, especially indigenous peoples’ organisations and scientists advocating for traditional knowledge, who have built a long lasting partnership. Some States must also be considered as spokespeople for this kind of knowledge. We will see that their participation in *climatising* traditional knowledge has been crucial but inspired by different political strategies that influenced the way they framed it.

1.1. Rights first? The politicisation of traditional knowledge

The salience of traditional knowledge in the climate arena — and the fact that indigenous peoples now have their authorised representatives present there — was not always given. It is the result of a complex and open political process, leading to the specific “translation” that appears in the Paris Agreement. The emergence of traditional knowledge in the climate arena has depended crucially on the emergence of a strong “indigenous peoples” actor, engaged in “competitive knowledge claims about nature” (Goldman, et al. 2011) and able to speak for all indigenous peoples, despite the heterogeneity of the realities covered by this expression. The main claim of indigenous peoples’ global movement has always been specific collective rights, as defined and promoted in the UN declaration on the rights of indigenous peoples since 2007^{iv}. Their agenda is clearly political, involving: first, more rights for indigenous peoples, and second, recognition of traditional knowledge. Two main impulses in 2007/08 and 2013/14 reorganized the place of indigenous actors, the place of traditional knowledge in their agenda, and their relationship with Parties and bodies of the Climate Convention.

The years 2007/08 were a fundamental time due to the confluence of various elements, starting with the formation of a centralised indigenous institution within the climate arena, known as the “indigenous caucus” or International Indigenous Peoples’ Forum on Climate Change (IIPFCC). In 2001, the Secretariat had already given indigenous representatives the status of “observer organizations” (along with NGOs, farmers, women, business, etc.), which initiated a promising process of interaction that had a low profile until 2007. Conceived as the head of the “major group”, the Indigenous Caucus aims at building common positions, statements, proposals and recommendations. Another element was the rapidly growing importance of adaptation and REDD+ (Reducing Emissions from Deforestation and Forest Degradation) issues that brought new saliency to local actors, and particularly to tropical forest organisations (see chapter Chapter7). Adaptation and REDD+ opened new windows of

opportunity for indigenous land claims, as well as for specific funding to implement a new local “information system” for Measurement, Reporting, and Verification (MRV) of forest carbon. Also, the issue of “ecosystem-based adaptation” intensified relations among biodiversity’s actors and the Convention on Biological Diversity (CBD) process, in which traditional knowledge issues were more familiar. The last one among these converging trends was the first mention of traditional knowledge by the IPCC in its 4th assessment report in 2007, as well as its inclusion in the “Bali Action Plan”, a roadmap released by the UNFCCC. This evolution ultimately led to the adoption of the 2010 Cancun Adaptation Framework (CAF) a few years later, wherein the formula “*adaptation strategies based on and guided by the best available science and, as appropriate, traditional and indigenous knowledge*” (decision 1/CP.16) gained official recognition.

Concurrent with this evolution inside the climate arena, the climate problem gained recognition inside indigenous arenas: in 2008, the UN Permanent Forum on Indigenous Issues held its first specific session on indigenous peoples and climate change, followed by a global summit, the first global report and handbook on the same issue, and a global indigenous declaration in 2009. Various regional and national meetings around COP15 in Copenhagen marked the diffusion of climate issues into the global ecosystem of indigenous organisations. Climatisation of traditional knowledge had thus been launched.

The years 2013/14 marked the beginning of a new mobilising cycle in climate talks — with a clearer traditional knowledge perspective — that led to the Paris Agreement. The Subsidiary Body for Scientific and Technical Advice (SBSTA) asked for a more special report report on the use of indigenous knowledge in assessment and adaptation, which led to ad-hoc meetings with high participation of indigenous organisations. That initiative, along with parallel, enhanced discussion mechanisms with “friendly States” and the release of the second volume of the 5th IPCC report on adaptation, formed building blocks for raising awareness among Parties about the importance of traditional knowledge. This “knowledge turn” of the adaptation work program is coherent with other existing initiatives on local adaptation (i.e., risk reduction); it can be viewed as a strategic way of using this knowledge for innovative adaptation strategies, and disconnecting it from participation, prior consent, or rights. Indigenous organisations intensified their mobilisation and maintained their position of putting rights first, but advancing traditional knowledge in the UNFCCC followed closely after that on their agenda. The First “Indigenous Pavillion” within the COP20 official space in Lima gave material and symbolic visibility to this newcomer in climate negotiations, and all the official side events and mobilisations around the conference demonstrated this new importance of indigenous peoples’ organisations.

COP21 marked a culmination point regarding the visibility of indigenous peoples. Each day the *caucus* gathered some 60 delegates in the “blue zone”, while more than 200 indigenous representatives travelled to the conference and took part in its various events. The caucus had a very proactive role in pushing for indigenous wording in the draft agreement, and contained working groups that conducted intense advocacy activities throughout the COP. Indigenous organisations also held numerous side-events with high participation. The most visible and active organisations were coordinated by historical indigenous platforms such as the “Forest Peoples Programme”, the International Alliance of Indigenous and Tribal Peoples of the Tropical Forests (IAITPTF), the Coordinadora de las Organizaciones Indígenas de la Cuenca Amazónica, (COICA), and the Asia Indigenous Peoples Pact (AIPP). All of these groups entered the climate arena after an engagement within the tropical forest/biodiversity arena. Their framing is aligned with their main interest in the REDD+ program and modes of

funding, often turning traditional knowledge into a claim for good (and cheap) management and monitoring of forests for carbon storage.

Within the “Climate Generation Space”, the Indigenous Peoples Pavillion was the largest and it attracted high-level media coverage. During the two weeks that it operated, a full program of daily cultural events, press conferences and panel discussions created an opportunity to showcase, perform and explain indigenous identities of regions around the world^v. In that display, references to traditional knowledge via mentions to IPCC assessments and other scientific reports were used as a mark of legitimacy. Support for traditional knowledge and indigenous rights was also constructed through the lobbying of state delegates and journalists, and alliance building with other civil society actors like women, human rights groups, trade-unions, and farmers. For the indigenous movement itself, that mobilisation in the climate arena has revived a broader dynamic of mobilisation at the global level, after the intense period culminating in the UN declaration on indigenous rights at the end of the 2000’s. Hence, climate is one of the international arenas in which indigenous peoples are the most invested. There are however strong limitations to this “rights first” position of the Indigenous Caucus. Indigenous peoples lack a specific institutional working group in the COP process, which is still profoundly State-centred (Schroeder, 2010; Ford et al, 2016). At the national level, they also lack dedicated funding, and national adaptation plans mention traditional knowledge infrequently (Maillet et Ford 2013).

Several Northern European States, Peru, Mexico and the Philippines have supported indigenous peoples with financial and political resources and by relaying their demands in climate negotiations. But discussion on the draft proposal of the Paris agreement also showed that these states were looking to impose a specific framing, which disconnects knowledge from rights, against the will of indigenous organisations^{vi}. The main driver of this kind of support for traditional knowledge may be the desire to re-enchant the climate arena, without paying the higher political cost of backing indigenous peoples’ rights. In a sense, the mention of traditional knowledge in the adaptation operative section of the Paris agreement — while indigenous rights are mentioned only in the weaker preamble section — reflects a form of compromise between a “rights first” versus a “knowledge first” approach.

The Bolivia of Evo Morales and the states of the Bolivarian Alliance (Bolivia, Ecuador, Venezuela, Cuba, Nicaragua, etc.) represent another way of politicising traditional knowledge. Since the end of the 2000s, “Rights of Nature” and “Mother Earth”, two important components of Bolivarian States’ phraseology and constitutions, became the dominant framework for numerous organisations in Latin America, but also for broader international coalitions^{vii} and hence those terms appeared in the preamble of the COP Decision in Paris. Like the Indigenous Peoples’ Caucus, these diplomatic voices insist on the link between traditional knowledge and criticism of the dominant political order. But unlike that argument, Bolivia’s demands for the recognition of traditional knowledge in global fora are not focused on the struggle for indigenous peoples’ rights, but rather they aim to mobilise civil society. The country organised two widely publicised “Conferences of the Peoples on Climate Change and the Rights of Mother Earth”, in Tiquipaya, Cochabamba in 2010 and 2015, which forged an international coalition, and their conclusions are supposed to dictate the agenda of Bolivarian states for climate negotiations. However, the flagrant contradictions between this international discourse on one hand, and persistence “on the ground” of extractivist and anti-indigenous politics, on the other, point to a primarily instrumental use of indigenous themes and framings. They are mobilised to criticise powerful “Western” States who are viewed as destroying nature and the peoples, and to build an anti-capitalist block.

That is why we label this more rhetorical celebration of “Pachamama” and vague reference to “saberres ancestrales”, as a process of “hyper-politicisation” of traditional knowledge.

In this first section, we have portrayed different ways that traditional knowledge has been translated and used by different actors to respond to their political agendas. Traditional knowledge is objectified, as it is considered in climate arenas not so much for what it means on the ground, but as a political instrument. A second kind of objectification corresponds to the scientific translation of traditional knowledge to fit UN formats.

1.2. Lost in normalisation: The scientisation of traditional knowledge

Anthropologists and scientists from related disciplines have also played a role as spokespersons for traditional knowledge in the climate change arena. While they were not very visible during the conference itself, they are key-players, acting all around the stage, as an “epistemic community” (Haas 1992, Hajer 1995) that defends the value and legitimacy of traditional knowledge.

The first step in the building of this “epistemic community” occurred in the early 2000s, when a growing body of anthropological studies documented that climate change affects Arctic peoples. Bestowing great importance to the role of indigenous knowledge for resilience and integration with scientific knowledge, studies of Inuit communities have clearly opened new paths for a growing field of research. It was not before the end of the decade, however, that these topics began to emerge in the climate arena (Salick et Byg 2007)(Salick et Ross 2009)(Macchi, et al. 2008). The globalisation of this epistemic community intensified in 2011 with a conference in Mexico co-organised by the IPCC, and also new institutional publication by UN University and UNESCO that presented a broad overview of “traditional knowledge and climate change”. More recently, a growing body of literature is produced by a small cluster of scholars, agglutinating early studies of the arctic with recasting publications on traditional knowledge and tropical forests, and with others on monitoring, risk reduction or agricultural resilience^{viii}. Frequent co-citations and cross-participation of experts in global meetings and committees, indicate the solidification of this new epistemic community. Its main part is constituted through the climatisation of actors constituted initially on the biodiversity/forests arena (Dumoulin Kervran 2003).

The epistemic community developed a strong partnership with indigenous peoples’ organisations, and they are advocating for a very rich version of traditional knowledge that is connected with indigenous rights. This “epistemic advocacy” (Hayden 2003) rests upon the recognition of a diversity of ways of knowing and living in the world. A case in point is a small UNESCO program called LINKS (Local and Indigenous Knowledge Systems), which has a long involvement in the promotion of traditional knowledge. It represents a way of recycling and regenerating a “bio-cultural” framing at the crossroads between biodiversity studies by ecologists and cultural diversity studies by ethno-scientists. The lead officer of the program, D. Nakashima, embodies this intense global advocacy, based on his multi-positionality (i.e., institutional memberships in UNESCO, CDB, IPBES, IPCC, etc.) and alliances with some like-minded funders (e.g., Christensen Fund, IWGIA, the Norwegian and Swedish governments...) and indigenous peoples’ organisations (Tebtebba, etc.).

A key contribution has been the production and showcasing of the UNESCO report “*Weathering uncertainty: traditional knowledge for climate change assessment and adaptation*” (Nakashima, et al. 2012). This is the first science-based official report with a global overview: it reached a broad global audience (and was quoted extensively in this

emergent field), and helped to synthesise contributions from different actors into a common agenda. LINKS-UNESCO experts intensified their advocacy in the climate arena, through discussion with authors of the fifth assessment report of the IPCC, through broader networking activities, and then, via participation in a long series of events surrounding preparation for COP21 and the Paris agreement (such as the IPCC, SBSTA, inter-session meetings, and ad-hoc meetings). A climax of this activism was the organisation, some days before the COP, of the very large conference “Resilience in a time of uncertainty: Indigenous Peoples and Climate Change” at UNESCO’s headquarters in Paris on 26-27 Nov 2015, followed by a meeting that aimed to finalise the common agenda of indigenous organisations, and another between indigenous organisations and States to prepare the coming Paris agreement. LINKS advocacy gives privilege to knowledge and science, by institutional culture and strategy; it also promotes a pragmatic inclusion of traditional knowledge, by presenting it as applied solutions, best practices, and methodologies, with a plea for integration between scientific and traditional knowledge (see Part 2). However, they do not defend a kind of “dis-embedded flying knowledge”, but see the recognition of traditional knowledge as a first step on the way to a larger transformation of the climate arena that would make it more to demands of indigenous peoples.

The IPCC has been a central target of this intensifying advocacy for traditional knowledge. However, the appearance of traditional knowledge in IPCC reports has been a very slow process. The Fourth Assessment Report is the first to contain a reference to the issue, yet it made “*only scarce mention of indigenous peoples, and then only in polar regions and merely as helpless victims of changes beyond their control*” (Salick et Ross 2009). It was not until the Fifth Assessment Report, released in 2014, that a move towards the recognition of traditional knowledge could be observed. Within the pool of IPCC authors and reviewers, experts with this kind of knowledge are still extraordinary scarce^{ix}, which hampered how it has been captured. The report contains no specific chapter on traditional knowledge, but reveals a strong growth in scattered keywords related to indigenous issues, and includes specific sections such as “Indigenous Peoples”, “Local and Traditional Forms of Knowledge” (12.3.2 & 3 of volume 2), and others in regional chapters.

Nevertheless, this growing body of references on traditional knowledge within such a prestigious scientific publication constitutes strong leverage for all indigenous actors who are fighting for more recognition. The epistemic community continues the advocacy by favouring broader coverage of traditional knowledge in the next IPCC AR6, and by calling for an alignment with other existing climate change assessments for the Arctic region or for the United States.

Still, when mainstream climate scientists show interest in traditional knowledge, it is typically about an issue where they identify a “knowledge gap”, and about traditional knowledge that could be “validated” by science. This “consecration” in IPCC reports is a costly translation process, alterations that have been aptly described by Agrawal as “scientisation” in the case of traditional knowledge (Agrawal 1995). First, it is depoliticised, as a vast majority of such references are vague, and knowledge holders are quoted among a list of vulnerable communities without reference to “indigenous peoples” as actors with specific rights. Traditional knowledge is presented in isolation from any broader historical, political, and ethical background, and even its links to sexpropriation and land claims are missing. Second, the challenging epistemic “otherness” of this kind of knowledge is lost through normalisation. References are punctual (e.g., one empirical observation of a specific event) and traditional knowledge is presented mainly as a source of new data. The complexity and diversity of indigenous knowledge systems, and the holistic and spiritual nature of this knowledge, are not

adequately captured (Ford, Cameron, et al. 2016).

This scientisation of traditional knowledge has created a strong push for its presence in the new Paris agreement, because it is an easy way for mainstream scientists and States to give some recognition to indigenous issues, and to renew climate discourses, without actually having to share power, to extend rights, or to affect the dominant epistemology.

Scientisation and politicisation are both efficient modes of climatisation. While opening two opposite paths, they give traditional knowledge access to the climate arena. Both are processes of translation, emerging from actors' interactions, and performed through different operations (e.g., mobilisations, lobbying, and publication of articles, books and reports). In fact, as is true for many other global categories, understanding the role of traditional knowledge in global climate politics is interesting not so much by what it pretends to do, but much more by what it enables different actors and institutions to do. More than fighting against climate change, it allows indigenous actors to continue their historical struggle for their rights, control over their territory, and recognition as peoples; it allows outsider States to pretend to fight against capitalism; it allows UN institutions to renew their concepts and legitimise themselves through the acknowledgement of marginalised categories of actors; and it allows different communities of scientists to requalify and legitimise their research agendas.

[insert figure 1 here]

Figure 1. *The climatisation of traditional knowledge, according to the principal actors*

Source: Authors

II. Re-enchanting the struggle against climate change

The reverse translation movement corresponds to the impact of the recognition of traditional knowledge upon the climate arena. It took the form of new climate narratives that gained momentum and reached a broader audience during COP21. In line with constructivist environmental discourse analysis (Hajer 1995, Nadasdy 1999), we will now analyse the two main narratives about traditional knowledge and climate change that we observed there: the “resilient victim-hero” and the “integration narrative”. Both have been used by a large array of spokespeople, and they participate in re-enchanting the struggle against climate change by offering new story-tellings, new positive actors, new bottom-up solutions, and even other visions of nature.

2.1. “The resilience narrative”: when victims become heroes

Regarding the press coverage of COP 15 in Copenhagen, Roosval and Tegelberg argued that indigenous peoples have been misframed as victim-heroes (Roosval et Tegelberg 2013). Paying special attention to traditional knowledge, we want to deepen here the analysis of the victim-heroes category and to show how it renewed the broader resilience narrative (Folke 2006) (Cannon et Müller-Mahn 2010) at COP 21. For us, this narrative is not just a politically blind misrepresentation by the media, as Roosval and Tegelberg argued, but also a powerful tale with strong symbolical and political dimensions, produced largely by indigenous representatives themselves. We will show that traditional knowledge plays a very important part in this narrative that combines denunciation of the impact of climate change with a proposed set of solutions. If this discourse is not exactly new^x, it was certainly actualised and widely legitimised during COP21.

Throughout the two weeks of the conference, indigenous peoples presented themselves as the first witnesses of climate change, because they have directly experienced it. Then, after the scientific alert of the IPCC, comes the alert of indigenous peoples based on stories of that experience. Melting of Arctic ice floes for the Inuit, melting of glaciers for indigenous peoples from the Himalaya, problems of drought, access to water and loss of agricultural land for the Maya in Guatemala, desertification for Peul pastoralists in Tchad: these are but a few of the striking examples shared to demonstrate how indigenous peoples form the front line for climate change effects, despite the fact that they scarcely contributed to the phenomenon. This discourse about a situation of unfair vulnerability enables them to also embody climate injustice^{xi}, and gives them legitimacy to request funds, resources, and other help from the international community.

This general discourse about indigenous peoples combines their simultaneous roles as witness, whistle-blower and victim. First, there is some empirical evidence that climate change has indeed caused dramatic impacts on indigenous peoples’ livelihoods, with wide-ranging effects on their cultures and even on the validity of traditional knowledge. In Kayapo’s territory in Amazonia, the disappearance of certain insect species (e.g., cicadas, bees, butterflies) because of increasing temperatures also represents the disappearance of important time and space markers for indigenous peoples there: “*Now we are disorientated, if we lose our way in the forest, we don’t know anymore how to get back home*” (Kayapo representative, 11-12-2015, translation by the authors). The seasonal cycles of the rainforest seems to be perturbed, and hence so does their entire culture. From territory control to rituals, including human health, climate change seems to be exacting a very high cultural impact.

Yet this discourse about climate change affecting traditional knowledge is marginal, compared to the one that presents traditional knowledge as a new set of solutions in the fight against climate change. In this narrative, indigenous peoples appear to be active providers of solutions rather than passive subjects “suffering” from climate change, and traditional knowledge is precisely the element that allows resilience, i.e. it enables the transition from victim to a positive status of problem-solver.

The narrative was present during the conference “Resilience in a time of uncertainty: Indigenous Peoples and Climate Change” just before the opening of COP21, co-organised by UNESCO and the National Museum of Natural History of France (MNHN), in partnership with Tebtebba and various national and international institutions^{xii}. The text that presented the event offers a perfect summary of this narrative:

“For over 350 million indigenous peoples, climate change impacts are expected to be early and severe due to their location in high risk environments. To face these challenges, indigenous peoples are mobilizing their in-depth knowledge of the territories which have been the source of their livelihoods for generations. This indigenous knowledge operates at a much finer spatial and temporal scale than that of science, and includes understandings of how to cope with and adapt to environmental variability and trends. Indigenous knowledge can thus make an important contribution towards climate change action on adaptation and mitigation (e.g. REDD+) and in recent years this has been formally recognized by IPCC and UNFCCC.”

This quote clearly insists on the specific features of traditional knowledge: its scale compared to that of science; its pragmatic and practical dimension to adapt to changing environmental conditions; and its “actionability” in policies against climate change. Nevertheless, beyond the repetition of this general narrative, concrete examples of it and of how traditional knowledge could be mobilised in the fight against climate change were not very visible during this conference, or in general during the COP. We heard many brief references, such as weather forecasts in Inuit or African pastoralist territories, fire management in communities within forests, strategies for the conservation and recovery of native seeds that are resistant to the effects of climate change in Peru. Even if the short format of side events does not enable in-depth discussion of specific traditional knowledge or concrete projects based on it, throughout all of the different events that we attended, we have noted that any references to traditional knowledge as solutions were mostly elusive and rhetorical.

Another variation of the victim-hero narrative originated from the claims by indigenous peoples for other ways of composing the world and conceiving nature through shamanism and its “ecology”. This spiritual dimension, and the ability to bring that knowledge to “Western people”, are the core building blocks of this variation that we have termed “supernatural ecology”. Invited by the Ile de France Region for various events during the COP, representatives of the Quichua People from Sarayacu (Ecuadorian Amazonia) were very active in diffusing this kind of message with their Living Rainforest (“Selva Viviente”) initiative. Felix Santi, President of the community of Sarayacu, stated firmly:

“We came from the remote land of Ecuador, upset by the situation of indigenous people, connected with the guardians of the forest, with a connection to the cosmic world. Climate change affects all the living beings that live on this little planet, the Earth. Sarayaku elaborated its living plan and its proposal: Living Rainforest (Selva Viviente), Kawsak Sacha. Sarayacu’s proposal is a space where we apply the ancestral knowledge. Our Yachak, our wise men, interact with the beings who protect the water, the mountains and the forest (...) The main objective is to reach a clear recognition by

the Ecuadorian state of this space as a sacred bio-cultural heritage, free from oil exploitation. Our call to the international community is to become aware of the necessity to maintain the Kawsak Sacha, the living rainforest” (Felix Santi, 1/12/2015, translation by the authors)^{xiii}.

[insert figure 2 here]

Figure 2. Representatives of the Quichua People from Sarayacu in the Espace

Génération Climat

Source: Authors

In this statement, we find a fascinating mix of claims about alternative worldviews through endogenous categories, environmental and ethical proposals to the western world, classical indigenous territorial claims, and appropriation of international categories such as climate change and bio-cultural heritage. The presence of this narrative at COP21 is quite ambiguous, since it is at the same time an opportunity for indigenous peoples to explain and expose their radically different manner of conceiving nature, and a way for the institutions that invite them (in this case, the Ile de France Region), and more generally, the UNFCCC arena, to benefit from their symbolic capital in order to re-enchant discourses about climate change.

Beyond its rhetorical dimension and performative effect on the climate change arena, this narrative of the strongly resilient victim-hero must be interpreted as a new example of the “inversion of stigma” (Goffman 1963) for the formerly “archaic” peoples, echoing even a Christ-like redemption, as suffering is transformed through salvation.

2.2. “The integration narrative”: a dialogue of knowledge and innovations

The second important narrative that was perceptible throughout COP21 presents traditional knowledge and scientific knowledge as complementary approaches to fighting climate change. This narrative tends to blur the divide between traditional knowledge and science to establish new ways of co-managing the environment.

Examples of collaborations between indigenous peoples and scientists were showcased at different occasions during the conference. For instance Hindou Oumarou Ibrahim, representative of the Peul people of Tchad and responsible for the indigenous Caucus at COP21, described a project wherein pastoralist nomads had invited cooperation with meteorologists. “*This is when those scientists realized the vastness of indigenous knowledge about the environment. This experience has valorised our knowledge and led to an evolution in contemporary research*”^{xiv}. According to this perspective, indigenous knowledge is more than merely traditional and local; it can contribute new data and perspectives to modern science, and thus participate in designing innovative adaptation strategies. This narrative is a clear departure from the usual “scientised” conception of traditional knowledge as a stable set of cognitive elements. It enables the actors that use it to concur with the dominant narrative, whereby modern science aims at innovation for resource management..

Another strong example of the integration perspective was presented during a side-event in the Pavilion of Peru: three scientists^{xv} and two representatives of indigenous peoples presented a project about a network of living laboratories known as the Indigenous Peoples Biocultural Climate Change Assessment Initiative (IPCCA)^{xvi}. The IPCCA is a global network including nine projects in North and South America, Asia, Africa and Europe, which promotes a methodology for local climate change monitoring based on participatory mapping and workshops for dialogue between scientists and indigenous people. Most of the

presentations related to conservation of agrobiodiversity, including the need to conserve local seeds and crops to adapt to climate change. This trend indicated a form of reconversion of the more classical discourse about traditional knowledge and crop biodiversity in ethnobotany, and in international fora such as the FAO.

The goal for a network of different local, living laboratories is to compose a long-term, global picture of climate change in indigenous communities. The integration narrative rejects not only a fixed vision of tradition in indigenous knowledge, but also its reduction to locality. As Alejandro Argumedo explained, “colonialism reduced us to the local” (personal interview, 3/12/2015), while in contrast, the ancient Inca empire, given their advanced technical and planning capacities, adopted a more comprehensive approach. According to this vision, traditional knowledge is (whether combined with scientific knowledge or on its own), if not global, at least much broader rather than being simply local.

Another oft-discussed issue has been “indigenous REDD+”, and more specifically one of its pillars, “indigenous MRV” which entails Measuring, Reporting and Verification. It is a kind of reappropriation by indigenous peoples of the official UN-REDD MRV mechanism and it is based on the local and real-time monitoring of climate change by indigenous peoples themselves. It combines one of the most traditional activities of Amazonian indigenous peoples — control over their territory — with high-tech tools such as cellular phones, GPS, satellite images and drones. As Henderson Rengifo, president of the Peruvian Amazonian indigenous organisation AIDSESEP noted, “*With time, the climate jargon is always stronger. Nevertheless the so-called Indigenous Monitoring, Reporting and Verifying for us is nothing but a form of governance and vigilance of our territory, that is to say what we have always been doing all along our history, but this time with technological tools that enable us to do it better^{xvii}*”. Indigenous MRV, sometimes illustrated by the paradoxical image of indigenous people managing drones, is another strong example of the integration narrative in which global scientific knowledge and techniques are mixed with on-the-ground local knowledge.

The integration narrative is not new. It has structured the co-management discourse that is already established in conservation science and policies, and it allows actors from this sector to recycle their perspectives in climatic terms. Through supposedly-better environmental management while empowering indigenous people, this win-win narrative is of course highly welcome and audible in international arenas such as climate conferences: it offers new discursive spaces based on a reconciliation between globality and locality, tradition and modernity, high and low-tech, and dialogue of cultures. Nevertheless — from the question of the commensurability between radically different epistemologies, to the difficulty of implementing that view in concrete projects; from the monolithic vision of both science and traditional knowledge to the implicit relations of power embedded in such practices — the integration narrative has also inspired academic debate (Bohensky et Mahru 2011) and provoked critique (Nadasdy 1999) (Nadasy 2005). By implying a dialogic movement of indigenisation of scientific knowledge, along with a scientisation of traditional knowledge, the integration discourse is a highly ambiguous project. Its climatisation opens a new chapter for this sort of practices and debates.

Conclusion: how the global category of traditional knowledge creates productive misunderstandings

Now that we have characterised the politics and narratives of traditional knowledge observed during COP21, we can come back to our initial question about how the climate change regime and traditional knowledge affect each other.

If we start with the climatisation of traditional knowledge, climate change has been the foundation for recycling and requalifying various arguments coming from other UN arenas (e.g., CBD, FAO). It has also expanded the traditional knowledge category, since new regions (such as the Arctic, arid Africa, the Pacific Islands) and new epistemic practices (weather forecasting, water management, early warning systems, etc.) were included. Specific to the climate change arena, these regions and practices were absent in the arenas where traditional knowledge was initially staged, and where it was framed mainly in terms of intellectual property rights. Moreover, we have shown that the climatisation process is based on different forms of “politicisation” and “scientisation”, as privileged pathways into climate arenas. These pathways take on different forms depending on the actors, interests and agendas. Political instrumentalisation to serve pre-established agendas, or standardisation of traditional knowledge to make it legible (Scott 1998) for management in the UN apparatus, are the main side-effects of this process, which corresponds *in fine* to an objectification of culture (Carneiro da Cunha 2009). It therefore enlarges the distance between the global category of traditional knowledge and the extreme diversity of empirical practices it is supposed to describe^{xviii}.

Inversely, the introduction of traditional knowledge in the climate regime has contributed to renew and re-enchant the struggle against climate change. This re-enchantment is the result of an array of convergent effects: new story telling with new “exotic” figures such as the resilient “victim-hero”, and new practical and grounded options that counterbalance and complement scientific abstraction. In some cases, like in the supernatural ecology narrative, it even introduces magical dimensions and other ontologies in dominant representations of climate change. However, this re-enchantment remains weak, since traditional knowledge is still a very marginal topic in climate talks. Furthermore, there is clearly a very long way to go from this global emergence of traditional knowledge as the golden bullet for adaptation to climate change to its concrete integration within adaptation programs, as shown by existing experiences in biodiversity conservation projects (Bohensky et Mahru 2011).

The dialogical movement of climatisation of traditional knowledge and the inclusion of traditional knowledge in climate talks can then be described as a kind of symbolic exchange between scientific and political objects on one side, and symbolic force and capital on the other. Traditional knowledge “needs” to be objectified by political instrumentation and scientific standardisation in order to penetrate the climate arena, as it must respond to different interests and fit the recognised UN format. In the exchange of this access, traditional knowledge delivers its symbolic power and lends the climate change arena a “supplement d’âme”, i.e. a human face of courage and wisdom.

This trade is ambiguous. If it can be interpreted as yet another example of the domination of the Western modern world over indigenous cultures, it can also constitute an instrument of visibility and empowerment for indigenous peoples that grants them better access to legitimacy, funding or rights. Whatever the case, traditional knowledge appears as a global category because of its capacity to unite many different realities related to widely divergent political agendas. Based on a fundamental semantic ambiguity, it ultimately generates what Marshall Shalins called a productive misunderstanding through “worlds of semantic compromise whose dialectic both bypass and reaffirm symbolic incompatibilities in

confrontation” (Albert 1993). By putting the narratives and the politics of traditional knowledge side by side, we have shown that it is precisely these epistemological, cultural and political misunderstandings, which help to understand the rise of traditional knowledge as a global category.

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ⁱ We are conscious that these distinctions among traditional, local and indigenous knowledge represent a battlefield for semantic struggles with potentially important political consequences, as with all processes of stabilization of international categories.. For example, some would say that « Indigenous people knowledge » undermines the existence of Peoples (with an s) with collective rights, « traditional knowledge » negates the potential of indigenous innovation, « local knowledge » hides the history of colonialism and negates the scope of this kind of knowledge. Nevertheless, in this chapter we will not enter the diplomatic or the theoretical debates about the differences among these categories. Theoretically, those differences are not clearly stabilized in the academic literature, and even less in the international context where they are most often confounded. In the rest of the chapter, we will refer to *traditional knowledge*, because it is the easiest and broadest category.

ⁱⁱ These broadly shared ideal-types tend to place the following in opposition: locality to globality, particularity to universality, embeddedness to the “view from nowhere” (Shapin, 1998), tangibility and emotions to abstraction,

experience to speculation, actionability to inefficiency, situatedness to generality, marginalisation to domination, tradition to modernity, and even spirituality to materiality, among other contrasts.

ⁱⁱⁱ This expression refers to the weberian terminology painting bureaucratic rationalisation as a historical process of disenchantment. Climate negotiations have experienced a process of bureaucratisation and epistemic dominance (see above), as well as a kind of breakdown after the « failure » of Copenhagen. Various authors have proposed the concept of re-enchantment to describe the process that opposes the disenchantment (Landy et Saler 2009), as we do in this chapter.

^{iv} Striking point: while indigenous land rights were ultimately *not* kept in the Paris Agreement, they nevertheless became an important issue of the climatisation process because various new global initiatives support these rights as one solution for forest/carbon conservation (See Ecuador Prize by UNDP, Indigenous Peoples Global Fund by Norway, and the LandMark initiative).

^v References to IPCC assessments and other scientific reports are sometimes quoted in indigenous claims, but references are more used as a mark of legitimacy, in the same way that the list of indigenous rights international norms are used.

^{vi} See for example the minutes of different meetings during 2015, in particular the one in Bonn in October. [KL: keep “i.e.” if it meant only that case specifically]

^{vii} Evo Morales was the first head of State to address the UN Permanent Forum on Indigenous Issues in April 2008, expressing this indianist/anti-capitalist views that also inspire his famous discourses at COP13 in Bali and at COP21. Also see the Global Alliance for Rights of Nature (<http://therightsofnature.org/>) and its members

^{viii} Cf. Risk reduction and natural hazard (i.e. early warning systems), traditional agriculture or forest management (i.e. REDD+ programs).

^{ix} Ford & al. (2012) affirm that only 2.9% of authors have published on indigenous issues or related matters; in addition to this low participation of experts in chapters’ authorship, very few external reviewers’ comments are addressing this issue (0.3% for AR4).

^x In 2007 and 2008, Tebtebba organised different participatory case studies in indigenous territories in Asia and Africa about adaptation strategies. This study has resulted in a publication of reference titled “Knowledge, Innovation and Resilience” (Loretto Tamayo et Alangi 2012) and then has contributed to the articulation of traditional knowledge with resilience.

^{xi} Nevertheless, the framing of their situation in terms of “climate justice” is not that explicit (Roosvall et Tegelberg 2015), including during COP21.

^{xii} This event also received support from the French Ministry of Foreign Affairs, Sorbonne University, the Swedish International Development Cooperation Agency, the United Nations Development Programme (UNDP), Japanese funds-in-trust to UNESCO, the National Research Agency of France, and Conservation International.

^{xiii} For a presentation of the Kawsak Sacha initiative, see:

<https://comunitariapress.wordpress.com/2015/11/17/kawsak-sacha-selva-viviente-propuesta-de-los-pueblos-originarios-frente-al-cambio-climatico/>

^{xiv} This interview with channel TV5 Monde is accessible at <http://information.tv5monde.com/terriennes/tchad-les-femmes-peuples-au-coeur-de-la-lutte-contre-le-changement-climatique-25552>. For an analysis of a dialogue about knowledge between meteorologists and indigenous people in Kenya, see (Guthiga et Newsham 2011).

^{xv} Ben Orlove, anthropologist at Columbia University, is a pioneer in the study of the perception of climate change among indigenous peoples; Alejandro Argumedo, a Quechua ethnobotanist, is one of the founders of the famous Potato Park in Peru; and Yiching Song belongs to the Chinese Center for Agricultural Policy, China.

^{xvi} For more details, see the the IPCC website : <http://ipcca.info/>

^{xvii} <http://www.aidesep.org.pe/aidesep-presenta-su-propuesta-de-vigilancia-territorial-indigena-denominada-mrv-i/>

^{xviii} What impacts traditional knowledge will have on climate change politics on the ground (and vice-versa) is another problem that will deserve a set of empirical, ethnographic field studies.