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Interspecies Respect and Potato Conservation in the Peruvian Cradle of Domestication

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Abstract

This paper explores people and tuber affective encounters, as they unfold in a biodiversity conservation programme in the Peruvian Andes. It draws on ethnographic data from the Potato Park, renowned worldwide as one of the most successful in-situ initiatives for the conservation of biocultural diversity. Concerned with interspecies relations, the paper focusses on the circulation of *respeto* that is both an affect and a normative stance posited locally as necessary for the conservation of the potato. Addressing first expressions of *respeto* in daily potato practices by highland peasants, the paper then explores its importance within the context of the Park's conservation policy. Agricultural investigations and seed-banking are indeed enmeshed in activities intended to intensify potato-people regard. Throughout the paper, the concept of non-human charisma is used to point out the different kinds of potato appraisals experienced in the Park; as well as how the Park concretely works toward human beings' learning 'how to be affected' by tuber agrobiodiversity. The article finally explains how potato affective agency is extended beyond the Park, to reach the international scene. Exploring the Potato Park from the perspective of *respeto*, and using charisma as a heuristic tool, it enlightens a mode of conservation initiative; creating flourishing ecologies through affective encounters, that cannot be accounted for with an instrumental approach.

Keywords: agrobiodiversity, conservation, potato, interspecies sociality, affect, ethics, non-human charisma, respect, Andes, Peru, Cuzco Highlands

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Introduction 

Potato agrobiodiversity is huge indeed: over 4500 edible varieties have been identified by the International Potato Center¹ (CIP). Most of this diversity is concentrated in the Andean cradle of domestication of the potato, where peasants' livelihoods depend on this tuber. Thriving above 3000 meters, tuber diversity is a pillar of the food system in the Andean highlands. However, the politics of modernisation and commercialisation of agricultural production have jeopardised agrobiodiversity in peasants' fields. Even though erosion rates were overstated (Zimmerer 1996, Brush 2004, De Haan et al. 2010), an array of initiatives has sprung up to support the conservation of varieties in the farming context where they have historically evolved. Such *in-situ* initiatives aim to mitigate the limitations of gene banks, unable to transmit the nuances of cultivators' knowledge and experience, nor the ecological milieu in which the seeds' evolutionary systems unfold. Furthermore, at the turn of the twentieth century, *in-situ* conservation came to be advocated as a way toward rural development, against a previous understanding of agrobiodiversity as precluding peasants' productivity (Altieri and Merrick 1987: 87; Zimmerer 1996: 226; Brush 2004: 197).

Usual agricultural development programs in Peru are chiefly concerned with improving the quality and selection of seeds, in order to increase yield². In this vein, agrobiodiversity is appreciated through instrumental criteria, focussed on the many uses procured to human by agrobiodiversity. Instrumental rationales have framed biodiversity conservation policies over the last 40 years (O'Neil et al 2008). They are explicit in the objectives of the Convention for Biodiversity Conservation, as stated in article 1: 'The conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilisation of genetic resources' (Gaston and Spicer 2004: 139). Having settled the agenda for conservation policies worldwide, these targets are commonly pursued through cost-benefits analysis whereby conservation is gauged in quantitative terms.

In the highlands of Cuzco, five peasant communities, supported by a local non-governmental organization (NGO), have gathered together to found the 'Potato Park' (*Parque de la Papa* in Spanish). The Park is widely acknowledged today as one of the most successful *in-situ* conservation initiatives: peasants in the Park are curating more than 1000 varieties. Yet, in contrast to usual *in-situ* conservation programs, the Park is not solely concerned with increasing genetic resources available to human. On top of championing the conservation of genetic diversity, the Park also works to increase human regard towards the potato. Addressing *respeto* (respect in Spanish) for this tuber is a key concern of many peasants in this region, who consider it as a condition for the reproduction of native varieties in their field³. This paper ethnographically documents potato-people respectful interactions in this Andean ecology. Considering also practices of *respeto* unfolding in the context of the Park, it aims to stress the importance of interspecies affective encounters within conservation programmes. In this context, potato conservation is indeed enmeshed in a wider network of interspecies affective relationships that instrumental approaches to conservation often ignore.

In fact, affect is omitted in existing listings of conservation incentive for peasants, focussed as they are on usefulness, be it economic, ecological, or cultural (Altieri 1995; Bellon 1996; Brush 2004). Whilst, this paper argues, affect constitutes a major drift for conservation practices in the highlands of the Cuzco region. This is a point implied by Karl Zimmerer's identification of 'geographical rationale' for potato growing, which entails a cultural and moral aesthetic. While Zimmerer evokes peasants' sentiments and feelings (1996: 187), this paper is concerned with 'affect' circulating between humans and their tuberous companions. The notion of affect is used in the Spinozian sense, meaning a relational capacity to affect and being affected.

In this way, this study participates in the 'affective turn' within social sciences, conceptualising affect as a 'force of encounter' (Seigworth and Gregg 2010: 2) that emerges from human entanglement with diverse materialities. The question of affect is empirically important because increasing potato-people respect is an explicit goal of the Park—although quantitative conservation, counted in varieties, and economic development achievements is the one usually praised by observers⁴. This question is also theoretically critical because it sheds new light on non-human agency in the unfolding of conservation programmes.

More precisely, this study borrows from Jamie Lorimer's notion of non-human charisma (2007). From his study on animal conservation in the UK, Lorimer extends Weber's concept of charisma to the animal realm. In the present paper, it is applied to vegetal affect, as a means of pointing out the different kinds of potato appraisals experienced in the Park. This notion also helps to reveal how a conservation programme can work to create new interspecies affective encounters. Whilst existing literature focusses on *in-situ* conservation potential in terms of producing genetic and economic resources (regarding potato, see De Haan et al. 2010, Pradel 2013, Cadima et al 2014), some authors have also highlighted its benefits regarding the transmission of agricultural knowledge and cultural memory (Zimmerer 1996; Brush 2004; Nazarea 2005). This paper wants to emphasise the capacity of *in-situ* programmes in enhancing the circulation of affect between people and crops, an aspect that remains untouched in the aforementioned literature. This study on potato conservation and ecological flourishing thus contributes to a body of literature concerned with teasing out the distribution of agency in more-than-human constellations; and related ethical concerns (Bennett 2004; Braun 2005; Whatmore 2006; Lorimer 2007; Instone 2015).

This article draws on ethnographic data gathered during fieldwork in the department of Pisac – Province of Cuzco, Peru – since 2015. Using classic ethnographic methodologies, the study engages in an array of potato practices such as cultivation, breeding, cooking, eating, selling, hoarding and rituals. Besides daily duties in the domestic economy, I

participated in a number of activities engaged by the Park such as investigations, ceremonies, institutional meetings in the country and at the NGO's headquarters, visitor tours, or exhibitions at biodiversity fairs. These experiences were further complemented with recorded open interviews, with people involved in the Park across different levels, as well as with people who were not officially employed by this institution. During my fieldwork, I spent time in the cities of Cuzco and Lima, enquiring about potato appreciation by Peruvians from different social backgrounds. Internet websites and YouTube spots related to the Potato Park, partner institutions, and potato activities in general, have also been useful to gather data on potato appraisal in diverse social fields. Finally, collaborating with international institutions and academics interested in potato conservation, allowed me to appreciate potato charisma within a wider-reaching scholarly landscape

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The paper begins with a brief review of emerging scholarship in the social sciences that is concerned with interspecies affective encounters. This is followed by an outline of livelihood in the highland communities of the Cuzco region, stressing the key role of the potato in these household economies. This leads to a section devoted to practices that entail interspecies respect. The paper finally turns to potato practices that are promoted in the context of the Park, showing how this institution concretely works to increase human bodies' ability to be affected by potato diversity (in the sense of Latour 2004).

Interspecies Affect in the Social Sciences



This paper builds on an emergent body of literature on affect as it relates to interspecies interactions. Interspecies ethnographies emerged as part of an effort to decentralise the human in our focus of study and fully acknowledge the social agency of non-human beings (Kirksey and Helmreich 2010; see also Ogden *et al.* 2013; Van Dooren *et al.* 2016). This approach considers the participation of diverse and heterogeneous actors in the fabric of social life, and stresses that our human lives unfold in entanglement with complex ecologies. Inspired by Donna Haraway's seminal study of dog-human companionship (2008), most of this scholarship focusses on human-animal interaction. According to Head and Atchinson, one of the reasons for this is the fact that animal geographies are enmeshed in ethical concerns; while, they say, 'between plants and human, there is arguably a greater ethical distance' (2008:237). These authors also emphasise that plants are not typically considered as individual, but rather as larger assemblages, such as forest, food, medicines, or even reservoirs of biodiversity. The ethnography presented in this article challenges this perspective; demonstrating how Andean peasants perceive vegetables as individual subjects that are very much caught up in everyday life ethics.

Beside ethical issues, bringing plants under the ethnographic gaze also entails methodological and epistemological challenges related to the understanding of vegetal sociality. Nevertheless, recent investigations into human-vegetal entanglements have started to inform how we think about the 'livingness of the world' (Whatmore 2006). This involves regarding humans and other organisms as the result of co-fabrication between more-than-human bodies and the lively earth. With *How Forests Think*, Eduardo Kohn provides an in-depth inquiry into vegetal communication (2013). Developing a semiotic analysis of the plant-human relationship in Ecuador, he reframes our understanding of vegetal modes of communication and their articulation within human sociality in the making of a complex Amazonian ecosystem.

Another thread of interspecies literature tackles the plants' agency from the perspective of affect. New approaches in the social sciences from post-humanist or vital materialist perspectives indeed highlight the importance of affect in the unfolding of human-plant interactions. In a recent article, Julie Archambault addresses how 'love' acts as an overriding principle in Mozambican gardeners' engagement with their plants. She demonstrates that 'love emerges through contingent affective encounters, albeit ones that are socioculturally inflected. These affective encounters inspire novel ways of being and relating that are articulated and contrasted with experiences of commodification and exclusion' (2016: 264).

Developing an argument based on fungal organisms, Anna Tsing also dwells on the importance of intra and inter species love as 'great romances of human history' (2012: 145). Exploring human-mushroom companionship biologically and politically, she is concerned with how love in these interspecies encounters finds itself entangled with processes of domination and domestication. Expanding Haraway's canine argument to fungus companionship, she outlines interactions merging care and instrumentality. The idea of companionship indeed points to the sometimes conflicting array of affective experiences that constitute the form and flow of any interspecies relationship, along with instrumental benefits. This paper insists on the deployment of interspecies companionship within agrobiodiversity conservation initiative; whilst, as mentioned in the introduction, actual conservation initiatives focus on the crops' usefulness to human, leaving aside the affective dimension of plant human-relations.

As it relates to plants, affective ambivalence is beautifully captured by Lesley Instone's use of Sara Ahmed's notion of the 'drama of contingency' to account for her ethnography of grassland restoration in Australian urban parks (2015). Translating Ahmed's work on affect into an interspecies realm, she demonstrates how native grasses impact on human mood and behaviour in unexpected ways, as the native grass triggers a variety of conflicting sentiments from aversion to delight. The importance of affect to conservation programmes is also pointed out by Neera Singh. In her study of forest conservation in India (2013), she wonders how do people become environmentally concerned subject. She brings out the intense affective relations to the forests that people maintain through enduring embodied practices of care, as the core impetus in their conservation commitment. By enlightening biopower from below, she challenges a paradigm on environmentalism crafted by governmental discipline that is advocated by Agrawal (2005). I agree with Singh in stressing the key role of affect in the emergence of environmentally committed subjects.

In a ground-breaking paper, Jamie Lorimer tables charisma as another important form of interspecies affect, further reinforcing the need to consider non-human agency within the context of conservation programmes. From his work on animal conservation in the UK, he defines non-human charisma as 'the distinguishing properties of a nonhuman entity or process that determines its perception by human and its subsequent evaluation' (2007: 915). This article joins his plea for a relational approach considering charisma not as a given property, but as emerging in encounters involving non-human actors. Examining activities orchestrated by the Park, it shows that this agrobiodiversity conservation programme increases human ability to be affected by non-human organisms and perceive their charisma. While Lorimer develops an anthropocentric charisma which does not acknowledge the status of subject to nonhuman organism, I will address a field of interactions where potatoes are imbued with a subjectivity of their own, albeit not by all actors. Indeed, an important difference between my case study and the aforementioned literature is that, in the highland communities of the Cuzco

region, potatoes are endowed with intentionality and emotionality. Before addressing potato practices in the context of the Park, I will delineate the role of potato in the rural economies of the Cuzco highlands.

Potato in Highland Economies of the Cuzco Region

The potato has been vital in Andean economies since archaeological times. In his extensive *History and Social Influence of the Potato*, Redcliffe Salaman advances the idea that potato use was a prerequisite for Amazonian people being able to move from the rainforest and establish settlements in the Andean highlands: 'it was the potato which made residence on these plateaux possible' (1985: 11). Apparently, hunter-gatherers started domesticating tubers between 8,000 and 5,000 BC around the Titicaca lake, at some 4,000 metres above sea level. Notwithstanding increased integration within the labour market, taking the form of temporary migration, the production of the potato remains today a mainstay in household economy in the highlands of the Cuzco region.

As a main crop, and a staple ingredient, it is a vital economic resource. Stephen Brush reports that, up to 70 per cent of the ingested calories of highland people come from the potato (2004: 102). Self-sufficiency in potatoes is a priority of household economies, which involves the continual cultivation of a number of varieties that satisfy different economic and social needs ⁶ (Bellon 1996; Zimmerer 1996; Brush 2004). This agrobiodiversity provides a source of nutritional variability. It supports complex agricultural system with outstanding resilience due to variability in resistance to biotic and abiotic factors. Genetic variability also guarantees a stable harvest in the face of climatic instabilities. It further provides long term food reserve through the production of dried tuber in the form of *chuño* or *moraya* that can be stocked for more than ten years.

Highland tubers are essentially cultivated for home consumption. Potato crops intended as commodities are usually produced on lower plots, which are irrigated and close to the road for easy transport. In this case, peasants favour intensive planting techniques, including the application of chemical fertilizer and pesticides to compensate for disease pathogens and pests that thrive at lower altitude. They also use improved varieties ⁷ (*papas mejoradas*) that grow better in these ecological conditions, and fit urban market demands for large and uniform tubers.⁸ These varieties ⁹ were introduced in the middle of the past century through a massive campaign of agricultural modernisation by the state, supported by national and international NGOs. Their purpose was to increase potato production and create market opportunities that would improve peasants' livelihood. However, in the highlands where soils and climate are propitious to native potato growing, cultivation centered on a few improved varieties was discarded after a few years when peasants realised the seeds were degenerating quickly.

At the end of the twentieth century, a growing number of scientists started to criticise the massive distribution of improved varieties for provoking erosion of local agrobiodiversity and the ensuing loss of traditional agricultural knowledge and practices. This concern, however, is now assumed to be overstated, in the sense that many peasants continued to cultivate small plots of native varieties for domestic consumption (Zimmerer 1996; Brush 2004; de Haan *et al.* 2010). That being said, even if genetic biodiversity has been conserved at the regional level, the number of varieties grown in every household has nonetheless decreased. Furthermore, the heavy use of agrochemicals in the commercial production of improved varieties has had harmful consequences for soil fertility. An agronomic engineer specialised in potato cultivation in the Peruvian highlands distinguished two kinds of households. On the one hand, there are households concerned with agrobiodiversity: 'they accumulate agrobiodiversity as part of their life plan (...), it's a way to secure a future, for them and their family'. On the other hand, there are families 'managing scarce biodiversity, whose livelihood strategy focuses on other forms of earning money (...), in an attempt to obtain food with the money.'

Talking with peasants, I noticed that they were all critical of farming practices based on agrichemical application and monovarietal cultivation; often lamenting the ecological degradation they provoke. Such practices are locally understood as damaging agricultural strategies fostering ecological degradation. In this vein, the growing of a few homogenous 'improved' varieties, requiring the use of chemicals that deteriorate the land, is directly contrasted to the cultivation of an array of native potatoes in highland plots that occur under contingent ecological conditions requiring singular care at every stage of production.

Furthermore, peasants are reluctant to feed their own families with improved varieties. They find modern potatoes both less tasty and lacking in the ability to nourish the body efficiently, which is attributed to their much higher water content. Potato cultivators insist that they need to consume food that provides enough energy to accomplish harsh agricultural work. Potato is appreciated for contributing to produce a hard-working person; which is considered a key quality in this peasant society. Cultivating the potato is a value-loaded activity, where the quantity and quality of the harvest reflects on the cultivators' fame within the community. Biodiversity is of the essence in the appreciation of human qualities and those peasants who can cultivate an array of potatoes in their fields are famous among their neighbours, and in some cases renowned beyond their own communities. As they constitute flesh through food, native potatoes thus participate in the making of humans' vigorous bodies as well as virtuous subjectivities. In the following section, I will show that, while peasants need potatoes for their reproduction, their relationship is not merely instrumental; peasants spend energy to care for their potato because they appreciate them as living organisms, not simply because they are food.

Potato Appreciation by Highland Growers

Although potato growers do not use this term, the charisma typology proposed by Lorimer (2007) is helpful to account for potato appreciation in this Andean context. Peasants firstly experience 'ecological charisma', as native varieties are said to be stronger, and more resistant to harsh climatic conditions. The fact that they are able to thrive at the highest altitude, where few other organisms can survive, inspires admiration. Even more so, as these peaks are home for the most powerful ancestral forces and chthonic entities. Native potatoes encapsulate this force. They are used to strengthen the body of those who eat them, to the extent that some are prescribed as remedies for disease as grave as cancer. Interestingly, potato pigmentation is taken as a sign of this curative potential, colouring being a clear differentiator between modern varieties that do not feature specimens appreciated for their vivid colouration. Purple, pink, red, or orange are perceived as remarkable, contrary to the common brown and yellow tuber. Secondly, the many colors and shapes of native tuber are constantly commented and appraised by their consumers for their 'esthetic charisma'. Uneven shapes and bright colors are appreciated as *bonita* (beautiful) or *resaltante* (outstanding). In some cases, such qualities

are associated with other admired vegetal or animal species, such as pumas, condors, or grapes from which similarities are drawn.

Thirdly, highland cultivators experience the 'corporeal charisma' that Lorimer identifies as mostly specific to natural historians. Jouisance, a modality of this corporeal affect is certainly at the core of the potato-people encounter: many peasants like spending time near their plants in the field, working toward their flourishing, or delightfully comparing every variety's taste and texture once matured. This point suggests that corporeal charisma is not largely specific to professional conservationists, as suggested by Lorimer (2007: 921), and can be potentially experienced by any actor who is in daily contact with a given organism. Furthermore, these tubers are appreciated for 'coming from the Incas', as people say. This hints at another kind of charisma that is not mentioned in Lorimer's typology, and which accounts for an organism's capacity to remain somehow continuous over vast stretches of time, be it alive (i.e. baobab) or under the form of historical remains (i.e. mammoths). I propose to refer to this temporal appeal as *ancestral charisma*.

Contrary to the figures of non-human charisma studied by Lorimer, these Andean peasants are sometimes affected by potatoes as living beings imbued with a subjectivity of their own. They insist that the potato has a spirit. They usually use the Spanish word *espíritu*, but I have also heard people talking about the potato's *vivo* (aliveness) which is closer to the word *causay* used in Quechua. When I enquired about the urgency of applying ritual and daily prescriptions on potato-human interactions, Adrian, who is a mature potato grower from the community of Amaru, warned me: 'You must respect (*respetar*) potato really really well. If you give her bad treatment, it will necessarily disappear progressively. Year after year, fewer and fewer harvest, then it's gone. You must care for them with affection.' Viewed in this light, potatoes are beings able to perceive human respect for them and able to react to lack of respect by stopping their growing process. In this sense, the subjectivity of the potato is bound up with a particular kind of intentionality.

As Adrian's words instantiate, the reproduction of the potato requires a reciprocal circulation of *respeto*. *Respeto* is not only a normative stipulation. It is also an affect that frames human interactions with the tuber; it is indeed enacted by a collection of practices that encompass the interlocking processes of production, exchange, and consumption. Many of these respectful gestures are similar to those prevailing between humans such as dressing up, or sprinkling flower petals. Others are specific to interspecies interactions. For instance, potato peelings are not to be left on the ground as other kinds of vegetal scraps might usually be. Instead, they are carefully gathered and boiled, and only then are they given as food to cattle.

Further practices intended to manifest human appreciation and respect for the potato are the rituals that are performed in their honour. One of these is the Papa Huatay (Potato Tying), preceding the storing of newly harvested potatoes in the warehouse. It usually takes place the night before Corpus Christi, at the end of May or the beginning of June. The principal aim of the ritual is to tie the potatoes' spirit to the household, to prevent it from travelling towards other communities. In more specific terms, it involves coating piles of potatoes with straw and tying the bundles together with lama wool rope. Afterwards, the potato spirits are attracted with smoke produced from guinea pig grease and incense. Then the harvest is sprinkled with wine or maize beer and covered with flower petals or confetti. Wearing their ceremonial ponchos, the owners invoke their Apus (mountain deities) and the Pachamama (Mother earth) to ask protection for their potatoes' well-being until consumed or used as seed in the next season. Indeed, these ancestors incarnated in the landscape are taken to have great influence on potato well-being. Before engaging any agricultural activity, peasants ask for their permission and favours through prayers and offerings.

It is noteworthy that the Papa Huatay is not performed in every household, as people say was the case a few decades ago. A peasant in the community of Chahuaytire estimated that approximately 40 to 50% of his neighbours were still doing ceremonies to entities in the environment, as prescribed by the elders. Potato producers agree that younger generations tend to omit this ritual, as well as other practices of *respeto*. This generational forsaking of the *respeto* practices is often linked to decreasing agrobiodiversity and to environmental instabilities more generally. As I noted above, potatoes are said to stop reproducing in the field if they feel offended by a lack of respect. In this light, we can infer that environmental balance is impacted by a deviation of *respeto* between human and other entities in the environment. The next section describes agricultural practices in the Potato Park, in particular how the Park has gone about the process of restoring the distribution of interspecies respect.

Potato Charisma in the Potato Park

Situated in the department of Cuzco, the Potato Park is made up of 6000 Quechua inhabitants, spread across five hamlets (Amaru, ParuParu, Sacaca, Pampallaqta, Chahuaytire). It covers a territory of more than 9000 hectares, ranging from thirty-eight hundred to forty-three hundred meters above sea-level. Following sustained collaborations since 1998, the Cuzco-based NGO ANDES (an acronym for the *Association for Nature and Sustainable Development* in Spanish) and local peasants signed an agreement initiating the *Parque de la Papa*, on 30 May 2002. The purpose of this initiative goes far beyond this local setting. Using tropes circulating within international institutions, ANDES staff insist that conserving potato diversity and genetic resources aims at strengthening the 'food sovereignty' of peasants in the Andes as well as 'food security' all over the world. For this purpose, the Park is lodged within a conservation network that encompasses international institutions such as the CIP, Oxfam, Biodiversity International, the European Commission, the International Union for the Conservation of Nature, and a number of internationally renowned universities. Cooperation with international institutions is fundamental for channelling resources necessary to the working of the Park: not only monetary funding but also services, such as transfers of technologies, scientific knowledge or agronomic assets. A key collaborator is the Lima-based CIP. Resulting from an agreement between the two institutions, some 400 virus-free seed potatoes were repatriated to the Park in 2004. In its whole, the Park currently curates 1362 varieties of native potatoes¹⁰.

To achieve its conservation goals, an investigation centre, a greenhouse, a museum, a potato-focussed restaurant and a storage room were built in each of the Park's different communities.¹¹ Communal land was allotted to the experimental culture of a range of varieties (mostly from the *Andigenum* species) which are planted at different altitudes and using different kinds of organic fertilizers and insect repellents. Cultivation, experimentation, and conservation tasks are undertaken by a team of eight peasants acting as 'local technicians'.¹² The latter receive monthly wages to carry out their duties and contribute to the working of the Park. However, in contrast to the situations observed by Michael Cepek in Amazonia (2011) and Genese Sodikoff in Madagascar (2009), their contribution to the conservation of potato biocultural heritage should not be conceived as 'alienated labor'. Following Marx, this corresponds to a situation where people are strictly motivated by their wage, as they do not see the result of their actions as part of their own lives. In contrast,

conservation tasks carried out by the Park's local technicians might be better understood as 'organic extensions of their practical being' (Cepek 2011: 509). This point is exemplified by technician Aniceto, who is paid by ANDES to cultivate experimental plots and participate in the activities of the Park two days a week. In 2015, he planted a dozen different native varieties of potato in his courtyard. By comparing their adaptation to the black and red soils he gathered in different ecosystems within his community, he wanted to check which potato variety would best thrive in his plots. This 'experiment' (*experimento*) as he calls it, is of great interest to ANDES and the Potato Park. Yet, he undertook this initiative on his own, outside of his work hours, hoping it will help him to better choose his seeds for future sowing on his own plots.

Technicians have been elected by their community based on their personal qualities. As the primary representative of his community to ANDES - and the primary representative of the Park to his community - a peasant eligible for a position as technician is "someone thoughtful, who works well, and someone reliable", as described by local technician Nazario Quispe. This entails commitment to the well-being of fellow members of their community, including animal and vegetal ones such as the potato. Still, enrollment in the Potato Park entails the acquisition of new capacities and skills. On the one hand, technicians constantly assimilate new potato knowledge by collaborating with other technicians and agronomists in the Park's fields and greenhouses. Furthermore, they are regularly invited to attend workshops- within the Park and worldwide - on potato breeding and culture, climate change, biocultural heritage, or food security¹³. When I worked with technicians in their own plots, they were keen on highlighting the practices learned from agronomists that they found helpful for their domestic production and conservation. I had the sense that they were quite proud of having developed their potato expertise that way. Contrary to the situation observed by Cepek, in the Potato Park, technicians are not afraid that "science transforms their knowledge into a good that can be understood and used by" outsiders (2011: 510).

On the other hand, technicians are continuously exploring new media of human communication that would posit them better in the wider conservation politics that extend beyond their immediate community- a dimension of technicians' engagement that I shall develop below. I was intrigued that Nazario asked me several times if I could understand him properly. He insisted that he was a Quechua native speaker and that he had learned to be fluent in Spanish when he started to work as a technician: 'I did not finish primary school. Therefore, when I am working here in the Park as a local expert, for me it's like a training; it's a learning process. It's just here that I have learned to speak Spanish as well.' Others pointed to their improved competency in writing by constantly taking notes during meetings and workshops.

Furthering communication skills opens up the possibility of broadcasting potato care to a wider audience. When they are on duty, technicians regularly interact with people from beyond their community. Their work is supported by ANDES' agronomists, who travel constantly from Cuzco to the Park where they are involved in every activity. More sporadically, technicians collaborate with engineers from the CIP, who visit the Park regularly to follow up on experimentations. Acknowledged as an exemplary *in-situ* initiative on the international stage; the Park is, moreover, continually visited by groups of scientists, students, development practitioners, journalists, and tourists with diverse interests in potato cultivation. When I came to the Park in May 2015, I met in the first days of my stay another anthropology professor from Montreal, a biologist from the University of Wisconsin, a Master's Student from the University College London, another one from Princeton University, an Italian photographer, and a team of Brazilian documentary producers.

While most one-off visitors are only introduced to tuber appreciation during their brief stay in the Park, this is not the case for those visitors who are tuber specialists. For them, the potato occupies a prominent place in their life, and they encounter them on a daily basis: 'You live all the time with potato. Waking up thinking in potato...', glossed an Engineer from the CIP and a distinguished potato specialist. When I inquired about his relationship to tubers, I realised how he was affected by the potato. This was made clear during a conversation about where his interest in tubers was coming from, as he claimed: 'potato diversity caught me' (*me atrapo*).

Lorimer's concept of nonhuman charisma beautifully captures this expression of vegetal agency. The fact that native varieties grow in highlands where no other crops survive makes them an exceptionally captivating subject matter for agronomists. Agronomic engineers and their conservationist colleagues see in this a potential to identify genotypes able to adapt to the extreme climate that vulnerable populations are facing around the globe. Potato professionals are also fascinated by the array of phenotypes in potato tubers, flowers and plants. While we were walking across a potato field in 2017 during harvest time, a Salvadorian photographer who had flown from Germany to document potato biodiversity made several requests to be shown colourful specimens. Experts come to appreciate this diversity through close interactions: examining, testing, and tasting potatoes. Developing extensive cognitive proximity to tuber, they have become able to identify many varieties, their biological features and ecological peculiarities. Experience of potato charisma is thus common to both peasants and external conservationists. However, they do not practice *respeto* in the same way. I suspect this is related to differences around the perception of potato's spirit and intentionality. In the next section, I use the example of the celebration of the anniversary of the Park to show how activities developed within this conservation programme trigger new interspecies affective encounters, and respectful regards.

Learning to Be Affected by Potato



Every year on May 30th, ANDES and the technicians come together with other members of the communities and visitors to celebrate the anniversary of the Park. Festivities include an array of activities fostering encounters with potato varieties. During the agrobiodiversity contest, an array of potato diversity is shown off. In 2015, each community was represented by a member who exhibited the diversity of native tubers he or she had harvested that year. A biology professor from a foreign university had been charged to interview them, displaying thereby the peasants' expertise on potato breeding and cultivation. When asking about outstanding resistance to the frost, or inquiring about climatic conditions that year, he highlighted potato ecological charisma.

The programme also featured a contest of potato cooking in which a couple from each community was assessed on their art of baking a *huatia*. A hole is dug in the ground into which burning clumps of earth are buried, along with tubers to be cooked. When ready, the potatoes are served with an array of toppings and tasted, first by the jury and then the audience. This session is particularly prone to trigger potato corporeal charisma. Another form of corporeal charisma is stirred up by a contest that gauges skills in potato peeling. Again, a couple from each community must peel a particularly uneven potato as quickly as possible. The performance is assessed according to the thickness of the peeling and the peeler's capacity to maintain the original shape of the potato.

When I attended the festivals in 2015 and 2017, the series of contests ended with the recitation of potato poems. This is a deeply emotional performance where young locals dramatise verses of their own in praise of the potato, the Pachamama and their Apus. On our way back to the city of Cuzco in a minibus following the 2015 celebrations, Hernan Mormontoy, an agronomic engineer, who was ANDES' project administrator at the time, recounted that he was so moved by seeing this young girl openly declaring her love for potatoes that he had a tear in his eyes. This example speaks to the distribution of affect from peasants, to an engineer, who became increasingly affected by potatoes as a result of his involvement in this conservation programme.

In some respects, the Park's Anniversary resembles the training sessions in the perfume industry examined by Bruno Latour whereby pupils acquire a 'nose' in their encounter with a range of fragrances. I argue that people partaking in the festivities 'learn to be affected' (2004) by potatoes, through the bodily experience of being embedded in a sensuous and affective lifeworld of the potato. During the different contests, participants develop their sensibilities to potato material diversity. In this way, they become an 'articulate subject', meaning 'someone who learns to be affected by others – *not by itself*' (2004: 201, emphasis in the original), where others include potato beings. Participants from all kinds of sociocultural backgrounds smell and taste potatoes during the cooking contest, they inspect their visual peculiarities at the agrobiodiversity exposition, grasp their uneven shapes during the peeling contest. In the festival, people develop a sensory perception enhancing their capacity to be affected by the potato's subtle differences, thus at the same time realizing the very diversity the Park intends to conserve. They thereby become able to appreciate and possibly respect a richer, more biodiverse world.

This analysis demonstrates how these kinds of potato festivals intensify experiences of potato charisma in communities where, as I noted earlier, people are becoming disconnected from their bodily capacity to perceive and experience diversity; a disarticulation that has been catalysed by the rampant spread of intensive agricultural practices¹⁴. In particular, ANDES' staff insist that it is crucial that children participate fully in the festivities, to remain open to the transgenerational transmission of a potato expertise that is seen as slipping away. These festivals also target a larger public, including people who do not depend on potato for their livelihood, like scientists and the public at large.

From his data on conservation practices in the UK, Lorimer states that 'nonhuman charisma provides the vital motivating energy that compels many people to get involved in biodiversity conservation in the UK' (Lorimer 928). The examination of the celebration of the Park's anniversary corroborates this important point in a totally different cultural context. It further shows how a conservation programme can contribute to expand interspecies charisma. I have already mentioned manifestations of ecological and corporeal charisma. In the next paragraphs, I will address the case of a potato ceremony performed to celebrate the Park's anniversary that speaks to the distributed experience of ancestral charisma. More importantly, this potato ritual exemplifies the Parks' ambition to expand *respeto* for the potato as living subject.

Expanding *Respeto*



Raising public regard for the potato is indeed a major objective of the Park. In line with Andean cosmology¹⁵, ANDES encourages the technicians to rescue (*rescatar*) potato rituals that are losing appeal. It is in this vein that, in 2012, they decided to introduce a Papa Huatay in the Park's anniversary. In so doing, they transformed what was an 'agrobiodiversity festival' into a 'sacred ceremony related to potato harvesting, biodiversity conservation, and thanksgiving to the Pachamama', as I was told in May 2015 by the agronomist who was then field coordinator of the Park. By resituating a ritual that used to belong to the domestic sphere to a public setting, the organisers were targeting a twofold objective. On the one hand, they intended to recover a custom that young generations tended to omit. On the other hand, they wanted to circulate this practice on regional and national stages, as a plea for respectful agricultural practices.

The current ceremony is composed of a peasant-led parade, featuring traditional costumes and dances. After the parade, peasants representing the communities constitutive of the Park gather around a pile of potatoes covered with straw. The tying ceremony is then performed by two ritual specialists brought in specifically for this purpose. Their duties involve tying the spirit of many different potato varieties to the communities of the Park and giving offerings of maize beer, coca leaves, flower petals, and other ingredients to Mother Earth and the Apus.

When performing Papa Huatay in the public sphere, I noticed that the ritual set into motion affective encounters between people and potato that extended beyond the immediate circumstances of the ceremony. The conditions were such that even people who did not intensively cultivate and eat potatoes found themselves opened up to the affective impact of the ceremony (learning-to-be-affected, as it were) and in the process developed attachments that might otherwise not have existed. This was already palpable before the ceremony started when visitors gather in the ritual area to take selfies with the tuber.

The spectators I interviewed in 2015 and 2017 were delighted and found the Papa Huatay 'impressive', 'interesting', or 'beautiful'. One of the reasons pointed out is that the ritual gives them a sense of the importance of the tuber in the perpetuation of what is appreciated as an Andean livelihood and cosmology. When I asked for comments on the 2017 ceremony an engineer occupying an important position at the Ministry of Agriculture marvelled: "I found it very beautiful. It's something interesting because they maintain their culture, their roots, their forms of being. Respect for what they believe in, their Apus". Attending potato ceremonies thus increases ancestral charisma, as introduced above. This affective impact is intended by the organisers, as suggested by ANDES Director, Alejandro Argumedo, when he inaugurated the Papa Huatay in 2017: 'Potato continues being the symbol of our culture. It epitomises this relationship between humans and the environment... Thus, potato continues being this charismatic species (*especie carismática*) that helps us to develop a green economy'. I argued above that during the biodiversity festival the participants increase their sensitivity to a biodiverse tuberous world. Papa Huatay opens a space where humans learn to be affected by diverse consideration over potato subjectivity. Indeed, ceremonies which involve humans communicating with the potatoes' spirit and asking such forces to remain within the Park's boundaries broadcast these tubers' special status within these highland communities, as beings that are endowed with an intentionality.

Even though most of the visitors do not regard potato as imbued with such qualities, they become aware that potato growers do, and they experience the potato differently for this reason. During the May 2015 public Papa Huatay, Hernan, the administrative staff from ANDES who I introduced above explained to me that this ritual was based on peasants' 'belief' (*creencia*) that potatoes have a spirit; a 'belief' that he praised as sacred and beautiful. By stating that the 'belief' was theirs, he implied that he did not share it. After a 30 year career in rural development programmes in Peru, he first

heard about potato spirit when engaged in the Park, in 2015. Through his collaboration with the Park, he had learned to be affected by the potato in new ways, as his tears triggered by the potato poem attest.

In fact, when I asked non-local participants if they had the sense that potato has a spirit, their answers were sometimes more ambiguous than I expected. A staff member from the Global Crop Diversity Trust replied, after a long silence, that he did not know. He explained that his stay in the Park 'had opened his eyes' as he had learned 'that there is another way of appreciating what surrounds us; and its fragility'. In a more general sense, while not all people attending the Papa Huatay perceive potato spirit, they agreed that this experience had led them to appreciate the tuber in new ways. Likewise, after he had left the Park and was working as a consultant for the UN, Hernan told me that while the idea of potato having a spirit 'may at first sight sound like madness, even an absurd idea, it's not. They (peasants) are totally right. If you look at it from the philosophical, or the spiritual point of view, you understand that it is the case. But for those who haven't entered that philosophical depth, we can hardly understand'¹⁶.

Public Papa Huatay shows that, besides producing intense affective encounters in the here and now, the Potato Park extends potato charisma across space and time.¹⁷ Such ceremonies have been performed in other circumstances than the one described above, asking for the potato to be respected on national and international stages. For instance, in December 2004, a delegation from the Park performed a Papa Huatay during a meeting at the National Council for the Environment in Lima, the aim being to lobby the government to declare a national day of the potato. As a result, May 30th was declared the National Day of the Potato; and the precious tuber is celebrated yearly throughout the country since then. The enthusiasm was such that the President at that time, Alejandro Toledo, asked the Food and Agriculture Organisation of the UN to declare an International Year of the Potato, which was accomplished in 2008.¹⁸ This led to a multitude of potato events cropping up around the world.

Technicians in the Park and ANDES staff are satisfied by the wide audience created by such celebratory events. They nonetheless lament that most festivals end up serving political and economic interests that differ from the environmental *respeto* they are intended to diffuse. These events usually celebrate improved varieties and intensive agriculture along with organic growing of native varieties. In such festivals, the potato is also displayed as an alienable mass commodity. Even though native varieties are exposed, and visitors might learn how to be affected by their diversity, these meetings promote massive production and agribusiness that run counter to fundamental ecological criteria defended by highlands producers and ANDES.

The multiple modes of celebration of the Potato National Day attest to a 'drama of contingency' of affect in potato festivals: while they are convened throughout the country, they are not necessarily imbued with an ethic of *respeto* to vegetal beings. On the whole, they nonetheless contribute to increasing potato charisma, as attested by an expatriate from the United States during an interview at the 2017 celebration of the Park's anniversary: 'I think we took (the potato) for granted, yes. But here (in Peru) it's sort of, well, living with queen potato'.

Conclusion



Drawing on Lorimer's concept of non-human charisma, this paper has shown that the Park's initiatives, leading to massive events such as the declaration of a national day and the International Year of the Potato, produce new affective encounters across species and spatialities. Far from only increasing the rate of biodiversity and genetic resources available for human use, this conservation project entices people to engage their self in interspecies regards. As part of the Park, technicians become ever more articulate subject within the tuberous world. Further, they endeavour to generate new affective sensitivity between potato and people, acquainted or not. By convening potato festivals, the Park exposes the public to potato 'enchancing agency' (Lorimer 2007): they stimulate their senses through potato meals, potato poetries, potato peeling or potato ceremonies.

Amongst the different potato qualities brought out by technicians is the possibility of their being moral entities endowed with subjectivity. The case of Andean tuber is thus spectacular in the sense that their conservation does not only reshape human subjectivities. It is also meant to extend potatoes' subjectivity toward new spaces and times, when making visitors able to be affected in that way.

Drawing on the celebration of the Park's anniversary, I have argued that conservation in this context is first and foremost a matter of being affected by a diversity of non-human life, beyond human instrumentality. In this light, conservation is engaged by creating respectful relationships between human and other species we are living with. Importantly, interspecies *respeto* that peasants and breeders insist upon in the Andean highland, echoes Donna Haraway's 'acts of respect' encapsulated in *respecere*, that is 'to hold in regard, to respond, to look back reciprocally, to pay attention, to have courteous regard for, to esteem' (2008:19). This is an affect that she calls forth to compose flourishing ecologies. The peasants in this paper corroborate her point in their daily agricultural practices of *respeto*. They provide us with an enlightening example for opening avenues to conservation practices that are concerned with the diversity of life on earth, not only with value production for human beings.

As pointed out by Latour, this bodily apprenticeship is a 'progressive enterprise that produces at once a sensory medium and a sensitive world' (2004: 207). Accordingly, learning to be affected by potato, and acquiring a body sensitive to its diversity is concomitant to the production of the diverse world of potato that conservation programmes target. Humans learn 'the arts of attentiveness' (Van Dooren, et.al. 2016) to potato diversity, and its fragility, appreciating tuber agency within lively ecologies. Henceforth, an approach of environmental practices in the light of affect brings to the fore qualities of agrobiodiversity and aliveness in our environment, that remain invisible in literature approaching biodiversity in terms of its instrumental values only.

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Notes



1. <https://cipotato.org/potato/>, it is important to note however that the CIP still lack fundamental data to be able to quantify this diversity (de Haan *et al.* 2010: 222).
2. This was observed by a Peruvian agronomist working as a consultant for international institutions concerned with rural development in Peru. The emphasis on technical assistance and marketing strategies is corroborated by Gregory Scott's inventory of potato conservation initiatives in Peru (2011). Note that PRATEC is another important initiative that is not essentially focussed on utilitarian targets – and more fundamentally on nurturing interspecies relationships within Andean ecologies.
3. As remarked by Alejandro Argumedo *respeto* unfolds within a complex field of affect encapsulated in the Quechua notion of *munay*. A concept that is in turn enmeshed in the local cosmology and the social organisation of *ayllu* (communities). These dimensions are not addressed in this paper focussed on *respeto*.
4. See for instance the presentation of the park on the CIP webpage: https://cipotato.org/att_ui/potato-park/; or on the International Institute for Environment and Development: <https://www.iied.org/return-potatoes-cip-andean-farmers-proves-critical-for-climate-adaptation>; See also http://www.farmersrights.org/bestpractices/success_benefit-sharing_7.html
5. Besides, my knowledge of domestic economies in Andean highlands was enriched by previous fieldwork in the Argentinean Cordillera.
6. Every household maintains ten to several hundreds of varieties. Huayro, Mactillo, Suytos, Bolis, Yuraq Kusi, or Jatun Huacachi count among the favourites.
7. Following the definition by de Haan *et al.*, 'improved cultivars are the product of formal breeding programs that have combined Andean native potatoes, modern European, or North American varieties, and few tuber-bearing wild species' (2010: 223).
8. Indeed, following colonial representations, urban-based mestizo peoples denigrated native landraces as small and wormy and a sign of highland peasants' backwardness. Yet these appreciations are slowly evolving as native tubers are being appraised on the public stage as nutritious and cultural capital.
9. Mostly Canchan, Yungay, and Sica.
10. Beside this potato transfer from Lima, about 200 varieties were brought from neighbouring communities and the University of Cusco (<http://pubs.iied.org/pdfs/G03843.pdf>, p.3). Adding to the 778 that were already cultivated, landraces that are currently conserved in the Park almost reach 14 hundred.
11. Of course, the attribution of land resources and a labour force to the conservation programme generated new human politics, taking the form of shifting conflicts and complicities within and between communities, and within and between other institutions in the assemblage (Asensio and Castillo 2011). I will not go into these interplays here, nor will I describe the institutions and meetings required to smooth out collaboration in favour of potato conservation because this would be outside the scope of this paper.
12. The team of technicians, along with Andes agronomists, have also nominated *papa arariwas* (potato guardians in Quechua) distinguished for their existing expertise in conserving potato diversity and sharing their knowledge.
13. This apprenticeship involves techniques featuring the tool kit of governmentality in a Foucauldian sense: process of examination, quantitative evaluation, numeration, strict timeframe, hygiene prescriptions, and architectural infrastructure where activities take place (I am borrowing this list from Cepek 2011: 506; who himself quotes Jonathan Xavier Inda). While the discipline framing scientific experimentation in breeding and growing gives rise to negotiation between peasants and agronomists, the former very much appreciate the latter's teaching, despite scientific rigour.
14. The Park was formed a few years after an NGO massively introduced modern varieties in these communities. Since then, peasants in the highlands have realised that modern varieties are not well suited to their soil and climate.
15. As Quechua speaker, Alejandro Argumedo has fine-grained knowledge of Andean ethics and cosmology. With his collaborators, he designs politics of sustainable development enmeshed in concepts of *munay* (affect), *ayllu* (community), *ayni* (reciprocity), to name only a few notions at the core of Andes biocultural conservation programmes. He has also developed the importance of *ayni* in a scientific publication (Argumedo and Pimbert, 2010: 343).
16. Note the move from “they” to “we” at the end of the paragraph; implying Hernan's shifting position to the peasants' perspective.
17. This sentence is inspired from Nancy Munn's concept of subjective spatio-temporal extension (1986). However, applying her theoretical framework to vegetal organisms would require a sustained theoretical discussion.
18. <http://www.fao.org/potato-2008/en/>

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