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Liquid Accountability: Water as a Common, Public and Private Good in the Peruvian Andes

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ABSTRACT: Taking its point of departure from the debate on 'water as commodity' versus 'water as commons', the article compares recent changes in the water governance of two rural communities in the Peruvian Andes. It draws on the anthropological tradition of controlled comparison to examine the different ways that the state and other external agents have accelerated the commodification of water in these communities and challenged their notions of water rights and water accountability. The article suggests that water is commodified through three kinds of transaction: as *tribute-for-usage*, which is used to manage water as a common good; as *tax/tariff-for-right*, which is used to manage water as a public good; and as *ticket-for-product*, which is used to manage water as a private good. It argues that Peru's water users, rather than considering these three types of transactions to be conflicting forms of accountability, view them as complementary relations of exchange with the agents that control the water flow in their communities and regulate their water supply. It also proposes that, rather than being a one-way process that moves from communal control towards commercialisation and privatisation, the commodification of water is inherent in the water management of Peru's highland communities. The article concludes that in a time of climate change and growing water scarcity the communities are keeping as many options open as possible. Managing water as at the same time a common, public and private good, and accounting for their water use to not one but several water providers, is therefore an important priority for these communities.

KEYWORDS: Water management, water accountability, water as commons, commodification of water, ethnographic comparison, Peru, Andes

INTRODUCTION

One of the most urgent challenges of modern times is the governance of the world's fresh water supply, a rapidly shrinking resource and a cause of political dispute and social strife in many countries. However, the questions of ensuring safe water supplies, improving water management, and holding everyone to account for their water use are controversial and demand thorough attention from both policymakers and scholars. In the past decades, international organisations and national governments have crafted policies that range from favouring a strong state, a neo-liberal market and a mixture of both, and they have adopted approaches that oscillate between public management, privatisation and cooperation amongst water's multiple stakeholders (Gouvello and Scott, 2012; Tortajada, 2015). The vicissitudes of water policies reveal the complexity of the social and political problems they address and the dilemmas they face when trying to attain not only efficiency but also justice and sustainability in water governance (Randle and Barnes, 2018; Roa-García, 2014). To achieve their aim, water policies must balance the demands of a host of often conflicting interests that include industrial production, agriculture, mining, gardening, tourism and, not to forget, the planet's 7.4 billion inhabitants who need clean water to drink, wash and cook. Equally important, water policies must ensure that all stakeholders use and consume water in a responsible way. How to link water rights to efficiency, accountability and sustainability in water management is a question that preoccupies not only policymakers but also scholars who more recently have debated the predicaments that arise when attempting to create a water supply that is cost

effective, fair and environmentally friendly (Farhana and Loftus, 2015; Groenfeldt, 2013; Schmidt and Peppard, 2014).

AIM, ARGUMENT AND METHOD

This article aims to unpack the rights-accountability nexus in water governance and to examine the implications of the commodification of water for its management as a public, private and common good (Bakker, 2007). It examines the commodification of water in Andean communities that has resulted from the implementation of Peru's 2009 water law and from other transformations in the country's water management practices. In particular, it scrutinises the processes of negotiation and contestation entailed by the collection of water taxes, water tariffs and water tickets.

It compares the water management of Cabanaconde and Tapay, two neighbouring rural communities situated at the bottom of the Colca Valley in Peru's southern highlands. It examines recent changes in the way that the two communities bring their members to account for their water use and studies these changes as they relate to other developments in the region, including the construction of a water channel and the recent opening of a gold mine. Until three decades ago, both Cabanaconde and Tapay paid tribute to the nearby mountains that supply them with water. Such offering ceremonies are an important practice in many highland communities, which perceive the mountains as superhuman powers that demand tributes in return for releasing the water they control (Stensrud, 2016a). Today, however, only Tapay conducts offering ceremonies to the mountain that supplies it with water. Water governance in the two communities also differs in other aspects. Tapay uses a community model to manage water, which implies that serving as water allocator is an unpaid duty that water users are required to perform at least once in their lifetime. Similarly, the water users are expected to do community work to clean Tapay's water canals and reservoirs. At the same time, the bulk of Tapay's water users evade both the tax the Peruvian state collects from its citizens' water use and the tariff that Peru's water users organisations collect to maintain the water infrastructures their members use to irrigate their fields. Cabanaconde, on the other hand, ceased to make collective offerings to its mountain 36 years ago. Moreover, it has replaced its community model of water management with a state model, which means that the post of water allocator is now a remunerated office that is financed by the sale of tickets that water users buy to irrigate their fields. Also, unlike Tapay, Cabanaconde is now paying the tax and the tariff on water. What has prompted Cabanaconde to abandon its own cultural customs and values, embrace the 2009 water law, and introduce a professional water management model that allocates water for cash? And why does Tapay still make offerings to the mountains while it evades the tax and the tariff and continues to allocate water free of charge?

The article answers these questions by comparing the meaning of water accountability and water management in Tapay and Cabanaconde in relation to the economic and political development of the two communities. More importantly, it compares recent changes in their water supply, which has increased in Cabanaconde but decreased in Tapay. The article argues that even though they have responded differently to the growing water scarcity and the new water law, both communities are experiencing a commodification of water that is propelled not only by Peru's water crisis and the resulting need to manage water as a scarce good, as well as the growing interference by external actors in their water management, but also by their water users' own perception of water and the powers they believe control its flow.

My data suggests that the two communities engage in three types of transaction to account for their water use: a *tribute-for-usage* transaction which is used to manage water as a common good; a *tax/tariff-for-right* transaction which is used to manage water as a public good; and a *ticket-for-product* transaction which is used to manage water as a private good. In the first transaction, the mountains grant the communities the moral right to use their water in return for an offering gift and respect for their non-human power. The second transaction takes two forms: a) the water users pay a tax to the state for the

right to use the country's water resources, and b) the water users pay two tariffs: one for their use of the infrastructures that transport water to their fields and another for the maintenance of their water infrastructures. In the third transaction, by contrast, irrigation committees hire professional water allocators who distribute water in return for a ticket, called a 'tiket', which the water users buy with cash.

In undertaking the comparison of the two communities, the article builds on Karen Bakker's discussion of 'water as commodity' versus 'water as commons'. More specifically, the article responds to Bakker's call to deconstruct the 'human rights/marketisation' and 'private/public' binaries that dominate the academic debate on neo-liberal reforms, water management and water rights, but fail to capture the subtle ways that rights, responsibilities and accountability intertwine in water governance. Drawing on Bakker's insights, I suggest that at the heart of the problem of distinguishing water as a common, public or private good are the difficulties of accounting for water's provision and use and therefore also the difficulty of commercialising it. Rather than viewing communal, public and private models of water management as mutually exclusive forms of supply, I propose that we see them as complementary modes that may coexist and even converge. There is not necessarily a conflict between paying a tax, a tariff or buying a ticket, and paying tribute to the mountains, just as the different values informing the three forms of accountability – water as a legal claim, water as an economic acquisition, and water a moral request – are not always incompatible.

Accountability is often used in public and private management to describe the economic, legal and moral responsibility to which agents can be held to account by those who sponsor or finance them. Thus, accountability is usefully seen as "a relationship between an actor and a forum, in which the actor has an obligation to explain and justify his or her conduct, the forum can pose questions and pass judgement, and the actor may face consequences" (Bowens, 2007: 447). Bowens also makes a distinction between accountability as a virtue and as a mechanism, the former being a set of standards for the evaluation of public actors' behaviour and the latter a formal arrangement to regulate the conduct of agents in specific institutional settings (Bowens, 2010). Drawing on Bowens' claim that accountability is a relationship of power and that the meaning of the concept varies depending on whether it is employed in a broad normative or a narrow institutional context, this paper defines 'liquid accountability' as the relation of control that emerges from, on the one hand, water users' own sense of water responsibility in a time of climate change and, on the other, their relations of negotiation and contestation with the institutions and powers that hold them to account for their water consumption in economic, legal or moral terms.

The article reviews ethnographic data gathered between 2011 and 2016, during which I conducted research in Tapay and Cabanaconde. I employed a range of anthropological methods in the two communities, including questionnaires and surveys, formal and informal interviews, and participatory observation. My fieldwork has focused on the intersection between climate change and water scarcity on the one hand, and, on the other, out-migration and immigration, economic development, and the growing presence of the state and other external agents. Critical questions in this research include how the communities perceive and account for their own role in the growing water shortage, how they address this, and how they draw on outside support to come to terms with the environmental change they experience. The article employs the anthropological tradition of controlled comparison (Kuper, 1980; Radcliffe-Brown, 1951; Schapera, 1953) that investigates social and cultural variations within the same regions (Gingrich and Fox, 2002) and that operates on "a smaller scale and with as much control over the frame of comparison as it is possible to secure" (Eggan, 1954: 747). While the two communities under scrutiny demonstrate a number of minor variations in terms of ecological adaptation, demographic development, economic specialisation, road connections, migration patterns, and cultural customs, they share a common historical colonial and postcolonial background just as the social and political contexts of their recent developments are similar, with the exception of the water supply that has increased in Cabanaconde and decreased in Tapay.

The article is organised in five sections. The first offers an introduction to the regional setting and the political and legislative context of the study and an examination of the social and cultural meaning of

water rights and water accountability in the Peruvian Andes. The subject of this enquiry is the changing meaning and importance of the payments the water users make to the mountain, the state, the user organisation and the irrigation committee. Employing the controlled comparative method, the second and third sections explore how the recent developments in the two communities have affected not only their water supply but also their practice of paying tribute to the mountains. These sections include an examination of the respective responses of these communities to the tax and tariffs introduced by the 2009 water law and to the introduction of a professional water management model. The fourth section discusses the insights derived from the comparison of the two cases, with a focus on their commonalities. The fifth and final section discusses the implication of the article's ethnographic insights for our understanding of the commodification of water and its management as a common, public and private good.

TRIBUTE, TAX, TARIFF AND TICKET IN ANDEAN WATER ACCOUNTABILITY

Water is a scarce resource in most parts of the Peruvian Andes where rain only falls between December and April and agriculture relies on irrigation. Water scarcity is particularly critical in Peru's southwestern highlands, which are drier than other Andean regions and suffer from recurrent droughts (Gelles, 2000; Guillet, 1992; Trawick, 2003). In the past decade, global warming has intensified the region's water scarcity, leading to the melting of the glaciers that provide households, communities, mining and other industries with fresh water (Coudrain et al., 2005; Vuille et al., 2008). Though not directly related to global warming, El Niño and the natural disasters it causes in Peru have reminded the country of its vulnerability to climate change and have prompted its government to look for new ways to prevent future water shortages.

To cope with the country's water crisis the Peruvian government passed a new water law in 2009 (ANA, 2010; Andersen, this issue). The law reaffirms the 1969 definition of Peru's water resources (from the water law of that year) as being the property of the state and a public good that cannot be privatised (del Castillo 1994, 2011; Guillet, 1992: 99-116). It ranks the human need for water as the top priority, and places the water needs of cattle breeding and agriculture higher than those of mining and other industries. To achieve this aim, the 2009 law invites the country's water users to negotiate water rights and manage water allocation in 'water basin councils', an organisational setting inspired by the concept of Integrated Water Resource Management (IWRM) (Allouche, 2016; Tortajada, 2015). However, compared to the water laws of other Andean countries that emphasise equity and sustainability, efficiency prevails in Peru's 2009 law (Roa-García, 2014; Roa-García et al., 2013), which recognises water as a basic need but nevertheless requires that people obtain the state's permission to use it. Moreover, after obtaining this, the water users must pay a tax (*retribución económica*) for their water use to the national water authority, the Autoridad Nacional de Agua (ANA). They are also required to pay two different water tariffs (*tarifas para el uso de agua*): one to the regional water authority, the Autoridad Local de Agua (ALA), for their use of the state's water infrastructures and another to their water users organisation (La Junta de Usuarios) for their administrative right to assistance in the maintenance of their communities' water infrastructures. And while the law acknowledges the right of Peru's highland communities to use and value water according to their cultural traditions and customs, it does not exempt them from paying the water tax and the water tariff. Admittedly, the country's water users have been familiar with several of these measures for quite some time, since water tariffs were introduced in the highlands by the 1969 water law and on the coast by the Leguía government in the 1920s (Oré, 2005). In the same way, the commercialisation of water rights is already widespread in some parts of Peru, as illustrated by the water ticket in Cabanaconde. Nonetheless, the 2009 law represents a milestone in the state's effort to commodify Peru's water and professionalise its governance (Paerregaard et al., 2016).

The conflation of the communal, public and private domains in Peruvian water governance is inextricably linked to water's confounding attributes as a common (but nevertheless rival) good, an

economic (but also sociocultural) good, and a public (but nonetheless unequally distributed) good. To understand the values that are at stake in the management of water by Peru's communities, it is therefore necessary to move beyond the binaries of commodity-commons, private-public and market-community, and examine water as a substance that can be accounted for in multiple ways. Since the colonial period, water has played a contested role as both a common good and a product in the Andes, which explains how it can be treated simultaneously as a human right and a commodity. Water's dual nature is a topic that has been debated by a host of scholars, who often refer to Karl Marx's distinction of the commodity's 'use value' (which originates from its ability to satisfy specific human needs) and its 'exchange value' (which emerges from its market price). However, as suggested by the following discussion of the thin line between tributes, taxes, tariffs and tickets in Andean water management, water and other natural elements of basic human need are also ascribed a symbolic value originating from their social and cultural meaning.

To flesh out the way that water's status alternates between being a common, public and private good in Peru's highland communities in terms of how these are made accountable for its use, I draw on Arjun Appadurai's notion of 'the social life of things', which brings to the forefront the social relations in which material objects are embedded and draws our attention to the shifting forms of value attributed to them as they are made subject to human consumption and commodification (Appadurai, 1986). Unlike 'ordinary' commodities that are defined by specific types of ownership, categories of value, and forms of possession, water flows across a variety of social and cultural as well as geographical boundaries and courses its way through a regime of values that include symbolic uses as well as exchange values (Orlove and Caton, 2010; Paerregaard, 2018; Strang, 2009). Moreover, in contrast to other commodities that can be controlled and fixed for human use and that are dumped as waste or garbage once they have been consumed, water is never entirely 'used up', which makes it an uncooperative commodity (Bakker, 2007).

Struggles over water rights, water values and water accountability in the Andes are generic for the relation between indigenous communities, the mining industry and the Peruvian state, which makes water an issue of economic and political contestation and social and cultural dispute (Boelens, 2015; Perrault 2014). For the industry and the state, water constitutes an economic asset that generates exchange value and growth. The communities, on the other hand, regard water as a vital substance to which they ascribe not only use value – because it satisfies basic human needs – but also symbolic value because the mountains bestow it with metaphysical qualities (Gose, 1986; Nash, 1979; Taussig, 1980). The tension amongst the stakeholders' divergent perceptions of water comes to the fore not only in periodic conflicts between the mining industry and the communities, but also within communities when water is short and the importance of the tribute to the mountains is called into question. In some parts of the Andes the tribute is known as *t'inka* (Quechua for 'libation'), but in other places it is called *pagachu*, which is a Quechua term derived from the Spanish word *pago* meaning 'payment' and from the Quechua word *apu* (shortened to *pu*) meaning 'lord'. As *pagachu*, the tribute embodies a hierarchical relationship between humans and the mountains who control the water and who demand gifts in exchange for its future deliverance (Gose, 1994, 2008; Paerregaard, 1994). The *pagachu* also signifies a good that is in chronic short supply, which is accounted for as a commodity on a virtual market of economic agents disguised as humans and non-humans, in which the demand for water exceeds the supply and payments for water are made in kind and in advance.

If the communities' tribute to the mountains embodies the commodity, the 2009 law accelerates water's commodification by endorsing its exchange value at the cost of its symbolic value (Stensrud, 2013). It defines Peru's freshwater deposits as a national heritage that cannot be privatised and acknowledges the water values of the country's highland communities. At the same time, however, the law authorises the ANA to charge the water tax as a way to hold the communities to account for their water use, and permits ALA and La Junta de Usuarios to collect the water tariffs as a means to maintain the state's and the communities' water infrastructures. In the wake of the 2009 law, the state has also tried to strengthen the communities' sense of water responsibility by launching a campaign to educate

them in the proper care and use of water, fostering what Karen Bakker calls the biopolitical power of water (Bakker, 2012). These measures undermine the water values of Peru's highland communities and challenge their notion of water as a common good. Yet, rather than leading to the privatisation of water, they have strengthened the state's role as governor of Peru's water resources and have affirmed the 2009 law's claim that water is a public good. As payments in cash, the tax and the tariff reify water's exchange value, but as contributions for the use of water and the maintenance of its infrastructures they represent its use value and refute its commercialisation. Notwithstanding the 2009 law, however, the state has encouraged the country's highland communities to modernise their water management and commercialise water rights. As the case study of Cabanaconde shows, this has led irrigation committees in some places to contract professional water allocators and, as already mentioned, sell water tickets.

Even though the 2009 law does not aim to commercialise water, the tax and tariff have encountered unexpected resistance. Climate change and glacier melt are causing water shortages throughout Peru, prompting many communities to question the state's right to tax their water use. Why pay for a good that is not delivered? Inefficiency and lack of resources, on the other hand, are crippling the water users organisations' ability to provide the expected service and, rather than requesting their support, many communities clean and maintain their irrigation canals and reservoirs and manage water on their own account. Why pay the tariff on a service you never receive? Even so, as the case study of Tapay demonstrates, opposing the tax and the tariff is not always synonymous with resisting privatisation and defending the commons.

The discontent with the tax and the tariff is amplified by Peru's water users' mistrust of the state and of other external agents such as big landowners and mining companies – distrust that taps into a centuries-old conflict over water rights in the Andes that has made water struggles a critical emblem of the communities' culture and identity and a highly charged political question. In the words of Boelens, "The struggle over water rights is simultaneously a battle over resources and legitimacy: the legitimacy to formulate and enforce water rights and to exist as water user collectivities, to have sufficient control over one's own future" (Boelens, 2008: 50). To the communities, therefore, the tax and tariff of the 2009 law are not merely payments for their water use and the maintenance of their water canals and reservoirs, they imply the communities' recognition of the state as the legitimate owner of their water resources and of the user organisations as the proper authority to manage their water supply and water infrastructures and represent their interests in the state's water institutions. In exchange for conceding these powers to the state and the user organisations, the communities demand tangible evidence of their ability to enhance their water supply and improve their water management.

THE TWO CASE STUDIES

Situated in Peru's southwestern Andes in the region of Arequipa, Tapay and Cabanaconde lie opposite each other on, respectively, the northern and southern banks of the Colca River. The principal livelihoods of these communities, which belong to the poorest strata of the Peruvian population, are agriculture and animal husbandry, supplemented by incomes from trade, tourism and migration. As the rainy season only lasts three months (from January to March) and precipitation is irregular, agriculture in both communities relies on irrigation which is supplied by meltwater that comes from the nearby ice- and snow-capped mountains and is stored in the reservoirs and transported to the fields via canals constructed by the villagers' ancestors.

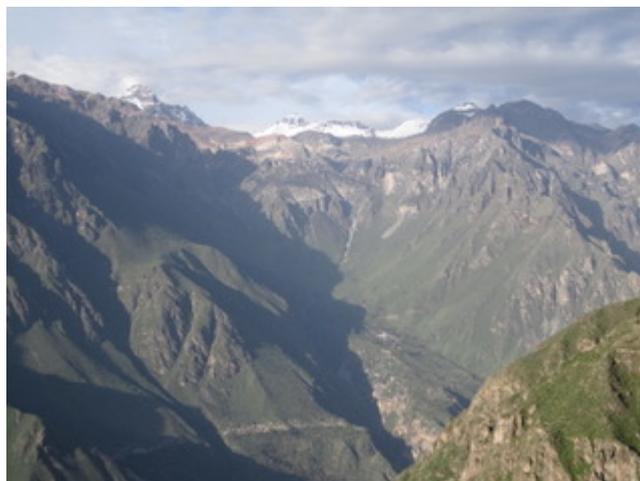
In 1983, a channel was completed which takes water from the Colca Valley to the Majes pampa on the nearby coast and, shortly after, Cabanaconde and the other communities on the Colca River's southern bank were also linked to the infrastructure, enabling them to increase their production, especially of dairy but also of corn, grain, meat and other products (Stensrud, 2016b; Stensrud, this issue; Ullberg, this issue). Irrigation in Tapay and in the remaining communities on the opposite bank of the Colca River, however, still relies on meltwater from the nearby mountains. Independent of the source

that supplies the communities with water, this is managed by their water committees, which are organised in a regional association of water users called Junta de Usuarios del Valle de Colca. In accordance with the 2009 law, the water committees pay an annual fee to the Junta consisting of three payments: 1) the tariff that water users pay for their use of the communities' water infrastructures, 2) the tariff that water users on the Colca River's southern bank pay for their use of the Majes channel; and 3) the tax that water users pay for their water use. While the Junta de Usuarios returns a small percentage of the first payment to the communities' irrigation committees, the rest is used to support their applications for economic and technical assistance to maintain and repair the communities' water infrastructures and to represent their interests in ALA's allocation of water from the Majes channel. By contrast, the Junta forwards the entire revenue of the second and the third payments to the state, the former to ALA and the organisations responsible for maintaining and managing the Majes channel, and the latter to the ANA, which represents the state.

TAPAY: TRIBUTE FOR LESS WATER

Tapay lies between 2400 and 3800 m. and has a population of 671 (INEI, 2017) (Figure 1). Until recently, the community could only be reached on foot or by mule and had no running water or any other modern services. However, in 2015 a single-track dirt road connecting Tapay to neighbouring Cabanaconde opened, which allows the population to cross the Colca Canyon by bus or car rather than on foot. Electricity, telephone service and cable TV have also transformed the life of Tapay, and it now receives daily news from the outside world. The dozens of tourists who visit Tapay every day and often stay in some of its lodges constitute another important source of information. Finally, out-migration, which in the past decades has drained Tapay of its able-bodied men and women, and more recently its youth and children as well, connects the community with Peru's major cities where it has large migrant colonies (Paerregaard, 1997).

Figure 1. The community of Tapay.



Mount Seprigina is critical to Tapay's agricultural production. The mountain provides the community with snow meltwater that feeds several rivers and a multitude of springs that are part of Tapay's various independent irrigation systems. A total of 53 water sources, of which 21 are springs and 32 are off-takes from six rivers and streams, supply the community with water that is stored in a total of 21 reservoirs overnight. Four autonomous irrigation committees are in charge of managing Tapay's water supply and maintaining its water infrastructures (Paerregaard, 1994). Every year they elect a *regidor* (water allocator), which is an office that lasts from July until January and which water users take turns occupying.

The regidor's duties include the organisation of the *yarqa aspiy*, which is a mandatory workday to clean the canals and reservoir, and which concludes with the tribute payment to Mount Seprigina and a fiesta to welcome the incoming regidor (Paerregaard, 1989) (Figure 2). The water users believe the mountain controls the water flow in Tapay and that it requires an annual offering gift at its 5432-metre summit in return for the meltwater that it releases, which constitutes the community's principal water resource (Paerregaard, 2013a). The water users also make offerings to the water when they clean Tapay's canals and reservoirs and when they take water from there to their individual fields (Figure 3).

Figure 2. The celebration of the *regidor* at the *yaqar aspiy* event in Tapay (left); The annual offering ceremony to Mount Seprigina in Tapay (right).



Figure 3. Offering ceremony to an off-take in Tapay.



Even though out-migration has led to the abandonment of one third of Tapay's fields, many villagers contend that they lack water. When I interviewed the president of the irrigation committee in Tapay's main hamlet in 2016 he supported the water users' complaint, pointing out that the hamlet had lost 50 percent of its water supply in the last three decades. The president also informed me that in 2015 less than 50 of the hamlet's 85 water users had paid the tariff that the committee collects and forwards to the Junta de Usuarios. The same year, I was told that less than 40 out of 63 members of the irrigation

committee in Tapay's second-largest hamlet had paid the tariff and that the number in the community's other hamlets was close to zero. The bulk of Tapay's water users who are evading the tariff are migrants who live in the cities of Lima and Arequipa and who have either left their fields to others or abandoned them altogether. The remaining are villagers living in Tapay who cultivate and irrigate their fields but nevertheless neglect or refuse to pay the tariff. Because of the widespread tariff evasion, Tapay's water committees forward to the Junta de Usuarios only a fraction of the economic contribution the 2009 water law requires them to make and, as a way of attesting the water users' non-compliance, their leaders rarely attend the Junta's meetings.

The opening of a gold mine in Tapay has added fuel to the villagers' concern about the future. To protest against the threat it poses to the community's environment and water supply, they have organised several marches to the mine, which is situated at 5000 MASL, not far from Mount Seprigina. To support the villagers' protests and to affirm their continued membership in the community, migrants from Tapay have arranged similar events in the city of Arequipa. The company, on the other hand, has tried to gain Tapay's support by offering employment to more than 100 villagers and migrants, sponsoring the construction of several public works in the community and promising to construct a channel to direct water to Tapay from a nearby river. These projects have changed the image that young villagers and many migrants hold of the mine, but it still meets resistance from the elders who fear it will contaminate the community's water.

During the years I conducted fieldwork in Tapay, the majority of water users I talked to claimed that the offering ceremony is essential to assure Tapay's water supply. Two regidores neglected to pay tribute to Mount Seprigina during that time but, while few villagers expected the tributes to actually alleviate Tapay's water crisis, they feared that by omitting to pay tribute the regidores will arouse the mountain's anger and cause not only more water shortages but also disease and other misfortunes. Many also said that they evade the water tax because it is Mount Seprigina, not the state, that supplies them with water. By the same token, they affirmed that they evade the water tariff to the Junta de Usuarios because they feel it has never offered Tapay economic support for the maintenance of the community's canals and reservoirs. Arguably, the villagers' tax and tariff evasion is consistent with Tapay's long tradition of managing its water supply and maintaining its water infrastructures independently of the state and of other organisations in which the community has little trust.

The gold mine has magnified the unease felt especially by elderly villagers towards external agents, but its politics of employing villagers and migrants has also made many welcome it. Moreover, the prospect of a new channel and the resulting enhancement of Tapay's water supply have made them question the power of Mount Seprigina. The president of Tapay's irrigation committee, who belongs to the community's Evangelical minority (Paerregaard, 1994), deplors this development just as he laments the villagers' lack of interest in his effort to maintain the community's irrigation system, though he understands this apathy to stem from Tapay's water crisis. But rather than making more tributes to the mountain, as many of Tapay's Catholic majority believe is necessary, he suggests that the community instead commercialise water and convert both his post as president and the post of water allocator into remunerated offices. He claims that many regidores already contract others to do their job, and proposes that the community allow the water allocators to charge the villagers money for the water they receive. Indirectly, the man asks: Why make a gift to a mountain that no longer yields water? Or pay taxes or tariffs on a shrinking water supply? The president's view is supported by many of Tapay's migrants who have left the community because of lack of economic opportunities but who see the mine and its promise to build a new channel as offering the possibility of return. As the second case study shows, the president's suggestion echoes the water management reforms that neighbouring Cabanaconde has introduced.

CABANAONDE: TAX, TARIFF AND TICKET FOR MORE WATER

Situated between 2200 and 3600 MASL, Cabanaconde is the second-biggest community in the Colca Valley (Figure 4). Its population of 2842 is concentrated in one big settlement (INEI, 2017) that has been connected to the rest of Peru by road since 1965. The community enjoys such modern services as electricity and running water and is an important regional centre for trade and transport as well as national and international tourism. It has large migrant populations not only in the rest of Peru but also in the United States, Spain and Chile. This group spends huge amounts of money on Cabanaconde's fiestas but otherwise contributes little to its development (Paerregaard, 2017). Out-migration, on the other hand, has opened the door to an influx of rural migrants from other areas who either open shops in Cabanaconde or first rent and later buy fields in the community.

For centuries, Mount Hualca Hualca has been Cabanaconde's principal water supplier. A canal leads the mountain's meltwater to the community's largest agricultural area, La Campiña, where a labyrinth of smaller canals transports it first into larger zones of cultivable land and then to individual fields (Gelles, 2000: 50-54). Until 35 years ago, the water users of La Campiña were organised into moieties (a common form of organisation in Andean communities) that were in turn divided into a number of agricultural zones which elected their own *controladores* (water allocators) (Gelles, 2000: 57). Starting upstream, these two groups engaged in a fierce competition for water, moving downstream to finish the allocation of water in their moiety first, a showdown that was repeated in each of the four irrigation rounds (Gelles, 2000: 98-117). Older villagers recount that people fought over the smallest drop of water and that the controlador occupied Cabanaconde's most onerous office (Gelles, 2000: 171-172). They also relate that during the rainy season (from January to March), when villagers were free to take water from the canals and irrigate their fields, disputes over water were quite common.

In the 1980s, the Peruvian state constructed a channel that brings water from the Colca River through the communities on its southern bank to the coast, where it is used to irrigate the fields of Majes (Figure 4). Upon its completion in 1983, which was a year of severe drought in southern Peru, the project caused much anger in Cabanaconde which claimed that it was denied water from the channel. In the end, a group of villagers took action, making a hole in the channel to access the water, and a few days after the action a local police force arrived in Cabanaconde to arrest the lawbreakers. They were released shortly after, and the same year Cabanaconde (and the rest of communities on the south bank) were granted rights to water from the channel. Today, the community taps water from five valves in the Majes channel, which now supplies La Campiña with water, and irrigates over 1000 hectares of what had been abandoned terraced fields, placing them back in production.

The Majes channel has impacted Cabanaconde's water management in several ways. It has enabled Cabanaconde to double its cultivated land base and it now has more land under irrigation than any other community in the region. At the same time, the state and the regional government have financed the improvement of the community's irrigation canals and the construction of several water reservoirs that minimise water wastage and save the controladores the work of irrigating at night. The Majes channel and the augmentation of Cabanaconde's water supply that it made possible have also prompted Cabanaconde to replace its traditional model of water management (that was based on the moiety division and appointed controladores) with a state model that uses remunerated water allocators (Paerregaard, 2013b). In the new model that was introduced in 1997 (Gelles, 2000: 163), the water users in each of the community's five agricultural areas elect an irrigation committee that contracts a professional controlador to allocate water. To irrigate their fields the users buy a ticket from the irrigation committee which they give to the water allocator as proof of their right to water. In contrast to the community model, which was designed to generate competition between Cabanaconde's moieties and which allocated water in zones, the state model is driven by a cash-for-water principle and allocates water sequentially, that is from one plot to the next.

Figure 4. The community of Cabanaconde (left); The Majes channel (right).



The Majes channel's substitution of Mount Hualca Hualca as water supplier and the replacement of the community model with a state model of water management have changed not only Cabanaconde's relation to the state but also its appreciation of water (Paerregaard, 2014). Senior villagers recount that the entire community used to walk to Mount Hualca Hualca's summit (at 6025 MASL) every year to make offerings to the mountain, and in years of drought they even did it twice (Gelles, 2000). When the channel opened in 1983, Cabanaconde ceased these practices. Nowadays, the presidents of Cabanaconde's five irrigation committees pay annual tribute to the valves in the Majes channel that supply the community with water. As in Tapay, some water users also make offerings at the off-takes that lead the channel's water into the smaller canals, or at the intersections that direct it to their fields. But, unlike the tributes Cabanaconde paid to Mount Hualca Hualca before 1983, which the community considered to be fundamental to its survival and which required the villagers' collective action on a specific date, these acts are conducted individually by the water users throughout the year. Moreover, as several of the presidents of Cabanaconde's irrigation committees explained to me, while participation in the tribute ceremony to Mount Hualca Hualca previously was viewed as a way for the villagers to affirm not only their membership in the community but also their water rights, these water rights are no longer linked to ritual offerings whether conducted collectively or individually. Instead, they pointed out, water rights are now obtained by buying the ticket from the irrigation committee and paying the tax to ANA and the tariffs to ALA and the Junta de Usuarios.

The introduction of a new water management model and a new set of water values reflect Cabanaconde's changing view of the powers it believes regulate the water flow. By hiring professional water allocators and selling water tickets to the water users, the community's irrigation committees endorse the idea that water is a commodity that can be acquired with money; similarly, by complying with the 2009 laws and paying the tax and the tariffs, the water users acknowledge the state as the legitimate owner of their water resources and as governor of their water infrastructures. Yet, even though Cabanaconde has changed its view of the relationship between water and the state – which it now sees as an ally rather than a foe – the community still attributes importance to Mount Hualca Hualca. To introduce new crops and raise cattle for the market in Cabanaconde, the president of La Campiña's irrigation committee plans to enhance its water supply by recapturing the water flow from Mount Hualca Hualca, which he suggests can be done by repairing the canal that transports water from the mountain to Cabanaconde. According to the president, the project involves not only many hours of community work but also a renewal of the offerings Cabanaconde used to make to Mount Hualca Hualca. As a way of advocating for his proposal, he indirectly asks: Why should the mountain reactivate the water flow, if the community doesn't give it something in return? Many of Cabanaconde's senior villagers disapprove

of his call for community work to restore Mount Hualca Hualca's water supply, which they say will require more labour than the community can muster. Nevertheless, many concur with the president that, if the community approves his project, the demand for water will increase and therefore new offerings to Mount Hualca Hualca will be required. To them, paying tribute to the mountain, tax to the state, tariff to the user organisation and buying the ticket from the water committee are not mutually exclusive practices.

DISCUSSION

Tapay and Cabanaconde are neighbouring communities, and even though the latter is bigger and more closely connected to the rest of Peru they are similarly affected by migration, tourism, and modern lifestyles. However, not only has Peru's water crisis impacted the two communities in different ways, but there is also a difference in their responses to the 2009 water law and the state's attempt to modernise water management in the country's highlands. So far, Tapay has received no assistance from the government to alleviate its water shortage and, even though Mount Seprigina's water supply is shrinking, many water users fear that neglecting the tribute may stir the mountain's anger. Hence, while many water users in Tapay evade the tax and tariff, they continue to make offerings to Mount Seprigina. By contrast, Cabanaconde stopped paying tribute to Mount Hualca Hualca after it began to receive water from the Majes channel, and today the water users not only pay the 2009 law's tax and tariffs but they also buy tickets to irrigate their fields.

The difference in the two communities' coping strategies is stark. Over the past 35 years, Cabanaconde has changed its strategy from opposing the state to engaging with it, and the community has recognised the state's authority and adopted its water policy. The Majes channel has played a key role in this process. By alleviating Cabanaconde's water stress and enabling it to double its irrigated land base, the channel has demonstrated the power of the state, and even though the community still commemorates its rebellious action in 1983 it has learned to negotiate water rights in political rather than metaphysical terms and to account for its water use in cash rather than in kind. On the other hand, by evading the water tax and water tariff and cooperating with the mining company in exchange for its offer to construct a channel, Tapay not only demonstrates the state's failure as water provider in the Andes but also highlights the urgency of its water crisis, which has accelerated out-migration from the community and discouraged the remaining villagers from engaging in the work of its irrigation committees. The suggestion to privatise water, which contests both the state's governance of water as a public good and Tapay's own management of water as a common good, is a troubling but nevertheless inevitable consequence of the community's strategy of asking private actors for help.

Ethnographic comparisons bring to the forefront important variations, but rather than create normative oppositions between 'normality' and 'deviation' or 'universality' and 'exception', their aim is to reveal underlying structures of power and subordination by contextualising differences and identifying commonalities in the two cases. As Adam Kuper points out, "One can compare structures while respecting content" (Kuper, 1980: 29). Starting with the content of the tribute, the tax, the tariff and the ticket, the values that are exchanged in the four transactions vary just as their forms differ. As a ritual of respect for the mountains that control the water, the tribute is made in kind and has an important symbolic value. By contrast, the tax, the tariff and the ticket are all transactions made in cash, lacking the ceremonial attributes of the tribute. However, while the ticket is a voucher that certifies the buyer's entitlement to a specific product and therefore embodies water's exchange value, the tax and the tariff are merely payments for the water's use value and its provision. Notwithstanding these differences, and their importance to the different strategies that Tapay and Cabanaconde pursue in order to cope with the water crisis, the water users of both communities perceive water as a substance that necessitates control by either metaphysical or political power. Equally, they recognise the relations of dependence in which they engage and the debt they assume when asking the agents that command such power to

supply them with water. To the water users of Tapay and Cabanaconde, paying tribute to the mountains, tax to the state, tariff to the state or the user organisations, and buying tickets from the irrigation committee are all ways of being held to account for a scarce good and the service its delivery requires.

To Peru's rural communities, irrigation implies trade-offs with the agents who control the water flow and demand payment in return for the water they provide. For centuries, these payments have been made as symbolic gifts to the metaphysical forces that the water users believe inhabit the mountains and to which they show great respect. More recently, the Peruvian government has invested in new water infrastructures in the region that have challenged the water users' image of the state and their notion of water accountability. As users of these projects, some of Peru's communities have not only ceased to make offerings to the mountains but have also begun to pay water taxes and tariffs to the state and their user organisations. Also, as described for Cabanaconde, some communities even pay for their water rights and hire professional water allocators to deliver water to their fields. By contrast, as discussed for Tapay, other communities seek help from mining companies and other private actors to finance new infrastructures and alleviate the water crisis. In the absence of the state and in response to its lack of support, they continue to make tributes to the mountains while evading the water tax and the water tariff. These insights suggest that water accountability in Peru's highlands is highly contextual and that rather than conceiving the tribute, the tax, the tariff and the ticket as mutually exclusive transactions, the communities view them as complementary payments they need to make to the most reliable water provider on the market.

CONCLUSION

Echoing Karen Bakker's argument, the data discussed in this article shows that commodity is not the antonym to commons in water accountability. It suggests that in a region where communities have always suffered from lack of water – exacerbated more recently by climate change and glacial retreat – the commodification of water is inherent in the communities' water management. As consumers of a scarce good, the water users of Peru's highland communities must account for their water use to the mountain, the state, and the user organisations or other private agents, in kind or in cash, collectively or individually. In the Andes, water rights and water justice are therefore inextricably linked to the notion of accountability and the ideas of power and control that underpin it. However, whether accounted for as tribute, tax, tariff or ticket, the commodification of water is constrained by its social life. The tribute, the tax and the tariff only involve claims to water's use value and, even though the ticket represents water's exchange value, community regulation restricts its commercialisation. Rather than revealing a new tendency towards neo-liberalisation and privatisation in the water governance of Peru's highland communities, the data suggests that in a time of growing water scarcity these communities are keeping as many options open as possible. Managing water simultaneously as a common, public and private good is therefore an important priority for the communities' agendas, as is accounting for their water use and the maintenance of their water infrastructures to not one but several water providers.

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REFERENCES

Allouche, J. 2016. The birth and spread of IWRM – A case study of global policy diffusion and translation. *Water Alternatives* 9(3): 412-433.

- ANA (Autoridad Nacional del Agua). 2010. *Ley de recursos hídricos y su reglamento. Ley No 29338*. Lima: Ministerio de Agricultura.
- Appadurai, A. (Ed). 1986. *The social life of things. Commodities in cultural perspectives*. Cambridge: Cambridge University Press.
- Bakker, K. 2007. The 'commons' versus the 'commodity': Alter-globalization, anti-privatization and the human right to water in the global South. *Antipode* 39(3): 430-55
- Bakker, K. 2012. Water: Political, biopolitical and material. *Social Studies of Science* 42(4): 616-623.
- Boelens, R. 2008. Water rights arenas in the Andes. Upscaling networks to strengthen local water control. *Water Alternatives* 1(1): 48-65.
- Boelens, R. 2015. *Water, power and identity. The cultural politics of water in the Andes*. London: Routledge.
- Bowens, M. 2007. Analysing and Assessing accountability: A conceptual framework. *European Law Journal* 13(4): 447-468.
- Bowens, M. 2010. Two concepts of accountability: Accountability as a virtue and as a mechanism. *West European Politics* 33(5): 946-967.
- Coudrain, A.; Francou, B. and Kundzewicz, Z.W. 2005. Glacier shrinkage in the Andes and consequences for water resources. *Hydrological Sciences Journal* 50: 925-932.
- del Castillo, L. 1994. Lo bueno, lo malo y lo feo de la legislación de aguas. *Debate Agrario* 18:1-20.
- del Castillo, L. 2011. Ley de Recursos Hídricos: Necesaria pero no suficiente. *Debate Agrario* 45: 91-118.
- Eggan, F. 1954. Social anthropology and the method of controlled comparison. *American Anthropologist* 56: 743-763.
- Farhana, S. and Loftus, A. 2015. The human right to water: Critiques and conditions of possibility. *WIRE's Water* 2: 97-105.
- Gelles, P. 2000. *Water and power in highland Peru. The cultural politics of irrigation and development*. New Brunswick: Rutgers University Press.
- Gingrich, A. and Fox, R. (Eds). 2002. *Anthropology, by comparison*. London: Routledge.
- Gose, P. 1986. Sacrifice and the commodity form in the Andes. *Man (Royal Anthropological Institute of Britain and Ireland)* 21(2): 296-310.
- Gose, P. 1994. *Deathly waters and hungry mountains. Agrarian ritual and class formation in an Andean town*. Toronto: University of Toronto Press.
- Gose, P. 2008. *Invaders as ancestors. On the intercultural making and unmaking of Spanish colonialism in the Andes*. Toronto: University of Toronto Press.
- Gouvello, B. and Scott, C. 2012. Has water privatization peaked? The future of public water governance. *Water International* 37(2): 87-90.
- Groenfeldt, D. 2013. *Water ethics. A values approach to solving the water crisis*. London: Routledge.
- Guillet, D. 1992. *Covering ground. Communal water management and the state in the Peruvian Highlands*. Ann Arbor: University of Michigan Press.
- INEI. 2017. *Censos Nacionales 2017: XII de Poblaciones, VII de Viviendas y III de Comunidades Indígenas*. Lima, Peru: Instituto Nacional de Estadística e Informática.
- Kuper, A. 1980. The man in the study and the man in the field. Ethnographic, theory and comparison in social anthropology. *European Journal of Sociology* 21(1): 14-39.
- Nash, J. 1979. *We eat the mines and the mines eat us. Dependency and exploitation in Bolivian tin mines*. New York: Columbia University Press.
- Oré, MT. 2005. *Agua bien y usos privados*. Lima: Fondo Editorial de PUCP.
- Orlove, B. and Caton, SC. 2010. Water sustainability: Anthropological approaches and prospects. *Annual Review of Anthropology* 39(1): 401-415.
- Paerregaard, K. 1989. Exchanging with nature: Tinka in an Andean Village. *Folk* 31: 53-73.

- Paerregaard, K. 1994. Why fight over Water? Power, conflict and irrigation in an Andean Village. In Guillet, D. and Mitchell, W. (Eds), *Irrigation at high altitudes: The social organization of water control systems in the Andes*, pp. 189-202. Washington: Society for Latin American Anthropology.
- Paerregaard, K. 1997. *Linking separate worlds: Urban migrants and rural lives in Peru*. Oxford: Berg Publishers.
- Paerregaard, K. 2013a. Bare rocks and fallen angels. Environmental change, climate perceptions and ritual practices in the Peruvian Andes. *Religions* 4(2): 290-305.
- Paerregaard, K. 2013b. Governing water in the Andean community of Cabanaconde. From resistance to opposition and to cooperation (and back again?). *Mountain Research and Development* 33(3): 9-12.
- Paerregaard, K. 2014. Broken cosmologies: Climate, water and state in the Peruvian Andes. In Hastrup, K. (Ed), *Anthropology and nature*, pp. 196-210. London: Routledge.
- Paerregaard, K. 2017. Ayni unbound. Cooperation, inequality and migration in the Peruvian Andes. *Journal of Latin American and Caribbean Anthropology* 22(3): 459-474.
- Paerregaard, K. 2018. Power as/in/of water. Revisiting the hydrologic cycle in the Peruvian Andes. *WIRE's Water* 5(2): 1-11.
- Paerregaard, K.; Stensrud, A.B. and Andersen, A.O. 2016. Water citizenship: Negotiating water rights and contesting water culture in the Peruvian Andes. *Latin American Research Review* 51(1): 198-217.
- Perreault, T. (Ed). 2014. *Minería, agua y justicia social en los Andes: Experiencias comparativas de Perú y Bolivia*. Cusco: Centro Bartolomé de las Casas/La Paz: PIEB.
- Radcliffe-Brown, A.R. 1951. The comparative method in social anthropology. *American Anthropologist* LXXI: 15-22.
- Randle, S. and Barnes, J. 2018. Liquid futures. Water management systems and anticipated environments. *WIREs Water* 5(2): 1-8.
- Roa-García, M.C. 2014. Equity, efficiency and sustainability in water allocation in the Andes. *Water Alternatives* 7(2): 298-319.
- Roa-García, C.M.; Urteaga-Crovetto, P. and Bustamante-Zenteno, R. 2013. Water laws in the Andes: A promising precedent for challenging neoliberalism. *Geoforum* 64: 270-280.
- Schapera, I. 1953. Some comments on comparative method in social anthropology. *American Anthropologist* LIII: 353-362.
- Schmidt, J. and Peppard, C.Z. 2014. Water ethics on a human-dominated planet: Rationality, context and values in global governance. *WIRE's Water* 1: 533-547.
- Stensrud, A.B. 2013. Commodifying water in times of global warming. *Nacla Report on the Americas* 46 (1): 32-37.
- Stensrud, A.B. 2016a. Climate change, water practices and relational worlds in the Andes. *Ethnos* 81(1): 75-98.
- Stensrud, A.B. 2016b. Dreams of growth and fear of water crisis: The ambivalence of 'progress' in the Majes-Siguas Irrigation Project, Peru. *History and Anthropology* 27(5) 569-584.
- Strang, V. 2009. *Gardening the world. Agency, identity and the ownership of water*. Oxford: Berghahn.
- Taussig, M. 1980. *The devil and commodity fetishism in South America*. Chapel Hill: University of North Carolina Press.
- Tortajada, C. (Ed). 2015. *Integrated water resources management. From concept to implementation*. London: Routledge.
- Trawick, P. 2003. *The struggle for water in Peru. Comedy and tragedy in the Andean commons*. Stanford: University of Stanford Press.
- Vuille, M.; Francou, B.; Wagnon, P.; Juen, I.; Kaser, G.; Mark, B.G. and Bradley, R.S. 2008. Climate change and tropical Andean glaciers: Past, present and future. *Earth-Science Reviews* 89: 79-96.

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