



Cultural politics and the hydrosocial cycle: Water, power and identity in the Andean highlands [☆]



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ABSTRACT

This paper explores interactions among water, power and cultural politics in the Andes. It analyzes the hydrosocial cycle as the political–ecological production of a time- and place-specific socionature, enrolling and co-patterning the social, the natural and the supernatural to reflect dominant interests and power.

A case analysis locates community water control practices in Mollepata, Peru, in the broader historical setting of Andean water empires. To see how local worldviews, water flows and water control practices are interwoven, it unravels the ‘meta’ behind the ‘physical’, examining contemporary expressions of the ancient ‘hydrocosmological cycle’ that intimately interconnects the cyclical dynamics of hydrology, agroecology, human lifetime and cosmology. Herein, bonds among mountain deities, Mother Earth and humans are fundamental to guide water flows through this world, the world above and the world below.

Next, the paper analyzes the ‘political’ behind metaphysical patterning of water flows. Since ancient times, elites have striven to reinforce subjugation over Andean peoples by creating ‘convenient histories’ and ‘socionatural order’, connecting local water practices and worldviews to supralocal schemes of belonging, thereby deploying overlapping governmental rationalities.

Continued in contemporary, globalizing water politics and ‘governmentalities’, efforts to establish, demystify or transform frames of ‘water order’ are at the heart of water struggles. Here, dominant conceptual and cultural-political frameworks naturalize the strategic positioning of humans and nonhumans in hydrosocial patterns that support water hierarchies and legitimize particular distribution, extraction and control practices, as if these were entirely natural. Hydrosocial cycles are, however, importantly mediated by counter-forces and alternative water truths.

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“We control life, Winston, at all its levels. You are imagining that there is something called human nature which will be outraged by what we do and will turn against us. But we create human nature” (Orwell, 1984, p. 216).

1. Introduction

In Andean societies, as elsewhere, water represents potential and power and is the source of collaboration and conflict. Since ancient times, as I will outline below, water is the symbolic and material power linking time, space and place, by connecting origin, life, destruction and regeneration. Water is a basic means of

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mobilizing people, the driving force behind local common property institutions, and fuses people, place and production in socio-cultural systems and shared techno-ecological histories.¹ This has led to water user groups’ strong identification with local water sources and territories, and water control has always importantly colored processes of identity formation in numerous Andean communities (Arguedas, 1975; Gelles, 2000; Sherbondy, 1998).

At the same time, this intimate connection among water, space and identity has fused struggles over material control of water use systems and territories with the battle over the right to culturally define and politically organize these socionatural systems. Dominant groups’ efforts to take control over local water resources go hand-in-hand with tactics to naturalize and commensurate schemes of water-based belonging. Hereto, ‘rationalizing water control’ by standardizing and externalizing local perceptions, rights, and rituals, in line with dominant interests, is a fundamental strategy.

¹ See, e.g., Achterhuis et al. (2010), Boelens (2008), Boelens and Gelles (2005), Gerbrandy (1998), Perreault (2008), Zimmerer (2000a) and Vera (2011).

In this battlefield to establish water control and representation regimes, hydrosocial cycles dynamically take shape, involving material water flows and distribution; the rules and rights prescribing how to manage these flows ‘from field and underground to cosmic levels’; legitimate authority to govern these water streams; and the discursive composition of water cycles as de-politicized socrionatural hybrids that fit powerful actors’ interests.

In the Andes, long before contemporary schemes of neoliberal governmentality and the creation of globalizing neoliberal socrionatures,² the strategic building of simultaneously material and discursive human-nature constructs – as hydrosocial cycles – through politics of identification and ‘subjectification’ was fundamental to the art of ‘conducting subject populations’ conduct’ (Foucault, 1980, 1991; Dean, 1999). Struggles over water, therefore, involve regimes of representation that aim to blend society and nature together through water truth and knowledge claims, to define ‘the order of things’. Though thoroughly mediated in everyday praxis, ruling groups’ strategic interest is to deploy discursive practices that define and position the social and the material in a human-material-natural network that leaves political order unchallenged and stabilized. Here, knowledge of nature is not neutral but a human production, co-defining social and natural orders (Goldman et al., 2010. Cf. Latour, 1993; Zimmerer, 2000b; Whatmore, 2002). Also water is a socio-nature (Linton, 2010; Perreault, 2011; Swyngedouw, 2007, forthcoming).

The paper, therefore, focuses on how different forms of governmentality envision to enroll and align humans, nature and thought within a network that aims to transform the diverse social and natural Andean water worlds into a dominant water discourse and governance system, structured according to ‘outside’ truths, categories and frames of reference. I extend the analysis of hydrosocial cycles to include conceptualization and political use of ‘hydro-cosmological cycles’. First, to show how cultural and metaphysical realities, through diverse worldviews, dynamically contribute to people’s understanding of hydrological cycles, welding social and natural to supernatural. Second, to illustrate how analyzing metaphysical water reality construction opens another window to scrutinize water politics and governance techniques (“the art of government according to truth”, Foucault, 2008: 313). It resembles the ways in which contemporary (scientific and interventionist) ‘water policy myths’ contribute to shaping those socrionature representations that suit ruling groups’ interests (e.g., “disciplinary” and “neoliberal governmentality”, Foucault, 2008).

This field and literature research started in Peru’s Mollepatá region in 1988, with regular follow-up (long-term and shorter periods) in later years. Action-research involved group discussions, interviews, and interactive water design, while archival and academic research was embedded in the coordination of international research coalitions, such as WALIR – Water Law and Indigenous Rights (2001–2007), Concertación (2005–2011) and, currently, the Justicia Hídrica alliance (since 2009).

The section below introduces relevant connections among water, power, hydrosocial cycles, and Andean identity politics, and how these are linked to different forms of governmentality – respectively, ‘truth’, ‘sovereignty’, ‘discipline’, ‘neoliberalism’, as arts of government (Foucault, 2008; Fletcher, 2010). The third section presents an anecdotal account of my own encounters with diverging water truths in the Andes. I introduce Mollepatá’s Balcompata water problem case as piece of a larger conceptual-empirical puzzle, one that asks for transdisciplinary examination. The

fourth section reflects briefly on the diverse, interlinked ‘domains of water knowledge’, to lend the anecdotal account, in Section 5, a wider context of Andean hydrosocial/hydrocosmological cycle conceptualization, and relating it thereafter to imperial politics of truth, extraction and submission. While ancient empires applied mythological thought to glue such networks together, Section 6 shows how today the globalizing empires of scientific and expert-interventionist representation blend various hydrosocial/hydropolitical system components – regimes with authority to formulate ‘fundamental problems’, define ‘solutions’ and produce ‘truthful water knowledge’. The conclusion argues how producing material nature, producing strategic representations of the nature of nature, and producing subject and subjectified populations, are directly related. The latter, however, are not defenseless victims.

2. Water, power, identity, and socrionatural water cycles

In the Andes, from Colombia to Chile, territorial management and community water use systems, for irrigation and drinking water, are interwoven with the cultural-political foundations of past and contemporary societies (Gelles, 2000; Vos et al., 2006).³ Since ancient times, local peasant and indigenous communities have made their agro-pastoral livelihoods in rugged mostly (semi-) arid highland regions, often connecting high and low altitudinal zones to combine different micro-climates, soils, ecosystems and production opportunities (Mayer, 2002; Zimmerer, 2000a).⁴ Maintaining these ‘interzonal water territories’ was increasingly complicated when, over the past centuries, communities were forced onto just the higher, less productive, unstable slopes, as powerful newcomers occupied their valleys and disintegrated the vertical production systems.

Because of these complex physical-ecological and adverse political-economic operating settings, water users must collaborate intensively. Despite endless variety, community water control builds on mutual dependence. Fundamental tasks in organizing for water are intertwined with bonds of rights and obligations. Here, strong ties of identification among local collectives and their water sources and territories are common. Bonds and arrangements tend to result from both internal negotiation and collective defense of water vis-à-vis third parties, such as landlords, neighboring communities, mining and agribusiness companies or State agencies (Boelens and Gelles, 2005; Vera, 2011; Vos et al., 2006).

In such settings, water rights simultaneously embody power relations and reveal how common ‘hydraulic property’ is reaffirmed, and how contested notions of ‘identity’ and ‘community’ are given their actual substance.⁵ They are formed through “processes of political and cultural creation and imagination – generating meaning in the context of unequal power” (Roseberry, 1989: 14).

Since symbolic and day-to-day empirical matters are closely interwoven in water flows, technology and institutions in the Andes, water control offers significant entrance points for ‘metaphysical’ and discursive power plays to dominate the empirical world. This struggle to conquer imagination is fierce: who establishes which rights and norms, and how these are legitimized, by human schemes of representation but also supported by supernatural power relations. Also, given this interweaving of water, property relations and identity formation, efforts to extract surplus

³ This is not unique for the Andean region, see e.g. case collections by Benda-Beckmann (2007), Roth et al. (2005) and UNESCO (2006).

⁴ For an overview of academic research on historical and contemporary irrigation water control in the Andean countries, see Boelens (2008). See also Trawick (2005).

⁵ For a comparative analysis with other regions, on water as a source of conflict and a bonding force among people, territory, production and identity, see e.g. Coward and Levine (1987), Benda-Beckmann (2007), Chambers (1994), Ostrom (1992), and Roth et al. (2005).

² See, e.g., Budds (2009), Fletcher (2010), McCarthy and Prudham (2004), and Swyngedouw (2004, forthcoming).

and water resources directly relate to the expropriation of identity and water culture: throughout Andean history, ruling groups have aimed to supplant the diverse water cultures and rights to make everyday water control graspable, by installing frames of reference of dominant classes and cultures, presenting them as objective, universal schemes of rational water culture and belonging (Boelens, 2009; Gelles, 2010). Here, construction of ‘convenient histories’, ‘invented traditions’ and ‘imagined communities’ (Anderson, 1983; Hobsbawm, 1983; Patterson, 1997) is fundamental. This takes place as a confrontational process; identity and subject-formation stem from Self and self-definition, but also from confrontation with the Other and how the Self is ‘othered’ (Said, 1978. Cf. Cohen, 1986). Thus, to understand subjugated water cultures, it is crucial to also focus on the water cultures subjugating them.

Cultural politics of water control must therefore focus on the politics of disciplining, examining both dominant groups’ classification schemes to categorize ‘others’, assigning them their ‘identity’, and the subject-formation by which Andean water users ‘turn themselves into subjects’ by internalizing outside frames and models. As Foucault (1980: 39) argued, this subtle, bottom-up power mode is characterized by “its capillary form of existence, the point where power circulates into the very grain of individuals, touches their bodies and inserts itself into their actions and attitudes, their discourses, learning processes and everyday lives”. To this respect, water control discourses – beyond just language and conceptual ideas – put knowledge and power to work to establish and legitimize water governance practice. As practices, they form the objects to which they relate (cf. Foucault, 1975). In water control and hydrosocial flow regulation, as ‘socio-technical stabilizers’ (Boelens, 2009), discourses strategically glue together ‘social’ and ‘technical’, ‘human’ and ‘non-human’, ‘physical’ and ‘meta-physical’, each with specific meaning, aiming to secure a particular political order. Discourses make fixed linkages and standard relations among actors, objects, categories, concepts, defining their identity and hierarchies, forcefully defining problems and their solutions.

This implies – a common notion in Political Ecology and Science & Technology Studies – that boundaries between ‘nature’, ‘technology’ and ‘society’ are not pre-given; but products of human minds, social conventions and actively constructed reality (Latour, 1991; Goldman et al., 2010). Natural and social orders mutually constitute each other as hybrids (Latour, 1991, 1993) or ‘naturecultures’ (Haraway, 1991) (Cf. Whatmore, 2002; Zimmerer, 2000b). Precisely by naturalizing siconatural waters, hydrological cycles and even water distribution systems (by locating them in nature) deeply political water issues and decision-making are strategically depoliticized (Zwarteveen and Boelens, 2011. Cf. Budds, 2009; Linton, 2010; Robbins, 2004). Formulating the ‘relevant’ water cycle elements and establishing their mutual interactions constructs particular truths and conventions, to serve analytical (and often strategic-political) purposes of ‘framers’. Masking this naturalizes water policies, scientific models and approaches, which then become ‘truth-makers’ aiming to align actors, standards, measurement instruments, points of view, etc., and prevent alternative thinking and acting.

Therefore, this struggle to establish, demystify or transform frames of ‘water order’ is at the heart of water control. Power-knowledge colors the choice and contents of domains and their fusion into hydrosocial patterns, such as hydrosocial cycles. Power, thus, produces water reality, knowledge and truth claims, even produces the ways in which truth is made true, establishing “regimes of truth” (Foucault, 1980: 133). Hence, water conceptualization itself is an intrinsically social and political activity.

Formulating and implementing ‘water governance’ is part of this. It fundamentally deals with how to organize decision making

with respect to water access, use and management in contexts of divergent interests, conflicting normative repertoires and unequal power relations, and how to produce socio-natural order via the control over water resources, infrastructure, investments, knowledge, truth, and ultimately, water users and authorities. To establish this order, Foucault argued that governors have historically engineered and applied different (interacting) rationalities. For the Andean case I scrutinize four:

Deeply penetrating Andean water societies is the above-mentioned “art of government based on truth” (Foucault, 2008: 313), whereby authority derives from supernatural powers, human-natural-cosmological life cycles and a meta-physical world order (Sections 3–5). Second, colonial States as the Inca and Spanish empires (also) profoundly based their control over water on “sovereignty”, it was the property of the Sun King or the Emperor, and through Him, the Crown distributed water rights to the lower echelons. Legal force and territory-based Law (with legitimacy given by God or the Nature-governing Sun) were central in these ‘States of naturalized Justice’, even though enforcement was difficult. In Hobbesian ways, water rule and order was founded on State’s monopoly over legitimate use of violence. Third, “disciplinary governmentality” works through normalizing power (Foucault, 1995), whereby deviant thinking and acting is oppressed. Subtly inducing norms for proper, ethical behavior generates “subjectified subjects” by invoking morality, guild, mental correction and self-correction. Water users self-correct in order not to be considered immoral or deviant. Finally, “neoliberal governmentality” envisions to conduct people’s behavior by approaching them as rational economic agents – individual utility-maximizers who strategically calculate costs and benefits as to materialize personal interests. Governors therefore would need to install the right economic incentive structures (Fletcher, 2010). The latter (liberal-modernist) governmentalities are not based on legal force or violence but on a range of multiform government techniques to productively (and economically) *manage and direct* society.

Given the above-elaborated, intimate connection among water, power, identity, and cultural politics, it is remarkable that the debates on siconatures and hydrosocial cycles have largely omitted the domains of water knowledge and action that go beyond social/technical/natural. Framing or intervening in hydrosocial cycles that inform water power hierarchies and legitimize particular distribution and control practices is simultaneously a technical-biophysical, social-economic and cultural-political project, chaining bonds among the social, the natural but often also the supernatural. A perspective on metaphysical concepts and powers in hydrosocial analysis sheds light on both ancient and contemporary water politics.

As shown below, a ‘hydrocosmological cycle’ perspective provides a new, different critique for, for instance, Wittfogel’s well-known ‘hydraulic hypothesis’ (1957) associating large-scale irrigation infrastructure development with inevitable social differentiation and despotic rule. Critics have often argued that Inca hegemony could not have been based on water control.⁶ However, as I argue, water control was indeed fundamental to the Empire’s hegemony, but Wittfogel neglected to analyze the intimate links between physical-natural and metaphysical-cosmological water control domains as crucial for strategizing towards hegemony. Section 5 analyzes how Inca-imperialist hydrocosmological cycle

⁶ Many have refuted Wittfogel’s thesis (for an overview, see Boelens, 2008), because of (a) its ecological determinism, (b) the hydro-political model’s static nature, (c) lack of archeological evidence, (d) stating that social structure determines water control and not vice versa, or (e) showing that most Andean systems were too small and localized to account for State despotism. Chang (1983), for other empires, also used metaphysical arguments to refute Wittfogel’s hypothesis, but I challenge his reasoning for the Andean case because he misrecognizes water control power and mechanically separates water control from metaphysics.

construction served to encapsulate alternative origin myths, reduce diversity of alternative hydro-political cults and, this way, develop a new socio-natural world order (cf. Patterson, 1997).

In rather similar ways, as Section 6 illustrates, diverse contemporary Andean hydro-cultural frameworks are currently being forced to unify into one hegemonic expert-modernist representation of the hydrosocial cycle, naturalizing policy models as scientific and reinforcing elite and State control over local resources (Boelens and Vos, 2012).⁷ In water-power-identity battles in the Andean region, dominant control-externalizing agents deploy subtle techniques of governance and modern myths strategizing towards a 'one-water-world order', trying to win the hearts and minds of those subject to their power (Lukes, 2005), in order to strategically replace local conceptualizations (Boelens, 2009).

Yet, such powers are not beyond the influence of those subject to them. The latter's efforts often aim for 'control-localization' (cf. Ploeg, 2008; Scott, 1990), challenging, at once, material water expropriation and normalization of water views, rights and norms, thus refusing to accept selfhood as a mechanical reflection of prevailing power relations. Here again, hydrosocial patterning projects are key. Hydrosocial cycles, constituted as local-national-global hybrids, focus us on their political use and convenience either for intervening agents and supralocal rulers or for user groups struggling for livelihood defense and rule-making autonomy. Therefore, commensuration of particular hydrosocial cycles is closely connected to the politics of truth and issues of legitimate water knowledge and practices. In Andean water control, imperial command, scientific research and policy-making, these battles produce permanent, clear results, separating 'legitimate' forms of water knowledge, rights and access from 'illegitimate' forms.

3. Probing for water in the Earth's veins: diverging truths about the nature of water and water problems

My first contact with water control and Quechua peasant communities in the Andes was in the remote Peruvian district of Mollepata, Cusco, in 1988. At that time, the area was dry, with irregular rainfall, making peasant families' life extremely difficult since fundamentally they all lived from subsistence agriculture, while herding cattle in the *puna* – the highest zone.

Early in the 20th century, the local landlord ordered the five (semi)serf communities belonging to his hacienda to build two canals: "La Estrella" and "Marcahuasi" (Figs. 1 and 2). The hacienda's *mayordomos* (foremen) made the *comuneros* (community members) work in compulsory *faena* workdays.⁸ Canal construction yielded many casualties when cutting through steep mountain rock and building intake structures on snow-covered highland pampas (altitude 4000 m), at the foot of 6271-m Mt. Salkantay. Communities had to deliver free labor by shifts to construct the canals and irrigate hacienda sugarcane fields. The canals brought some 500 ha of hacienda fields under irrigation. In exchange for their labor and expropriating most of their agricultural output, peasant families were allowed a limited amount of water, at night only, to irrigate their smallholdings.

During Land Reform (starting in 1968), the hacienda was subdivided among *comuneros* (holding individual titles within community property) and third parties. Because of the sudden organizational vacuum and lack of authority – the hacienda had maintained a large organization to operate and repair the canal systems – the irrigation system fell into disuse and broke down. In 1984, some 200 families from the communities took the initia-

tive to rehabilitate the old 26-km-long La Estrella canal. They approached Peruvian NGO CADEP (*Centro Andino de Educación y Promoción*) to support their difficult project. The challenge was to build an inter-community organization capable of managing the canal system, with democratic structures unlike prevailing patron-servant relationships. Communities wanted to bring 200 ha under irrigation in a first 5-year phase, and another 200 ha in a second phase.

Rehabilitating the ancient canal, however, faced many drawbacks. One major obstacle was in 'Balcompata', 2 km from the main intake, near the mountain peaks of Umantay and Salkantay. Throughout the rehabilitation effort, this 200-m stretch, crossing a steep slope of gravel and stones, repeatedly collapsed. This place could be reached only by some eight hours' walk from the communities. For years, many *faena* days were spent to overcome this huge problem, loading building materials on donkeys or simply on the *faenantes*' shoulders. Each time, right after reconstructing collapsed canal sections at Balcompata, new landslides would destroy it again.

When inquiring about this 'water problem',⁹ later when villagers and technicians could reflect on it, I heard several explanations:

Technicians explained that the Balcompata problem was *technical and biophysical*. The canal slope was steep and very unstable, without rock or vegetation. The slightest filtration of water would undermine the mountainside. On top of that, the canal's hydraulic and (concrete) structural design was not suited for that trajectory: too heavy, not flexible, and susceptible to dangers of filtration and undermining. The *comuneros* agreed with this explanation, and mentioned similar technical bottlenecks as root causes.

However, the NGO's social promoters emphasized other aspects of the water problem. Beyond just technical issues, it was also *socio-legal and organizational-managerial*. Rules were established, but the actual concretization of water rights and organizational framework lagged behind. Communities still lacked strong organization, with transparent leadership, clear roles and responsibilities. Organizational capacity-building had just started, to fill the vacuum after the hacienda water-use organization breakdown. Also here, *comuneros* agreed with this problem assessment, since they had analyzed similar problems.

Political scientists related to the NGO did not deny the technical and organizational problems contributing to the water problem, but stressed that it was more than just internal management affairs. The Balcompata case – actually, the whole canal rehabilitation effort – should be placed in its *political and economic* perspective. Since time immemorial, elites have abused local communities, expropriating 'surplus' labor and agricultural production. Although haciendas were largely expropriated during land reform, parts were still unaffected. Moreover, well-to-do classes from outside the area obtained large land entitlements to the fields formerly irrigated by the La Estrella canal – affecting especially the Auquiorcco, Huamanpata and Marcahuasi communities (see Fig. 1). La Estrella – just like the other canals – once rehabilitated, would irrigate community members' fields but also these ancient hacienda fields. Still prevailing practices of power abuse, clientelism, and fear that their newly created water rights might ultimately be expropriated by force and legal manipulations after delivering thousands of *faena* days, were explained as basic reasons for not overcoming the 'water problem' to actually complete the canal.

⁷ For comparative analysis, see e.g. Swyngedouw (2007, forthcoming) on Spain; Swyngedouw (2004) and Boelens (2008) on Ecuador; Budds (2009) on Chile; Ferguson (1990) on Lesotho; Worster (1985) and Fiege (1999) on the USA.

⁸ *Faenas* (by *faenantes*) are collective working parties.

⁹ Rather than giving a linear description of the irrigation development projects in Mollepata since the 1970s (see, e.g. Hendriks, 1988; Boelens, 2008), here I focus on Mollepata's Balcompata (and later Canal Nuevo) cases as 'diagnostic events' – events that express more than the incidence itself; as 'episodes' they form part of and articulate larger socio-economic and cultural-political practices and ongoing historical processes (Moore, 1987).



Fig. 1. Map of Mollepata, Cusco, Peru. Source: own elaboration.

Again, several peasant leaders were asked about this perspective, and recognized the validity of such an explanation.

Although comuneros basically agreed with such explanations, some said these only partially described the nature of water control in the region. Since starting the rehabilitation effort, *faenantes* working in the high altitudes of Pampa Soray and staying overnight at the workers' camp at the foot of Mt. Salkantay had discussed the need for a human sacrifice to the mountain god, the Apu,¹⁰ to appease him, ask permission to work on his body and release his blood as irrigation water – just as their ancestors were said to have done. Several nights, comuneros and CADEP personnel had arrived at the campsite in panic, having seen ghosts in Balcompata (see also Hendriks, 1988). Some felt a basic component of the 'water problem' was the distorted relationship between comuneros and deities, particularly Pachamama (Mother Earth) and the Apus of Mt. Salkantay and Umantay. In the past, local comuneros would gather for tribute to Apu Salkantay every time water became scarce or when probing for water in the Earth's veins, but this tradition had been lost. Therefore, they were punished with water scarcity and simultaneously too much water, the heavy cloudburst

and rain- and hailstorms impeding the work, causing landslides and breaking the canal. As in former days, when building the La Estrella canal (1914–1931), things went wrong: that job took almost 20 years and because the landlord did not respect the mountain gods it was only after many people had died during construction that the Apu sent his water. Since that time, it has been perceived that the Apu has rejected all human construction efforts to rehabilitate or build new canals and he complains every time people hurt him without asking permission. He becomes angry and violent when they scratch his skin and try to open his body. The *Hatun Pago*, the 'ultimate sacrifice', a human being, might content him and calm his anger.

Nevertheless, finally, in 1987, the Balcompata water problem was solved. Instead of the open canal, the stretch was covered with slabs of reinforced concrete. They also carefully lined and protected the canal. For the first time since the hacienda regime, water could now pass smoothly through the stubborn zone. In 1988, water reached the communities' irrigation zones and fulfilled the long-cherished dreams of hundreds of families.

Basically, the NGO's technicians working on the rehabilitation project attributed this success to adapted technology. The slabs were strong and could easily withstand rock avalanches. The lined canal did not allow any leakage that might weaken the subsoil. Canal protection included tree planting and natural vegetation

¹⁰ 'Apu' or 'Wamani': main protector of the local territory. They engender and control water sources, and as such, life itself.

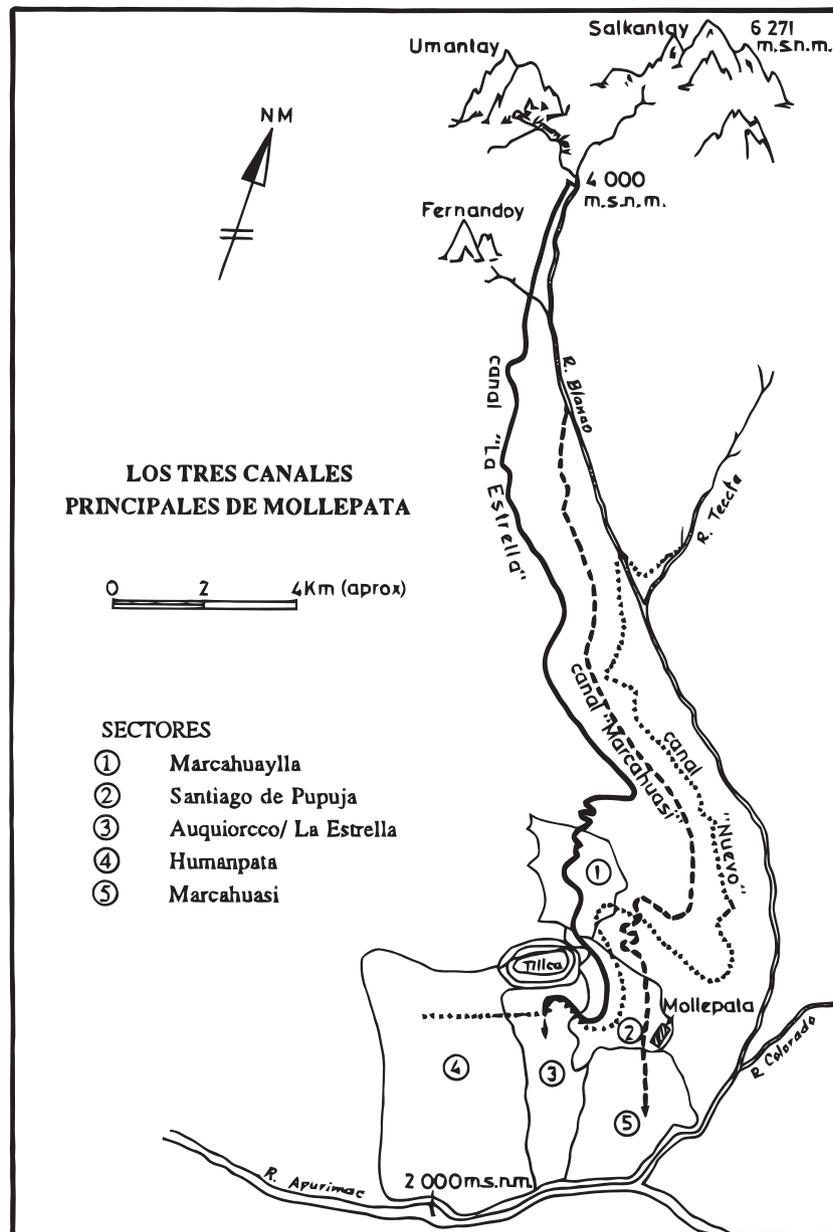


Fig. 2. Canal systems in Mollepata. Source: Hendriks (1988).

strips along contour lines, and building interception ditches, drainage canals, and canal support walls.

In turn, their colleagues, the social promoters, accepted this technical truth but added another: the collaborative work structure was finally in place, with clear objectives and operational rules and responsibilities within the community and intercommunity organizations. Capacity building and collective discussions had improved management capacity enormously. The intercommunity organization's overall rights framework increasingly functioned as the reference system for decision-making, and each community started making its own internal regulations for future water management.

The above explanations were acknowledged by those persons with political science schooling, supporting the work of CADEP from Cusco. They, however, emphasized that the power of the State, the local landlord and the elites had further diminished in the area. Communities were conscious of the fact that their labor

would no longer just be expropriated, had growing countervailing force and were even replacing municipal authorities. Now, they worked for themselves and could harvest their investments to gain water rights.

In short, the various 'groups' not only analyzed the water *problem* according to their own background and perspectives but also placed the water *solution* in their own truth domain. And the comuneros? They tended to agree with all of them, recognizing however that water and water management is fundamentally a multi-layered issue, and such 'domains' cannot be separated in actual practice. But they felt there was more under the mighty Sun, and they added a 'supernatural' or 'metaphysical' explanation to the foregoing clarifications.

In their account, shortly before the problem was solved, the Apu again showed his power and anger to the Mollepata *faenantes*. An enormous landslide and stone avalanche occurred when reconstructing the canal at Balcompata. This time, the canal stretch

collapsed again, and a peasant leader was buried under the debris. Together, the laborers managed to dig him out and, although more dead than alive, he was released from the Apu's embrace and survived. They interpreted that the Apu did not demand a permanent offering, but settled for the temporary human sacrifice since, from that day onwards, the stretch did not pose further problems; the Apu released his blood, sending water to the irrigators' communities.

4. Domains of water knowledge and control

It is not my aim to verify these divergent Balcompata 'truth contents'. Rather, I am interested in understanding how such claims to truth are being used in practice, how they shape perceptions of reality and also define socionatural reality itself: how they form part of particular hydrosocial cycle constructs and truth-knowledge-power triangles (cf. Foucault, 1975, 1980). In Balcompata, actors' definitions of knowledge and truth diverged according to their social/disciplinary backgrounds. Nevertheless, the farmers' explanations illustrate that such domains of knowledge are not necessarily mutually exclusive. And several 'truths' (complementary, diverging or even contradictory) may come together and relate as different aspects of the same phenomenon. Farmers tended to see the water problem explanation in five (not exhaustive) domains: technical-biophysical, organizational, socio-legal, political-economic and metaphysical.

Depending on the analytical vantage point, different thematic areas are highlighted and different perspectives used to understand the same, complex object, i.e. Andean water control, water territories, or hydrosocial networks. The domains present diverse, distinct but *interlinked thematic fields of knowledge, conceptualization and interpretation, generating and applying particular focuses toward imagining the real*.¹¹

The domains' contents and their mutual interaction and composition as a framework to explain, intervene in, and (re)create socionature (such as hydrosocial cycles), is shaped by regimes of practice and representation and the power they embody: from particular scientific disciplines to diverse farmers' knowledge systems, from water policy-truth regimes to local-global chains of production and accumulation, for instance. Defining and categorizing these domains' contents and interconnections, based on particular concepts and theories, is much more than a scholarly striving for clarity or intellectual rigor; as mentioned earlier, it is also a deeply political, ideological matter (Zwarteveen and Boelens, 2011). The choice and classification of concepts and their interrelations do not represent the *nature* of water control of (e.g., Mollepatata) water users' perceptions but my own intentions 'to tame the wild profusion of existing things' (cf. Foucault, 1966). They aim to serve my analytical purposes, sprout from my situated knowledge (Haraway, 1991), and reflect my background, interests, analytical skills and field experiences.

In modern science, commonly, these water 'domains' have been 'dominated' (demarcated and encroached) by scientific disciplines that separated them to produce water truth claims backed by the disciplines' own system of valuing, norms of correctness, and methods of categorization, comparison and judgment. However, not just the categories or concepts make alternative analysis difficult but also the boundaries that divide categories and obscure trans-boundary linkages. For example, transdisciplinary conceptualization of 'water rights', contrary to their mainstream relegation

to the realm of law and regulation, would trace the concept as encompassing multiple domains.¹² Water rights become manifest, simultaneously, in water infrastructure and technology, normative arrangements, and organizational frameworks to operate water control systems, while the cultural and political domains of water rights significantly address the question of legitimacy regarding actors' inclusion in and exclusion from water use and decision-making processes.

Here, the cultural-metaphysical domain (Greek: meta + physika = "the works beyond the physical works")¹³ particularly focuses on how rules, rights and duties attached to water flows and hydraulic infrastructure are closely linked to systems of meanings, symbols and values, involving institutions and networks of human, non-human and supernatural actors and powers that influence water control. This domain – often erroneously associated with only 'social' and not with, for example, technology – is essentialized in romantic representations and contested or ignored in natural sciences; for not unraveling 'objective truths' that can be verified or discounted. But, as in Balcompata, the issue is not about whether water listens only to modern knowledge or also to supernatural guidance. As long as, in particular settings, it is an important reference frame for peoples' behavior, metaphysical institutions will crucially influence actual water control. In regions as Mollepatata, water rituals and beliefs produce social reality, in terms of actually orienting human water use practices (see, e.g. Gelles, 2000; Vera, 2011). Discourses enveloping this domain, beyond just 'narratives', comprise power-knowledge regimes constituting sets of precise rules, procedures, techniques and practices. Lévi-Strauss observed that the logic used in mythical thought is "as rigorous as that of modern science, [...] the difference lies not in the quality of the intellectual process, but in the nature of the things to which it is applied" (Lévi-Strauss, 1955: 66).

The Balcompata event expresses how water control necessarily requires transdisciplinary understanding, interweaving multiple domains – some of which are commonly 'forgotten' in scientific analysis. As I have shown and will deepen (in Sections 5.3 and 6), it also expresses how studying these domains separately may lead to biased, romanticized and often depoliticized understanding. To comprehend the Balcompata anecdote, in the next section I travel through the complexities of a scattered cosmology, placing the anecdote in a local cosmological perspective; and then critically analyze the role of power linking 'metaphysical' and 'political' domains.

5. The hydro-cosmological cycle and ancient imperial efforts to colonize water truths

5.1. Amaru: water's constructive and destructive powers

In many communities water rites and myths play a fundamental role in the annual agricultural cycle. In several myths, water appears as a deity (*huaca*).¹⁴ Rites involve praying for rain during harsh drought periods.¹⁵ Many myths and festivals relate to

¹² With transdisciplinarity I refer to a holistic approach that crosses the boundaries of scientific disciplines while also incorporating vernacular, grassroots frames of knowledge and representation.

¹³ Webster's (1994:630). Also: "supernatural", or: concerned with "the ultimate causes and underlying nature of things". Coward and Levine: "Cultural ideas are often central to everyday behavior in system operation (water sharing, mobilizing labor, etc.) giving meaning to these activities *beyond material consequences*". Irrigation rituals can highlight "structural principles and underlying values that energize these systems" (1987:20).

¹⁴ *Huacas* refer to divinities and sacred places, and often relate to water sources.

¹⁵ Several rites aim to 'get the water angry' – so it will respond by raining. Some communities 'make the water fight' for this. Water from different sources is mixed in one river or lake; the reaction – the fury of water from land and sky – can be violent. In other rites they 'exchange' Apu's male water from mountain springs with Pachamama's female water from lakes on the plains (see Arguedas, 1975; Cáceres, 2002; Gerbrandy, 1998).

¹¹ Compare Geertz, who stated that the 'law' side of things is part of a 'distinctive manner of imagining the real' (1983:173). I conceptualize the notion of 'domain' as a *thematic field with particular codes, meanings, techniques and focuses*. The domains mutually constitute each other, they represent different abstractions from and explanations of water control reality.

irrigation. For example, water festivals (*unu raymi*) organize canal cleaning and summon irrigators to assemblies to elect their water authorities and distribute and evaluate tasks. For irrigation systems to operate properly, it is common for communities to ‘pay’ the local Apu and Pachamama to start the irrigation season. Payments, often near the water source or intake, usually include an offering of coca leaves, wild fruits, liquor, sometimes with a guinea pig or bird. In water myths and rites, different animals play major roles. For example, frogs (and previously black llamas) invoke rain. The animal most associated with water in day-to-day stories may be the snake (*amaru* in Quechua).

In Mollepata, mythical tradition is very fragmented and inexplicit, since most communities there are not long-standing. Even so, myths and legends are quite common, lively and full of energy, especially those involving water. They are not dealt with as ‘complete’ mythical systems but as incidental events, as fragments that seem not to fit into a broader world-view. Metaphysical control often emerges suddenly, in times of despair and critical changes – such as droughts, landslides and violent rainstorms. At these moments, communities turn inwards, to sources lodged within their innermost being, where hidden patterns of identification and communication, also with ancestors and deities, play important roles. Mollepata residents themselves refer to these events as ‘just superstition’. However, these splinters of local mythology do form part of irrigators’ actions.

One day, *comuneros* had found a snake in the Pampa Soray meadow, where the intake is located near Mt. Umantay and Mt. Salkantay. Instead of killing the snake, they caught it and pulled it through the whole canal, from the intake where the thawed snowcap water flows in, all the way to the end of the canal, over 25 kilometers. They explained this by saying that, for water to be plentiful once the rehabilitation work was finished, it was important to drag the snake through the canal first, so that the water will follow the same route.

On another occasion, when La Estrella was already operational, the canal dried up. A farmer’s inspection revealed a snake in the canal. Usually, when they find snakes, they kill them or throw rocks so they will go away. However, they carefully removed this snake from the canal and let it take off into the brush, so the watercourse would not be harmed.

In Andean mythology, *amaru*, the snake, represents water.¹⁶ Amaru’s waters can bring prosperity or catastrophes:

Snakes appear beneficially, for instance, when water runs in an orderly manner in irrigation canals – meandering like a serpent. This brings water down from the mountains, where the Apus live, to fertilize Pachamama, reinforcing bonds among humans, deities and nature.¹⁷

On other occasions, snakes show their dangerous side and punish people. Punishment involves disasters: floods, landslides, erosion and lost crops from saturated fields. Or snakes deny the water so sorely needed to farm and survive. For example, Cáceres presents the story told by Musuq Llaqta *comuneros* in Peru, whose irrigation aqueduct is out of order: “One day, the snake was guiding the water along the aqueduct. Just before it reached the other bank, someone spotted it and threw a big stone, killing the snake. Since then, the water has never wanted to come back; it ran totally dry” (2002: 92). One can hear many similar stories (e.g., Gelles,

2000; Vera, 2011; Zuidema, 1990), particularly when related to abandoned Inca canals.

How are these widespread local narratives about ‘amaru’, benevolent and destructive water force, related to the Balcompata story? How to interpret the Mollepata *comuneros*’ reaction? Let us have a closer look at the metaphysical explanation of water flows in Andean cosmology.

5.2. The hydrological bond among divine, human and natural communities

Water in communities’ traditional visions is commonly controlled by Apus. Historically, ethnic identity has been strongly related to worshipping a local mountain deity governing the territory’s natural and supernatural resources.¹⁸ Most traditional world-views share the strong bond among Pachamama, the local Apu, the territory, its local kinship groups and the role of water uniting them all. As such, they seem to form part of a pan-Andean representation and worship that gives power and agency to mountains, the Earth, and other elements of sacred geography (Boelens and Gelles, 2005). As in Mollepata, rags and remnants become manifest even today, although not as a complete, imperative ‘order of things’. In what follows I have composed an outline,¹⁹ highlighting water’s fundamental role:

“Water is the main element of the Andean cosmos: the principle that explains movement, circulation and forces of change, the essence of life itself” (Sherbondy, 1998: 212). Andean civilizations have often based their cosmologies on empirically existing hydrological phenomena (Gelles, 2000; Zuidema, 1990). *Mamacocha*, the Mother Lake (i.e. Ocean), as the womb of the universe, envelops the world, links all waters together and they all flow back to Mother’s lap. Directly related to *Mamacocha* and the world’s waters is *Tisci Viracocha*, Andean creator deity (vital force and animating principle), who emerged out of Lake Titicaca. *Viracocha* engendered the cosmos, and created three interrelated worlds and its driving forces:

The spatial structure of the cosmos is divided into *Kay Pacha* (this world), *Hanaq Pacha* (the world-above) and *Ukhu Pacha* (the world-below) (see Fig. 3). *Kay Pacha* comprises three ‘communities’ of living beings: nature (*sallqa*), humans (*runas*) and deities (*huacas*). These communities wish to achieve a complementary, reciprocal relationship (*ayni*). With other deities, water inhabits *Kay Pacha* as a living being: as the *Amaru* snake and deity. Linking Pachamama and Apus, *Amaru* symbolizes life and fertility. These three are considered protectors of human and nature communities, provided that humans maintain the reciprocal *ayni* relationship. For example, when people take care of Pachamama, she repays this through plentiful harvests. And if communities show their respect to the Apu, he sends his water to use. *Amaru* must also be respected, expressed in proper husbandry of water.

Human beings, thus, have a socionatural relationship of dependence on water, mountains and Earth. Herein, water flowing through underground rivers is the bloodstream of Pachamama and Apus. When it flows through surface canals and rivers, it is associated with semen. Next, rain represents teardrops from heaven. Metaphors of blood, semen and tears show how water is a vital liquid, ordering and unifying the cosmological body (Arguedas, 1956; Sherbondy, 1998).

The cyclical symbolic process of the cosmos involves cycles of both *time* and human, natural and divine *life*, while the hydrologi-

¹⁶ Chronicler Guamán Poma (1992[1615]:243) says about *amaru* that the Incas worshipped him as ‘the powerful lord Snake’ – “*capac apo amaro*”. To this day, water mayors’ traditional staffs have snake-head symbols.

¹⁷ E.g., Valderrama and Escalante recorded the myth of Maska, Paruro (Peru): “wherever the [Inca’s] golden snake moved, instantaneously, a canal opened up, with abundant water” (2000:279).

¹⁸ For comparative analysis, on water as a source of identification and structuring bonds among local peoples, territory, sacred nature and cosmology in other regions/continents, see e.g. the cases in UNESCO (2006).

¹⁹ For a detailed overview and other literature sources, see Boelens (2008).

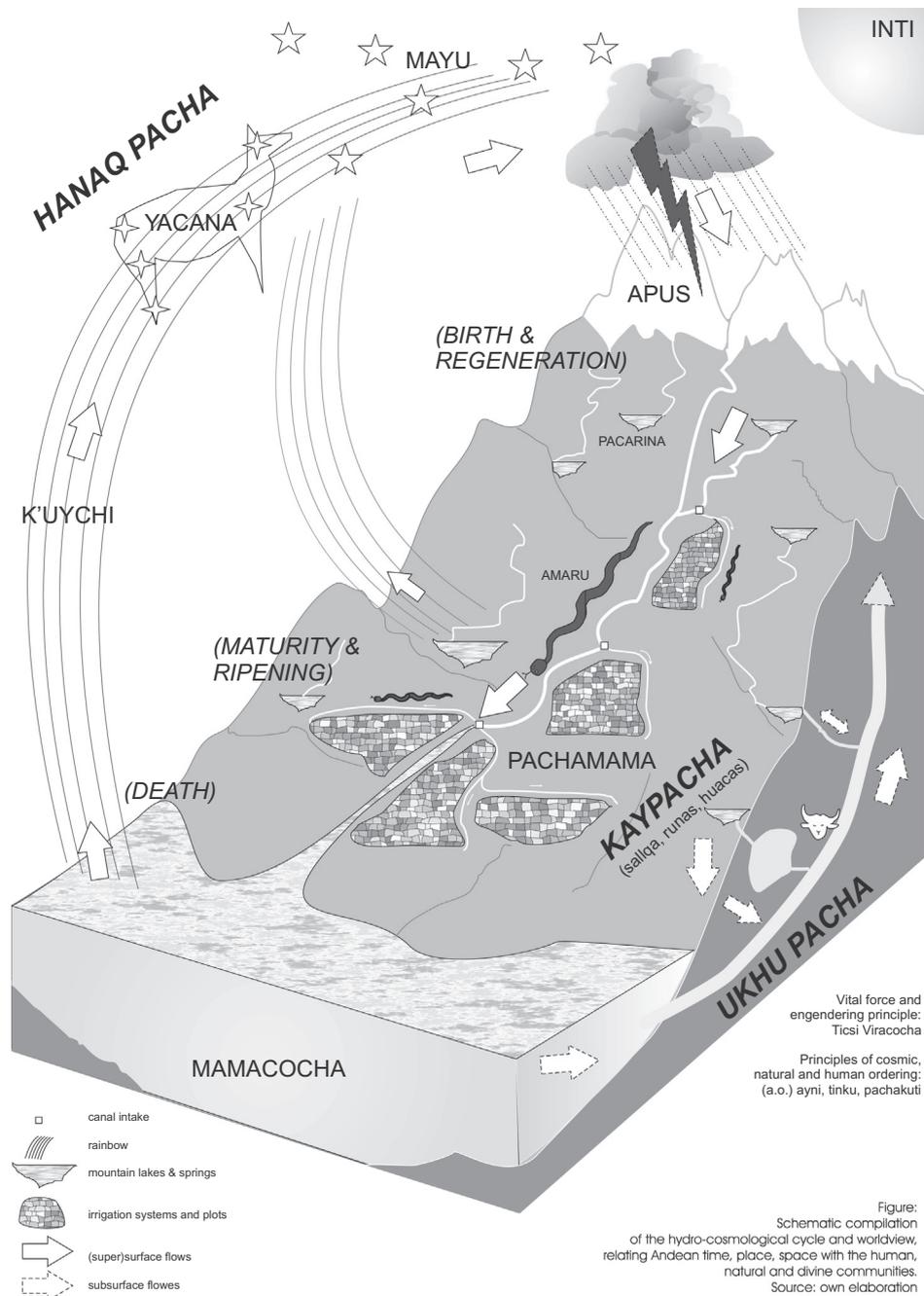


Fig. 3. The Andean hydrocosmological cycle and worldview. Source: own elaboration

cal cycle plays an ordering role.²⁰ Water's route symbolizes the route of life through three worlds. Through ritual offerings and reciprocal action, humans must sustain balance and cyclic flows in the hydrocosmological cycle. The cyclical order connects the scales of time to space: particular places are associated with certain phases of life:

- The ocean's water, as a cosmic sea, surrounds and underlies the Earth, and after flowing through underground rivers, penetrates the Earth's surface from below. Then water appears on the surface, in highland lakes, as springs (*puquios*) or as outflows from sacred caves (Sherbondy, 1998). The origin of time and life,

²⁰ E.g., Ávila (1987)(1598), Cáceres (2002), Guamán Poma (1992(1615)), and Zuidema (1990).

pacarina (awakening, birth) is associated with lakes and springs on mountains, summits and snowcaps (*pacarisca*), where the Apus stay. This is the place of both birth and regeneration. Apus control the water cycle by freezing the liquid of life in their ice- and snow-caps and release it when they decide.

- Through irrigation canals and rivers, serpentine-shaped and guided by Amaru, water reaches Pachamama's lands and fertilizes them.²¹ This is when life is planted and sprouts.
- Pachamama gets nature and crops to grow, flourish and ripen, according to the respect she has been shown. Life ripens in Kay Pacha.

²¹ In contemporary communities, many weddings are scheduled at the start of the irrigation season ('marriage' between Apu and Pachamama, and fertility celebration) – and the Water Festival.

- After ripening and harvest, death comes in the lowest part of Kay Pacha: water dies in the desert, trickles directly underground, or is lost in Mamacocha's sea. There, water continues its underground pathway, in Ukhu Pacha, the netherworld, where it often is symbolized by a bull (Puka Turu) rather than a snake.²² After a long trip through underground rivers – the Earth's veins (*Yawar Mayu*, River of Blood) – water reappears again in 'this world' (Cáceres, 2002; Sherbondy, 1998).

Apart from subterranean flows, water also circulates through the sky, transported by the rainbow (*K'uychi*) and celestial river *Mayu* (the Milky Way). In this world-above, Hanaq Pacha, water is symbolized by *Yacana*, the black llama, a prominent constellation. *Yacana* drinks from Mamacocha and strolls along rainbows and the heavenly river. Like snakes in Kay Pacha, this mythical llama guides water through the world-above (e.g., Ávila, (1987(1598)); Zuidema, 1990). Clouds and rainfall, the llama's teardrops, bring water back to the Earth, complementing waters that Pachamama needs for nature and agriculture, or feeding Apus' sources. From here, again, with water, life, is reborn and Apus direct water down to fertilize Pachamama.

Water's different cosmological pathways form a socionatural network traveled by gods and ancestors, engendering the human world²³ (Sherbondy, 1982, 1998. Cf. Arguedas, 1956). Ancestors, like major bodies of the cosmos, were created in local water sources, especially in mountain lakes. According to the particular worldview of the Inca imperial regime, the universe's most sacred elements were created in Lake Titicaca.

"For the Incas ... all peoples were created in Lake Titicaca where Viracocha endowed them with the symbols of their ethnicity... Viracocha submerged these ancestors in the Lake and sent them along underground rivers to the points where they emerged to the Earth's surface. Interior rivers were, and are, conceptualized as Pachamama's blood veins. Throughout the Andes other high lakes were the origins of other communities ... The ancestors emerged at points where there were springs, lakes, rivers, caves, mountains or large trees. All these were considered points of communication with Earth's interior waterways ... Mountains have snowcaps that form streams and rivers, but there are also many mountains considered water sources that show no empirical evidence of being water sources. It is a widespread belief that large subterranean lakes lie under mountains and that these are the sources of waters that flow from the general direction of these mountains" (Sherbondy, 1998: 212).

Local Apus, powerful mountain deities, control water and thus life's origin and continuation. This local lord, personification of the territory's most important mountain, controls the 'central source' and the surface and subterranean hydraulic network originating there: all local springs, secondary lakes and streams in the territory. Historically, wherever water left the underground network and surfaced, local humans and animals saw the Sun for the first time and communities were established.²⁴ Ancestors traveled underground water routes both ways: when they died they sank into bodies of water and returned to their source of origin (Arguedas, 1956; Sherbondy, 1982). Such *water territories*, combining hydrological, social, biophysical and cosmological representations, express

powerful notions of origin and identity (Boelens and Gelles, 2005). In the Balcompata case, scattered pieces of this hydrosocial puzzle dynamically refer back to ancient hydrocosmological cycle perspectives.

Parallel with perception of agriculture as a cyclical, Andean worldviews also perceive time as cyclical, or rather spiral, and not linear.²⁵ Everything 'returns' periodically but with major qualitative leaps forward. These leaps happen because of continuously renewed experiences in the human-nature-deity network interaction. However, there are also violent breaks, expressed in cataclysms (earthquakes, landslides and floods). They happen when the cosmic cycle is under great stress, generally when humans forget their reciprocal obligations. To re-establish the cyclical/spiral hydro-cosmology, these catastrophes emerge to shake up Kay Pacha. Nature's forces, cosmological energies and human conflicts²⁶ join to re-establish balance. This cosmic re-ordering is represented by the Andean concept of *Pachakuti*.

Pachakuti releases the built-up tension through telluric and hydrological forces. This is, *when Amaru, the water-serpent, shows its other face*, revealing its violent, poisonous side: water becomes a powerful means of punishment. Amaru's destructive waters enable *Pachakuti*, conveying the discontent that the local Apu or Pachamama feel towards people, as in the Balcompata case. *Pachakuti* (i.e., 'returning the Earth') is a most fundamental concept allowing re-composition of human-nature society. To re-establish the hydro-cosmological cycle and ask for Amaru's destructive forces to revert back into benevolent water flows, humans make small offerings. But in exceptional cases, human sacrifices were needed to console the deities. Currently, in situations of extreme crisis, remnants of this (in Inca-times widespread) tradition come to the surface.

We see, then, that the above Andean principles, symbols and metaphors (*Pachamama*, Apus, Amaru, ayni, Earth's veins, *Pachakuti*, etc.), placed within the hydro-cosmological worldview, *seem* to give an explanation of local views' coherence during the Balcompata incident. All 'metaphysical domain elements' important in the Balcompata water problem may easily be situated in the above hydro-cosmological framework. It presents a possible explanation of how local comuneros would trace their origin to territorial deities and water sources, building their 'hydraulic identity'. Below, I examine this assumption.

5.3. The colonization of truth about creation

Although the foregoing explanation attracts many scholars and activists searching for an original, pan-Andean worldview, based on human-nature harmony, radically different from the 'Western predatory relationship with Nature', few contemporary communities would consider themselves represented by such discourse alone; except for when they *strategically* use pan-Andean truth regimes as counter-discursive arms (e.g., against water privatization policies). Current practices and rituals cannot be explained solely by pre-colonial frameworks. Also, beyond accuracy, essentialized visions may be dangerous, especially for groups that lack power in presumed 'complementary', 'harmony-oriented' societies. As Mollepata farmers argued, water control cannot be explained *from just one* of its constituting domains. Linking 'metaphysical domain' interpretations with, for example, a

²² Arguedas (1956) recorded myths about winged serpents, Amarus, huge monsters living in deep lakes, representing water, who were gradually replaced by black bulls after Spanish Conquest.

²³ After creating the universe, Viracocha disappeared into the Ocean, and deities (Sun, Moon, Pachamama and Apus, and territory-bound divinities) continued to play active roles (see, e.g., Garcilaso de la Vega, 2000; Rostworowski, 1998).

²⁴ In many communities, water access and property rights find legitimization in these mythical-historical roots – ancestors emerged from the sources and collectives hold these waters and irrigated lands as a sacred trust (Sherbondy 1998:213).

²⁵ The spiral cycle of *time* is concentric with the spiral cycle of *life* (birth, growth, blossoming, death and rebirth), the spiral cycle of *agricultural work* (plowing, planting, sprouting, ripening and harvesting), the *hydrological* cycle and the spiral cyclical *cosmological* order.

²⁶ Expressed in the '*tinku*' concept, the conflict-ridden encounter between complementary components comprising the dual structure of Andean society and cosmology, to re-establish balance.

cultural-political domain view, offers other insights. Beyond the question of truthfulness of pan-Andean water beliefs, I examine how they express Foucauldian ‘truth governmentality’ and legitimize dominant views and power structures, deployed by agents who use local truths to create hydro-social-political reality that strengthens their political control over water and humans.

‘Manipulating’ the metaphysical domain is often portrayed by Andean cosmology activists as a Western (neo)colonial phenomenon, but ‘indigenous’ rulers also were great masters in metaphysical discourse strategies. Particularly the Inca empire knew that appropriating local beliefs also meant appropriating the powers attributed to deities. Since these beliefs orient local, water-related human behavior, influencing water metaphysical beliefs steers societal practice (e.g., socio-organizational structures, technology development, resource distribution), consequently, conquest of local water truths was central to installing Inca religious supremacy and political-military power.

Local hydrosocial practices and beliefs were subject to imperial ‘identification and normalization politics’ aiming to foster subjugation – combining “the art of government according to truth” and according to “the rationality of sovereign power” (Foucault, 2008: 313). The diverse pre-Inca mountain cults, relating to local water sources and territorial kinship roots, were symbolically appropriated, unified and incorporated into official State religion. The Empire also installed a widespread State violence system based on human sacrifices. It “used the most local and primordial of religious beliefs for its own purposes, extending its legitimacy and hegemony throughout the Andes” (Gelles, 2000: 80). Simultaneously, in their scalar politics, local Inca deities were elevated (‘up-scaled’) to the status of primary gods to become world powers, legitimizing their mastering of the universe.

So, too, with water itself. In their cultural-political representation, Inca conquerors established hydrological linkages – empirically existing or not – between *all* Andean water sources and Lake Titicaca, which it claimed as source of imperial origin. Hereby, they strategically used beliefs that local ancestors originated from local water sources (Arguedas, 1956; Sherbondy, 1998). Lake Titicaca, militarily and politically controlled by the Incas, was *hydro-politically constructed as center of the universe*,²⁷ feeding through subterranean rivers all local mountain lakes, springs and rivers: these were made *secondary* places of creation in the world’s hierarchy. Through origin politics, the Inca Empire made itself the center-point of the hydro-cosmological-political order.

Section two referred to Wittfogel’s ‘hydraulic despotism’ hypothesis (1957) that, interestingly, pays important attention to religion and priest-elites’ role to dominate societies based on large-scale irrigation infrastructure development. However, he (and even his critics) crucially missed the issue of the ‘politics of patterning the hydro-cosmological cycle’ as a strategic effort to establish hegemonic rule (see Boelens, 2008). The Incas strategized to create a powerful ‘convenient history’ and an ‘appropriate hydrosocial cycle’ as truth governmentality techniques to incorporate and subject humans and non-humans in their socio-natural network reality. While the military conquest of neighboring tribes’ water sources served direct material-economic purposes, their ideological conquest served to legitimize occupation, centralized hegemonic power and surplus extraction in the long term (Boelens and Gelles, 2005).

Indeed, the effort to colonize Ultimate Truth – creation of the universe with particular human-natural-divine connections – appeared as a forceful governance strategy for Andean dominant classes. The importance of *water control* in these processes to dis-

empower the dominated is remarkable. Obviously, subsequent influences of colonial, republican and contemporary cultural politics have added to interaction among current beliefs and water flow patterning in Mollepata.²⁸ But even when limiting this analysis to pre-Conquest times, it clearly shows the need to place hydrosocial cycle presentations in their multi-domain context to understand their workings as reality-making powers.

6. The order of things: the politics of composing hydrosocial cycles

Water metaphysics is exploited as an instrument par excellence to reinforce disciplinary power strategies. As Levi-Strauss observed, this finds continuation through “politics in modern societies” (1963: 204): *there is a strong resemblance between ancient mythical thinking and current political discourses*. Inca nobles, Spanish colonizers, Catholic priests, landlords, and the latest policy-makers have all known the governance game, using prevailing Andean practices and worldviews for their own purposes. These days, through agribusiness, forest logging or mining discourses, new myths and discourses are built on existing ones, envisioning to selectively appropriate Andean symbolic and organizational patterns, and re-interpreting them to alter water cycles and access local labor and natural resources. For instance, in the name of ‘market environmentalism’ and the ‘greening of capitalism’ (e.g., Bakker, 2010a,b; McCarthy and Prudham, 2004), mechanisms are invented to marketize ‘environmental services’ that presumably build on existing Andean collaborative traditions (often, however, shaping new commons’ enclosures; see Boelens et al., 2013). Or the myth of ‘popular capitalism’ (De Soto, 2000) is promoted, claiming to ‘recognize’ Andean rights plurality while, in fact, forcefully incorporating local user collectives, identities and resources into the world market water network (cf. Achterhuis et al., 2010; Boelens, 2009). These modern myths and discourses – adding disciplinary and neoliberal governmentalities to ancient power games – aim to shape hydrosocial cycles and mask political choices by claiming scientific objectivity. Mollepata, again, is full of governance efforts to legitimize the profound re-patterning and re-allocation of water flows as natural, rational, inevitable phenomena.

An illustration among many is the multimillion dollar hydraulic mega-project ‘Canal Nuevo’ (Fig. 2); started in the 1970s and ‘rehabilitated’ ever since. A coalition of Mollepata elites, national government, foreign construction companies and international financing institutes, through a Public–Private Partnership, aimed to redirect water flows according to ‘criteria of efficiency and productivity’ and bring ‘modern technology and progress’ to remote areas. State legal force neatly combined with (neoliberal) governance by manipulating external incentive structures and moralizing efforts to discipline and (self)correct water users. Modern cultural politics framed the water user identity issue in terms of ‘beneficiaries of development’ whereby comuneros would become ‘responsible water service clients’ and ‘progressive producers for the international market’ – new moral schemes of cultural-political belonging. At the technical and legal design table, the Canal Nuevo governance rationally linked individuals and local water society to national and global scales of governance. In fact, however, the highland comuneros were included in the design as laborers and (physical and moral) collaborators by providing access to their territory, but their fields were excluded from the new hydrosocial patterning benefits: their waters would flow to

²⁷ E.g., the legend of Inca ancestors Manco Capac and his brothers and sisters, who after emerging from Lake Titicaca, established the *world’s capital*, Cusco: ‘navel of the universe’ (Guamán Poma 1992(1615)).

²⁸ It goes beyond the aim of this paper to present a full or linear history of Andean cultural politics, acculturation and its relation to water struggles and counter-identification movements; the paper concentrates on illustrations and diagnostic events.

large 'productive farms': the downstream valley's capitalist enterprises. From there, following neoliberal rationality, Mollepata water flows would transform into export commodities and, embedded in agro-food chains as 'virtual water', link to the transnational hydrosocial cycle, driven by global market forces (see Allan, 2003; Boelens and Vos, 2012).

Obviously, detailed patterning of humans and non-humans, institutions, management scales and water practices, through governance techniques converging into a predictable hydrosocial control and governance system ("*hydro-political dream schemes*") is an illusion. The Canal Nuevo experience expresses this dramatically: after many years of construction, the canal collapsed as soon as it was inaugurated. A minimal portion of the 1800 l/s design capacity went through the canal, and only for a few days. Since then, the canal is dry. Still, conviction that *the myth must become reality* is powerful. Its illusive character does not make its power illusory, but generates powerful contradictions in everyday practice. Expert teams continue to conduct surveys to 'rehabilitate' the dream that materialized as a nightmare. Communities, in turn, have successfully rehabilitated their La Estrella and Marcahuasi canals, and refuse to collaborate with efforts to rehabilitate the experts' 'white elephant'.

While Andean user collectives face hydrosocial models and policies powerfully working to normalize and control-externalize their management systems, they are not defenseless. They engage in multiple forms of resistance to defend their resources, rights and decision-making faculties (see, e.g., Bebbington et al., 2010; Castro, 2006; Gelles, 2000). Their "counter-conducts" also question the disciplining regimes through which they are engaged as objects and subjects of governmentality, challenging the very politics of truth (Foucault, 2002, 2007; Cadman, 2010). Often, also, water users' internalization of formal truths and structures is only appearance. They may incorporate these elements into their own water views and practices but assign them a different strategic significance, rejecting the categories in which the dominant want to enclose them and at the same time using them for their own purposes. From pre-Conquest times up to now, production of water-truth has proven to be useful not just to dominate but also to resist. Local communities and coalitions, apart from 'material opposition' to altering their water flows, use a variety of metaphysical arguments, as weapons to counteract hegemonic water policies. For example, Gelles shows how communities around Cabanaconde, Peru, strategically re-appropriated Andean water mayors' practices and rituals and dual irrigation-organizational structure – once seized by Inca, colonial and hacienda regimes to extract local resources – to ritually attain abundant water and to resist elite and State interference in local affairs (Gelles, 2000). Boelens (2008) details how myths around local hero Huanchor, against Spanish colonization, continue to symbolically nurture resistance against mining and drinking water companies that encroach people's water rights in San Mateo de Huanchor, Peru. Vera (2011) presents various cases of communities reviving and reshaping their ancient water legends to counteract encroachment by large-scale hydraulic infrastructure and mining projects. Here, the question of whether water-truths (social, physical and meta-physical) are 'true' may be interesting for scientists, but is not always that relevant for water policy-makers and dominant power-knowledge regimes, nor is it for counter-movements of local water user organizations.

7. Conclusions

As in other regions, water struggles in the Andes manifest water's political nature as well as the ways in which water, infra-

structure and nature are closely connected to cultural meanings and identities. Irrigation systems, for instance, as in Mollepata, more than just ditches linking the hydrological cycle to agro-productive, institutional management systems, are simultaneously political and cultural constructs embedding local knowledge, values, property arrangements, power relations and bonds of belonging. They are also the result of ongoing internal negotiations and harsh conflicts with 'outsiders' – local views, truths and norms are shaped in multiscale contexts of struggle.

These struggles take place, simultaneously, in a variety of 'domains' that constitute each other as integrated facets of the same complex water issue. As such, hydrological cycles are simultaneously natural and social constructs – as chains of human and nonhuman elements constructed by the human mind and by human material intervention. Shaping water control, defining water rights, or 'composing' hydrosocial cycles, therefore, are technical and profoundly social and political activities. Beyond just naming and analyzing water flows, they 'chain' bonds of the social and the natural together in particular ways, envisioning to construct precise patterns: how water should be distributed, how humans and non-humans need to be ordered in socio-technical hierarchies, how this is legitimized by moral and symbolic orders, in ways that can either strengthen or challenge the status quo.

My conceptual use of the hydro-cosmological cycle extends the concept of hydrosocial cycles. It does so, first, by intimately linking diverse water cultures, rights frames and worldviews to the socio-natural construction of hydrological flows – requiring analysis that goes beyond patterning of 'social' and 'natural'. Second, it provides a new, additional entrance to analyze how 'metaphysics' links to (water) politics and power; it offers a tool to examine ancient and modern myths and discourses that attempt to normalize and subjugate actors to control by the dominant groups in water society.

This paper has shown how myths, discourses and practices around hydrosocial cycles and water control are put to work as 'sociotechnical/socionatural organizers and stabilizers', constituting an "art of government according to truth" (Foucault, 2008) that aims to conduct water users' conduct. In contemporary water politics, as I show, this governmentality based on worldview/cosmology and revelation of the world's order overlaps with other foucauldian government rationalities – according to "sovereign power", "neoliberal economic rationality" and "discipline" (Foucault, 2008; Fletcher, 2010). Often in conjunction, they aim to create and proliferate belief that particular production modes, policies and water rights orders are self-evident. While contested in everyday practice, they commonly strategize to connect local hydrosocial practices and beliefs (technical, operational, cultural) to wider identification politics: to foster resource extraction, political incorporation and normalization. From the technical-physical to the meta-physical, they envision to compose and glue together convenient water truth orders: enrolling and aligning diverse social, natural and even 'supernatural' Andean water worlds in one hydrosocial governance network, structured according to 'outside' rules, truths and reference frames. A particular patterning of the hydrosocial cycle – normalizing local systems in the empire's or nation's imagined framework, or the global water experts' and market network – is of major interest to rulers of these spaces, and simultaneously strongly contested.

These 'hydro-political dream schemes' are imaginary, the meticulous configuration of all human and non-human elements into an actually hegemonic nature-society patterning in which they all work towards a coherent, predictable system is an illusion. Nevertheless, existing power hierarchies (continue to) actively design such schemes in which the "actors are 'acted' by the network that holds them in place" (Callon, 1991: 154). Moreover, as

I show, their properties are experienced as real and have forceful material and distributive consequences.

In Andean waterscapes, however, water myths and discursive practices function both to stabilize the status quo and to mobilize against water-power hierarchies. Throughout history, control over mythical and discursive water reality and water-based material-symbolic constructions of origin and distinctiveness have been crucial for ruling classes to dominate *and* for counter-movements to challenge this dominance. Local water communities react, modify and also strategically use the ruling symbolic order. Below appearances of uniformity and formality, local collectives as trans-local networks strategize their ways to resist and construct their own, alternative orders, questioning the self-evidence of formal State, science or market-based frameworks for analyzing and regulating water flows and hydrosocial networks. Here, economic-material and political-symbolic orders and struggles interweave in the effort to defend their water rights and livelihoods. These water battles have no final outcomes but rather characterize opposing forces and strategies.

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