Worldviews and the Everyday Politics of Community Water Management

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ABSTRACT: This article highlights one important reason why attempts to achieve sustainable development through community management often fail – the neglect of worldviews. It addresses a gap in existing research on institutional bricolage by focussing on the core role that beliefs and rationales play in resource governance. Our research into rural water supply in Malawi and Uganda was conducted through a variety of ethnographic methods including year-long community diaries. Drawing on this, we demonstrate how worldviews shape local water management arrangements and their outcomes. We unpick three dimensions of the work that worldviews do In (1) making sense of socio-natural events and processes, (2) maintaining unequal social orders, and (3) serving as resources for institutional arrangements. The article concludes with a reflection on how our approach meaningfully furthers critical water studies, and on the challenges faced by development initiatives in operationalising such insights.

KEYWORDS: Worldviews, critical institutionalism, institutional bricolage, community management, Malawi, Uganda

INTRODUCTION

During our research into the hidden crisis of non-functioning waterpoints in sub-Saharan Africa, we visited a village in rural Uganda. One of the waterpoints we considered – a handpump fitted to a borehole – appeared to be in good working order. It was located on the edge of a field farmed by the chair of the waterpoint committee. His house was on the other side of the field, enabling him to oversee the daily use and maintenance of the borehole. The chair, whom we will call BE, is also a prominent Muslim in his community and a traditional healer. Sitting in the shade in his compound, BE showed us the official certificate from the Government of Uganda that authorises his practice as a traditional healer. He told us that he specialises in resolving marital difficulties, particularly where women have used 'charms' against their husbands to make them less active, less authoritative, impotent and weak.

The situation at this borehole seems to confirm the wider findings of the research we undertook in Ethiopia, Malawi and Uganda. Here, we found that the work of community waterpoint committees is often undertaken primarily by one, or a small number, of influential actors (Whaley et al., 2021). These individuals draw on their authority from other sociocultural domains to undertake water management activities. At first sight, our findings – like this vignette – seem to support an approach to development which advocates "working with the grain", that is, drawing on local practices, values and power relations

to produce hybrid "arrangements that work", and that fit into particular social contexts (Booth, 2012; Kelsall, 2011).

On closer scrutiny, however, the vignette also hints at some of the difficulties of working with local social dynamics, revealing challenges that are often overlooked in development planning and policy. The waterpoint is physically located on BE's land, rather than close to the centre of the village; this potentially makes access more difficult for many residents. BE's traditional healing practice touches on the gendered ordering of society and on upholding the proper roles and behaviour of men and women. In his management of the borehole, he is undoubtedly able to draw on authority derived from different sources, including his position as committee chair, his gender, his government-sanctioned healing practice, and his role as a prominent Muslim. To what extent, however, does this socially embedded exercise of power also act against the achievement of social equity and sustainability in relation to rural water supply?

In this article, we highlight one reason why attempts to achieve sustainable development by working with local arrangements might fail – the neglect of worldviews (people's fundamental beliefs about the nature of life and reality). The importance of people's beliefs and values has been partially recognised in some global declarations (UNESCO, 2016). However, this recognition often adopts an instrumentalising rationality in which culture is superficially understood as material that development actors can consciously mobilise to build sustainable development (Clammer, 2005; Smith et al., 2017). This framing typically fails to engage with how worldviews can encompass logics that shape people's behaviour in ways that achieve some development objectives but contradict others. Behaviour shaped by worldviews may, for example, facilitate the delivery and maintenance of infrastructure while at the same time reinforcing unjust resource allocations and unequal access.

We recognise that worldviews do commonly provide some of the material from which governance arrangements are fashioned. However, to understand just how these arrangements work to produce particular outcomes, we need to pay attention to the explicit and implicit meanings carried by their constituent elements. To illustrate our argument, we draw on evidence of how worldviews affect the prospects of achieving access to safe and sustainable water supply in rural Malawi and Uganda.

The paper proceeds as follows. We begin by outlining the dominant policy approach to achieving the global goals of water for all, arguing that the poor performance of this is partly due to a lack of attention to people's beliefs and to how they shape governance arrangements. We then set out our distinctive conceptual approach, specifying our use of the term 'worldview' and elaborating an analytical lens derived from critical institutionalism. This is followed by a brief description of the project, including the methods we employed to conduct the research. The data is then explored thematically, considering the work that worldviews do in sense-making, maintaining the social order, and acting as resources in governance arrangements. The article concludes with a discussion of the implications of taking worldviews seriously, both for research and for development policy and planning.

THE INSTRUMENTAL LOGIC OF WATER SUPPLY INTERVENTIONS

Ensuring sustainable access to water is a key development challenge, as expressed in the United Nations Sustainable Development Goal 6. Target 6.1 aims, "by 2030, [to] achieve universal and equitable access to safe and affordable drinking water for all". Despite considerable investments over several decades, the problem of inadequate water supply persists across sub-Saharan Africa (UN Water, 2018). Ongoing challenges include ensuring that there are sufficient quantities of clean water close to people's homes and sustaining affordable and effective operation and maintenance of water supply infrastructure. It is estimated that up to half of rural waterpoints (often handpumps) are non-functional at any time. This situation has been dubbed a "hidden crisis" because of the challenge it poses to people's lives and the fact that it often goes largely unnoticed in official statistics (Banks and Furey, 2016; Bonsor et al., 2018).

These problems of rural water supply sustainability endure despite the long-standing global consensus around the preferred mode of service delivery. The dominant community-based management model, popularised in the 1980s UN Water Decade, was intended to ensure culturally appropriate technologies, the increased involvement of women as water managers, and local ownership, operation and maintenance. Central to operationalising this approach is the establishment of a local-level waterpoint committee – typically voluntary in nature – as the vehicle for water management (Harvey and Reed, 2007).

There is increasing evidence that community management arrangements consistently underperform (van den Broek and Brown, 2015; Whaley et al., 2019; Chowns, 2015). However, the policy remains dominant despite this evidence and the championing of alternative models of service delivery (Moriarty et al., 2013). In policy-oriented literature, the poor performance of community management is often attributed to deficiencies of organisation, voluntarism, supply chains, finances, and technical support. We argue that in focusing on such concerns, too little attention has been paid to the ways that people's worldviews shape local water management arrangements, often resulting in outcomes that are very different to those intended by development planners. Our paper aims to show just how worldviews shape everyday water governance, and the implications for equity and sustainability.

WORLDVIEWS

We define worldviews as beliefs about the fundamental nature of reality that ground and shape people's perceptions, emotions, thoughts and behaviour (Koltoko-Rivera, 2004). These include beliefs about humans and their interactions with the natural, physical and supernatural worlds. Worldviews are psychosocial, encompassing shared ideas about order, fairness and justice, right and wrong. These beliefs help orient individuals in their relations with others. They offer rationales for particular practices and strategies (Landini et al., 2014), as well as explanations for social, environmental and metaphysical phenomena. Mundane interactions and events are imbued with meaning and may thus be profoundly significant for those experiencing them. Worldviews shape and legitimise "everyday roles, priorities, and operating procedures by placing them in the context of the most general frame conceivable" (Berger and Luckman, 1966: 117; see also Douglas, 1987; Koltoko-Rivera, 2004).

The cultural turn in the social sciences has foregrounded the need to understand the ways in which beliefs and meanings shape people's engagement with each other and the world. Research in anthropology, history, development studies, and political ecology provide ample evidence for how worldviews are deeply implicated in questions of development, governance and the environment. In recent decades, cultural concerns have become more prominent in critical water studies, with particular emphasis on the multidimensional meanings of water, plural water knowledges and discourses, and the contested 'ontological politics' of water (Mollinga, 2019).

At this point it is worth briefly considering our use of the term 'worldviews'. We acknowledge the recent and varied debates around the ontological turn in anthropology (Carrithers et al., 2010; Graeber, 2015; Kohn, 2015) and the current flourishing of the use of the term 'ontologies' in the social sciences. For a number of reasons, however, we chose to use the term 'worldview', rather than ontologies. We see worldview as a more immediately accessible term; indeed, we argue that it could be seen as a boundary concept that is broadly understood across disciplines and at the interface with policy (Mollinga, 2010). Proponents of the ontological turn argue that people experience alternate realities or worlds and that we should allow such differences to challenge the ways we think about nature, culture and being in the world (Kohn, 2015). Our aims in this article are more modest. We build on an established social theory (institutional bricolage) and argue that, until now, people's underlying beliefs and rationales have been relatively neglected in research that has employed this theory. Our aim is to show how such beliefs interact with contemporary water and development initiatives to produce particular development

outcomes. In this sense, our decision to use the term worldview is more congruent with Ellis and Ter Haar's (2007) argument that one should "take African epistemologies seriously".

Finally, we note that critical academic analyses of all stripes can often seem distant from the pragmatic exigencies of development and thus they have limited impact on the way it is conducted in practice. The more practically oriented literature has focused on 'recalibrating', 'redesigning', or 'integrating' worldviews to address the challenge of sustainable development (Beddoe et al., 2009; de Vries and Petersen, 2009; van Egmond and de Vries, 2011). This framing is typically instrumental. It tends to abstract worldviews in potentially misleading ways, overlooking power and politics and the ways in which worldviews are instantiated in everyday relationships and encounters. While there is a general recognition that worldviews shape behaviour and processes of development, we argue that there is little understanding of how this occurs or what to do about it. In the next section, we provide a theoretical perspective that helps us to analyse how worldviews work in practice, in the shaping of governance arrangements.

A CRITICAL INSTITUTIONAL APPROACH TO WORLDVIEWS

In this paper, we adopt a critical institutional (CI) perspective to examine how worldview beliefs and rationales shape water governance arrangements. From a CI perspective, institutions evolve in relation to the unfurling of historical, socio-economic, and political dynamics across scales. Institutions are enacted through everyday social practices and relationships, located in systems of meaning, and tend to reflect and reproduce relations of power and inequality (Cleaver, 2012; Hall et al., 2014; Cleaver and de Koning, 2015).[1] The everyday governance of water is understood here as the processes that take place among the actors involved in addressing a collective problem (Hufty, 2011). Such processes lead to the creation or reproduction of social norms and institutions that shape patterns of resource distribution and access. Water governance processes thus both create institutions and are enacted through them.

Within our CI framing, institutional bricolage refers to the ways in which institutions are pieced together using the social, political and cultural resources at hand (Cleaver, 2000, 2012). We employ a worldviews lens to help us understand just how governance arrangements emerge and evolve through processes of institutional bricolage. Much of the institutional bricolage literature pays close attention to the role of local norms and practices and to the embeddedness of resource governance arrangements in society (Ishihara et al., 2017; Wang et al., 2018; Frick-Trzebitsky, 2017). However, less attention is paid to the broader worldviews or beliefs that inform the conscious and nonconscious processes of institutional bricolage in which individuals and groups engage (Liebrand, 2015).

Our approach is distinctive in a number of ways. First, we highlight the everyday aspects of believing. We reflect on how the perceived natural order of things shapes acceptable ways of behaving and authorises institutional arrangements that benefit some and exclude others. Our orientation is not primarily towards the dramatic – but relatively infrequent – overt political struggles that are evident in much political ecology literature (for example, on water wars and resistance to water injustices). Instead we are interested in understanding how worldviews shape the "unmarked terrain" (Brekhus, 1998) of everyday resource governance.[2] In our research, this includes the quotidian practices of siting and drilling boreholes and of queueing, carrying, storing, maintaining, distributing, using and paying for water. Beliefs

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[1] We understand institutions as "complexes of norms and behaviours that persist over time by serving collectively valued purposes" (Uphoff, 1986: 8-9). They often manifest in the tacit 'rules of the game', which everyone in a particular context understands as the right way of doing things. Institutions in this sense may be distinguished from organisations which are structures of recognised and accepted roles. A norm-based institution may also, of course, take organisational form (as in marriage or the family), while the operation of organisations is governed by cultural norms as well as by official roles and procedures (Cleaver, 2012: 8).

[2] See Cleaver (2018) for a discussion drawing on Brekhus and others, which considers the need for a focus on the everyday practices of water governance.

and meanings can be explicitly invoked in governance arrangements, but they are also embedded in routinised and taken-for-granted practices that form part of the social fabric of everyday life. It is here perhaps that worldviews hold the hidden power to shape resource access and allocations for good or ill.

Second, and related to this focus on the everyday, we see value in broadening our examination beyond beliefs about the resource in question. That is to say, we are not focused primarily on *hydro*-cosmologies or *water* ontologies (see, for example, Boelens, 2014; Yates et al., 2017); rather, we seek to understand water relations as social relations that are located in more general ideas about the right way of doing things. This includes proper forms of generational respect, natural gendered orders, fair contributions and distributions, and desirable relationships. Moral orders, while not explicitly about water, nonetheless shape the ways in which different people can access water resources and participate in their management. Relations around water connect many realms of social life (Orlove and Caton, 2010) and, from a bricolage perspective, ideas about the right ways of doing things can 'leak' from one domain into another. We therefore see resource governance as entwined in the multiplex relations of everyday livelihoods, where the principles that shape the distributions of water, land, food and social identity inextricably overlap (Schnegg, 2018).

Third, as cognitive frameworks we see worldviews as syncretic. Different bodies of literature tend to categorise worldviews into types such as Christian, Western, scientific, indigenous or neoliberal. These categories, typically, are broad, static abstractions that tend to reify worldviews and may misrepresent how they function in practice. Instead, worldviews are dynamic; they are not always integrated or internally consistent and they may be contradictory (Landini et al., 2014; Comaroff and Comaroff, 1993). We therefore argue for understanding worldviews as being hybrid and evolving. They are contingent on history and personal experience and on the necessary daily improvisations made by people with complex identities and multiple allegiances.

An institutional bricolage perspective reveals how the plurality of social and cultural elements available for the fashioning of institutions partially accounts for their diversity and adaptability and for the possibility of social fit. These elements reflect particular logics, assumptions and meanings that may appear unrelated to the institutional task to be performed, such as water management. The people fashioning institutional arrangements – the bricoleurs – may do so deliberately. However, they also often fashion institutions non-consciously and without questioning the implicit meanings embedded in the constituent material. Such meanings include taken-for-granted assumptions about cause and effect relationships, order and authority, and just allocations.

Worldviews, therefore, do provide a source of material for the fashioning of institutions, but they do so in more complex ways than is appreciated in the building-block logic of mainstream development. Using empirical data on community efforts to access, use and manage water in rural Malawi and Uganda, we go on to elaborate the role that worldviews play in processes of institutional bricolage. Before this, we outline our methods and sources.

METHOD

This paper draws on data from a five-year interdisciplinary project entitled "Hidden Crisis: Unravelling current failures for future success in rural groundwater supply"[3] which investigated the high failure rate of groundwater supplies in rural areas of Ethiopia, Malawi and Uganda. The project employed an extensive – intensive research design across three phases, with the authors of this article leading the

social science component of the research. Here we briefly outline the social science elements of the project and the material that forms the basis for our analysis and discussion.

Phase 1 of the project was a broad survey of the community water management arrangements associated with 600 boreholes in the three study countries. Phase 2 was a more in-depth survey of the management arrangements associated with 150 boreholes. Methods employed to collect data on management arrangements were focus groups, interviews, community mapping exercises, and village transect walks. Phase 3 of the project comprised 12 one-year studies in Uganda (Luwero and Budaka Districts) and Malawi (Balaka and Lilongwe Districts); these were located in six communities in each country. The aim of these studies was to situate water management within the dynamics of wider village life, capturing seasonal variations and stress periods. Community members were trained as either waterpoint monitors or diary keepers; their tasks included tracking water management, access and use over the year, and recording some of the intersecting everyday occurrences in the village. Three community diary keepers were recruited for each site in Uganda and two for each site in Malawi. Project researchers monitored community researchers at each study site and made quarterly visits to the communities to undertake focus groups, mapping exercises, transect walks, and seasonal calendars. Subsequently, follow-up interviews and focus groups were conducted by two of the authors in two villages in Uganda to test findings and pursue salient themes emerging from the data.[4]

The material and conclusions presented here draw from Phase 2 findings and Phase 3 diary accounts for Malawi and Uganda.[5] Our research did not set out to specifically investigate worldviews; rather, this was a key theme that emerged naturally during our analysis[6] of the diary accounts, team discussions, and follow-up focus groups. The diary method proved useful for understanding how water management is embedded in the wider terrain of village life and for identifying the important role that worldviews play in shaping the everyday politics of community water management.

We are sensitive to the danger of essentialising African worldviews and of generalising from localised studies.[7] The purpose of this paper is not to provide a detailed anatomy of worldviews as they manifest in a particular cultural milieu – for which there is a wealth of anthropological studies – but rather to illustrate the relevance of beliefs to everyday water governance. To that end, we select examples from our ethnographic material which illustrate how worldviews provide models of reality which may differ from those expressed in the modernist rationalities of development polices. People's rationales and actions are shaped by worldviews (Landini et al., 2014) and we are primarily concerned with explaining the implications of this for water governance.

We organise the empirical sections of our paper according to the three types of work that worldviews do: sense-making, social ordering, and providing the resources for improvised arrangements. These forms of work are necessarily interlinked, together constituting the ways in which worldviews shape everyday water governance.

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[4] A more detailed account of the implementation of these methods is provided in Whaley et al. (2021).

[5] Political economy analyses and district-level sustainability assessments were also undertaken for each country. Ethiopia was not included in the longitudinal studies due to the nature of the research which partners considered to be too sensitive to be allowed by the authorities there.

[6] All data collected through Phases 2 and 3 was translated into English by the field researchers and was stored and analysed in Nvivo.

[7] Each district is home to particular prominent ethnic groups and is characterised by local variations of culture and belief. In the Luwero District of Uganda the main ethnic group is the Baganda and in the country's Budaka District it is the Bugwere. In Malawi's Balaka District the main ethnic groups are Yao and Ngoni tribes, while the Chewa are dominant in the Lilongwe District. We noted, however, that ethnic identify is only one factor shaping beliefs and values and that many of the communities we studied comprise people from a range of ethnic groups.

SENSE-MAKING

Worldviews provide ways of explaining environmental, social and metaphysical phenomena by placing them within cause and effect relationships. They provide a framework for explaining processes and events in the world and the rationales, principles and assumptions that inform the practices of social actors (Landini et al., 2014; Orlove and Caton, 2014).

Viewing our data from an institutional bricolage perspective, we emphasise two characteristics of worldviews and sense-making. The first relates to the ways in which different logics or rationales (derived, for example, from 'customary' beliefs and from professional developmental logics) intersect to frame and explain a situation. Both Malawi and Uganda are characterised by complex institutional landscapes in which national policy and legislation, customary law, and global development models overlap and entangle with one another (McNamara, 2015). In both countries, elements of so-called customary beliefs frequently collide and elide with the contemporary world. In Malawi for example, in 2017, this manifested in a vampire ('bloodsuckers') scare where vigilante violence was partly directed against doctors, local officials and foreigners (Sharra, 2019, Hay 2017). In Uganda, belief in witchcraft permeates all levels of social and political life, including relationships around water and land (Allen, 2015; Brown and van den Broek, 2020; LEMU, 2017).

The second characteristic of worldviews and sense-making relates to the ways in which worldviews incorporate explanations of the grand scale of phenomena into the prosaic tasks and interactions of everyday life. In this way, many aspects of wider beliefs are implicated in practices of water management, access and use, and in understandings of groundwater availability and borehole functionality. We explore this in the following paragraphs.

Cause and effect explanations

The implementation of water projects provides fertile ground for the articulation of cause and effect explanations. Supplying drinking water from boreholes involves a range of technical activities, including siting, drilling, pump installation, maintenance and repair. Rationales drawn from hydrology and engineering explain water availability in terms of the capacity of the aquifer, the rates of borehole recharge, and the functioning of pump mechanisms. However, water users – and indeed many borehole drillers, maintenance mechanics and project officers – hold to logics that are partially derived from other worldviews which link the workings of supernatural powers with the actions of humans. Explanations of scarcity or plenty which go beyond the immediately technical are common. The falling of rain to replenish water sources and thus improve the personal well-being of the water user is frequently attributed to God: "Today it rained and I harvested rain water again. We are now enjoying free water. God has helped me, now all my containers are full".[8,9]

When it comes to water supplied through human intervention such as the drilling of boreholes, other forces come into play in explanations of dearth or abundance of supply. In such cases, a lack of water is often linked to the power of certain individuals to mediate supernatural and physical forces. One of our NGO partners in Malawi recounted an experience of this. She said that the NGO had been involved in providing a borehole to a health clinic that needed water, and that, after surveying the area surrounding the clinic, they found a location close to the village that was likely to produce water. However, the local chief heard about this, and requested that the borehole be drilled near his compound instead. Those responsible for siting and drilling refused as the borehole was meant to serve the clinic and the chief's compound was too far away for this purpose. The chief left their discussions in disgust saying, "We will see!", intimating that ignoring his request would result in some misfortune. When they came to drill at the chosen site near the clinic, the borehole was dry. Members of the community advised the project

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[8] Diary excerpt, married woman, Luwero District, Uganda; 7 November 2017.

[9] We have anonymised accounts taken from individual diaries and from focus group discussions.

team to go and reconcile with the chief. They did so and subsequently were able to site a borehole near the clinic that produced plentiful water. This account, as conveyed by our NGO partner, thus offered a cause and effect explanation for the supply of water which drew on worldview beliefs about the power of the chief to command more than human forces.

Technology and infrastructure play their part in explanations of everyday phenomena. Some of the boreholes we studied were fitted with chlorination devices to ensure good water quality, which were locally referred to as water guards. Such seemingly beneficial technologies could arouse suspicion. In one community in Malawi people suspected that these water guards were actually contraceptive devices introduced by the government to control fertility by reducing men's potency. As one community member commented, "Some women are complaining that the government brought water guard to their men to reduce their man power, because some of their men they are weakening in bed".[10]

Clearly, boreholes and pumps are more than simply instrumental means for accessing water. They also carry meanings relating to wider phenomena including the beneficence of God, the powers of chiefly authority, the supposed social engineering plans of government, and the potency of men in marital relations. The humdrum everyday practices of water collection and use are also imbued with meanings beyond the immediately functional, as we discuss in the following paragraphs.

Everyday water use, conflict and danger

In many of the study communities, boreholes exist in a landscape containing other water sources such as hand-dug wells, rivers, ponds and springs, as well as piped systems which supply water to communal and household taps. Beliefs shape the ways that people distinguish between water sources in different locations and how they use them. 'Natural' sources of water such as springs, ponds, rivers, and even hand-dug wells are often seen as locations where spirits, demons and ghosts reside.[11] Boreholes, by contrast – which are drilled with machinery and fitted with pipes and pumps – are seen as clearly being part of the modern project of development and thus less likely to harbour spirits. As a member of a focus group in Uganda's Budaka District noted, "Spirits, demons and ghosts[12] prefer isolated places like forests and wells that are natural, we do not have them at our borehole because they are drilled in open places, in the middle of communities and are not natural".[13]

The dangers of accessing water are felt to be magnified at certain times of the day or night when the user is thought to be more susceptible to the play of dark forces. At the boreholes we studied, people often avoided certain hours when supernatural forces were believed to be most active. In both Malawi and Uganda, the dangerous times are thought to be at night, while in Uganda, the middle of the day is also considered to be hazardous. At that time of day, ghosts or spirits can reside at the borehole, perhaps in the form of a snake. Such beliefs impact upon patterns of water use. Avoiding particular sources at certain times increases congestion at other sources, or else it means that some people go without water. This is magnified during periods of high demand, for example when the borehole is functioning poorly or during the dry season. At these times, people may be forced to queue through the night to secure water, which is considered to be a dangerous time, even at boreholes. As a Ugandan woman commented, "Those

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[10] Diary excerpt, waterpoint monitor, Budaka District, Uganda; 4 August 2017.

[11] The word 'natural' is used to differentiate the water source from a drilled borehole that is equipped with a handpump. We use quotation marks here because these ostensibly 'natural' sources have often also been improved or protected in some way through human and technical intervention.

[12] A number of terms appear in our data to denote supernatural forces: spirits, demons, ghosts, skeletons, dark forces and witches. Other words and phrases are used to refer to the harmful actions they deploy: throwing bones, throwing curses, and practising witchcraft. In this project we did not investigate in depth the specific meaning attached to these various terms; they have simply been translated into English and may therefore convey only approximations of their situated meaning.

[13] Focus group discussion notes, rural village, Budaka District, Uganda; 2 October 2018.

who resort to getting water at night are also worried because they fear the demons around the borehole area".[14]

The effects of a poorly functioning or overburdened borehole may pose a further danger to people. The tensions generated by heavy demand and long queues give rise to fears of witchcraft accusations or curses between conflicting parties, as the following account suggests:

> Where there is a long queue at the borehole (…) there is always confusion (…). People fight and abuse each other, especially those who don't want to join the queue. They believe that the long queues are not healthy because in those conflicts people may develop enmity for each other and decide to revenge on their enemies secretly. They said that in their village there is a habit of throwing charms, known as 'throwing bones'. They said that this practice is very dangerous because if one fails to detect who was charmed, they may end up dying. So one needs to detect it very fast and go to the witch doctor for a remedy.[15]

Everyday water use can be risky, even in the absence of queues and conflicts, as danger is everywhere and innocent people are at risk. Belief systems provide cause and effect explanations for these dangers. For example a project diary keeper attributed a child falling sick after fetching water to witchcraft exercised by a neighbour in the borehole queue.

As these examples suggest, sense-making and interpretations of cause and effect relationships carry clear ideas about proper social behaviour. Lack of respect for a chief may result in a dry borehole and quarrelling at the waterpoint may have dire consequences for health and well-being. These beliefs are likely to affect the achievement of the desired development benefits of improved water supplies. People deterred from using the borehole by queues and conflicts may turn to unprotected supplies, with negative health consequences. Fear of charms, curses and witchcraft affects the potential for cooperation among neighbours; these are relationships that are necessary for the success of community-managed water supplies.[16] With this in mind, we now turn to considering in more detail the role of worldviews in maintaining the social order and disciplining those who act against it.

MAINTAINING THE GENDERED SOCIAL ORDER

To function effectively, water management institutions must fit socially. Worldviews offer cognitive shortcuts for recognising particular human orderings as natural. They are arrangements and expectations that may be largely taken for granted, or, when questioned, can be justified by reference to higher authorities. As Mary Douglas suggests, there may be no need to design specific sanctions for people who violate community rules if people in the community believe that God or the ancestors will punish the offenders (Douglas, 1987).

Contained within worldviews are understandings of proper hierarchies, roles and ways of behaving; for example, gendered divisions of labour, respect for elders, or desirable behaviour may be justified in relation to the natural order and the 'right way' of doing things. As one diary keeper writes, commenting on the need to order children to clean the borehole surroundings, "God is just a water user who likes clean things".[17]

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[14] Diary excerpt, married woman, Luwero District, Uganda; 21 May 2017.

[15] Focus group discussion notes, rural village, Budaka District, Uganda; 2 October 2018.

[16] In the countries where we conducted this research, belief in witchcraft is common. Such beliefs have a long history and are interwoven with other beliefs such as Christianity and Islam and are embedded in the conditions of contemporary life. The term witchcraft may cover a variety of phenomena, but with the common link that witches can cause tragic events, inflict pain and suffering, and even kill others. For a useful account of different trends in the study of witchcraft in Africa see Kroesbergen-Kamps (2020).

[17] Diary excerpt, married man, Budaka District, Uganda; 2 November 2017.

Here we focus on the ways that worldviews shape the gendered social order, often maintaining the patriarchal structures within which water governance is embedded. As feminist scholars point out, to understand water governance we need to examine culture and customary norms which are often enacted in social domains like the household and marital relations, and not normally associated with formal water management (Delgado and Zwarteveeen, 2007). We proceed by considering some social implications of the gendered nature of water work. We then go on to explore how worldviews and social orders enable or constrain women in taking up positions of authority or leadership in water management.

Water work and gender disciplining

One of the key policy imperatives behind expanding borehole construction across sub-Saharan Africa is the minimisation of the time and effort women and girls expend in collecting water; this requires bringing sources closer to their homes (UN Water, 2014; Hunter et al., 2010). Waterpoints, however, are not simply a location for collecting water. The daily need for water and the location and communal nature of the waterpoint mean that it features in the diaries as a public meeting place and sometimes even a trysting place for lovers. Appearing more often in the diaries are cases of suspicious husbands objecting to the time their wives spend at the waterpoint; in at least one case, a woman is beaten by her husband for this.[18] When a borehole is in heavy demand or functioning poorly, women may collect water early in the morning or late at night, sometimes spending hours queueing and away from home. As a result, many women face a difficult dilemma, caught between the demands of socially acceptable behaviour at the borehole and the demands of their household:

> Also, due to delays at the borehole, some women are suspected to be with other men. It is frequent here that women are bitten[19] by their husbands because of water. More so, worried women always try to look for ways of getting water very fast by skipping lines. This is rarely acceptable by other users and has caused enmity amongst people, and even [among] us leaders of the borehole who advised the conflicting parties.[20]

Women do not always experience time spent at the borehole as conflictual. It can be a time for socialising, when women can talk to others about village matters, including the behaviour of their husbands and other men. Men can find this threatening to themselves personally and to the gendered social order. The functionality of the borehole, the responsibilities of waterpoint managers, the gendered nature of water collection and ideas about desirable social behaviour all intersect, as in this example:

> On this day, I was challenged when a man came to my home reporting women who spoke ill about him, [saying] that he is a womaniser. [He said] that a group of women sat at the borehole and raised their mouths to him. I counselled the man to cool down. I was settling the matter because I'm a committee member for the borehole. All these things would not happen if the borehole was effective. Women wouldn't have become idle to backbite others.[21]

Through the diary accounts, we observe how the waterpoint functions as a site that constantly reproduces particular gender relations. We note, however, that it can also be a space where gender norms are challenged by drawing on development logics. One village head, for example, challenged the assumption that only women and girls should clean the borehole. In the account, the village head was reported as saying that, "it is the responsibility of everyone in the village to take care of the borehole and

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[18] Readers should note that we are not implying here that gender-based violence is primarily caused by cultural beliefs. As the literature suggests, the tenacity of gender injustice can be attributed to multiple factors including systemic patriarchy, the uneven effects of capitalist economies, the crisis of masculinity, and environmental stress.

[19] It is unclear whether the (translated) term 'biting' used here connotes a physical assault or whether it is used idiomatically to refer to angry words and 'backbiting', as used in a later diary quote.

[20] Diary excerpt, waterpoint monitor, married woman, Budaka District, Uganda; 15 March 2017.

[21] Diary excerpt, married woman, Budaka District, Uganda; 13 May 2017.

not only women. [The village head] told men that if the soakaway[22] clogged up again they will clean it to brush aside the mentality of male chauvinism".[23]

In this section we have illustrated how everyday interactions around the waterpoint carry wider meanings, particularly about the ordering of social life and the proper roles and behaviour of the sexes. We now expand this focus to consider how water management arrangements are shaped by the perceptions of the proper gendered social order that are embedded in worldviews.

Gender, authority and social disciplining

Governments and development agencies commonly promote community management of water through the formation of waterpoint committees. Attempts are made to specify the representation of women through quotas, including for positions such as chairperson or treasurer. We have discussed elsewhere how real-world waterpoint committees seldom reflect the organisational form prescribed by policy and guidance manuals (Whaley et al., 2021).[24] Much of the real decision-making about water management takes place through other authoritative figures such as the chief, local council chairperson, or village elders; these are typically – but not always – men.

Where there is a waterpoint committee with women in positions of leadership, these women are often related to existing or traditional sources of authority. In Malawi, for example, we found a Muslim treasurer of the waterpoint committee who was also the village headman's wife and related to a leader of the local mosque. We could argue that while her prominent position on the committee challenged prevailing gender norms, she could only function in it by drawing on the authority and legitimacy derived from the patriarchal social order. She may also have been a poor representative of women of less elite status.

Even when they hold what appear to be prominent roles, women are still subject to the disciplining of social norms concerning gender. With maintenance and repair of boreholes devolved to local communities, the business of handling finances melds with existing expectations of gender roles. We see in an example from Uganda how the responsibility for collecting and accounting for funds for waterpoint maintenance sits uncomfortably upon a female treasurer:

> Always when the monthly contributions are not enough to repair the borehole, the chairperson LC-1 [the councillor at the lowest level of government] and the chairperson of the waterpoint committee go around collecting the extra money. The treasurer does not get involved in the activity because she is a woman. They said that "women should not over engage in movements that are not good for a woman if men are around to do the activity".[25]

It is debatable whether such social prohibition on moving around the community is experienced as oppressive by women or whether it relieves them of a burdensome water management task (Zwarteveen and Neupane, 1996). The emphasis in many of the diary accounts, however, is on the naturalness of gendered divisions of labour, the normality of the gendered social order, and the need to regulate women's behaviour. The consequences of infringing on these norms can be serious. Our data reveals how witchcraft accusations may be levelled at women who deviate from the norm; these deviations can include gaining a good education or taking up positions of leadership. Paradoxically, development interventions that promote women to prominent roles on waterpoint committees may also render them vulnerable to accusations of witchcraft:

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[22] 'Soakaway' refers to the drainage area surrounding the borehole.

[23] Diary excerpt, rural married woman, Lilongwe District, Malawi; 12 July 2017.

[24] See also the Rural Supply Network blog, "The borehole is not a madman – 3 reasons why community based management demands a rethink" (https://rwsn.blog/2018/03/05/the-borehole-is-not-a-madman).

[25] Field researcher notes, married woman, Budaka District, Uganda; 6 June 2017.

> The cases where women take up leadership positions and become very influential and active, the community sympathised with their husbands at home and think that some women are not normal and accuse them of witchcraft, even to their husbands. The community commonly termed this as 'the woman sat on a man', meaning that the man is powerless because the woman sat on him using witchcraft. For that matter, to avoid such embarrassment, men refused [to allow] their wives to join leadership positions. [On the] contrary, if a man became influential and powerful in a leadership position, the community believes that it is natural. As they quoted, "It is normal, God created him like that".[26]

Gender disciplining takes a number of forms. Women may be cast under suspicion when they spend too long collecting water or they may be prevented by their husbands from taking up leadership roles. Where they do take on such roles, they may be subject to the suspicions of other community members and considered 'unnatural'. As the consequences of being accused of witchcraft can be grave and even fatal (Federici, 2008), women may well discipline themselves. This can result in behaviour that is considered acceptable in the gendered social order, including the avoidance of volunteering for prominent positions in water management and community leadership. Norms shaped by prevailing worldviews of the gendered social order can, in this way, contradict and impede attempts to promote sustainability and equity through water development interventions.

BELIEFS AS AUTHORITATIVE RESOURCES FOR WATER GOVERNANCE

Both sense-making and social ordering are ways in which worldviews act as authoritative resources in making local arrangements for managing water. As we have seen, much of the everyday deployment of worldviews is routinised, that is, taken for granted as the right way of doing things. However, elements derived from worldviews may be deployed more explicitly in conditions of stress or rapid change, or when development initiatives are introduced to a local setting (Schnegg et al., 2016).

Some of the variation in the ways worldviews are deployed comes from the exercise of agency. People may partially share worldviews, their repertoires derived from common history, culture, and location. However, they also have individual beliefs, motivations and contingencies. From an institutional bricolage perspective, such human variation increases the range of potential elements that can be drawn on in the fashioning of governance arrangements. This plurality also provides the material for contestation, where customary or routinised arrangements may be challenged by alternative logics (including developmental logics). In their study of a community-based ecosystem services project in Japan, for example, Ishihara et. al. (2017) refer to "battlefields of legitimacy". Here, different members of the community hold contending beliefs about the fairness of payments for participating in the scheme (collective or individualised), some drawing on customary worldviews, others asserting the validity of contemporary monetary logics.

In this section, we focus on how worldviews operate as resources for governance arrangements in a variety of ways. Sometimes these resources are drawn on non-consciously or implicitly and sometimes they form part of conscious strategising and deliberation.

Fair shares, just claims, and authoritative arrangements

Worldviews are infused with implicit ideas of fair shares and just allocations, which are understood in terms of relationships with others and the social order (Ferguson, 2015). Such generalised ideas about fairness shape the moral economy of water, helping to define rightful users and uses, as well as terms of access and exclusion (Wutich, 2011; Cochran and Ray, 2008). Cultural norms of fairness and reciprocity may contradict the rationalities of development interventions, particularly during times of crisis such as drought (Schnegg and Bollig, 2016). In rural Malawi and Uganda, it is a common underlying principle of community life that access to water should be open to all and that to deny a person water is to deny

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[26] Focus group discussion notes, rural village, Budaka District, Uganda; 9 October 2018.

them life itself. In many of the communities we studied, this norm was linked to the idea that reciprocal relations between communities are both necessary and desirable. Diary accounts commonly acknowledge that when facing drought or borehole breakdown, people from other villages should share their borehole water. Such ideas, however, are held in tension with concepts of ownership and financial responsibility that are promoted by development initiatives. When water is scarce, villagers may assert their rights as 'owners', drawing on a different set of ideas to legitimise exclusion: "There were quarrels at the borehole. People from our village wanted to draw water first before the people from the neighbouring villages. They also wanted the visitors to contribute some money towards the borehole savings".[27]

In such situations, people may blend elements derived from different sources and come up with working arrangements that seem acceptable and legitimate. In the following example of pragmatic compromise, members of the waterpoint committee attempted to balance principles of open access and neighbourliness derived from customary worldviews with ideas of payment and ownership derived from contemporary development logics: "I got water from the borehole but found there a lot of people from this village and the neighbouring village whose borehole had gotten faulty. We told them to come with money for the second day and the first day was for free".

Beliefs, and the hierarchies that they reinforce, can make it difficult to operationalise effective water management. The failure of some users to behave in socially desirable ways is a constant theme in our diary accounts; however, even when there are formalised arrangements for waterpoint management – often with a written constitution and rules – there is a noted reluctance to sanction people for antisocial behaviour. Some deliberately use their place in the social order and norms of respect to avoid payment, as this example suggests:

> Some people refuse to pay water fees, and what would be best for us is to refuse those people to get water. Unfortunately, this is not possible because some people are not easy because they can abuse you (…) or curse you, which is bad. They added that some people are also wealthy and respected in the community, and they used this position to default on paying water fees, and it is hard to deny a rich person water.[28]

The desire to avoid social conflict and to maintain principles of respect, access and reciprocity means that, in improvising everyday water management, villagers often come up with suboptimal arrangements in terms of achieving physical borehole functionality. Our data shows that communities commonly agree on a monetary contribution for borehole maintenance. In practice, however, the borehole managers avoid denying water to those who default on payment, resulting in insufficient funds for proper maintenance, a finding echoing that of Brown and van den Broek (2020). We can perhaps say that these 'suboptimal' management arrangements are more sustainable in the social sense of living together in a community and avoiding the adverse consequences that may arise from contested interactions.

The exercise of authority and delivery of services

Sustaining community water supplies necessitates calls on authority. This may be symbolic, embodied in particular people, or in prominent policies and discourses. We have already considered how leaders such as chiefs in Malawi may influence the choice of sites for new boreholes by drawing on their role as cultural mediators and brokers of service delivery. Their role, however, is also shaped by the expectation that they will exercise authority in an appropriate way. Some Malawian informants, for example, explained that their borehole produced inferior 'salty' water because the chief failed to properly consult the people when making decisions about siting. The villagers knew that the water from that area would be salty but their chief did not listen to them, possibly because he had another agenda for the location of the borehole.

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[27] Diary excerpt, waterpoint monitor, married woman, Balaka District, Malawi; 24 March 2018.

[28] Focus group discussion notes, rural village, Budaka District, Uganda; 9 October 2018.

The research diaries repeatedly refer to the proper roles of local leaders in facilitating access to development interventions. They also highlight the just claims that can be made on rich people and on powerful politicians, particularly the obligation to finance development through infrastructure (Chabal, 2009; McNamara, 2015). Where the amount of money required for borehole maintenance is beyond the means of the community, leaders see it as appropriate to solicit contributions from rich people who have moved to the cities, and to lobby politicians to intervene. Our data documents cases where politicians have personally financed borehole repairs.

Religious beliefs can also function as resources that are drawn on in the construction and management of the borehole. In many cases, church and mosque funds are used for the construction and upkeep of boreholes, with religious authority also bestowing legitimacy on water management arrangements. In villages in Uganda, for example, religious leaders commonly attend water meetings and lead opening prayers; this lends a sense of legitimacy to the decisions made there which they may otherwise lack. This is demonstrated in one diary excerpt:

> When I went to the borehole, I found there a meeting and people were many. The meeting was about looking after our borehole. The chair LC-1 [the councillor at the lowest level of government] was present, and even the religious head who prayed, and the meeting started. We introduced ourselves, and after [that], they told us that we need to improve on the standards of our borehole. They told us that currently the borehole needed minor repairs, and each person in the meeting paid 500. After [that], they urged women to clean their jerrycans.[29]

This example effectively illustrates the overlapping of different forms of authority. Here, the village chairperson and the religious leader come together to bestow legitimacy on the tariff and maintenance requirements and on the proper hygienic behaviour of women. From a bricolage perspective, it illustrates how authoritative meaning is borrowed from different domains, in this case from the domains of formal state government and religion. Different forms of authority may be blended or may cohere in one person, as illustrated in our opening vignette of BE, the waterpoint chairperson and traditional healer. We can speculate that, in exercising authority over waterpoint management, BE draws on the legitimacy and confidence bestowed on him as a traditional healer. He simultaneously maintains the management regime at the waterpoint and, through his traditional healing practice, reproduces the gendered social order as applied to marital relations. Beliefs about authority embedded in worldviews can be drawn upon to legitimise actions in other domains of social life, quietly shaping the outcomes of community-based water management.

WORLDVIEWS, CRITICAL WATER STUDIES, AND SUSTAINABLE DEVELOPMENT

Critical academic perspectives

In this article, we have mobilised an institutional bricolage lens to show how practical governance arrangements incorporate elements of different worldviews, which are adapted from the varying versions of the customary or traditional, and ideas about modernity and development. We argue that an understanding of everyday rationales, strategies, and practices and of the hybridised worldviews that underpin them can offer insights into how institutions work. This happens through the use of mechanisms and symbols whose effectiveness lies in their meaning and in their link to morally acceptable and authoritative ways of doing things. A focus on worldviews can help us understand how inequitable, gendered, socio-political orders are reproduced through sense-making and the attribution of meaning and legitimacy to governance arrangements. We can also see how drawing on beliefs can offer possibilities for contestation and negotiation. Some actors may be able to create room to manoeuvre in governance arrangements by deploying heterogeneous elements of worldviews that legitimise their

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[29] Diary excerpt, married woman, Budaka District, Uganda; 24 April 2017.

actions within a perceived moral order. In short, meaning matters in local-level governance, and an exploration of worldviews as they are practised can further our understanding of how this works.

The implications for water management are significant. In this article, we have demonstrated how worldviews shape water governance arrangements in ways that may impede or support the development goals of sustainability and equity. Fears about malignant supernatural forces around water sources may discourage people from using these sources. Ideas about proper social order reinforce unequal relations of power and prevent women from playing meaningful roles in management. The broad range of culturally specific beliefs that is denoted by the term witchcraft, magnified by stresses at the waterpoint, can undermine trust between water users and the possibility of effective community management. Worldview beliefs, on the other hand, can also provide resources for the adaptation and functioning of community management. They can lend authority to newly fashioned arrangements, offer acceptable ways of doing things that can be repurposed for water management, and ensure that social principles of reciprocity are maintained, so securing some kind of universal access to water.

We argue that employing a perspective that emphasises the role of worldviews in institutional bricolage is a meaningful contribution to critical water studies.[30] Such a perspective offers an analytical approach that enables us to recognise the multidimensional nature of relationships concerning water. It also links the workings of structure and agency through economic, institutional and cultural domains, and has the explicit aim of understanding power, with the normative goal of overcoming inequalities.

Implications for development policy and practice

Critical academic analyses that embrace plurality, complexity and contingency do not neatly lend themselves to development policy and practice. Earlier in the article, we considered the story told by an NGO officer about the significance of local beliefs and relations of authority to the proper siting of a waterpoint. When questioned as to whether this event, and several others she recounted, informed her development work, she laughed and said that these were just everyday experiences that she shared with friends on social media. Government and NGO staff, extension officers and mechanics all hold worldviews and encounter them in communities on a daily basis; these 'interface bureaucrats' may be seen as straddling different social fields and as potential 'brokers of connection' between them (Haapala and White, 2018). They become practiced at navigating different worldviews, mediating the logics, beliefs and explanations of the bureaucratic and community fields. This aspect of their professional work, however, is rarely reported or discussed, leaving the associated assumptions and inequities unchallenged.

A growing body of academic work holds the promise for investigating such issues, bringing a welcome focus on the agency of bricoleurs into engagement with the everyday workings of the state and development bureaucracies. This literature poses questions that offer interesting directions for further research and reflection. For example, how do the worldviews of interface bureaucrats shape their professional practice? And how do ordinary people, elites, and gatekeepers interact with interface bureaucrats to produce legitimate local governance arrangements (Funder, 2020; Funder and Marani, 2015; Kairu et al., 2018; Brown and van den Broek, 2020)?

The cultural turn in the social sciences has had limited impact on development interventions. One possible reason for this is the difficulty of translating a nuanced and contextualised understanding of beliefs and meanings into the necessary simplifications of policy and practice. Some practical approaches to water development, including those inspired by critical institutional thinking, have attempted to work with people's knowledge and beliefs to shape socially appropriate arrangements (for a review see Whaley et. al.; 2021). Such 'facilitated bricolage' emphasises the co-production of institutional arrangements, which are rooted in local norms and practices but are reshaped through creative and adaptive processes

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[30] See Mollinga (2019) for a recent review of the field of critical water studies.

to meet development goals (Haapala et al., 2016; Hassenforder et al., 2015; Merrey and Cook, 2012; Rusca and Schwartz, 2014).

Applying these approaches to water development interventions involves understanding the wider political economy in which local norms, practices and values are generated, and in which the key players are able to promote or impede change. Practitioners also need to be able to identify the spaces and times that offer opportunities for the deliberate facilitation of bricolage processes and for continuous learning and adaptation. This is difficult to implement and, as a result, there is a constant danger that these processes will be reduced to the instrumentalised assembly of 'building blocks' for good governance. These are derived from simplified (mis)understandings of local worldviews and overlook the meanings and assumptions they carry. A tightrope must therefore be walked between critical academic and practical approaches. There are inevitable tensions here. Rather than play these tensions down, we argue that academics, policymakers and practitioners recognise and work with them in an effort to make genuine progress toward sustainable development.

REFERENCES

Allen, T. 2015. Vigilantes, witches and vampires: How moral populism shapes social accountability in northern Uganda. *International Journal on Minority and Group Rights* 22(3): 360-386.

Banks, B. and Furey, S. 2016. What's working, where, and for how long: A 2016 WaterPoint Update to the RWSN (2009) Statistics, GWC/Skat, RWSN, St Gallen: Switzerland.

Berger, P. and Luckmann, T. 1966. *The social construction of reality: A treatise in the sociology of knowledge*. London: Penguin.

Beddoe, R.; Costanza, R.; Farley, J.; Garza, E.; Kent, J.; Kubiszewski, I.; Martinez, L.; McCowen, T.; Murphy, K.; Myers,N.; Ogden, Z.; Stapleton, K. and Woodward, J. 2009. Overcoming systemic roadblocks to sustainability: The evolutionary redesign of worldviews, institutions and technologies. *PNAS* 106(8): 2483-9.

Boelens, R. 2014. Cultural politics and the hydrosocial cycle: Water, power and identity in the Andean highlands, *Geoforum* 57: 234-247.

Bonsor, H.; MacDonald, A.; Casey,V.; Carter,R. and Wilson, P. 2018. The need for a standard approach to assessing the functionality of rural community water supplies. *Hydrogeology Journal* 26(2): 367-370.

Booth, D. 2012. *Development as a collective action problem: Addressing the real challenges of African governance*. London, UK: Overseas Development Institute.

Brekhus, W. 1998. A sociology of the unmarked: Redirecting our focus. *Sociological Theory* 16(1): 34-51.

Brown, J. and van den Broek, M. 2020. Crime and punishment: the challenges of free riding and peer sanctioning in the rural water sector – Lessons from an innovation in Uganda. *Geoforum* 112: 41-51.

Carrithers, M.; Candea, M.; Sykes, K.; Holbraad, M. and Venkatesan, S. 2010. Ontology is just another word for culture: Motion Tabled at the 2008 Meeting of the Group for Debates in Anthropological Theory, University of Manchester. *Critique of Anthropology* 30(2): 152-200.

Chabal, P. 2009. *Africa: The politics of suffering and smiling.* London: ZED Books.

Chowns, E. 2015. Is community management an efficient and effective model of public service delivery? Lessons from the water supply sector in Malawi. *Public Administration and Development* 35(4): 263-276.

Clammer, J. 2005. Culture, development, and social theory: On cultural studies and the place of culture in development. *Asia Pacific Journal of Anthropology* 6(2): 100-119.

Cleaver, F. 2000. Moral ecological rationality, institutions and the management of common property resources. *Development and Change* 31(2): 361-383.

Cleaver, F. and de Koning, J. 2015. Furthering critical institutionalism. *International Journal of the Commons* 9(1): 1-18.

Cleaver, F. 2012. *Development through bricolage: Rethinking institutions for natural resource management*. Oxford, Earthscan.

Cleaver, F. 2018. Everyday water injustice and the politics of accommodation. In Boelens, R.; Perreault, T. and Vos, J. (Eds), *Water justice,* pp. 246-258. Cambridge: Cambridge University Press.

Cochran, J. and Ray, I. 2008. Equity re-examined: A study of community based rainwater harvesting in Rajasthan, India. *World Development* 37(2): 435-44.

Comaroff, J. and Comaroff, J. (Eds). 1993. *Modernity and its malcontents: Ritual and power in postcolonial Africa*. London, University of Chicago Press.

Delgado, J. and Zwarteveen, M. 2007. The public and private domain of the everyday politics of water: The constructions of gender and water power in the Andes of Peru. *International Feminist Journal of Politics* 9(4): 503-511.

Douglas, M. 1987. *How institutions think*. New York: Syracuse University Press.

Ellis, S. and ter Haar, G. 2007. Religion and politics: Taking African epistemologies seriously. *Journal of Modern African Studies* 45(3): 385-401.

Federici, S. 2008. Witch-hunting, globalization, and feminist solidarity in Africa today. *Journal of International Women's Studies* 10(1): 21-35.

Ferguson, J. 2015. *Give a man a fish: Reflections on the new politics of distribution.* Durham, NC: Duke University Press*.*

Frick-Trzebitzky, F. 2017 Crafting adaptive capacity: Institutional bricolage in adaptation to urban flooding in Greater Accra. *Water Alternatives* 10(2): 625-647.

Funder, M. 2020. The state as a person: The role of interface bureaucrats in everyday natural resource governance. In Nunan, F. (Ed), *Governing renewable natural resources: Theories and frameworks*, pp. 163-183. London: Routledge.

Funder, M. and Marani, F. 2015. Local bureaucrats as bricoleurs. The everyday implementation practices of county environment officers in rural Kenya. *International Journal of the Commons* 9(1): 87-106.

Graeber, D. 2015. Radical alterity is just another way of saying reality: A reply to Eduardo Viveiros de Castro. HAU: *Journal of Ethnographic Theory* 5(2): 1-41.

Haapala, J.; Rautanen,S.; White, P.; Keskinen, M. and Varis, O. 2016. Facilitating bricolage through more organic institutional designs? The case of water users' associations in rural Nepal. *International Journal of the Commons* 10(2): 1172-1201.

Haapala, J. and White, O. 2018. Development through bricoleurs: Portraying personnel's role in implementation of water resources development in rural Nepal. *Water Alternatives* 11(3): 979-998.

Hall, K.; Cleaver, F.; Franks, T. and Maganga, F. 2014. Critical institutionalism: A synthesis and exploration of key themes. *European Journal of Development Research* 26(1): 7 1-86.

Harvey, P. and Reed, R. 2007. Community-managed water supplies in Africa: Sustainable or dispensable? *Community Development Journal* 42: 365-378.

Hassenforder, E.; Ferrand, N.; Pittock, J.; Daniell, K.A. and Barreteau, O. 2015. A participatory planning process as an arena for facilitating institutional bricolage. *Society and Natural Resources* 28(9): 995-1012.

Hay, M. 2017. How colonialism fueled deadly anti-vampire hysteria in Malawi. *Vice Newsletter* 01.11.17 https://www.vice.com/en_us/article/7x4kjg/how-colonialism-fueled-deadly-anti-vampire-hysteria-in-malawi.

Hufty, M. 2011. Investigating policy processes: The governance analytical framework. *Geographica Bernensia* 2011: 403-424.

Hunter P.R.; MacDonald, A.M. and Carter, R.C. 2010. Water supply and health. *PLoS Medicine* 7(11): e1000361. https://doi.org/10.1371/journal.pmed.100036

Ishihara H.; Unai, P. and Hodge, I. 2017 Dancing with storks: The role of power relations in payments for ecosystems services. *Ecological Economics* 139: 45-54.

Kairu, A.; Upton, C. and Huxham, M. 2018. From shiny shoes to muddy reality: Understanding how actors negotiate the implementation gap in participatory forest management. *Society and Natural Resources* 31(1): 74-88.

Kelsall, T. 2011. Going with the grain in African development? *Development Policy Review* 29(1): 223-251.

Kohn, E. 2015. Anthropology of ontologies. *Annual Review of Anthropology* 44(1): 311-327.

Koltoko-Rivera, M. 2004. The psychology of worldviews. *Review of General Psychology* 8(1): 3-58.

Kroesbergen-Kamps, J. 2020. Witchcraft after modernity: Old and new directions in the study of witchcraft in Africa. *HAU: Journal of Ethnographic Theory* 10(3): 860-873.

Landini, F.; Long, N.; Leeuwis, C. and Murtagh, S. 2014. Theoretical guidelines for a psychology of rural development. *Cuadernos de Desarrollo Rural* 7(74): 125-147.

LEMU (Land and Equity Movement of Uganda). 2017. Treacherous exploitation and land grabbing is a sin against god. USAID-SAFE.

Liebrand, J. 2015 Methods for researching institutions: Critical Institutional Perspectives Report. Kings College, London, www.researchgate.net/publication/303838781_methods_for_researching_institutions_critical_institutional_perspectives

McNamara, T. 2015. Development, witchcraft and Malawi's elite. *The Australasian Review of African Studies* 36(2): 74-92.

Merrey, D. and Cook S. 2012. Fostering institutional creativity at multiple levels: Towards facilitated institutional bricolage. *Water Alternatives* 5(1): 1-19.

Mollinga, P. 2010. Boundary work and the complexity of natural resources management. *Crop Science* 50: S-1S-9.

Mollinga, P. 2019. Cultural political economy and critical water studies: An introduction to the special themed section. *Water Alternatives* 12(3): 788-801.

Moriarty, P.; Smits, S.; Butterworth, J. and Franceys, R. 2013. Trends in rural water supply: Towards A service delivery approach. *Water Alternatives* 6(3): 329-349.

Orlove, B. and Caton, S. 2010. Water sustainability: Anthropological approaches and prospects. *Annual Review of Anthropology* 39: 401-415.

Rusca, M. and Schwartz, K. 2014. Going with the grain: Accommodating institutions in water governance. *Current Opinion in Environmental Sustainability* 11: 34-38.

Schnegg, M. and Bollig, M. 2016. Institutions put to the test: Community-based water management in Namibia during a drought. *Journal of Arid Environments* 124: 62-71.

Schnegg, M.; Bollig, M. and Linke, T. 2016 Moral equality and success of common-pool water governance in Namibia. *Ambio* 45(5): 581-590.

Schnegg, M. 2018. Institutional multiplexity: Social networks and community-based natural resource management. *Sustainability Science* 13(4): 1017-1030.

Sharra, A. 2019. Vampires in the news: A Critical analysis of news framing in Malawi's newspapers. *African Journalism Studies* 40(2): 67-82.

Smith, T.; Murrey, A. and Leck, H. 2017. What kind of witchcraft is this? Development, magic and spiritual ontologies. *Third World Thematics* 2(2-3): 141-156.

UNESCO. 2016. Indigenous and local knowledge(s) and science(s) for sustainable development.
http://unesdoc.unesco.org/images/0024/002461/246104E.pdf

UN Water. 2014. A Post -2025 Global goal on water: Synthesis of findings and recommendations from UN-Water.
United Nations, New York, USA. https://www.un.org/waterforlifedecade/pdf/27_01_2014_un-
water_paper_on_a_post2015_global_goal_for_water.pdf

UN Water. 2018. Sustainable Development Goal 6: Synthesis Report on Water and Sanitation. United Nations: New
York, USA.

van den Broek, M. and Brown, J. 2015 Blueprint for breakdown: Community based management of rural
groundwater in Uganda. *Geoforum* 67: 51-63.

van Egmond, N. and de Vries, H. 2011. Sustainability: The search for the integral worldview. *Futures* 43(8): 853-867.

de Vries, B. and Petersen, A. 2009. Conceptualizing sustainable development. An assessment methodology values,
knowledge, worldviews and scenarios. *Ecological Economics* 68(4): 1006-101.

Wang, R.Y.; Liu,T. and Dang, H. 2018 Bridging critical institutionalism and fragmented authoritarianism in China.
Regulation & Governance 12: 451-465.

Whaley, L.; MacAllister, D.; Bonsor, H; Mwathunga, E.; Banda, S.; Katusiime, F.; Tadesse, Y.; Cleaver, F. and
MacDonald, A. 2019. Evidence, ideology, and the policy of community management in Africa. *Environment
Research Letters* 14(8): 085013.

Whaley, L.; Cleaver, F. and Mwathunga, E. 2021. Flesh and bones: Working with the grain to improve community
management of water. *World Development* 138: 105286.

Wutich, A. 2011. The moral economy of water re-examined: Reciprocity, water insecurity and urban survival in
Cochabamba, Bolivia. *Journal of Anthropological Research* 67(1): 5-26.

Yates J.; Harris, L. and Weston, N. 2017. Multiple ontologies of water. *Environment and Planning D* 35(5): 797-815.

Zwarteveen, M. and Neupane, N. 1996. *Free-riders or victims: Women's nonparticipation in irrigation management
in Nepal's Chhattis Mauja irrigation scheme*. Research Report 7, Colombo, Sri Lanka: International Irrigation
Management Institute.