7 Water-security capabilities and the human right to water

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Introduction

The human right to water discourse offers a powerful mooring for social and political claims by policymakers, public health advocates, development campaigners, and communities struggling for equitable, affordable, and safe water provision (and sanitation). International legal architecture and obligations, including the 2010 United Nations (UN) Resolution (A/RES/64/292 28 July 2010), paired with a constitutionally recognized right to water in a number of country contexts (e.g., South Africa, Bolivia, Uruguay, Ethiopia), reflects a growing global consensus and resonance of its core claim—the idea of universal access to safe and affordable water regardless of ability to pay. For many, the recognition by the UN General Assembly in 2010 signified a clear victory for water justice advocates. The human right to water policies and discourses that strive to attain safe and affordable water have influenced policymakers, shaped international development targets, and appealed to millions around the world. As Pope Francis (2017) stated during his *Dialogue on the Human Right to Water*,

> The right to water is essential for the survival of persons and decisive for the future of humanity. . . Respect for water is a condition for the exercise of the other human rights. . . Our commitment to give water its proper place calls for developing a culture of care (cf. ibid., 231) and encounter. . .

The call for and meaningful work towards conceptualizing and achieving a human right to water reveals its salience for imagining, debating, and broadening the policy space for alternative concepts and visions of water governance, particularly those that embrace equity, justice, and sustainability. Whether underscoring the relationship between to the human right to water or other ongoing water governance shifts, it is clear that we will be debating the meaning of the right to water and *how* to achieve these goals, not if we should, for years to come.

Notwithstanding the aspirational dimension of the human right to water discourse and its policy success, many scholars have identified key shortcomings, many of which have been well-reviewed in the literature. The human

right to water has been criticized as individualistic, state-centered, anthropocentric, and vulnerable to co-optation by the private sector (Bakker, 2007; Bustamante, Crespo, & Walnycki, 2012). Some have also argued that an emphasis on "drinking water" as part of basic-needs orientations is problematic given fundamental differences cross-culturally and for various livelihood strategies (Goff and Crow, 2014). Linked to this, the goal of water access and quality alone pays little attention to broader associated considerations such as human dignity (Redfield & Robins, 2016; Morales, Harris, & Öberg, 2014). A narrow focus on basic needs also risks overlooking water insecurities in the Global North (Ranganathan & Balazs, 2015; Jepson & Vandewalle, 2016). Urban struggles for water in Flint or Detroit in the United States, for example, are often portrayed in the as outcomes of technical failures (Morckel, 2017) rather than as political failures to fulfill human rights obligations (Clark, this volume).

Yet, the sharpest critiques do not negate clear benefits and salience of human right to water calls as a discursive repertoire and policy frame. Rather than reject the notion as co-opted or post-political, scholars have called for new pathways to reformulate and re-politicize the human right to water (Sultana & Loftus, 2012; 2015; Perera, 2015). Others call for a holistic conceptualization of the human right to water so as to fulfill its potential by focusing on lived experiences, unevenness, and water's materiality (Rodina, 2016).

Angel and Loftus (2017) interrogate the paradoxical role of the state within the human right to water debates and policy implementation. They argue that the UN recognition of the human right to water and its incorporation into legal frameworks has re-centered the state in these struggles, making ground gained by activist communities vulnerable to co-optation, dilution, and denial by state power. According to these authors, a new vision of the human right to water requires a fundamental rethinking of the state—one that proactively adopts a relational approach to the state as co-produced through socio-natural processes. They argue that the human right to water similarly needs to be relational and that scholars, activities, and communities need to "think and act within-against-and-beyond the right to water" to advance political change within (and without) state processes while also holding in tension that such water politics can yield new possibilities for progressive socio-ecologies (Angel and Loftus, 2017, p. 7).

This chapter seeks to build on these calls to think through the possibilities within-against-beyond the human right to water in tandem with re-centering lived experiences of water. Notably, we draw inspiration from the capabilities approach to incorporate a broader understanding of hydro-social relations. This is a clear departure from previous utilitarian approaches to water security that prioritize water access and environmental and economic services (Schmidt, 2012; Zeitoun et al., 2016). It is a distinct departure from Grey and Sadoff's definition of water security (2007, 547–48), which attends to water availability, risk (Garrick and Hall, 2013), or water security discourses framed in terms of geopolitics, economic development, large infrastructure, or state policy and governance (Zeitoun, 2011; Lankford, Bakker, Zeitoun, & Conway, 2013; Scott et al., 2013). Our definition of water security is grounded in the lived experience.

Attention to the community, household, and individual experiences of hydro-social relations provides clarity as to the societal consequences that circulate through the dynamic socioeconomic change in water flows and its meaning in relation to everyday life and human well-being. This chapter presents concepts and analytics associated with what we term a "water-security capabilities approach." We propose that water security needs to be redefined, and most importantly, that a redefinition should shift from securing water as a thing and end in itself (as H_2O) to securing water relations that recognize the wider relations through which water shapes people's lives and contributes to human flourishing and well-being (Jepson et al., 2017). We review the capabilities approach and water security to situate our analysis, followed by our response to two questions: (1) How does a water-security capabilities approach advance current conceptualizations of the human right to water? (2) What are the implications of a water-security capabilities approach for water equity?

The emergence of a water-capabilities approach

The capabilities approach (CA) is a conceptual framework that develops core concepts of well-being, freedom to achieve well-being, development, and social justice. Originating in welfare economics and political philosophy, CA focuses on how social arrangements contribute to, or detract from, human flourishing and freedom (Nussbaum & Sen, 1993; Nussbaum, 1997; 2011b; Sen, 2000). CA purports that freedom to achieve well-being is a matter of what kind of life one is effectively able to lead and the pathways and mechanisms through which an individual (or a community) is able to define and achieve well-being. Early capabilities approaches have been subject to criticism of individualism; however, recent work with indigenous communities has demonstrated the ways CA enables community functioning (Schlosberg and Carruthers, 2010).

Several core foci cut across CA interdisciplinary scholarship. First, capabilities are understood as what people are able to do and be, or the genuine (and positive) freedoms and opportunities to realize functionings. Capabilities reflect the fact of whether a person could do something if he or she wants to; that is, capabilities are considered *intrinsic* (not instrumental) aspects of well-being that a person may value and are constituent of human dignity. Functioning is defined by what a person actually does or is, such as nourishment, taking part in a religious community or engaging in political life. That is, functionings are the corresponding achievements to capabilities and are constituent to human existence.

While CA's intellectual roots can be traced to Amartya Sen, who first reframed human development in terms of well-being, and Martha Nussbaum, who advances a theory of social justice (Nussbaum, 2003; 2011b), the concept resonates across development studies, welfare economics, gender studies, and sociology. Capabilities analyses address a wide range of topics including the advancement of social justice, policy, quality of life measurements, and social arrangements and institutions. CA respects people's different ideas of the good

life and their capacity to achieve it. Moreover, human diversity is stressed through the recognition of unique profiles of conversion factors. Individuals and communities have different abilities to convert resources—from goods and services to educational attainment—into functionings. These *conversion factors*, which have been categorized as personal, sociocultural, and environmental, provide a fuller picture of available resources—owned or accessible—to realize well-being and achieve functionings (Robeyns, 2018). Notably, as Nussbaum argues, "the language of capabilities enables us to bypass the troublesome debate"—about the European origins of rights—because "when we speak about what people are able to do and to be, we do not give the appearance of privileging a Western idea" (Nussbaum, 2003). CA also allows for value pluralism in human development, eschewing the tendency to reduce development to one metric, such as wealth. Nussbaum argues that the openness of CA offers an alternative narrative to the "poverty-prosperity" paradigm or utilitarianism. Certainly, the means of well-being are important—such as resources, housing, social institutions, etc.—but attention to capabilities underscores that these are *not the ends of well-being*. As we explore here, these elements of CA all have potential importance for reformulating the human right to water debate.

Capabilitarian scholars have recently turned their attention to the analysis of ecological and environmental issues, including ideas of natural capital and ecological limits, environmental justice, and animal ethics (Nussbaum, 2011a; Rauschmayer, Omann, & Frühmann, 2012; Pelenc & Ballet, 2015; Ballet, Marchand, Pelenc, & Vos, 2018). Particularly relevant for our interests, recent examples have also addressed access to water. For example, Goldin (2013, p. 315) argues that a capabilities approach to the water sector encompasses various dimensions, including human health and goods, education and literacy, significant relations with others, participation in social life, self-determination and autonomy, accomplishment, aspiration and self-respect, and basic mental and physical functionings. In this way, water is understood as a conversion factor, a resource necessary to achieve wellbeing (cf., Anand, 2007). Along similar lines, Lyla Mehta (2014) argues that the right to water is necessary for human capabilities—whether in service to support health, bodily requirements as well as productive resources for different livelihoods; thus, she advances an ethical claim on the state for the provision of water for all.

Jepson et al. (2017) advance a capabilities framework to re-conceptualize the contested concept of "water security" for human development. Water security understood through a CA framework necessarily attends to water as part of a hydro-social process that is relational, based on negotiation and interaction at individual and collective scales. A central capability is the ability to engage with and benefit from sustained hydro-social processes that include the breadth and scope of water flows, water quality, and water services in all of its socio-natural complexity. Similar themes are taken up by Gimelli, Bos, and Rogers (2018), who are interested in examining current international metrics of water access in terms of the capabilities approach. Most importantly, applying a CA framework to water security issues incorporates a relational framework to analyze

broader considerations and pathways important for hydro-social relations. For our purposes, we argue that water is not simply a resource (or "conversion factor" in CA terms) but should be understood and analyzed as *co-produced hydro-social flows, services, and meanings* that support the achievement of human well-being *as defined by individuals and communities*. Thus, the water-security capabilities approach offers new pathways to re-conceptualize the human right to water.

Water-security capabilities approach and revisioning the human right to water

A long-standing dialogue between capabilitarian perspectives and human rights scholarship addresses themes of duty, obligation, and the implementation of human rights into policy and practice (Nussbaum, 1997, 2003; Sen, 2005). There are salient aspects to this dialogue that inform our analysis of the human right to water from a water-security capabilities perspective. First, there is a recognition that the language of rights plays an important political role in the attainment of justice. Second, capabilities—whether on Nussbaum's endorsed capabilities list or implied in terms of Sen's "process-freedoms"—meet the threshold of urgent importance similar to human rights: "that just by virtue of being human, a person has a justified claim to have the capability secured to her," similar to a human right (Nussbaum, 1997, p. 293). In this way, capabilities are seen as fundamental entitlements, *equivalent* to "first-generation rights" (civil and political liberty) and "second-generation rights" (economic and social). Finally, freedom and choice ground capabilitarian views of human rights, therefore the ideas of what is a capability (and in this view a human right) are flexible, and open to revision and rethinking, which, by default, demands public deliberation to enable progressive realization of these dynamic goals (Nussbaum, 2011b).

It is against this backdrop that we focus on how water-security capabilities approach can advance current debates on the human right to water in terms of two central questions: (a) *to what* do people or communities have a right and (b) *whose* duty or obligation is it to ensure the right or capability? Our response to each question, then, allows us to "think and act within-against-and-beyond the right to water" with the benefit of our broadened orientation not on water as an object but a more relational and processual focus on hydro-social relations and human well-being.

First, scholars and policymakers need to address the fundamental question: *to what do people or communities have a right*? The human right to water pivots on what Linton (2010) calls "modern" water. A narrowly defined understanding of the human right to water, which entitles everyone to sufficient, safe, acceptable, physically accessible, and affordable water (H_2O) for personal and domestic uses is silent to the complexity of human-environment interactions. One can argue that ecosystem services are of central importance to the realization of the human right to water. For example, the UN acknowledges that the

loss of key ecosystem services, such as water and biodiversity, undermine human rights, for example by reducing agricultural and fisheries outputs, negatively affecting health or removing natural filters in the water cycle (United Nations High Commissioner for Refugees [UNHCR], 2018). But in order for this to be a universal positive right, the HRW frames water as a resource and individuals as consumers rather than agents in complex socio-natures.

The water-security capabilities perspective opens new visions of what a right to water is. First, following from earlier discussions in Jepson et al. (2017), the claim we are making is that a right to water needs to be redefined as "a right to water security," defined as the ability of individuals, households, and communities to benefit from sustained hydro-social and cultural processes that include the breadth and scope of water flows, water quality, and water services in all of their socio-natural complexity. This perspective respects the freedom to engage and benefit from hydro-social and cultural relationships. Water-security capabilities are considered *intrinsic* not instrumental aspects of well-being that a person or community may value. That is, we propose that water security as a capability, not a conversion factor.

Moving forward, a capability approach to the human right to water also opens space to integrate multiple water ontologies into its frame (Shah, Angeles, & Harris, 2017; Linton, this volume), taking seriously "the possibility and politics of a multiplicity of water-related worlds" (Yate, Harris, & Wilson, 2017). The right to water security from a capabilities perspective provides political and philosophical grounds for individuals and communities to assert certain realities of what water is and how they self-define and understand water in terms of their fluid socio-environmental relations with water systems, flows, and services. Moreover, the water-security capabilities approach to recognizes *co-constituent well-being* between society and water flows. That is, a water-security capability approach acknowledges complex socio-natures as a constituent to human capabilities and, thus, it offers a unified theoretical entry point and ethical claim, not a separate eco-centric claim, for ecological processes to be fundamental for the human right to water. Thus, a water-capabilities approach opens a conceptual and *political* pathway for diverse water ontologies to bear on claims and debates over the human right to water.

The second question relates to *obligation and duty*, in particular, the role of the state in securing the human right to water. The role of the state and the expectation of government involvement in achieving the prescriptive claim underscores a primary difference between the two approaches. First, the human right to water is considered by some to be state-centric (Bakker, 2007; Angel & Loftus, 2017). The human rights claim pivots on legal pathways for the redress of marginalized and impoverished communities to make demands on the state for improved water access or conditions. As a designated human right, it creates corresponding legal obligations to ensure the enjoyment of the right, and that obligation lies with each state to follow the necessary technical, economic, and infrastructural steps to work towards the progressive realization of the right for its population. While many are critical of the state-centricity of the

human right to water, given common failures of the state, some have noted nonetheless that the state-centricity also takes on particular meaning, and potential importance, given movements away from the state as part of ongoing market pressures and neoliberal restricting of water governance of the past several decades (Mirosa and Harris, 2012).

From a capabilities approach to water security, we reconsider the implications in terms of the role and meanings of the state. To the extent that the capability approach respects peoples' different ideas of the good life and given that capabilities are the goals (as a relation and process) rather than focusing on any particular single outcome, this has the potential to move the discussion away from state responsibility to secure water as an object. Instead, the approach foregrounds processes through which states, communities, and individuals define water capabilities and, in turn, how these definitions serve as a basis to make claims on the state. With the broadened focus on hydro-social relations, communities and individuals could potentially press for a variety of claims related to healthy, equitable, and sustainable hydro-social relations—including cultural and political recognition, political participation, collective action, and democratic rights. In this recasting, the role of the state is not *necessarily* (or only) to provide H_2O but rather to facilitate or help citizens realize the right to participate and engage in social and political collective action and maintain and secure sustainable and equitable hydro-social relations in all of its complexity. Thus, a water-security capabilities approach reinforces individuals and communities as citizens and political actors rather than reduced to only consumers of water.

Recasting state-society relations through a renewed approach to the human right to water is crucial. As we see in the case of Katie Meehan's work in Tijuana, Mexico, residents' use of alternative rainwater collection systems offers opportunities for autonomy *from* the state (Meehan, 2014). In Jepson's ongoing research in Fortaleza, Brazil, we have also documented systemic self-disconnection from state-owned water utilities for individual and even collective groundwater wells, a source viewed by urban residents as more reliable and secure. Moreover, state-imposed systems—in the pursuit of the human right to water—have been shown in some cases to undermine existing water sharing regimes. With an open-ended appreciation of water-security capabilities, in lieu of a narrow framing of the human right to water as securing rights to H_2O, we can enable an appreciation of the complex and often deeply ingrained in senses of reciprocity between family, community, and non-human natures, all of which can be critical for how we understand the senses of well-being and human flourishing (Wutich et al., 2018). Therefore, a narrow state-driven and state-centric realization of the human right to water without attending to cultural obligations, expectations, and fundamental social relations could unduly impinge or constrain freedoms to realize what a person or community is, or does, in relation to water flows and systems. Duty and obligation to realize or ensure the human right to water (security) is coproduced and tied to inclusive forms of water governance that are within-against-and-beyond the state.

Engaging CA more meaningfully in these discussions helps to amplify these emergent interactions, and it also illuminates some of the specific pathways that might be followed to reveal and enliven diverse pathways to water-security capabilities, as differentiated in various communities, across time and space.

Equity and water-security capabilities approach

Yet if a capabilities approach provides for water security to be achieved through diverse and contingent pathways, what are the implications of a water-security capabilities approach for equity? Equity lays at the heart of conflicts over water, and some have also argued that conflict is a necessary precondition for both sustainable transition and justice in water systems (Ingram et al., 2008, p. 8). In riverine systems, for example, conflicts between upstream and downstream users are ubiquitous and a major focus of institutional rule-making. In addition to concern with how people and places are unequally affected by water-related changes, quality, and access concerns, it has also been suggested that equity plays an important role in scholarly framings of water problems, water justice struggles, and water governance deliberations (Perreault, 2014; Zwarteveen & Boelens, 2014; Boelens, Perreault, & Vos, 2018; Sultana, 2018).

While water scholars agree that equity matters, there is relatively little consensus on what equity means, how to recognize it when we see it, or how to most ably promote it in water governance frameworks (Lu, Ocampo-Raeder, and Crow, 2014). Rather, scholars emphasize the historical and cultural contingency of understandings of equity (Lauderdale, 1998; Ingram, Whiteley, & Perry, 2008). Even cross-cultural analyses yield little overarching agreement as to how equitable water distribution is conceptualized (Wutich et al., 2013). As Boelens, Dávila, and Menchú (1998) sum up, equity "deals with 'fairness in particular cases'" and is dynamically "formulated and functions in the communities themselves." As a result, equity is difficult to define universally and may be most fruitfully explored in a local context. To illustrate this further, Wutich et al. (2013) found that local conceptions of inequity are particularly salient in settings with water insecurity and inadequacy, suggesting dynamic interlinkages between conceptualization and operationalization of equity and the features of context—beyond cultural and institutional dimensions to also include biophysical and hydrological considerations.

A water-security capabilities approach to equity offers the opportunity to approach local conceptualizations of water (in)equities in ways that are both broadly understandable and locally specific. As mentioned previously, Goldin (2013, p. 315) argues that a capabilities approach to the water sector encompasses many dimensions, including human health and goods, education and literacy, significant relations with others, participation in social life, self-determination and autonomy, accomplishment, aspiration and self-respect, and basic mental and physical functionings. In this section, we address the ways that a water-security capabilities approach enables us to better understand different axes of inequity—socioeconomic, gender, and community—again emphasizing both the general and

locally specific articulations of the concept. In relation to each of these dimensions, equity may take on different meaning and relevance—for instance, the ways that equity links with aspiration and self-respect or the ways that equity emerges as relevant to relations with others.

While it has been well-established that socioeconomic (in)equity is a core driver of water control, access, and use, there are a number of important (and as yet undertheorized) concerns related to equity that are potentially highlighted through a water-security capabilities framework. For instance, such an approach invites analysis of complex ways that socioeconomic inequities in hydro-social relations relate to broader capabilities and entitlements such as those associated with *education and literacy*. Educational exclusion, such as from information about water quality and water systems, is commonly a limited capability among politically marginalized communities. In South Africa, for example, racial and related economic inequities prevent residents of black and colored rural areas from obtaining the knowledge and power needed to confront historical water injustices. In the United States, residents of Flint, Michigan—who suffered lead poisoning due to municipal water mismanagement—were repeatedly prevented from obtaining timely and accurate information about lead risks (Katner et al., 2016). Although the historical, political, and economic dimensions of these cases are characterized by significant differences, conceptualizing education and literacy as a core capability enables us to better understand water security failures across both cases. Here, we see that there are key concerns not only with secure access to water but ways that inequities play into broader dynamics and capabilities (education, literacy), which impinge on water securities. As such, the reorientations bring into view other linked (structural, historical) inequities that are important for addressing and overcoming water insecurities and that remain obstacles to success in implementing the human right to water.

Adding to these understandings, a water-security capabilities approach enables us to theorize less-studied aspects of this phenomenon, including impacts on capabilities such as *significant relations with others* and *participation in social life*. For example, Sultana's (2011) work explores the complex social entanglements women in Bangladesh navigate as they attempt to obtain water that is uncontaminated by arsenic. Sultana demonstrates how women's relations with others are mobilized and compromized as they draw on attenuated family and neighborhood ties to access water. Wutich (2012) found that water crises in Cochabamba, Bolivia were moments in which both women and men were able to participate in social lives that transgressed normal gendered divisions of labor. In these cases, a water-security capabilities approach helps us think beyond received wisdoms about gender and water to look at a fuller range of capabilities and functionings. By attending to hydro-social relationships that are key to framing and supporting specific entitlements (such as entitlements to water), we can demonstrate a critical consideration that is often implicit, but somewhat underdeveloped, in water access, governance, and equity debates. To state this another way, we find a number of exciting connections

are likely to be highlighted through a water security capabilities approach—key among them, we suggest, would be a fuller appreciation of social relationships, dynamics, and complexities that enable and condition uneven entitlements to water.

Across communities, water security also varies widely due to inequities in economic development, political power, and territorial sovereignty. Importantly, water (and water security) may be conceptualized in profoundly different ways across communities (Yates, Harris, & Wilson, 2017; Norman, 2017). Here, too, a water-security capabilities approach offers the possibilities for reconceptualizing, in culturally sensitive ways, capabilities such as *autonomy and self-determination* and *accomplishment*. The case of the San Francisco Peaks (*Nuvatukya'ovi*) conflict in the western United States illustrates this well. These mountains, located in Northern Arizona, have been the site of several legal battles over the use of land and recycled wastewater to support a ski resort (Glowacka, Washburn, & Richland, 2009; Schlosberg & Carruthers, 2010). The Hopi tribe recognizes the mountains as sacred home to ancestor deities; skiing, tourism development, and wastewater application all impede their religious practices and desecrate the site. As such, the recreational uses of the mountains impede the Hopi tribe's autonomy and self-determination. Local settlers value economic growth from the tourist economy and need the reclaimed wastewater to provide skiing opportunities to tourists in low-rain years. As such, the mountains offer these communities a sense of accomplishment, both in terms of income generated and skiing challenges. In this case, the water-security capabilities approach provides a framework for identifying, valuing, and evaluating different capabilities and functionings as they are conceptualized by local communities in conflict. Identifying these differentials as core to the conflict might serve as a key first step towards understanding the stakes and terms of the concerns at play.

Directions forward

Contemporary calls for a human right to water, regardless of how it is defined, pivots on a positive right: the ability of people to access a thing—in this case, water. What water is—its qualities, forms, conveyance system, or characteristics are debated—but this approach is moored to the water as a material object. The human right to water must be reframed on securing the relations that support people's and communities' relations with waterworlds as *inherent* aspects to what they choose to do and be. Access to water is clearly one element of this, but we argue, along with a growing number of scholars (Linton, 2012; Schmidt, 2012), that human dignity is coproduced through fluid relations. For these reasons, it is necessary to reconceptualize the human right to water in broad terms of the hydro-social relations (not only availability) that ensure human security, flourishing, and well-being—beyond merely water access or availability (Obeng-Odoom, 2012).

The water capabilities approach provides the opportunity for an important conceptual advancement on our understanding of the human right to water. The capability approach respects peoples' different ideas of the good life or in specific hydro-social relations in all its material and nonmaterial dimensions, and this is why *water-security capability* is the goal rather than any particular outcome. In doing so, the capability approach offers the possibility of focusing on hydro-social relations, such as water sharing rather than water as a material object. The HRW, as commonly conceptualized, focuses on water equality (ElDidi & Corbera, 2017; Stoler et al., 2018; Wutich et al., 2018; Brewis et al., 2019). However, the focus should be on water (in)equity. Equity is a much more complex concept than equality, difficult to define and implement outside of local contexts. Thus, a water capabilities approach provides a way to value and protect hydro-social terms of local needs, values, and ideas of a good life. For these reasons, adopting a CA approach to the human right to water could significantly advance its utility in accomplishing equity (not just equality). In this way, water security can operate within-against-and beyond the state in ways that promote the multiple hydro-social relations, and even differing water worlds, in support of human well-being.

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References

Anand, P.B. (2007) *Scarcity, entitlements, and the economics of water in developing countries*. Cheltenham: Edward Elgar Publishing.

Angel, J. and Loftus, A. (2017) 'With-against-and-beyond the human right to water,' *Geoforum*, 98, pp. 206–213.

Bakker, K. (2007) 'The "commons" versus the "commodity": alter-globalization, anti-privatization, and the human right to water in the Global South,' *Antipode*, 39 (3), pp. 430–455.

Ballet, J., Marchand, L., Pelenc, J., and Vos, R. (2018) 'Capabilities, identity, aspirations and ecosystem services: An integrated framework,' *Ecological Economics*, 147, pp. 21–28.

Boelens, R., Dávila, G., and Menchú, R. (1998) *Searching for equity: conceptions of justice and equity in peasant irrigation*. Assen: Uitgeverij Van Gorcum.

Boelens, R., Perreault, T., and Vos, J. (2018) *Water justice*. Cambridge: Cambridge University Press.

Brewis, A., RosingerA., Wutich, A., Adams, E., Cronk, L., Pearson, A., Workman, C., Young, S., and the HWISE Consortium (2019) "Water sharing, reciprocity, and need: a comparative study of inter-household water transfers in Sub-Saharan Africa," *Economic Anthropology*, 6, pp. 208–221. Available at: https://doi.org/10.1002/sea2.12143

Bustamante, R., Crespo, C., and Walnycki, A. (2012) "Seeing through the concept of water as a human right in Bolivia," in Sultana, F. and Loftus, A. (eds) *The right to water: politics, governance, and social struggles*. New York: Routledge Publishing, pp. 223–240.

ElDidi, H. and Corbera, E. (2017). 'A moral economy of water: charity wells in Egypt's Nile Delta.' *Development and Change*, 48 (1), pp. 121–145.

Garrick, D. and Hall, J.W. (2014) "Water security and society: risks, metrics, and pathways," *Annual Review of Environment and Resources*, 39, pp. 611–639.

Gimelli, F.M., Bos, J.J., and Rogers, B.C. (2018) 'Fostering equity and wellbeing through water: A reinterpretation of the goal of securing access,' *World Development*, 104, pp. 1–9.

Glowacka, M., Washburn, D., and Richland, J. (2009) 'Nuvatukya'ovi, San Francisco Peaks: Balancing Western economies with Native American spiritualities,' *Current Anthropology*, 50 (4), pp. 547–561.

Goff, M. and Crow, B. (2014) 'What is water equity? The unfortunate consequences of a global focus on 'drinking water',' *Water International*, 39 (2), pp. 159–171.

Goldin, J. (2013) 'From vagueness to precision: raising the volume on social issues for the water sector,' *Water Policy*, 15 (2), pp. 309–324.

Grey, D. and Sadoff, C.W. (2007). 'Sink or swim? Water security for growth and development,' *Water Policy*, 9 (6), pp. 545–571.

Ingram, H., Whiteley, J.M., and Perry, R. (2008) "The importance of equity and the limits of efficiency in water resources," in Whiteley, J.A., Ingram, H., and Perry, R. (eds) *Water, place, and Equity*. Cambridge: MIT Press, pp. 1–31.

Jepson, W.E., Wutich, A., Colllins, S.M., Boateng, G.O., and Young, S.L. (2017) "Progress in household water insecurity metrics: a cross-disciplinary approach," *Wiley Interdisciplinary Reviews: Water*, 4 (3), pp. 1–21.

Jepson, W., Budds, J., Eichelberger, L., Harris, L., Norman, E., O'Reilly, K., Pearson, A., Shah, S., Shinn, J., and Staddon, C. (2017) 'Advancing human capabilities for water security: a relational approach,' *Water Security*, 1, pp. 46–52.

Jepson, W. and Vandewalle, E. (2016) 'Household water insecurity in the Global North: a study of rural and periurban settlements on the Texas–Mexico Border,' *The Professional Geographer*, 68 (1), pp. 66–81.

Katner, A., Pieper, K.J., Lambrinidou, Y., Brown, K., Hu, C.-Y., Mielke, H.W., and Edwards, M.A. (2016) 'Weaknesses in federal drinking water regulations and public health policies that impede lead poisoning prevention and environmental justice,' *Environmental Justice*, 9 (4), pp. 109–117.

Lankford, B., Bakker, K., Zeitoun, M., and Conway, D. (2013). *Water security: principles, perspectives, and practices*. New York: Routledge Publishing.

Lauderdale, P. (1998) 'Justice and equity: a critical perspective,' in Boelens, R. and Davila, G. (eds) *Searching for equity: conceptions of justice and equity in peasant irrigation*. Assen: Uitgeverij Van Gorcum, pp. 5–10.

Linton, J. (2010) *What is water? The history of a modern abstraction*. Vancouver, BC: UBC Press.

Linton, J. (2012) 'The human right to what? Water, rights, humans, and the relation of things,' in Sultana, F. and Loftus, A. (eds) *The right to water: politics, governance, and social struggles*. New York: Routledge, pp. 45–60.

Lu, F., Ocampo-Raeder, C., and Crow, B. (2014) "Equitable water governance: future directions in the understanding and analysis of water inequities in the Global South," *Water International*, 39 (2), pp. 129–142.

Meehan, K.M. (2014) 'Tool-power: water infrastructure as wellsprings of state power,' *Geoforum*, 57, pp. 215–224.

Mehta, L. (2014) 'Water and human development,' *World Development*, 59, pp. 59–69.

Mirosa, O. and Harris, L.M. (2012) 'Human right to water: contemporary challenges and contours of a global debate,' *Antipode*, 44 (3), pp. 932–949.

Morales, M. d. C., Harris, L., and Öberg, G. (2014) 'Citizenshit: the right to flush and the urban sanitation imaginary,' *Environment and Planning A*, 46 (12), pp. 2816–2833.

Morckel, V. (2017) 'Why the Flint, Michigan, USA Water Crisis is an urban planning failure,' *Cities*, 62, pp. 23–27.

Norman, E.S. (2017) 'Standing up for inherent rights: the role of indigenous-led activism in protecting sacred waters and ways of life,' *Society & Natural Resources*, 30 (4), pp. 537–553.

Nussbaum, M.C. (1997) 'Capabilities and Human Rights,' *Fordham L. Rev.*, 66, pp. 273.

Nussbaum, M.C. (2003) 'Capabilities as fundamental entitlements: Sen and social justice,' *Feminist Economics*, 9 (2–3), pp. 33–59.

Nussbaum, M.C. (2011a) "The capabilities approach and animal entitlements," in Beauchamp, T.L. and Frey, R.G. (eds) *The Oxford handbook of animal ethics*. Oxford: Oxford University Press, pp. 228–251.

Nussbaum, M.C. (2011b) *Creating capabilities*. Cambridge, MA: Harvard University Press.

Nussbaum, M. and Sen, A. (1993) *The quality of life*. Oxford: Oxford University Press.

Obeng-Odoom, F. (2012). 'Beyond access to water.' *Development in Practice*, 22 (8), pp. 1135–1146.

Pelenc, J. and Ballet, J. (2015) 'Strong sustainability, critical natural capital, and the capability approach,' *Ecological Economics*, 112, pp. 36–44.

Perera, V. (2015) 'Engaged universals and community economies: the (human) right to water in Colombia,' *Antipode*, 47 (1), pp. 197–215.

Perreault, T. (2014) 'What kind of governance for what kind of equity? Towards a theorization of justice in water governance,' *Water International*, 39 (2), pp. 233–245.

PopeFrancis (2017) "The human right to water." Dialogue on the Human Right to Water, Pontifical Academy of Sciences, The Vatican, February 24. Available at: https://press.vatican.va/content/salastampa/en/bollettino/pubblico/2017/02/24/170224a.html

Ranganathan, M. and Balazs, C. (2015) 'Water marginalization at the urban fringe: environmental justice and urban political ecology across the north–south divide,' *Urban Geography*, 36 (3), pp. 403–423.

Rauschmayer, F., Omann, I., and Frühmann, J. (2012) *Sustainable development: capabilities, needs, and well-being*. New York: Routledge.

Redfield, P. and Robins, S. (2016) 'An index of waste: humanitarian design, 'dignified living' and the politics of infrastructure in Cape Town,' *Anthropology Southern Africa*, 39 (2), pp. 145–162.

Robeyns, I. (2018) *Well-being, freedom, and social justice: the capability approach re-examined*. Cambridge, MA: Open Book.

Rodina, L. (2016) 'Human right to water in Khayelitsha, South Africa: lessons from a 'lived experiences' perspective,' *Geoforum*, 72, pp. 58–66.

Schlosberg, D. and Carruthers, D. (2010) 'Indigenous struggles, environmental justice, and community capabilities,' *Global Environmental Politics*, 10 (4), pp. 12–35.

Schmidt, J. (2012). 'Scarce or insecure? The right to water and the changing ethics of global water governance,' in Sultana, F. and Loftus, A. (eds) *The right to water: politics, governance, and social struggles*. New York: Routledge, pp. 94–109.

Scott, C.A., Meza, F.J., Varady, R.G., Tiessen, H., McEvoy, J., Garfin, G.M., Wilder, M., Farfán, L.M., Pablos, N.P., and Montaña, E. (2013). 'Water security and adaptive management in the arid Americas,' *Annals of the Association of American Geographers*, 103 (2), pp. 280–289.

Sen, A. (2000) 'Development as freedom,' *Development in Practice*, 10 (2), pp. 258–258.

Sen, A. (2005) 'Human rights and capabilities,' *Journal of Human Development*, 6 (2), pp. 151–166.

Shah, S.H., Angeles, L.C., and Harris, L.M. (2017) 'Worlding the intangibility of resilience: the case of rice farmers and water-related risk in the Philippines,' *World Development*, 98, pp. 400–412.

Stoler, J., Brewis, A., Harris, L.M., Wutich, A., Pearson, A.L., Rosinger, A., Schuster, R., and Young, S.L. (2018). "Household water sharing: a missing link in international health." *International Health*, 11 (3), pp. 163–165.

Sultana, F. (2011) 'Suffering for water, suffering from water: emotional geographies of resource access, control, and conflict,' *Geoforum*, 42 (2), pp. 163–172.

Sultana, F. (2018) 'Water justice: why it matters and how to achieve it,' *Water International*, 43 (4), pp. 483–493.

Sultana, F. and Loftus, A. (2012) *The right to water: politics, governance, and social struggles*. New York: Routledge.

Sultana, F. and Loftus, A. (2015) 'The human right to water: critiques and condition of possibility,' *Wiley Interdisciplinary Reviews: Water*, 2 (2), pp. 97–105.

United Nations High Commissioner for Refugees (2018) *Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy, and sustainable environment*. Available at: http://ap.ohchr.org/documents/dpage_e.aspx?si=A/HRC/34/49

Wutich, A. (2012) 'Gender, water scarcity, and the management of sustainability tradeoffs in Cochabamba, Bolivia,' in McElwee, P. (ed) *Gender and sustainability: lessons from Asia and Latin America*. Tucson: University of Arizona Press, pp. 97.

Wutich, A., Brewis, A., Sigurdsson, S., Stotts, R., and York, A. (2013) 'Fairness and the human right to water,' in Wagner, J. (ed) *The social life of water*, New York: Berghahn Books, pp. 220–238.

Wutich, A., Budds, J., Jepson, W., Harris, L.M., Adams, E., Brewis, A., Cronk, L., DeMyers, C., Maes, K., Marley, T., and Miller, J. (2018) 'Household water sharing: a review of water gifts, exchanges, and transfers across cultures,' *Wiley Interdisciplinary Reviews-Water*, 5: e1309. Available at: https://doi.org/10.1002/wat2.1309

Yates, J.S., Harris, L.M., and Wilson, N.J. (2017) 'Multiple ontologies of water: politics, conflict, and implications for governance,' *Environment and Planning D: Society and Space*, 35 (5), pp. 797–815.

Zeitoun, M. (2011). 'The global web of national water security,' *Global Policy*, 2 (3), pp. 286–296.

Zeitoun, M., Lankford, B., Krueger, T., Forsyth, T., Carter, R., Hoekstra, A.Y., Taylor, R., Varis, O., Cleaver, F., Boelens, R., and Swatuk, L. (2016) 'Reductionist and integrative research approaches to complex water security policy challenges,' *Global Environmental Change*, 39, pp. 143–154.

Zwarteveen, M.Z. and Boelens, R. (2014) "Defining, researching, and struggling for water justice: some conceptual building blocks for research and action," *Water International*, 39 (2), pp. 143–158.