Published in final edited form as:

Med Anthropol. 2015 ; 34(6): 533–550. doi:10.1080/01459740.2015.1050490.

CONCEPTUALIZING BIOPOLITICS: CITIZEN-STATE INTERACTIONS IN THE SECURING OF WATER SERVICES IN SOUTH AFRICA

Nicola Bulled [post-doctoral fellow]

Center for Global Health at the University of Virginia. Her research focuses on infectious diseases in highly vulnerable and disadvantaged populations in the US and southern Africa, with an aim to guide the development of culturally informed interventions and health policy.

Abstract

Despite constitutional obligations to provide clean water to all citizens in South Africa, access to water and related services remains highly contested. The discord between constitutional promises and lived realities of water access, particularly through national infrastructure, provides a platform upon which to examine Foucauldian notions of biopolitics, the control of populations through technologies of governing. Drawing on the situations of residents in the rural Vhembe district in the north eastern corner of the country, I examine how individuals conceptualize the relationship that exists between citizen and state and the responsibilities of each in post-apartheid South Africa as it relates to water access. In addition, I describe strategies employed throughout South Africa to voice rights to water and how these approaches are perceived. Finally, I consider how the three primary forms of ‘water citizenship’ – citizen, agent, and subject – influence the current and future health of vulnerable residents.

Keywords

biopolitics; citizenship; responsabilization; South Africa; water

“Without water we will die. If we die there will be no one to vote for the government.”

(Nandi,¹ December 17, 2013)

It had been raining on and off for the past few days. The ground was saturated. Graded dirt roads were pocked with potholes and part of the main road had been washed away in a flash flood. As we arrived at our destination, the home of Nandi, nestled in the Soutpansberg mountain range in the former Venda *Bantustan* in northern South Africa, we heard a woman's voice calling to us from across the road. She was hidden among the lush green vegetation of the shared garden, only her voice offering evidence of her presence. Making

Correspondence may be directed to her to University of Virginia - Center for Global Health P.O. Box 800822 Charlottesville Virginia 22908-1379 United States. nlb2b@virginia.edu.

Media Teaser: In South Africa water is a human right, yet the complexities of access to water services for vulnerable populations suggests a reshaping of citizen-state relationships

¹Pseudonym used to protect informant confidentiality.

our way towards the house perched on the hillside she silently joined in-line behind us; her legs, up past the ankles, her arms, almost to the elbows, covered in wet, rich, dark soil. *Voetsek!* (go away) she yelled, startling me. The intended subject of her scolding, the pregnant and not very hostile looking dog barking at us, slinked off to the other side of the patio as we approached. “You speak Afrikaans?” I inquired in English turning towards her. “It is a good word,” she replied, pausing then adding quietly and with a hint of animosity, “for a dog.” Growing up as a white English speaker in South Africa, I had shouted *voetsek* at dogs many times. But the phrase was also routinely directed by white people at black people. Perhaps because of this recent and shared personal/political history and our different race categorization (white/black), the remainder of our conversation would continue in TshiVenda (language of the Venda people), not English or Afrikaans, even though Nandi could clearly communicate in all three languages.

Nandi had recently experienced personal difficulties with government water services. She lived in one of the few houses in the neighborhood fitted with a municipal water pipe and water meter. Although the municipality only supplied water Mondays, Wednesdays, and Fridays, the purified water supply was dependable and relatively inexpensive at about 40 ZAR (4 USD) a month. However, the water supply had become erratic and her water meter had broken. To resolve this issue, Nandi had travelled to the local municipality building to complain. She was told it would cost 400 ZAR (40 USD) to install a new water meter. Nothing was said about the intermittent supply of the water. After saving up the requisite funds, she returned to the municipality, only to be told a different story. Instead of paying for a water meter to be installed, she was supposed to purchase her own meter, and the municipality staff would install it at a later, undetermined date.

It is with Nandi's story that I begin this discussion of citizen-state relationships related to water access in South Africa. In 2012, 748 million people globally had no access to improved drinking water, defined as water from a source that is less likely to be contaminated than water from a river or pond, including household connections to purified water infrastructure, public standpipes, boreholes, protected dug wells, protected springs and rainwater collections (UNDP 2014). In South Africa alone over 4.5 million citizens remained unable to access sufficient water for personal and domestic use on a regular basis (between 50 and 100 liters per person per day).² These numbers are contested, and have been used to either bolster political positions or dismantle them. Prior to the 2014 national elections, the national government announced that 95 percent of South Africans had access to clean and safe drinking water, and 91 percent of households had access to piped water. A closer examination of the 2011 census figures, upon which these statistics are based, indicates that only 43 percent of the population has access to piped water in their homes, with 29 percent using a standpipe in their yards, 3 percent a neighbor's tap, and 15 percent a communal tap (Rademeyer 2013, www.statssa.gov.za/). Even when pipes are available, municipal water services are sporadic at best, water is not always clear, tastes and smells bad, and may not be safe to drink.

²See <http://data.worldbank.org/indicator/SH.H2O.SAFE.RU.ZS> for data on percentage of rural populations with access to improved water sources by country over time.

Despite global efforts to improve water services (UNDP 2014), the expansion of basic human rights to include the right to water has been contentious. Forty-one countries abstained from the 2010 vote to include a right to water on UN General Assembly Resolution 64/292, citing concerns over the role of the Human Rights Council in clarifying national governments' legal obligations to guarantee access to water (ISHR 2010). South Africa is one of only six countries that has explicitly ratified the right to water within its national constitution (Bill of Rights 1996), although many countries have framed the right to water implicitly within national legislation drawing on the international water rights framework (see Gleick 1998 and CESCR 2002). Key tensions persist in current global debates around the human right to water – determining what is fair and the extent of citizen entitlements, expectations, and responsibilities – as discussed by Wutich and colleagues (2013) in their examination of water rights in diverse communities worldwide.

The legacy of embedded economic and social inequalities turn practicalities and realities into “suffering from water” (Ennis-McMillan 2006). Poor hygiene and sanitation due to limited access to water services contribute directly to the transmission of water-borne disease. Frequent bouts of diarrhea during childhood have deleterious and potentially irreversible effects on long-term physical and cognitive development (Checkley et al. 2008; Guerrant et al. 1999; Lortz et al. 2006; Moore et al. 2001; Niehaus et al. 2002; Petri et al. 2008). In South Africa, diarrheal disease is one of the leading causes of death for children under five in informal settlements. In the province and district where this study was conducted (Vhembe, Limpopo), diarrhea is the third leading cause of death (Bradshaw et al. 2000), with rates for children under 5 years 1.7 times higher than the national average. In this region, cases of diarrhea increased 170 percent between 2003 and 2008 (Sello 2010). The South African figures estimating water services coverage, although significantly improved from coverage provided under the former apartheid government, do not meet constitutional obligations.

In this article, I offer an empirical exploration of contemporary understandings of and actions to secure the right to water and by consequence better health status and improved future potentials of South Africans living in a remote area of Venda. I describe the multiple citizen-state relationships taking shape in South Africa, and how these influence health states. I argue that these forms of citizenship both fit within and lie outside the current definition and conceptions of biopolitics, which has been limited to citizen-state interactions and thus arguably not applicable in societies where alternative forms of authority exist and new stakeholders are surfacing.

BACKGROUND

South Africa, and particularly the Vhembe district of the Limpopo Province in the extreme north east of the country, presents an intriguing context to examine biopolitics. Contemporary studies of water insecurity in South Africa have primarily examined citizen responses in agricultural areas (Goldin 2010), metropolitan neighborhoods with insufficient water supplies to support impoverished population (Mehta and Ntshona 2004; Von Schnitzler 2008; 2013), and communities with water supplies contaminated by industrial run-off (Feris 2012). In the early 2000s, Lyla Mehta (2005; 2006; Mehta and Ntshona 2004)

examined the right to water in the remote former homeland of the Transkei (Eastern Cape Province). At that time she argued that the public was largely ignorant of its right to water. This contributed to a lack of progress to improve water infrastructure servicing the more remote regions of the country. Jacqueline Goldin (2010), in studying remote agricultural communities in the Western Cape prior to and shortly after the 1994 elections that marked the end of Apartheid, similarly found an unwillingness of some communities to make claims for improved water services. Collectively, these studies suggest that multiple issues interlaced (e.g., poverty, inequality, geography, economics, politics) and defined the relationship between citizens and the state with regards to water services. In recent years, local awareness and understandings of rights, entitlements, and responsibilities have shifted in both metropolitan and remote areas, both incited by and inciting widely publicized social movements and court cases related to the right to water in South Africa (Dugard 2009; Robins 2011; 2013a; 2013b; Von Schnitzler 2008; 2013). How then might contemporary relationships between citizens and the state play out in remote geographic spaces where infrastructure is limited but where the temporal space is imbued with knowledge of rights and growing feelings of entitlement?

As mentioned above, South Africa is one of only a few countries that have explicitly articulated a citizen's right to water. The intent of this right is to redress past imbalances and establish social equality. Policy makers tend to emphasize equality as it is more consistent with the project of nation-making than the notion of equity, which relates more to fairness in terms of local histories, norms, and beliefs (Boelens 1998). For South Africa, nation building was particularly important in 1996 when the national constitution was developed. However, the language of equality has promoted a “culture of entitlement” whereby individuals and communities opt to wait for government action rather than make efforts to improve local situations (Grootes 2014).

Recognizing financial constraints, capacity limitations, and market drivers,³ the ‘rights’ language of the constitution has been tempered with language of practicalities, as national policy documents define the barriers to equality and in so doing, lay the foundations of the equitable distribution of water services. The constitution articulates the caveats of “availability of resources” and “progressive realization” of rights (Bill of Rights 1996, Section 27(1)(b), Act 108). The Water Services Act (1997) further notes that the duty of the state is to provide consumers with “efficient, affordable, economical and sustainable access to water services,” (Section 3, 2-3 and Section 11, 1) but that this is subject to (but not limited to), “the need for an equitable allocation of resources to all consumers; [and] the need to regulate access to water services in an equitable way” (Section 11, 2). This language effectively limits the responsibility acknowledged by the state in ensuring the ample provision of water services.

This tension between equality and equity is described by Mehta (2005:22) as a “blurriness” between policy and practice. The responsibility acknowledged by the state in ensuring the ample provision of water services to all is reduced through the recognition that providing

³A South African Water Research Commission study identified that 36.8 percent of South Africa's municipal water is lost through leaks and deteriorating water supply systems, a loss of 7 billion ZAR in revenue (Water Research Commission 2012).

such services is beyond the capacity of the state and limited to providing services to some with the promotion of self-governance and self-determination to address access delivery to the rest. While this may undermine the state (Boelens 1998), it also limits the ability of citizens to make claims for improved water services. Mehta (2005) argues that the lack of clarity on the locus of responsibility with regards to implementation of orders, and the limited monitoring role played by the South African Rights Commission, leaves citizens confused about where to turn. What effect might such language have on public actions today, as individuals are both granted the right to sufficient water access and yet simultaneously denied it? Do residents still believe in entitlements, expecting government to provide services to redress past imbalances and consequently doing nothing to improve their own conditions?

South Africa's political history intimately shapes current citizen-state relationships. Over the past 20 years, citizenship in South Africa has been redefined first through the sudden transition of the government to a democracy and then through a growing culture of corporate capitalism. As a result, citizen activist efforts have taken varied and fascinating forms (Robins 2008). We see combinations of the post-apartheid neoliberal package of hyper-individualism, free market capitalism, and rights talk contrasted against communitarian notions of African renewal. Communitarianism is largely maintained by the traditional authority structures and associated customary laws that are still recognized in South Africa. Traditional leadership structures are supported by the national government under Chapter 11 of the Constitution. With the Department of Traditional Affairs serving as a coordinating body, numerous pieces of legislation have been passed and various programs implemented to ensure traditional leadership continues to contribute to society, particularly in relation to the rural development strategy.⁴ The end result is that many contemporary South African citizens function under the elected government system as citizens and the traditional leadership structure as subjects, concurrently.

From this understanding – the existence of multiple forms of and avenues for social activism – I have developed and utilize the term ‘water citizenship’ to indicate the use of science and law to base claims for improved access to government services, in this case, water infrastructure. I am extending here the concept of biological citizenship as described by Rose and Navos (2003; 2005) that encompasses all citizenship projects that link conceptions of citizens to beliefs about the biological existence of human beings. In considering the South African situation in the context of biopolitics, where do traditional or alternative authority structures fit? Do they serve as an extension of government or are they a separate entity entirely? If separate, might we need to reconsider applying the biopolitical perspective in the South African context?

Most literature on water insufficiency focuses on limited access (e.g., Anand 2011; Wagner 2013). The situation of water access of the Vhembe district is representative of a remote area in that it has limited water infrastructure, but it is unique in that it is not a water scarce region. Projections from studies conducted locally suggest that households could collect sufficient rainwater runoff during the wet season to provide for personal and small scale

⁴See <http://www.gov.za/aboutgovt/tradlead.htm> for more details on South Africa's Traditional Leadership programs.

agricultural use throughout the dry season (Ndiritu et al. 2011). Few households have the economic resources to purchase storage tanks for rainwater runoff collection. Access to safe drinking water, free from agricultural contaminants, human and animal fecal matter, and pathogens thus remains limited and contributes to a high enteric disease burden, as discussed above.

Census data from the Vhembe district indicates that 88 percent of households have access to clean running water provided through government infrastructure, consistent with nationwide figures (Statistics South Africa 2012). A study conducted in the Dzimauli neighborhood indicates that 84 percent of measured households (n=244) have access to “piped” water (Bessong et al. 2014). However, among my study participants in Dzimauli, only 44 percent had access to municipal water. These conflicting data reveal the complexity of identifying primary water sources, particularly where multiple water sources are used and primary sources shift by season. My conversations with women in Dzimauli revealed that water “piped into households” was synonymous with both municipal supplied water (purified) and water from streams or rivers diverted to homes through an overland piping system developed and maintained by community members (supplying impure surface water). Some households had municipally supplied water in the past (private or shared standpipes), but these lines were disconnected due to “inappropriate water use,” or broken pipes and meters. Other households have never had access to municipal water.

Many of my colleagues working in the region focus their efforts on developing technologies for water collection, storage, and purification to allow individuals and communities to be self-reliant rather than working to improve and expand on the existing water infrastructure (Dankovich and Smith 2014; Mellor et al. 2014). What do such projects promoting self-reliance have on efforts to hold the government accountable for improved water infrastructure necessary for better health, the potentials of individuals, and the growth of communities?

METHODS

I engaged in participant observation at the district, municipality, and village levels in 2013 and 2014, analyzed relevant policy documents and newspaper accounts of current court cases and social movements, and conducted semi-structured interviews with female household heads. For interviews, I randomly sampled 75 women, those responsible for managing the household's water supply living in the Dzimauli neighborhood. Fifty of these women (67 percent) were available to participate. The semi-structured interviews included questions about primary drinking water sources, water-related emotional distress, water-related health and health behaviors, and civic engagement or water citizenship including voting, participation in coordinated social efforts to improve water services, water-related conversations with authorities, filed legal claims and knowledge of how to file a claim, willingness to pay for water services, and knowledge and understandings of the right to water. Interview data were analyzed using qualitative methods, namely content analysis, and quantitative methods, including correlations, multiple linear regression, and path analysis. In this article, I focus on the qualitative findings as informed by the quantitative results.

In what follows, I present three composite cases of female household heads as unique forms of water citizenship. These cases do not reflect a single representative individual, but rather a combination of individuals who responded to their water situations in similar ways. In each composite case, I highlight the actions taken to acquire water, and who/what serves at the authority figure. I describe the different forms of citizenship as independent, but people often chose to operate using multiple forms to ensure their water needs are met. Through this I argue that the complexities of water services within South Africa serve as portraiture of contemporary biopolitics.

RIGHTS BEARING CITIZENS

The case of Nandi, with which I opened this article, reveals that residents of the new South Africa do voice their right to water by making claims on the state (at municipal, district, and national levels) for improved water services, in line with current biopolitical models. As documented in the Bill of Rights (1996, Section 38:17), Nandi could have “approach[ed] a competent court, alleging that a right in the Bill of Rights has been infringed or threatened, and the court may grant appropriate relief, including a declaration of rights.” However, few individuals in the Vhembe district with whom I spoke appeared to have considered the courts as an option to voice their concerns over the provision of improved water services or as a way to practice their citizenship. Even individuals working within the district court system could not identify the avenue by which a citizen could make such a claim. Everyone agreed that legal representation was needed to file a claim, because of an attorney's position within the legal system, not necessarily their expertise. The University of Venda, Thohoyandou, has a department of law that offers a certificate in Human Rights Law and Practice and holds legal clinics for local residents. No one with whom I spoke in Thohoyandou or the more remote Dzimauli area had considered this legal clinic as a means of obtaining advice or filing claims.

Voting appeared to be a more viable avenue for Dzimauli neighborhood residents to voice their water services concerns, as expressed by Nandi's opening quote. Voting is a right South Africans of Nandi's generation have seen granted, and despite the reduced voter turnout for the 2014 national elections, many continue to take their right to vote very seriously.⁵ Indeed, a change in municipal leadership in the Dzimauli area occurred as a result of the 2014 national elections.

Lacking significant legal oversight and clearly demarcated structures through which citizens can make claims (Mehta and Ntshona 2004), beyond the act of voting, the translation of rights into practice and the enforcement of these rights in South Africa has been largely dependent on civic action campaigns and individual legal struggles (Bond and Dugard 2008). The first such water campaign occurred between 1996 and 2000 in reaction to indications that the government planned to encourage the wholesale privatization of water services (Bond and Dugard 2008). In 2002, a legal claim was filed by private citizen Manqele against the Durban Transitional Metropolitan Council, in KwaZulu Natal, for the

⁵Only 57 percent of the eligible voting population participated in the 2014 national elections, a significant drop from the 86 percent turnout for the first democratic elections in 1994 (Schulz-Herzenberg 2014). These numbers are still considerably higher than voter turnout in the U.S, which was down to 36 percent in the 2014 mid-term elections (DelReal 2014).

unlawful disconnection of her water services.⁶ The judge ruled against the applicant (Mangele) citing non-payment and the illegal re-connection to the municipal water supply. That same year, residents of Bon Vista Mansions, a block of apartments in Hillbrow a suburb of Johannesburg, filed a legal claim against Southern Metropolitan Local Council, in Johannesburg, in which the judge ordered the interim re-connection of water to the applicants.⁷

In 2004, civil protests began in Phiri, a township in Soweto, in response to Operation Gcin'amanzi, which regulated water consumption in poor communities through water disconnections, quantity restrictions, and installment of prepaid water meters. Protesters argued that the water supply was too limited, placing undue burdens on the elderly, families with young children, and individuals infected with HIV. Moreover, two young children had died in a house fire that residents were unable to contain as the pre-payment meters automatically shut off the water supply. These civil protests eventually led to litigation against the City of Johannesburg, claiming human rights abuses (Dugard 2009). In 2009, contradicting the initial findings of the Johannesburg City High Court and those of the national Supreme Court of Appeal, the Constitutional Court (providing judication on claims of human rights abuses) found that the free basic water policy adopted by the City of Johannesburg was reasonable with regard to the Constitution and that the use of prepaid water meters was lawful.

In 2011, the 'Toilet Wars' erupted in Western Cape Province, initially protesting only partial provision of flush toilets by the state. While the state had provided the hygiene and sanitation infrastructure, residents were expected to build enclosing structures as a way to stimulate a sense of local responsibility over shared communal services. Given their impoverishment, most informal settlements of black residents lacked the financial resources for building supplies, and the toilets remained open to the public. Residents argued that this was reminiscent of the Apartheid period when black South Africans were denied basic personal liberties, including private hygiene and sanitation facilities. In 2013, 'poo protesters' flung human waste onto the national highway, the Cape Town International Airport, and on the steps of provincial legislatures in Cape Town (Robins 2011; 2013a; 2013b). These protests were driven by a number of grievances, including labor disputes with Sannicare contractors responsible for sanitation service delivery in informal settlements, the 'bucket system' requiring residents to remove their own human waste from the area, and the City of Cape Town's provision of portable toilets, given land conditions that make building water and sewage infrastructure difficult. According to the protest leaders in Cape Town, people wanted "proper" permanent porcelain toilets and water infrastructure, which they associated with democratic citizenship and rights.

In the Vhembe District in the Limpopo Province, civil protests for improved service delivery erupted in 2013, centered within the city of Thohoyandou. Protest marches and the ensuing violence including looting and destruction of buildings resulted from a disappointing 10-year struggle by the residents of Malamulele to obtain a separate municipality autonomous

⁶Mangele v Durban Transitional Metropolitan Council, Durban High Court, 2002 (6) SA 423 (D).

⁷Residents of Bon Vista Mansions v Southern Metropolitan Local Council, 2002 (6) BCLR 625 (W).

from the Thulamela municipality. During the transitional local government period, Malamulele (formerly part of Gazankulu, Tsonga homeland) had its own municipality. Subsumed by the predominantly Venda Thulamela municipality, residents of Tsonga heritage became increasingly angered by the lack of service delivery in their area and by nepotism and alleged corruption by Venda municipality leaders (Tshikhudo 2013). Residents of the Vhembe district had mixed reactions to these local civic protests that appeared to align with ethnic affiliations. Most MuVenda were disappointed at the violent nature of the protests. Local Tsonga residents similarly were displeased with the disruptive nature of the protests, but felt that the civic action was appropriate to voice legitimate concerns.

In October 2014, over 500 residents of the Vhembe district demonstrated against the Nandoni Dam. Completed in 2009, the dam intended to address water shortages in the region. However, it took five years from the completion date for residents in the region to finally obtain purified water from the dam, although at a cost. To build the dam, residents of 16 villages were relocated. To access water from the dam surrounding residents were expected to pay between 800 and 2000 ZAR for household connections, based on income level (Masakona 2014). Local residents were under the impression that dam water would be provided free of charge. In addition, water services to all outlets, including communal standpipes, were sporadic and unreliable. An article in the local online newspaper *City Press* by Poloko Tau (2014) articulates the controversies surrounding the Nandoni Dam project. Tau cites different stakeholders – spokespersons of the local tribal authority and the Department of Water Affairs, and the community leader of a local municipality – as offering different accounts of the project's success. One stakeholder indicates that only two villages were receiving water, another that only 3 percent of residents received water, the third that 21 villages now had water. Reports indicated that most of the purified water was sent to the metropolitan area of Polokwane, 200km away (Masakona 2014). Local impressions of the project are clear; the dam that reportedly cost between 0.3 and 2 billion ZAR to construct had not lived up to expectations. Locals had no recourse other than to publically demonstrate their disappointment and frustrations.

A traditional headman (*Mukoma*) from the Dzimauli neighborhood in Limpopo expressed dismay with the protests for better services taking place. He described these civic actions as those of “out-of-control hooligans” who had become disconnected from social structures that had historically managed community concerns and disputes. He argued that such civic engagements occurred because traditional leadership structures did not exist in metropolitan areas where multiple ethnic groups co-reside. This commentary is particularly intriguing when we consider how civil actions impact, threaten to bypass, and undermine the traditional leadership structure of which this *Mukoma* was a part, as I discuss further below.

Mehta argues that the lack of a clear avenue for making claims on the state is effectively a “sin of omission.” This “sin”, she argues, is a direct result of a “lack of financial resources, poor institutional capacity, poor awareness of rights [by the public] and the lack of means to seek legal recourse” (Mehta 2005:11). The result is that residents are denied the right to water. Protesting serves as one of the only avenues (beyond voting) whereby residents can voice their claim to government services.

RESPONSIBILIZED CITIZENS

Nandi, social activists, and legal plaintiffs represent one form of water citizenship in South Africa, one that aligns with the current biopolitical model in that they seek services from government representatives as rights bearing citizen and argue corporeal damages. A second form of water citizenship involves a more contemporary relationship between independent citizens and the new South African state – a case of self-governance of “responsibilized” citizens.

Dali and her family have paid to become self-reliant, self-functioning, self-disciplined, and responsible citizens. Though physically situated within walking distance from Nandi, Dali's new modern house not only had indoor plumbing, it had flush toilets and a functioning septic system. During the construction of her home, Dali paid for purified municipality connected water pipes. However, there is no water meter as the municipality was not informed of the connections. In addition to the water pipes, two large *JoJo* tanks were installed behind the house serving as reservoirs for rainwater. The impure collected rainwater is used for washing clothes and flushing the toilets, not for consumption. Dali was able to afford this modern water arrangement because of her husband's position with the police force and her full-time employment as a baker.

Dali used the family's collective economic, political, and social capital to obtain and develop a dependable water supply with limited interactions with the municipality. In this, Dali joined a growing movement of affluent citizens in South Africa who elect to minimize their relationship with the public sector and opt instead to interact with the private sector. They drill private boreholes and self-purify the water, use pre-payment rather than credit water meters to avoid inaccurate billing by municipalities lacking capacity to function effectively, install solar electricity rather than relying on the frequently interrupted municipally supplied electricity, and use cell phones rather than the government landline telephone system (Von Schnitzler 2013). As a result of these limited engagements with the state, a tension is developing as citizens embodying the role of responsible agents and autonomous self-reliant individuals neither belong nor contribute to the state.

The economic reorganization of democratic South Africa has resulted in a growing culture of corporate capitalism, the appearance of “rights talk”, and rising expectations for responsible citizen agents. The biopolitics of the country has similarly shifted from one of paternalistic control of the Apartheid regime to government at a distance. In the contemporary era of advanced neoliberal rule, responsibility has shifted from the shoulders of public officials to those of the residents. Simultaneously, “good citizenship” in a neoliberal era is increasingly based on the individual's capacity for autonomous self-mastery, self-discipline, and “responsibilization” (Barry, Osborne and Rose 1996; Rose 2007; Rose and Novas 2005; Scott 1998). This, however, contributes to maintaining and even expanding social inequities. The state of “responsible citizen agent” is only achievable by those who can afford it. These residents can purchase improved hygiene and sanitation services, and subsequently enjoy improved health states. Yet, by not contributing into the state system, finances and capacity to develop state infrastructure is further restricted for the poor and most vulnerable. Here I turn our attention to the final form of water citizenship –

the ethnic subject. This form of citizenship also lacks formal integration within government infrastructure, but distance from the state is a consequence of the conditions of low economic, social, and political capital.

ETHNIC SUBJECTS

Grace lived about five miles down the main road from Dali's home, up a steep hill and around a bend with her husband and their three grandchildren. During a light rainfall we talked in her 'outside' kitchen, a small *rondaval* – a round building with a thatched roof and dirt floor. The kitchen contained nothing but a smoking fire atop which simmered a pot of water. Although the smoke from the fire stung our eyes and the persistent flies were almost unbearable, it was warm in the kitchen, and we, and the baby goat hiding in the shadows, were sheltered from the drizzle. Grace's property has never been connected to a municipal water supply as it is situated further from the centralized water purification system and across mountainous terrain. Grace also made no mention of accessing water from a shared municipal standpipe within the community. Rather than spending hours each day collecting water from the stream, or investing monies to drill a borehole or purchase rainwater collection tanks, Grace had coordinated with other households, through her traditional leadership structure, to rig a system of hoses and pipes to pick up water from the nearby stream. Occasionally the community laid water delivery pipes broke or were diverted, requiring the locally appointed water group to make minor adjustments. But, Grace never worried about having a sufficient water supply. If the water pressure became too low to accumulate enough volume for everyday cooking and cleaning purposes, she would send the children to collect water from the stream. This water needed to be purified prior to consumption, although Grace rarely made the conscious effort to purify any of her water. Rather than operating through civil leaders, or making direct claims on the government to fulfill its constitutional obligations to provide water services, Grace chose to act within the traditional social structures of her community.

South African anthropologist Jacqueline Goldin (2010) has suggested that shame prevents vulnerable communities from accessing government structures to demand improvements in water services. Studying two distinct racial groups in the Western Cape Province, white Afrikaans farmers and a colored community, Goldin found that members of the colored community, with no tribal affiliations or leadership structures, were too ashamed about their limited familiarity and experience engaging with the civic sector to make claims for improved water services. These feelings, and associated lack of action, persisted even after the end of Apartheid. Grace's apparent inaction, given her limited involvement with civic structures to obtain government water services, was not linked to feelings of shame, although some residents in Dzimauli did express shame, particularly when considering that some houses had improved water services. Grace however was not interested in taking the time to engage with civic leaders. Given Nandi's encounters with the state, we can understand why. Action does not always result in positive outcomes, and learning from years of experience, residents consciously elect to use alternative approaches.

Given the lack of or ineffective municipal services, Grace and most of her neighbors chose to, or were limited to, using surface water. Consistent with Goldin's (2010) findings, water-

related complaints were not directed towards civic leaders or the municipality. Grace reasoned that it was the duty of her traditional leaders to negotiate on her behalf, and she sought to improve her water services through a social rather than civic process – her locally appointed water committee. Social relationships are critical to being able to negotiate the uncertainty and vulnerability of everyday life in many places in Africa, including rural South Africa, and communitarian forms of citizenship, conviviality and sociality may be valued for their capacity to hold powerful state actors and traditional leaders accountable for the delivery of material and social goods (Robins 2008). While it may seem as if individuals are not engaged in a civic process of citizenship to obtain improved water services, we might consider that there are layers of water citizenship, each with different authority structures (civil, private, or traditional) operating concurrently throughout South Africa, within communities and by individuals. Grace's choice was therefore not one of shame, ignorance, inaction, clientism, entitlement, or repudiated citizenship, but rather, a uniquely South African form of 'water citizenship'.

In addition to her lack of integration within national infrastructure, Grace's shifting citizenship status was another possible reason for her distance from the nation state (which included abstaining from voting). For black South Africans of Grace's generation, citizenship status in relation to the Republic has been redefined multiple times. The Bantu Homelands Citizenship Act No 26 was passed on March 26, 1970. South African blacks were required to become citizens of one of the nominally self-governing *Bantustans* (tribal 'homelands').⁸ The homelands, by design of the Apartheid government, occupied relatively small and economically unproductive areas of the country. Each homeland controlled its own education and health system. With limited local economic productivity, these institutions were mostly underfunded and underdeveloped. Traditional leaders served as convenient forms of administration for these areas, paid by the government and held responsible for the collection of taxes, distribution of pensions, allocation of communal land, and the administration of customary law through tribal courts. For details, see Comaroff (1974), Gluckman, Mitchell and Barnes (1949), Lahiff (2000), and Ngwane (2004). Nationals of the supposedly autonomous homelands also had their South African citizenship circumscribed. They were no longer legally considered South African, rather assuming nationality and holding passports from their homelands. The homeland system further disenfranchised black people residing in white South Africa by restricting their voting rights to their own identified black homeland. In this context, traditional authorities became one of the only gateways through which people, the 'subjects', could access the state 'as citizens' (Mamdani 1996).

The Bantu Homelands Citizenship Act was repealed on April 27, 1994 under the Interim Constitution of South Africa, allowing all black South African citizens the opportunity to vote in the new democracy with no restrictions on property ownership and residence location. The former homelands were incorporated into a non-racial, unitary South Africa, and a significant number of the former Bantustan leaders became African National Congress MPs in the national and provisional legislatures. Although some chiefs were seen as stooges

⁸Venda became independent in 1979. Other autonomous homelands included the Transkei (1976), Bophuthatswana (1977), and the Ciskei (1981).

of the Apartheid regime, they had an important role in reconciling patriarchal traditional leadership structures and their associated ethnic subjects, within a liberal democratic constitutional framework which insists on the creation of autonomous rights-bearing citizens (McNeill 2011; Robins 2008). Traditional leadership structures remain in place in Venda, with leaders paid monthly salaries to exercise their various duties. In this, traditional structures serve as another layer between citizens and the state, alleviating the responsibilities of government and maintaining a distance from citizens. By maintaining these traditional structures, residents are part of a complex system of ethnic subjects (whose leaders both fight for and provide necessary services), autonomous agents (who independently act to ensure their needs are met), and rights-bearing citizens (who draw on the state for the provision of services).

The shift from citizen to non-citizen, and then back to citizen, and the continued existence of the traditional leadership structure, may be a cause for Grace and others in her neighborhood to continue to seek support from their traditional social structures. Traditional authority structures serve as more accessible forms of authority to people within some rural communities. Despite the liberal democratic constitutional framework, which insists on the creation of autonomous rights-bearing citizens and the growing body of responsibilized agents, Grace operates within a system of ethnic subjects.

WATER CITIZENSHIP AND HEALTH

None of the women interviewed for this study recognized water as a cause of personal illness, yet all agreed that bad water can cause sickness. Health behaviors, including treating water and routine hand washing, did not change based on citizenship category or water source. However, water-related emotional distress was influenced by level of water citizenship (Pearson's correlation coefficient: $r=0.431$, $p=0.0018$). Individuals categorized as 'citizens' expressed greater water-related emotional distress mostly due to the uncertainty of municipal water supplies.

The narratives presented above offer a distinction of sorts between citizens, subjects, and agents. While relayed as independent encounters and actions, people and communities employ a combination of rights-based claims and strategic engagements with non-state actors, living their lives concurrently as citizens, subjects, and responsible agents (Nyamnjoh 2002). Nandi's frustrations with the municipality system drove her to seek assistance from her traditional leader and enter into the community water piping system. Though not ideal, her alternatives included legal claims of human rights abuses, which required time, effort, and financial investment, independently collecting and purifying water from local streams, or purchasing purified water from local markets.

This practice of fluctuating between forms of what I recognize as citizenship is not distinct to the issue of water access. Robins has detailed citizenship practices for AIDS treatment (2008) and is currently examining social activism in relation to water and sanitation services in townships surrounding Cape Town (2011; 2013a; 2013b). He argues that activist efforts have taken multiple forms, with citizens making claims on the nation-state, as well as reaching out for assistance to NGOs and international agents. I add traditional leaders to the

list of authorities upon which residents make claims for government services. Traditional leadership structures have been legitimated as one of the more reliable gateways to the nation-state (Mamdani 1996).

It is, however, not that simple. Traditional leaders have not always had direct ties to the nation-state (colonial, Apartheid, or democratic), and even formal agreements are further complicated by the personal attributes of traditional leaders. Koelble and Lipuma (2005) argue that traditional leaders serve the democratic state by penetrating the hinterland with projects that facilitate the current agenda of social justice. Yet, Oomen (2005) argues that traditional leadership is not just an extra arm of the state, but a new body politic that has grown to fill the void of the shrinking nation-state. In his assessment of the traditional authority structure in Venda, and recent rivalries for the claim/appointment as paramount king (*Thovela*), McNeill (2011) points out the inequities that exist for residents as a consequence of the characteristics of traditional leadership. Charismatic leaders have used their positions of power to manipulate their relationship with the state to improve government services for their communities. Certain villages, linked directly to the paramount king, enjoy piped water into every house, flushing toilets, and showers, while communities not 10km away are limited to communal water taps and latrine toilets. Recognizing that traditional leadership positions are inherited not appointed, residents have little or no say in who will serve as their leader. Furthermore, the leadership structure involves a chain-of-command that cannot be bypassed, beginning with the village level petty headman (*Mukoma*), headman (*Vhamusanda/Gota*), chief (*Khosi*), and king (*Thovhela*).

Ultimately, national government sovereignty trumps traditional authority, and many traditional leaders in the region have limited influence over civic structures. Consequently, residents choosing to operate as subjects, making claims on traditional authorities, are unlikely to see improvements in their access to government water services, and consequently will continue to suffer from repeated bouts of enteric disease from improperly purified and stored water. Responsible agents who acquire access to water services independent of the state and traditional leadership structures also continue to be exposed to enteric pathogens in their communities (e.g., schools, churches, markets), even though benefiting by not drinking contaminated water. Citizen action, in the form of complaints, legal actions, or voting, may result in working water meters, mended water distribution pipes, and reconnected communal taps. This may benefit the health of individuals, but will not result in significant population health benefits, as communities remain disconnected from water services that would limit exposure to pathogens.

As such, the right to water does not make much of a difference to this and many other vulnerable populations, remaining an illusion. Citizens are granted the right to water, but not to water services (e.g., purification and delivery) because of wider political factors and lack of political will on the part of powerful stakeholders (Mehta 2006). While seemingly empowered, the neoliberal technologies of governing prevent these efforts of citizens, subjects, and agents from having any positive impact on health. Promoting the human right to water can only be the result of a conscious socio-political choice on part of decision makers including financial allocations for basic water services and infrastructure, as well as the expansion of social services generally to remote areas and vulnerable populations

(Bulled, Singer and Dillingham 2014). The current situation, whereby legal action against the state remains inaccessible, traditional leaderships have limited influence, and responsible agents can minimize but not fully prevent disease, results in marginalized South African citizens benefiting very little from the human right to water.

CONCLUSION

In the three forms of water citizenship taking shape in South Africa highlighted by the composite narratives of Nandi (citizen), Dali (responsible citizen agent) and Grace (subject), we see evidence of conflict between the atomized and autonomous conception of the rights bearing citizen and African realities (Nyamnjoh 2002; Werbner 2002). The first of these citizen-state responses aligns with a classic definition of biopolitics whereby citizen-state relationships are clearly defined and direct; the second sees a distancing of citizen-state relationships as the neoliberal agenda places greater responsibility on citizens while lessening the obligations of the state; and the third reveals an extension of the state into the realm of traditional authorities that not only serve community members but are recognized by and are a functional, albeit limited, part of the nation state. As this illustrates, South African citizens straddle multiple political discourses and logics in their strategic and situated encounters with the modern state, traditional authorities and other sites of power (Robins 2008).

Deborah Heath, Rayna Rapp and Karen-Sue Taussig (2004) have pointed out that citizenship in the contemporary age is manifested in a range of struggles over individual identities, forms of collectivization, demands for recognition, access to knowledge, and claims to expertise. New spaces of public dispute over bodily experiences and their ethical implications are emerging. New objects of contestation are being generated, including concerns regarding respective powers and responsibilities of public bodies and individuals. Novel forums for political debate, new questions for democracy and new styles of activism are developing. In their exploration of patient-citizen-consumers in Brazil, João Biehl and Adriana Petryna (2013) argue that the multiple positioning of citizen-agent-subject complicates the concept of biopower. Rather than “a top-down biopolitical model of governance in which population well-being is the object of knowledge and control, ...there is a contestation over the utility of government by multiple...stakeholders” (Biehl and Petryna 2013:338). While speaking in relation to health care technologies, the increasing privatization of water is likely to propel this situation out of the health care setting. In each case presented in this article, the forms that these movements take are shaped by many factors that vary in different individual experiences, relationships with the state, and even differing biopolitical histories and presuppositions about persons and their rights and obligations (Rose and Novas 2005). The modes of mobilization taking place in the Vhembe district create the political space for the articulation of new forms of biopolitics in South Africa that may in future compel political action to improve water and social service delivery.

ACKNOWLEDGMENTS

Study received approval from the Institutional Review Board of the University Virginia, SBS # 2013035100. My sincere thanks to the faculty and staff at the University of Venda, Pascal Bessong, Emanuel Nyati, Brenda, Ellen,

Simba, Blessing, Nicolas, and Ndivuwani, Cornelius Hagenmeier, and Vhonani Netshandama. For the thoughtful comments and guidance offered by faculty at the University of Virginia, I thank Rebecca Dillingham, Carol Mershon, Richard Guerrant, Karen Firehock, Garrick Louis, James Smith, and Richard Handler.

FUNDING

Funding was provided by: Fogarty International Center of the NIH, Award Number D43 TW009359. The content is solely the responsibility of the author and does not necessarily represent the official views of FIC or the National Institutes of Health.

REFERENCES

- Anand N. Pressure: The poli-technics of water supply in Mumbai. *Cultural Anthropology*. 2011; 26(4): 542–564. [PubMed: 22171410]
- Barry, A.; Osborne, T.; Rose, N., editors. *Foucault and Practical Reason: Liberalism, Neo-liberalism and Rationalities of Government*. University College London Press; London: 1996.
- Bessong PO, Nyathi E, Mahopo TC, Netshandama V. Development of the Dzimauli community in Vhembe District, Limpopo Province of South Africa, for the Mal-ED Cohort Study. *Clinical Infectious Diseases*. 2014; 59(suppl 4):S317–S324. [PubMed: 25305304]
- Biehl, J.; Petryna, A. Legal remedies: Therapeutic markets and the judicialization of the right to health.. In: Biehl, J.; Petryna, A., editors. *In When People Come First: Critical Studies in Global Health*. Princeton University Press; Princeton, NJ: 2013. p. 325-346.
- Bill of Rights. Section 27(1)(b) of the Constitution of the Republic of South Africa Act 108. 1996
- Boelens, R. Equity and rule-making. In *Searching for Equity: Conceptions of Justice and Equity in Peasant Irrigation*. Boelens, R.; Davila, G., editors. Van Gorcum; Assen, The Netherlands: 1998.
- Bond P, Dugard J. Water, human rights and social conflict: South African experiences. *Law, Social Justice and Global Development*. 2008; 1:5–6.
- Bradshaw D, Nannan N, Laubscher R, Groenewald P, Joubert J, Nojilana B, Norman R, Pieterse D, Schneider M. Mortality estimates for Limpopo Province: South African national burden of disease study. *Medical Research Council*. 2000
- Bulled N, Singer M, Dillingham R. The syndemics of childhood diarrhoea: a biosocial perspective on efforts to combat global inequities in diarrhoea-related morbidity and mortality. *Global Public Health*. 2014; 9(7):841–853. [PubMed: 25005132]
- CESCR [Committee on Economic, Social and Cultural Rights]. General Comment No. 15 on the right to water (articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights) para 2. 2002
- Checkley W, Buckley G, Gilman RH, Assis AM, Guerrant RL, Morris SS, Molbak K, Valentiner-Branth P, Lanata CF, Black RE. Multi-country analysis of the effects of diarrhoea on childhood stunting. *International Journal of Epidemiology*. 2008; 37(4):816–830. [PubMed: 18567626]
- Comaroff J. Chiefship in a South African homeland: A case study of the Tshidi chiefdom of Bophuthatswana. *Journal of Southern African Studies*. 1974; 1(1):36–51.
- Dankovich T, Smith JA. Incorporation of copper nanoparticles into paper for point-of-use water purification. *Water Research*. 2014; 63:245–251. [PubMed: 25014431]
- DelReal, JA. Voter turnout in 2014 was the lowest since WWII. *The Washington Post*; 2014. Accessed online from: <http://www.washingtonpost.com/blogs/post-politics/wp/2014/11/10/voter-turnout-in-2014-was-the-lowest-since-wwii/>
- Dugard J. Rights, regulation and resistance: The Phiri water rights campaign. *South African Journal on Human Rights*. 2009; 24(3):593–611.
- Ennis-McMillan, M. *A Precious Liquid: Drinking Water and Culture in the Valley of Mexico*. Thomson Higher Education; Belmont, CA: 2006.
- Feris L. The public trust doctrine and liability for historic water pollution in South Africa. *Law, Environment and Development Journal*. 2012; 8(1):1–22.
- Gleick H. The human right to water. *Water Policy*. 1998; 1:487–503.
- Gluckman M, Mitchell C, Barnes J. The village headman in British Central Africa. *Africa*. 1949; 19(2):89–106.

- Goldin JA. Water policy in South Africa: Trust and knowledge as obstacles to reform. Review of Radical Political Economics. 2010; 42(2):195–212.
- Grootes, S. Analysis: A culture of entitlement that holds us back. Daily Maverick; 2014. Accessed online form: <http://www.dailymaverick.co.za/article/2014-01-20-analysis-a-culture-of-entitlement-that-holds-us-back/#.VJHqXFJ0xdg>
- Guerrant D, Moore S, Lima A, Patrick P, Schorling J, Guerrant R. Association of early childhood diarrhea and cryptosporidiosis with impaired physical fitness and cognitive function four-seven years later in a poor urban community in northeast Brazil. American Journal of Tropical Medicine Hygiene. 1999; 61(5):707–713. [PubMed: 10586898]
- Heath, D.; Rapp, R.; Taussig, KS. Genetic citizenship. In Companion to the Handbook of Political Anthropology. Nugent, D.; Vincent, J., editors. Blackwell; Malden, MA: 2004. p. 152-167.
- ISHR [International Service for Human Rights]. GA pre-empts council and recognises the human right to water and sanitation. International Service for Human Rights; Geneva: 2010.
- Koelble, T.; Limpuma, E. Traditional leaders and democracy: Cultural politics in the age of globalisation.. In: Robins, S., editor. Limits to Liberation after Apartheid: Citizenship, government and culture. James Currey; Oxford, UK: 2005.
- Lahiff, E. An Apartheid Oasis? Agriculture and Rural Livelihoods in Venda. Frank Cass; London: 2000.
- Lorntz B, Soares AM, Moore SR, Pinkerton R, Gansneder B, Bovbjerg VE, Guyatt H, Lima AM, Guerrant RL. Early childhood diarrhea predicts impaired school performance. The Pediatric Infectious Disease Journal. 2006; 25(6):513–520. [PubMed: 16732149]
- Mamdani, M. Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism. James Currey; London: 1996.
- Masakona, L. Residents March to Nandoni Dam for Water. Limpopo News; 2014. Accessed online from: https://www.facebook.com/permalink.php?id=1587433168149593&story_fbid=1664767273749515
- McNeill, F. AIDS, Politics, and Music in South Africa. Cambridge University Press; New York: 2011.
- Mehta, L. Unpacking rights and wrongs: do human rights make a difference?: The case of water rights in India and South Africa. Institute for Development Studies; 2005.
- Mehta, L. Do human rights make a difference to poor and vulnerable people? Accountability for the right to water in South Africa.. In: Newell, P.; Wheeler, J., editors. Rights, Resources and the Politics of Accountability. Zed Books; London: 2006. p. 63-78.
- Mehta, L.; Ntshona, ZM. Dancing to Two Tunes?: Rights and Market-based Approaches in South Africa's Water Domain. Institute of Development Studies; 2004.
- Mellor JE, Abebe LS, Ehdaie B, Dillingham R, Smith JA. Modeling the sustainability of a ceramic water filter intervention. Water Research. 2014; 49:286–299. [PubMed: 24355289]
- Moore S, Lima A, Conaway M, Schorling J, Soares A, Guerrant R. Early childhood diarrhoea and helminthiasis associate with long-term linear growth faltering. International Journal of Epidemiology. 2001; 30(6):1457–1464. [PubMed: 11821364]
- Ndiritu J, Odiyo J, Makungo R, Ntuli C, Mwaka B. Yield-reliability analysis for rural domestic water supply from combined rainwater harvesting and run-of-river abstraction. Hydrological Sciences Journal. 2011; 56(2):238–248.
- Ngwane, Z. “Real men awaken their fathers’ homesteads, the educated leave them in ruins”: The politics of domestic reproduction in post-apartheid rural South Africa.. In: Weiss, B., editor. Producing African Futures: Ritual and Reproduction in a Neoliberal Age. Brill; Leiden, The Netherlands: 2004.
- Niehaus MD, Moore SR, Patrick PD, Derr LL, Lorntz B, Lima AA, Guerrant RL. Early childhood diarrhea is associated with diminished cognitive function 4 to 7 years later in children in a northeast Brazilian shantytown. American Journal of Tropical Medicine and Hygiene. 2002; 66:590–593. [PubMed: 12201596]
- Nyamnjoh, F. “A child is one person's only in the womb”: Domestication, agency, and subjectivity in the Cameroonian Grassfields.. In: Werbner, R., editor. Post-colonial Subjectivities in Africa. Zed Books; New York: 2002.

- Oomen, B. Chiefs in South Africa: Law, Power and Culture in the Post-Apartheid Era. James Currey; Oxford, UK: 2005.
- Petri WA Jr. Miller M, Binder HJ, Levine MM, Dillingham R, Guerrant RL. Enteric infections, diarrhea, and their impact on function and development. *Journal of Clinical Investigations*. 2008; 118(4):1277–1290.
- Rademeyer, J. Claim that 94% in SA have access to safe drinking water...doesn't hold water. *Africa Check*; 2013. Accessed online from: <http://africacheck.org/reports/claim-that-94-of-south-aclaim-that-94-in-sa-have-access-to-safe-drinking-water-doesnt-hold-water/>
- Robins, SL. From revolution to rights in South Africa: Social movements NGOs and popular politics after apartheid. University of Kwa-Zulu-Natal Press; Pietermaritzburg, South Africa: 2008.
- Robins, SL. Toilets that became political dynamite. June. Vol. 27. *Cape Times*; 2011. p. 9
- Robins, SL. How poo became a political issue. Vol. 2. *Cape Times*; Jul. 2013a p. 9
- Robins, SL. Politicisation of human waste. Vol. 27. *Cape Times*; Sep. 2013b p. 9
- Rose, N. *The Politics of Life Itself: Biomedicine, Power and Subjectivity in the Twenty-first Century*. Princeton University Press; Princeton, NJ: 2007.
- Rose, N.; Novas, C. Biological Citizenship. In *Global Anthropology*. Ong, A.; Collier, S., editors. Blackwell; Oxford, UK: 2003.
- Rose, N.; Novas, C. Biological citizenship. In *Global assemblages: Technology, Politics, and Ethics as Anthropological Problems*. Ong, A.; Collier, S., editors. Blackwell Publishing; Oxford, UK: 2005.
- Schulz-Herzenberg, C. Voter participation in the South African elections of 2014. Policy Brief 61. Institute for Security Studies; 2014.
- Scott, J. *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press; New Haven, CT: 1998.
- Sello E. District and province profiles. South Africa national burden of disease study. Health Systems Trust. 2010
- Statistics South Africa. General Household Survey 2011. Statistics South Africa. 2012
- Tau, P. Dam the rich. *City Press*; 2014. Accessed online form: <http://www.citypress.co.za/news/dam-rich/>
- Tshikhudo, E. Malamulele brought to a standstill. *Limpopo Mirror*; 2013. Accessed online from: http://www.limpopomirror.co.za/details/30-08-2013/malamulele_brought_to_a_standstill/20878
- UNDP [United Nations Development Programme]. *We can end poverty: Millennium development goals and beyond 2015*. Switzerland; Geneva: 2014.
- Von Schnitzler A. Citizenship prepaid: Water, calculability and techno-politics in South Africa. *Journal of Southern African Studies*. 2008; 34(4):899–917.
- Von Schnitzler A. Traveling technologies: Infrastructure, ethical regimes, and the materiality of politics in South Africa. *Cultural Anthropology*. 2013; 28(4):670–693.
- Wagner, JR., editor. *The Social Life of Water*. Berghahn; New York: 2013.
- Water Research Commission. *The state of non-revenue water in South Africa (Report No. TT 512/12)*. 2012
- Water Services Act of South Africa. Water Services Act, 108. 1997. <https://www.dwaf.gov.za/IO/Docs/a108-97.pdf>
- Werbner, R., editor. *Postcolonial Subjectivities in Africa*. Zed Books; New York: 2002.
- Wutich, A.; Brewis, A.; Sigurdsson, S.; Stotts, R.; York, A. Fairness and the human right to water: A preliminary cross-cultural theory.. In: Wagner, JR., editor. *The Social Life of Water*. Berghahn; New York: 2013. p. 220-238.