

NEOLIBERAL WATER MANAGEMENT IN NORTHWESTERN INDIA:  
Impacts and Experiences of the Shifting Hydro-Social Cycle

by

Jennifer Charlotte Dorothea Mateer

BSoc. Sci., University of Ottawa, 2008  
M.A., Queen's University at Kingston, 2010

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**Supervisory Committee**

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**Supervisory Committee**

Dr. Simon Springer, Department of Geography, University of Victoria, Canada  
**Supervisor**

Dr. Reuben Rose-Redwood, Department of Geography, University of Victoria, Canada  
**Departmental Member**

Dr. Douglas Hill, Department of Geography, Otago University, New Zealand  
**Outside Member**

## Abstract

Water scarcity and water contamination are persistent problems facing large numbers of people in India. In order to combat scarcity, the Indian Federal government designated 2016 to be the Year of Water Conservation. In order to prepare for the success of this initiative, different management strategies and awareness campaigns began in 2015. Critics have generally responded favourably to these shifts in water management because conservation is considered a benevolent and even environmentally-friendly, or “green” process that can successfully combat water scarcity. However, these initiatives often change the ways in which people access water based upon new governing mentalities. The governing mentality most strongly underpinning these initiatives is based on a neoliberal rationality, which is generally admonished by academics and activists due to the production of uneven socio-economic landscapes under neoliberal economics. Similarly, in an effort to combat water contamination, governing authorities have initiated programs and policies to ensure that safe water is provided for citizens. However, this too has often been influenced by neoliberal governing mentalities. In order to analyze these shifts, this dissertation takes a closer look at the narratives of water conservation, water scarcity, and water contamination using a political ecology framework in three states in North Western India: Punjab, Himachal Pradesh, and Haryana. The following manuscript style thesis consists of five independent papers, plus an introduction and conclusion, linked thematically through the discussion and analyses of the shifting nature of the hydro-social cycle under the pressure of various neoliberal reforms and processes initiated by federal and state governing authorities in North Western India. Having independent papers lends itself to a more nuanced discussion of the ways in which neoliberal water management strategies are lived-out in various communities. Neoliberalism is not an overarching hegemonic project or phenomenon, and as such the discourses of neoliberalism have had different consequences for different communities and populations. As such, this thesis highlights the ways in which the shifting hydro-social cycle has changed gender-related activities of water collection, the ways in which contamination is a form of slow violence, the ways in which defacto public-private partnerships operate in water scarce urban centres, and the ways in which discourses of conservation can be misleading and even manufactured.

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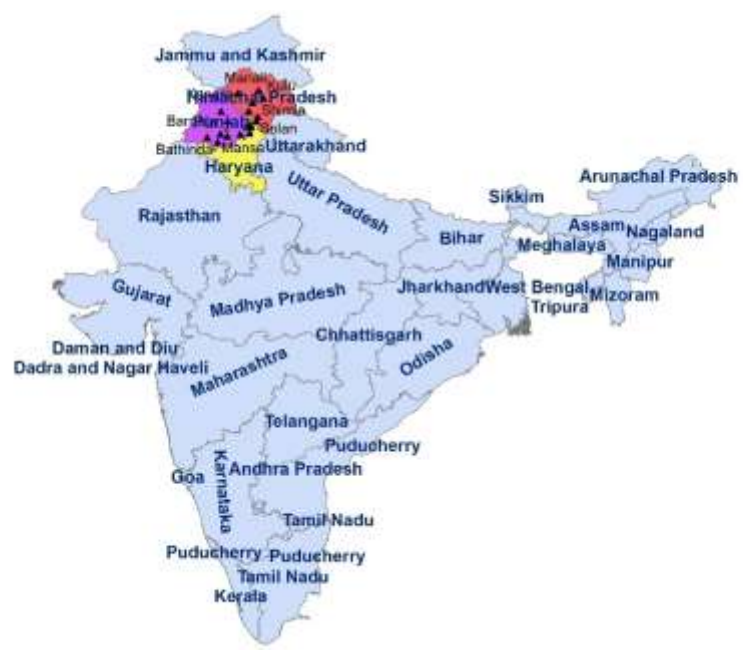
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**Dedication**

*Dedicated to Tristan, Charlotte, Dorothy, and Louise*

### Map of India and Study Areas



## **Introduction: Framing the Research Regarding the Hydro-Social Cycle in Northwestern India**

*"We forget that the water cycle and the life cycle are one." Jacques Cousteau*

### Background and Context: Why Research Water Management in Northwestern India?

Thinking about and discussing water has always been part of my life. I grew up next to a river and watched quality and quantity levels change throughout my early years. I have participated in activist organizations around the protection of the Great Lakes and the Pacific Ocean. Water has also been my research focus throughout my Undergraduate and Master's degrees because *water is everything*: it is connected to every component of life in this world. Human biology, ecosystems, industry, and agriculture all require water as a vital resource. Water is also imbued with social content. Many social and cultural activities acknowledge the importance of water, and most religions include some element of water in important rituals. Water is thus so much more than the combination of hydrogen and oxygen. With respect to politics, access to water can and has become a tool with which power relations are enacted (Budds 2004; Hill 2015; Sultana 2007; Sultana 2009; Truelove 2011). For example, those who have enough clean water (particularly in areas faced with drought and contamination) indicate where and how power operates because their lives and bodies hold worth and thus power over water allocation. It is clear then that water is not just a tool to wield power, but is also a lens through which to understand said power (Funke et al. 2007; Sultana 2007; Sultana 2013; Templehoff 2008; Turton et al. 2006). When considering water as a lens, various social, economic, and environmental issues can also be understood and analyzed. Urban political economy, rural ecologies, economic

development, gender equality, rights and environmental justice, private enterprise negotiations and resource privatization: all of these involve dimensions of water, and as such, my research on water is both comprehensive and focused.

Globally there is an incredible breadth of issues that intersect with water and the hydro-social cycle,<sup>1</sup> however, there are some unique physical, political, and socio-cultural factors in India that made the area a region of interest for my research. Northwestern India has many different water management issues, such as those involving transnational boundaries, hydropower and damming, rural versus urban concerns, privatization, private-public partnerships, and community-based water-sharing situations. It is rare to find all these conditions in such close physical proximity, but I did in my research sites. What this means is that literally the same water induced completely different outcomes for the different communities I worked with. What changed the outcome was, and remains to be, the local social and political specificities and implications of water, highlighting the ways in which the management of water is constantly enmeshed in social, economic and ecological relations (Linton 2010; Sultana 2007).

Beyond the complex management situation, another reason for my focus on the Northwestern region of India is because it is considered a water-rich area of the nation, particularly in the states of Punjab, Himachal Pradesh, and Haryana. With the Himalayan Mountains providing glacier melt, the Beas, Satluj, Ravi, Chenab, and Yamuna rivers running through the states, and underground water available via tube wells<sup>2</sup>, water is often a secondary focus for State, Federal, or international interventions within these three states (unlike in “dry states” such as Rajasthan). However, it is this lack of attention that has allowed for problematic water management to arise in the region. Each of these three states has experienced or is currently undergoing formal water management shifts, including an increase in private industry involvement in water provisioning, as well as increased commodification and technological

intervention. Furthermore, there is limited critical information on water management, privatization, and conservation in Northwestern India, which makes my engagement in the region not only important but also innovative.

In India, as well as in other countries and regions, the management of water has been affected by specific political ideologies (Krier 1992). As will be explored in this dissertation's papers, I consider this ideology to be part of an overall shift towards a neoliberal governing mentality in India and beyond (Bakker 2005; Bakker 2010). This has impacted how water is managed, particularly with respect to water quality, scarcity and the ways water is accessed more generally. One of the ways in which neoliberalism is lived-out within water management strategies is through the commodification and privatization of resources. Privatization and commodification are incredibly profitable for many companies like Monsanto, which predicts net revenue earnings of \$63 million from its water business in India (Giddens and Hutton 2000). Beyond the fiscal prescription of privatization, there remains a push towards disciplining people and households into "economically defined consumption norms" (Loftus 2006: 1030), through strategies such as pricing and metering. In fact, as another indication of shifts to the hydro-social cycle, most water regulations involve some element of domination through the technologies that define various waterscapes. As such, although water is fundamentally important, water management is not about water, or as Latour said, "let me put it bluntly: political ecology has nothing to do with nature" (2004:5). Instead, water management is about power, control, and neoliberal economic mentalities which become clear through the course of my papers.

#### Neoliberal Impacts on Waterscapes in India

*"The neo-liberal era has now come to define what it means to live in India  
in the early twenty-first century" (Hill 2016: 265)*

Each of my dissertation papers shows the different ways in which neoliberalism is enacted and impacts communities in Northwestern India. Understanding and discussing neoliberalism can be challenging as not only has there been a considerable amount of academic and popular literature written on the subject, there is also notable contradiction among authors (Springer, Birch, and MacLeavy 2016). There is, however, a benefit to this in that without one concise description or summary of neoliberalism, space is made for a discussion of the different ways neoliberalism is lived out in different locations through the multitude of processes and impacts involved within neoliberal ideologies, programs, and governance models (Castree 2008; Bakker 2007; Larner 2003; Sultana 2007; Sultana 2012). This is important for the research presented in my dissertation, as each site of research showed only certain features of neoliberalism, rather than each site being impacted in any consistent, or predictable manner. There are, however, some overarching common themes through which to discuss neoliberal economic and political phenomena.

Neoliberalism is governmentality as well as a political and economic discourse, which promotes the idea that human prosperity and overall progress can be best achieved by encouraging the unbridled accumulation of capital (Carroll and Sapinski 2016; Eagleton-Pierce 2016; Harvey 2005). The mechanisms with which to accomplish this are through the promotion of entrepreneurialism, the removal of barriers to trade, and an increase in private property rights. Further, policies promoted under neoliberalism suggest the importance of cuts to government spending, particularly on social programs, along with a decrease in taxation, and the regulations on capital (England and Ward 2016; Steger and Roy 2010). The logic then is that market-based reasoning should be part of every element of life because the freer movement of goods and resources is thought to maximize profits and efficiencies, thereby making life better for everyone (Ferguson 2010; Harvey 2005; Steger and Roy 2010). In many countries, this change in ideological

stance took the form of smaller governments, which provided fewer services to citizens, as well as a decrease in taxation on income and corporations, and the spread of free trade agreements, such as NAFTA (Carroll and Sapinski 2016; Brenner and Theodore 2002; Harvey 2005; Steger and Roy 2010). The discourses legitimizing these state actions are often presented as “common sense,” making opposition difficult (Harvey 2005; Hill 2015; Keil 2002).

The neoliberal ethos gained momentum in the 1970s as a reaction to Keynesian economics, under which economies had originally grown but then had slowly declined into a recession (Palley 2005). This recession was then blamed on the ways in which nation-states had intervened in their own national economies, as advocated under Keynesianism (Palley 2005). Critics of Keynesianism were right, in a sense, as under neoliberalism there has been a dramatic increase in the accumulation of wealth. However, this wealth has been highly concentrated in a population now commonly referred to as “the 1%” – and has never “trickled down” as predicted by economists, like Milton Friedman and George Stigler, and thus does not benefit the vast majority of citizens (Brenner and Theodore 2002; Eagleton-Pierce 2016; Springer 2016b).<sup>3</sup>

Neoliberal policies, although arising from values similar to those espoused by capitalism and liberalism, have led to a slightly different expression of economic ideologies. To begin, capitalism is more of an economic practice, advocating for commodity production and capital accumulation (Brenner and Theodore 2002; Duménil and Lévy 2005; Eagleton-Pierce 2016; Harvey 2005). It includes policies and provisions that commodify goods, services, and even social relations, and the freeing up of markets for trading and distributing these goods and services, while also limiting the autonomy of workers to prevent threats to the labour market. Capitalism was further reinforced within nations and globally by liberalism, which advocates for the removal of state-based interventions in the market (Duménil and Lévy 2005; Eagleton-Pierce 2016; England and Ward 2016). The logic here is that the forces of supply and demand, along with the

invisible hand of the market, will best serve individuals (Duménil and Lévy 2005; Harvey 2005). Neoliberalism, although having similar goals and tenets is a variation of capitalism and liberalism, presenting then, as the most recent incarnation of capitalism, tackling the goal of accumulation through both economics and political ideologies, and expediting economic liberalization through globalizing forces that further trade and the financial integration of national economies (Harvey 2005).

Across India there are specific articulations of neoliberalism, which is to be expected since neoliberalism always expresses local specificity (Brenner, Peck and Theodore 2010; Springer 2011). In particular, the current government of India, led by Prime Minister Narendra Modi, has prioritized “the needs of capital at the expense of redistributive functions, ... [which] is indicative of the stranglehold that neo-liberalism has on policy in India” (Hill 2016: 266). Further to this shift, there has been a rescaling of government operations, decentralizing responsibilities and interventions onto states and municipalities (Hill 2016). In India, as in other countries which are adapting to neoliberal reforms, State or Municipal governing authorities are often the sites for new “regulatory conditions and fiscal incentives [that] enable neoliberalism to become rolled out and thus, transform the conditions under which capitalism may flourish” (Hill 2016: 262). This was further encouraged by Modi’s government, which allowed individual states to independently attract and negotiate new business arrangements with foreign non-governmental organizations and corporations (Hill 2016). As such, since the 1990s and in accordance with neoliberal policies, private sector principles have slowly permeated the public sectors (Doogan 1997; Jones 1998; Oza 2006; Smith 2003).

Another particularity of India’s neoliberal shifts has been the adoption of new national subjectivities,<sup>4</sup> which reframe what it is to be a citizen of neoliberal India (Hill 2016; Oza 2006; Read 2009). Specifically, economic liberalization associated with the emerging neoliberal model

in India, and overall decentralization, has encouraged sovereignty practices through the maintenance of specific Indian identities. For example, in order to maintain Indian state sovereignty against “foreign invasion” (fostered by decentralization and market integration), women should reject Western media interpretations of femininity and instead limit their activities and gender performances to those which “grandma would be proud of” (Oza 2006: 31). The response then to the economic liberalization associated with an emerging neoliberal model in India was to collapse traditional Indian subjectivities onto the body (specifically the bodies of women) because the continued strength of the Indian State was predicated on maintaining an ethic that disavows Western popular culture, even while the country was opened to Western financial capital. Further, due to the way in which citizens came to embody state sovereignty, there was less room for disagreement on new neoliberal policies, dissent was now to be considered unpatriotic (Hill 2016).

For resource management in India, and water management in particular, neoliberal ideologies have stimulated two major shifts in policies and governance models. The first neoliberal shifts in water management policies focused on changing the discourses of government services. Specifically, water management discussions now focus on the costs of services provided to the public, rather than on recognizing the public good or necessity of said service (Gupta et al. 2012; Smith 2003). This has resulted in the omission and obscuring of some of the political, economic and social processes which have changed under this mentality (Hill 2015), and ultimately influences the ways in which citizens and government officials imagine the trajectory of resource management and the nation as a whole (Hill 2016). This is because an underlying ethos of cost recovery<sup>5</sup> suggests that water be governed as a corporate-managed and supplied good, ensuring that the costs for water shift from the government to the user, thus deregulating management (Loftus and Budds 2016; McDonald 2002; Smith 2003). This turns public services

toward a market-based relationship between citizens and the state (Loftus and Budds 2016; Sclar 2000; Smith 2003), which is what Peck and Tickell (2001) refer to as a rolling-back of the state, from needs-based water service provision to “supply according to the ability to pay” (Smith 2003: 378).

For the second phase of the neoliberalization of water management, there remains an understanding that cost-recovery and market logic are best suited to the management of resources, however, deregulation by the state is replaced with regulations that reinforce neoliberal logic (Kelsey 2001; Loftus and Budds 2016; Swyngedouw et al. 2002). In India, this was done in a variety of ways, however, the most prominent in Northwestern India is through corporatization. Corporatization “involves changing public institutional structures to incorporate private sector principles in the provision of services” (Smith 2003: 380). This means that water is still owned and operated by the state, but the state creates a service entity that is managed separately and maintains financial independence from other services (Loftus and Budds 2016; Smith 2003; Yarrow 1999). This is part of what Peck and Tickell (2001) refer to as roll-out neoliberalism since this brings about new state regulations that reinforce neoliberal rationalities.

The rationale for the corporatization of water provisioning and management activities is that local governments can achieve higher productivity and efficiency (Loftus and Budds 2016; Smith 2003). Efficiency is achieved by revealing the full costs of water services, and then subsequently identifying hidden losses through accounting formulas which appear neutral, but inherently reproduce neoliberal “common sense” logic (Loftus and Budds 2016). Further to corporatization, performance-based management is encouraged under this scheme, whereby the state rewards managers who lower the bottom line through cost-recovery (McDonald and Smith 2002).

This same common-sense logic has been used in the management of water in India. Examining these water management shifts, fostered by neoliberal governance, in such varied contexts across the Northwestern states provided an opportunity to see which discourses are marginalized, and the purpose for privileging certain discourses over others across differing management strategies. More specifically: who thrives and who dies? Whose body matters? Who gets surveilled and policed? Who is included and who is excluded? Who matters? It also allowed for the understanding of which discourses are legitimized and how that impacts the management of the environment and human/nature relationships. For example, in my second and fifth papers, I discuss the ways in which conservation is a discourse that legitimizes a specific dominant ideology requiring neoliberal “flexibility and cost-effectiveness” (Backstrand and Lovbrand 2006: 60), and brings about suffering for a significant portion of the population. Although this has happened in many countries and regions, what makes this case particularly novel is that this is occurring in India at the same time as situations wherein gender relations are changing. These different outcomes, both human suffering and changes to gender relations, arising from different governing strategies for the same water, which I found to be particularly unique and compelling.

This research in India then falls into the political ecology sub-field of critical human geography (Robbins 2011; Sultana 2007). In particular, my use of political ecology in water-based research is a mode of analysis pertinent to understanding the everyday resource-based practices that produce spatial differences and inequalities (Sultana 2009). Political ecology allows for the understanding of the ways in which lived experiences are a production of various ideologies and power relations that can be traced from the local to the global scale. As such, my research contributes to political ecology by examining the practices and social relations surrounding access to water, in order to analyze the ways in which micropolitics in daily life both impacts and is

impacted by different scales of action. I seek to politicize environmental issues in ways similar to and inspired by the work of Arturo Escobar, Karen Bakker, Nancy Lee Peluso, Farhana Sultana, Rob Nixon, Dianne Rocheleau, Jamie Linton, and Vandana Shiva, to name a few. While drawing on the work of these scholars, I have attempted to avoid a strict adherence or prescription regarding my theoretical framework, because no one framework can account for all the complexities found within the hydro-social cycle. As with the hybrid approach that is utilized in an exploration of the hydro-social cycle, I have further brought this element of hybridity to my theoretical framework by linking ideas of political ecology, Foucauldian analytics (including biopower, regimes of truth and governmentality), as well as neoliberal political economy. I believe that this provides a better scholarly base because, as stated by Feyerabend,

“Are we really to believe that the naïve and simple-minded rules which methodologists take as their guide are capable of accounting for such a maze of interactions? And is it not clear that successful [scholarship] in a process of this kind is only possible for a ruthless opportunist who is not tied to any particular philosophy and who adopts whatever procedure seems to fit the occasion?” (1988: 9)

As such, my theoretical analysis is laid out as a series of dialogues, each with a different focus on theories of water management, water quality and quantity, neoliberalism, embodied politics and slow violence within the Indian context and beyond. This dialogue purposefully combines seemingly different theoretical perspectives, as a way of “fitting with the occasion.”

#### Methods, Philosophical Positionality, and Limitations

While in India, I used a variety of qualitative methods with which to collect data. I began by compiling state and government grey literature concerned with water management, water quality, and water scarcity. I then conducted a search of popular sources regarding quality, scarcity, conservation and governance issues from local and foreign newspapers, social media

accounts, as well as from magazines. Once this was completed, I read through these documents for common themes and discourses using a guide, which I've included in Appendix A. Within the documents consulted, the themes most common were as follows: concern over the decline in groundwater levels; the (so-called) misuse of water by individual citizens; the contamination of water sources; the necessity of rainwater harvesting (and other conservation techniques); and the importance of foreign investment and technology in water conservation, allocation, and overall management. With these themes in mind, I developed interview and focus group questions in order to "test" the grey literature and popular sources against the lived experiences of people involved with water initiatives that constituted a management shift, as well as a comparison against the experiences of those facing water scarcity and poor water quality. I wanted to challenge existing assumptions provided by theory, grey literature, and popular sources in order to ensure their relevance.

I conducted 76 focus groups of 7-9 individuals each, and 70 individual interviews for the collection of data presented in this dissertation. These were done across three states in Northwestern India. In Himachal Pradesh, I conducted research in the districts of Shimla, Solan, Mandi, Kullu, Bilaspur, and Kangra. In Punjab, I conducted research in the districts of Chandigarh, Zirakpur, Mansa, Sangrur, Patiala, Mohali, Ludhiana, Bathinda, Barnala, and Jalandhar. In Haryana, I conducted research in the districts of Panchkula and Ambala, for a total of 680 participants.<sup>6</sup> The demographics of these participants have been included in Appendix C.

Most participants for the focus groups were chosen at random, and some participants were found through snowball sampling after completing interviews and focus groups. In particular, I practiced stratified random sampling in an effort to obtain a representative sample of the population, covering individuals from multiple different socio-economic standings (Kothari 2004; Teddie and Yu 2007). I obtained samples from these different sub-groups of the population

by going to different public and private locations, which are commonly stratified spatially by economic and social distinctions. These locations included: indoor malls, outdoor shopping centres, schools, cafes, bus stations, train stations, parks, water ATMs,<sup>7</sup> informal housing settlements, and stores, among other locations. Although many people came to me to participate, or brought friends to focus groups, I did seek out a significant number of people myself to ensure the sampled population would be as diverse as possible. As such, I attempted to ensure that no subset of the population was excluded, nor favoured, during the participant selection process (Kemper et al. 2003; Kothari 2004).

Although most people were willing to speak to me (or to one of my research assistants), business owners of tourist industries were more hesitant and uncomfortable discussing water quantity issues. In tourist areas, there has been considerable concern over the ways in which changes to the population during the summer months impacts water availability for local populations (see for example Cole 2012; Gosling 2001; or Tortella and Tirado 2011;). Businesses and government agencies have thus been targeted for protest and as such business owners (although not necessarily employees) were quick to deny any water scarcity issues, perhaps in an effort to distance themselves from criticism.

Focus groups generally lasted 60-90 minutes, whereas interviews were a bit shorter, taking between 30 and 60 minutes. The questions posed were both open and discrete. Participants were each asked the same questions, which are included in Appendix D, but often chose to offer further information. In these instances, follow-up questions were individualized. Participants were provided the opportunity to withhold their responses and biographical information, or to withdraw from the interview or focus group completely. Although no one withdrew from participation, some people were uncomfortable giving employment or other personal information, and thus some of the biographical information remains unknown. Upon

my return to Canada, the interviews and focus group discussions were transcribed and coded for themes and discourses. For those interviews that included Hindi, Punjabi, or a local dialect, transcription was done with the aid of the original interview or focus group interpreter for coding. The coded interviews were then analyzed in comparison to the document analysis. Most information could be triangulated or compared during this process. However, some data had been unexplored previously (or is simply unavailable in English), and thus triangulation was not possible for all. This is particularly true for the information retrieved concerning water provided in public schools, and the disproportionate impacts on women discussed in my fifth paper, as some of these narratives had apparently never been documented or recorded. This is an area of particular concern for my research considering the socio-economic positions of students in attendance at these institutions.

For my research, a qualitative inquiry of the ways in which neoliberal water management techniques have changed quality and quantity has the ability to speak to the way individual Indians understand and experience these shifts. Further, this method of analysis can assist in illuminating the discourses that legitimize the neoliberalizing processes, by connecting localized and specific instances of neoliberalized water with overarching neoliberal trends and discourses. Bringing out these local specificities is particularly important since it allows for an Indian point of view and understanding on water allocation and quality, and moves beyond essentializing tendencies, providing instead an understanding of lived experiences (Abu-Lughod 1991). As such, the style of qualitative research I used echoes what Burawoy (2000) refers to as “global imaginations.” What this means that data is not discovered in the field, but rather global imaginations as a method concerns itself with the ‘extension of theory’ by constituting ‘the field’ as a challenge to existing theory that is in need of improvement, where some anomalies or absences have been identified” (Springer 2009: 16). Fieldwork, including the focus groups,

interviews, and discourse analysis, are methods of testing the validity and realities of theory, rather than a place to extract “the truth.”

I also believe that by conducting this style of qualitative research, I was able to avoid some of the ethical problems of speaking for other people (Staeheli and Lawson 1994). India already suffers from on-going colonial and neocolonial impacts, and it was important to ensure that my research subtracted from, rather than added to, this problem. To do this, I have tried to include as many of the voices of the participants as possible and chose papers for this dissertation based on the goals, concerns, and hopes of the people I had the opportunity to speak and work with. As such, even though the dissertation I have produced reflects my own descriptions, rather than those of the participants (Geertz 1988), I believe I have achieved a candid portrayal of my participants, the stories they chose to share with me, and the field. This is one of the reasons I start my dissertation with a very personal paper on my embodied research obstacles and opportunities, in order to serve as a mode of framing the rest of the findings of the dissertation by the obstacles I personally faced.

In order to further obtain the candid portrayal and accuracy of my qualitative study, I was consciously engaged in a reflexive process to understand my own positionality (Nightingale 2003; Springer 2014; Sultana 2007; Wasserfall 1993). My personal, cultural and professional experiences and opportunities will have and have had a significant bearing on how I perceive the world around me and thus are part of how my data was collected and interpreted. This is an especially important process as I was an outsider in a number of overlapping and interconnected ways, making my positionality one of the research limitations for this project. As a foreigner in India, it was often easy to initiate participant engagement as being out-of-place was considered a novelty and thus participants asked to be part of my focus groups. Alternatively, being a foreign *woman* was often superseded by novelty, decreasing participant engagement.

Beyond my own subjective lens, which is unavoidable in the interpretation of any data, there are also limitations to my research project design. My qualitative analysis is based on self-reported data. Although I did triangulate my findings with academic and non-academic sources, self-reported data cannot be independently verified. However, this form of verification is not the goal of my qualitative study, so I do not see this as a significant limitation. My participants took time out of their busy lives to speak with me, and there is no reason to think that there would be specific intent to misrepresent the reality of the impact of water management strategies on their lives.<sup>8</sup>

Further to my research design, although I left Canada with an understanding of the questions I would ask my participants, many of these questions shifted as I entered each individual community. For this reason, sample sizes for each paper differ. For example, I quickly discovered that the gendered implications of water collection from reverse osmosis filtration devices were particular to rural communities in Punjab, and as such, I did not discuss these issues with focus groups in Himachal Pradesh. Changes to research questions once entering the field are common, so it is not surprising that many of my proposed topics, questions, and thus the papers I wrote evolved between the proposal and field stages of the project. The rich interview and focus group data that I brought back from India was not explicitly what my supervisor, committee, nor I had anticipated. Thankfully before I left Canada, one committee member, in particular, had said, “leave room for the unexpected,” and I clearly took him up on this.<sup>9</sup>

I also tried to prepare for my research project by taking Punjabi and Hindi lessons in Canada prior to entering the field in India. I still however needed the assistance of an interpreter during most of my interviews and focus groups. This helped ensure my full understanding of interviews, as well as culturally specific expressions, colloquialisms, and jokes, etc.<sup>10</sup>

Another significant limitation has been the impact of caste on water access. Although laws protecting certain lower caste members have existed since Indian Independence (1947), there remains ongoing legacies of discrimination (Thorat and Neuman 2012). However, many experts interviewed, including government officials and employees at reputable NGOs, denied the impacts of caste in my discussions with them. This was true of a significant portion of the government literature around water access and quality. Most of the information that I gained regarding caste impacts to water access were anecdotal, rather than formal. As such much of this aspect regarding how caste impacts water is missing, but this does not mean that caste was not an important factor in how water was accessed and distributed. Many wells or other public water sources are unofficially stratified by caste. This method of distributing water often means that individuals who are members of lower castes must travel further to access water, or may not have access to the same quality of water as members of higher castes. Although the divisions were not formally codified or enforced, there were social enforcements that would punish individuals (usually economically, so for example ending employment or refusing to buy products from a certain individual) who accessed water not deemed “appropriate” for their caste, since a lower caste individual accessing a higher caste water source was considered a form of pollution and contamination.

#### Dissertation Breakdown

My chosen format for the presentation of my research findings is through individual papers, rather than a single narrative common in many doctoral dissertations. This format comes with both opportunities and limitations, as there are some tensions and potential gaps between the various papers. Although there is no single “story” explicit between the papers, there are implicit thematic connections and intersections drawing on resource management, neoliberalism, violence, and embodiment. Embodied geographies have been an increasingly important avenue

of study. This form of engagement allows researchers to consider the body “as a surface to be mapped, a surface for inscription” (McDowell and Sharpe 1997: 3). This is important to the research on water quality and allocation in multiple ways. Firstly, this allows for further consideration of the bodies of researchers, and the ways in which researcher identities are a “permeable boundary which leaks and bleeds and is penetrable” (ibid.) by and with our research. Secondly, when considering the impacts of water quality and quantity on the lives of individuals in Northwestern India, the quality of water and the amount consumed have physical ramifications on the body, so politics and management are literally the “surface for inscription” (ibid.). Thirdly, when further considering the politics of water management, bodies are at the core of the space, place, and landscapes inhabited by individual participants. As such, what makes this a study in geography goes beyond just the politics surrounding the physical landscapes of Northwestern India, since the ways in which water is managed speaks to the ways in which space *and* people are produced and reproduced (Lefebvre 1991), even though these outcomes of production may differ between the compiled papers that form this dissertation.

Although the focus of each paper differs, my intent with each is to illuminate the plurality of experiences under neoliberal governing mentalities and to demonstrate how easily certain governing strategies can be legitimized and embodied, while still leaving the potential for friction and resistance. In particular, I have focused on the lived experiences of individuals as well as the ways in which “experts” and “expert knowledges” have impacted water management. Through my field research and analysis of various documents and discourses regarding water management in India, I have produced an overarching description of the ways in which various governing agents control one of life’s most basic necessities – water. This control has been legitimized by discourses around poor water quality and water scarcity. However, the solutions to these problems illustrate the political mentalities that hold power throughout the region. In order to produce this account,

I have conducted qualitative field research with citizens, development practitioners, government officials, academics, and activists. Again, in discussing water with my chosen participants, I was not attempting to uncover the “truth” regarding water management and politics in the region, but rather, I wanted to understand the lived experiences of individuals in their access to water as the waterscape shifts.

My first paper, titled *Embodied Research: Body Politics and Researcher Positionality*, addresses some of the limitations and privileges I encountered while conducting research in India. The objective of this paper was not only to account for my positionality during data collection but also to highlight the ways in which body size should be included more frequently within intersectional analyses. As such, my discussion does not focus on Indian subjectivities (as they relate to body size) and instead focuses on my own positionality and the need for the inclusion of body-based discrimination in the understandings of researcher positionalities. As evidence, this paper draws on my work and experience in order to critically explore the power relationships between myself and research collaborators and participants. My own position in India, while privileged, also intersected with certain forms of subjugation. I pay special attention to my position as an academic to reflect on how power asymmetries based on race, education, class, gender, and appearance were produced, reproduced, remade and reshaped during my fieldwork, and how my research agenda was often directly tied to the power asymmetries (i.e., I was given special access because of my foreigner status, while simultaneously having diminished access because of my gender and appearance). Throughout the paper, I discuss dilemmas, rewards, and difficulties that often result from doing critical human geography research. I hope to encourage a deeper understanding of the limits and opportunities one’s intersectional position has during field research, while also proposing that the category of appearance or body size be more commonly used during intersectional analyses, especially when considering fieldwork in locations where the

body of the researcher may “stick out.” I was particularly inspired by the work of feminist geographers on topics related to the body, such as Robyn Longhurst, Elaine Scarry, Sophie Smailes, Rachel Coles, Farhana Sultana, and Kathleen LeBesco. I believe this discussion is an appropriate precursor for the rest of my research findings and analyses, revealing some of the ways in which my findings were impacted by my body and appearance.

My second paper is based on work conducted in rural Punjab. I was incredibly fortunate to meet my gatekeepers early on in my research trip (literally day 3), as a result of my considerable privilege. This paper highlights some of my first interviews and a topic I had not anticipated prior to my arrival in India. Titled *Changing Policies and Gender Practices: The Impact of Reverse Osmosis Water Purifiers in Rural Punjab*, the paper analyzes the ways in which drinking water supply and collection has changed and shifted through the introduction of reverse osmosis water purifiers (ROs). As many authors have noted, water flows have been progressively “modernized” with technology and have become more connected to capital accumulation strategies in an evolution towards commodification (Bakker 2005; Braun 2011; Castro 2013; Loftus 2006; Shiva 2002; Sultana 2013; O’Reilly 2006). Part of this shift results from development strategies that advocate neoliberal solutions as the only way to have a “modern” domestic and international economy. This case study demonstrates that water has been commodified, not just through the increasing need to pay for it, but also through linking water to technological modernization within the waterscape. These technological advancements have begun to change the gendered division of labour associated with water, by linking modernity to men and traditional water management to women. I argue that through their recent participation in water activities linking gender and modernity to new responsibilities and water-allocation activities, men are reinforced as modern subjects and women as “traditional.” In parallel, water becomes “new,” “improved” and worth male labour and subsequent payment under a reinforced neoliberal model. This paper highlights

the way in which a feminist political ecology framework (FPE) can illuminate how gender constructions are strengthened through natural resource management activities, and specifically how meanings of water, women, and men are mutually constructed through the way water is used and commodified under a neoliberal agenda in rural Punjab. This embodiment of technology, water, modernity, and gender connects well with the first paper, which discusses my own embodied subjectivity, which is why I have chosen this as the second paper of my dissertation. I also highlight through this second paper the ways in which water management is based on the “truth” of a spatiotemporal moment, and represents political mentalities that have been made “objective” through scientific abstractions (Linton 2010). What this demonstrates then, as previously stated, is that “water is not about water” (Narain 2005), but rather, water management strategies are political projects (Bailey and Bryant 1997: 27), which may create docile bodies and further certain political rationalities. This is an important research theme, which I elaborate upon in my fourth and fifth papers.

The third paper of this dissertation is titled *Water Contamination as Slow Violence in Two Districts of Himachal Pradesh*. This paper continues the theme of embodied impacts of shifts in water management. However, the impacts considered are not to gender relations or the division of labour, but rather the impacts are health-related and most strongly felt by those with limited financial capital. I consider these impacts to be exemplary of the gradual and often invisible component to the slow violence of environmental degradation and contamination. In Himachal Pradesh, health concerns arising from contamination are most prevalent for individuals who do not own property and who hold a low socio-economic status. Thus, violence is focused on certain segments of society and is a consequence of inattention, indifference, and general neglect by the state. Looking at embodied outcomes, this paper speaks to the literal ways in which bodies that become ill are a consequence of water (mis)management in the state and thus, speaks to the

ways in which certain bodies are deemed worthy of attention and value.<sup>11</sup> Further, I provide an analysis of the ways in which slow violence and economic violence are intimately tied, which demonstrate the ways in which the environmental degradation and embodied impacts to human bodies in Shimla and Solan are an active form of violence, rather than a form of “letting die” through neglect. As such, the critique of slow violence is an active critique of economic violence fostered through the overarching neoliberal project in India.

My fourth paper also attempts to illuminate a shift in water management that has gone largely unnoticed. The paper, titled *New Constellations of Neoliberal Water in India: Water Tanker Usage as De Facto Privatization in Urban Punjab*, describes the use of water sold by private tankers as a way to deal with water scarcity in the urban areas of Chandigarh, Mohali, Zirakpur, and Panchkula. Although water *should* be provided by the state under Article 21 and 47 of the Indian Constitution, drought and competition among users often leads to unmet needs. This paper discusses the ways in which water tanker usage in the above-specified cities presents a new form of privatization and, more specifically, a *de facto* public-private partnership (PPP). This form of water distribution presents us with an “actually existing neoliberalism” (Brenner and Theodore 2002) that is locally specific, and yet still traceable to national and global neoliberal processes. The new hybrid and informal privatization of water make the Rights to the City discourses that much more necessary, yet challenging to imagine. Numerous authors have discussed water privatization. However, this does not mean that the issue is “closed” for debate (Bakker 2010; McDonald and Ruiters 2005; Swyngedouw 2005). Privatization of common resources is still a strategy used by governments in many countries and is still strongly promoted by international organizations. As such, my discussion aims to add attention to the transforming nature of privatization and the neoliberalization of water allocation, particularly that which is occurring at the level of the every-day in urban centers. Although this provides a different focus from the

previous papers, it affords another example of the shifting hydro-social landscape in Northwestern India and the consequences for individuals whose lives are most affected. This paper also picks up on a theme presented in the second paper, which illuminates the ways in which the “truth” regarding water quality and quantity are often part of political projects and neoliberal governing mentalities.

In my fifth and final paper, I have scaled out from the local level used for the previous papers in order to look more broadly at the politics of conservation in Himachal Pradesh and Punjab in a paper titled *The Politics of Water Scarcity and Conservation in Northwestern India*. Conservation is generally conceptualized as a “green,” benevolent process, and thus when the Federal government of India declared 2016 to be the year of water conservation, citizens and international stakeholders alike were pleased with the new focus on water management that more closely considers scarcity. During the summer of 2015, there were preparations underway to meet some of the goals of the national government, which I was able to discuss with citizens, government officials, and NGO employees. What became clear through this line of questioning was that the solutions to scarcity and the ways in which people are encouraged to conserve are part of an overarching neoliberal governing mentality. This concept builds upon themes found in my second and fourth papers by specifically examining the “solution” to scarcity, which in Himachal Pradesh and Punjab encourages policing of water, responsabilization, and increased costs for individual citizens. However, this paper presents a more empirical focus on the consequences of certain conservation strategies.

For the conclusion of this dissertation, I describe my personal doctoral journey, while also discussing my findings in light of current research and public discourses. I also provide further discussion on the links between each manuscript paper, as well as to the overall field of geography. As part of this discussion, I present the significance and major contributions to my

fields of study. I do not contend that this work is a way of speaking for citizens in India, which is often a “symptom of a pervasive postcolonial crisis” (Clifford 1988:8), rather, I consider the papers to be contributions toward understanding the plurality of experiences and impacts to hydro-social cycle based on governing rationalities and “expert” knowledges.

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<sup>1</sup> The hydrosocial cycle reflects the ways in which water is produced, reproduced, and impacted by the hydrological cycle and society. Water is natural and of nature, but this does not exclude human attempts to management and control water (Linton and Budds 2014; Swyngedouw 2009).

<sup>2</sup> A tubewell is a type of well which has a narrow pipe connecting an electric pump to an underground aquifer.

<sup>3</sup> Unless forced through government intervention and taxation structure – thus limiting deregulation.

<sup>4</sup> Two preeminent scholars on subjectivities, Rose-Redwood and Glass (2014), describe subjectivity as being entirely based upon the performative acts with which one is engaged in everyday life. As such, the performative acts are what make a subject, rather than the subject being separate from the identities or performances that may be presented to others.

<sup>5</sup> Cost-recovery refers to the recovery of all fees associated with the administration of services, meaning the state or governing authority is able to maintain limited or no outward expenditures while still providing needed services to citizens. For water, this is often done by increasing the fees associated with delivery and maintenance of infrastructure (McDonald 2002:18).

<sup>6</sup> This was possible in large part because we discovered my husband, Tristan, looks like a celebrity well-liked by Indians. His doppelganger looks along with my outsider status, made people more likely to approach us to be interviewed, and also influenced people to bring friends, allowing for easy access to participants. I also felt that including this many participants was particularly necessary in order to overcome some of the limitations I faced due to my limited time in the field.

<sup>7</sup> A water ATM is device similar to a beverage dispensing machine. The ATM is automated to dispense potable water into a reusable bottle (brought by the customer) after payment.

<sup>8</sup> Although there is always room for unintended misinterpretation when sharing information between people of different cultural and linguistic backgrounds.

<sup>9</sup> Thanks Reuben!

<sup>10</sup> Colloquial language, although potentially not part of formal institutional discourses, is still a common feature in everyday discourses (Bourdieu and Passeron 1977).

<sup>11</sup> This connects with Butler’s work on what makes life grievable (2016). Although in her book Butler is discussing how representations of certain lives during wartime can define which lives, or bodies, are more or less worthy of grief, I believe this also relates to the ways in which certain governing authorities have designated certain bodies as worthy of intervention. Lives, or bodies, can be represented as recognizable and deserving of protection. These are generally lives that the framer has some form of solidarity with, or

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associates with as similar. Butler's hypothesis is that the lives we find similar to our own are the ones we more closely associate as being human, and thus one's status as valuable is highly precarious and subjective.

## Paper 1 - Embodied Research: Body Politics and Researcher Positionality

*Field Note 1: In August 2015 as part of my doctoral field research, I went to a hospital in Shimla, India, to discuss the increase of kidney disease, jaundice, and water-borne illnesses in the region. These were very material consequences of water management policies and practices. Although most people were interested in discussing water issues with me, one doctor in particular was unhappy to see me. Instead of discussing the acute issues related to inadequate rural water sources that had brought a large number of people into the hospital for treatment, he chose to discuss my appearance and the health of Americans – clearly assuming me to be from the USA. He suggested I was obese and diabetic during this talk and remained defensive at any mention of my research project. This was not an isolated experience in India – my weight had been an issue on a number of occasions with negative connotations. I do not deny my considerable privilege as someone who passes for Caucasian, however, this often intersected with subjugation and sexualization, which can come from being a fat woman. This may be due to the medicalized discussions of body-size in India, which has increased in India in recent years, or perhaps due to more normalized body shaming discourses.*

Having conducted my doctoral research abroad on a topic related to the bodily impacts of certain resource management strategies, I have spent a significant amount of time thinking about, observing, and discussing other people's lives and bodies. The topics around resource management and the potential conflicts are often compelling but painful, including topics on disease, exploitation, violent conflict, social exclusion, inequalities, and injustices. Even though these impacts have very material and bodily impacts, the discussion of these topics usually occurs in a comfortable environment. We've been taught as researchers to ensure the physical and psychological comfort of our research participants, even while they discuss the discomforts in their lives – both everyday and exceptional. Although my body is implicated in the research, particularly based on my gender and appearance<sup>1</sup>, typically my body has been of lesser focus than those of my participants.

My research has focused on water politics and management from the perspective of critical geography. When I began my fieldwork in Chandigarh, a Union Territory in India during

2015, my goal was to understand the lived experiences of individuals facing water insecurity through both quality and quantity issues. I also wanted to identify the ways in which people resist, cope with, and survive limitations to water access based on gender, class, caste, religion, and more generalized structural violence. By the time I concluded the field research portion of my work in India, it had become clear to me that my own positionality played a significant role in how my research was interpreted, collected, and analyzed as well as the ways in which dilemmas and conflicts evolved. As such, during this research, I was both consciously and unconsciously engaged in an autoethnographic analysis of my own position and embodied field-based identities.

Thorough reflection and a personal examination of position using an autoethnographic approach are incredibly important for geographers. This is true of qualitative and quantitative geographers, and in particular geographers who conduct fieldwork. Geography and the work of geographers has been used as a violent tool for as long as the discipline has existed (Godlewska and Smith 1994). Cartography, dispossession, the ordering and confining of people through geographic imaginaries, as well as the problematic notions that have come from environmental determinism, have all contributed to embedding and placing violence (Springer 2011c). It has even been argued that certain forms of urban planning embed violence because it can lead “to oppression, exclusion and social and environmental injustice” (Gunder and Mouat 2002: 125, quoting Yiftachel 1998). Often these forms of violence go unquestioned and as such domination through geographic methods can lead to significant social injustice (Springer 2010b). Many geographic methods have imbued violence in the politics of everyday life for people and become material through the ways in which they impact communities, individuals and the body (Scary 1985). Thankfully, within the discipline of Geography, there are also methods of incorporating emancipatory strategies (Springer 2016a). The work of geographers today must include an appreciation of intersectionality in order to begin to undo the historical and modern violences

embedded within the discipline (Valentine 2007). By engaging with our own identity as students, activists, and researchers, positions of privilege and subjugation can be better understood and we can thus better understand those “routines that are frequently oppressive [ to ourselves and others], yet nonetheless go unquestioned” (Springer 2010b: 935).

This paper begins with an overview of intersectionality before moving on with a description and discussion of the ways in which appearance can and does factor into an intersectional analysis because of the ways in which appearance is tied to subjugation, particularly for individuals categorized as fat<sup>2</sup>. I then provide evidence from my own fieldwork on how appearance can impact data collection. Placing my appearance and position within the understanding of researcher positionality and intersectionality is an important part of a feminist research engagement. Our bodily locations and understandings of ourselves are inseparable from the societal contexts within which we live. In this way, “the researched, the researcher and the research are the entire field” (Smailes 2014: 58) while conducting a study (Gillen 2014). What emerges then is how the “researcher, researched and research make each other; (because) research and selves (are) interactive texts” (Rose 1997: 316). To engage in research in this way acknowledges the inherent subjectivity in all research and works to avoid the problematic “god trick” of assumed objectivity (Harraway 1988), instead engaging with the position of a non-neutral observer to “highlight and explore the nature of the researcher involvement as a relevant resource” (Burman 2006: 16). This makes the researcher and his or her position/identity part of the production of knowledge by removing the fictitious barrier between the private, invisible, world of the researcher and the public, visible, activity of data collection and research (Burns and Walker 2005).

Beyond the understanding of intersectionality and positionality as a component of research methods, a feminist research ethos engages with the implications of power as it

circulates between researcher and research participant(s), particularly the potential power imbalance based on positions of identity. As such, by employing positionality as a method of personal reflection, feminist research allows for the role and identity of the researcher to become part of the social world that she or he researches (Burman 2006; Goodley & Smailes 2011; Mauther & Doucet 2003). Acknowledging ourselves as part of the research by reflecting on our position, identities, and influence, allows us to open new spaces of knowledge that were invisible but can now be shared, contested and/ or made equitable (Smailes 2014). Further, by embracing and acknowledging our inherent positions rather than denying or resisting our presence in our research, we can avoid being “forced to artificially create a sterile objective ‘researcher’ self that is separate from the other selves [we] enact” (Ronai 1995: 421-422). Although I am certainly an advocate for this approach – it is by no means a comfortable experience<sup>3</sup>. This is because it demands researchers, academics, and activist question the various implications of ourselves – our various “hats” or identities as it relates to and is part of a very unequal and hierarchical world. While identities are fluid and constantly being negotiated (Bordo1990), there is no question that certain constellations of our positions allow us both greater and/or lesser authority. In my case being considered white (although I am mixed race), educated, foreign, holding social capital, and being able-bodied in India afforded me various opportunities while intersecting with more marginalized positions of being female, and fat.

*Field Note 2: I seem to be “coming out” as fat – in the words of Robyn Longhurst (2005). Although people who know me have no illusion about my weight, it has been a difficult experience writing about my body precisely because so many academics are unseen figures. By putting my physical body in my paper, I come out to people who have never met me and people who will never meet me. I feel surprisingly vulnerable, regardless of my support of body positivity.*

Normative ideals of the body can collide with fat stigma, race, and gender, to create a unique research experience that can include both privilege and marginalization. As such, I want

to further push the inclusion of body composition and size within intersectionality and positionality in order to ensure that all aspects of the self and identity are woven into our understandings of individual experiences – in particular those that are of personal and professional importance such as field research projects. Fatness, thinness, and overall body composition are physical attributes that define certain limitations and freedoms. Attractiveness and fat stigma have been known to preclude or induce economic success in the workplace and can impact social capital. Individuals with physical attributes considered less desirable within the relevant community are open to being stigmatized because of their seemingly “spoiled identity,” or moral failing, and are therefore vulnerable to social rejection and even overt forms of discrimination (Puhl & Peterson 2012). Taking this into account is important for a critical intersectional analysis of one’s research experiences. In order to do this myself, I have compiled some living excerpts (Change 2008) that include my field notes, reflective writings, and memories, along with the relevant literature in order to discuss my interwoven identities as a “layered account” where “the boundaries of these identities converge, blur, and separate as I write” (Ronai 1995: 395).

#### Intersectionality: A brief overview

Intersectionality is a critical feminist method for understanding the complexities of identity as it relates to social experience. Kimberly Crenshaw (1991) is generally considered the first scholar to have proposed intersectionality, which she developed in order to better address how gender intersects with race and class, however, it was also used by other Black, multicultural, and postcolonial feminists in the 1980s and 1990s. Intersectionality now explores difference within and between many more social categories (McCall 2005). In this paper, I further encourage the extension of intersectionality from the socially constructed categories further into the physical (although still often socially defined) categories of appearance<sup>4</sup>. This is an important addition to

intersectionality since an intersectional method is meant to address the differences in the lived experiences among various people, and women in particular, thus including appearance will give a more complete understanding of a situation. The typical intersectional categories now include gender, race, class, ability, sexual preference, age, and other components of an individual's identity that exist simultaneously and intersect (Crenshaw 1991; Dhamoon 2011). The way in which these intersections coalesce contributes to an individual's lived experience, the acknowledgment of which works to critique any theories that essentialize women as a universal category. Women face significant barriers and discrimination in their everyday lives, however Black women, Caucasian women, and Latina women (for example) will all face different relational barriers that are in part based on ethnic background, or the assumption thereof. This is because "the intersectional experience is greater than the sum of racism and sexism, [therefore] any analysis that does not take intersectionality into account cannot sufficiently address the particular manner in which Black women are subordinated" (McCall 2005:140). Discussing oppression, and experiences through a single lens such as gender, size, race, caste, or class distorts and marginalizes those individuals who face multiple barriers (Collins 1990; Mohanty 1988; Moraga 1983; Narayan 1997; Zinn and Dill 1996). As such intersectionality explores how these separate systems of oppression mutually construct each other (Collins 1990).

One popular example of intersectionality in academic literature is the work by Cooper (1892/1998), who discusses the simultaneity of different forms of inequality through her discussion of racial politics in the USA during the 1890s. In the South during this time, Cooper was waiting in a railway station and read two bathroom signs, "'FOR LADIES' swinging over one and 'FOR COLORED PEOPLE' over the other; while wondering under which head I come..." (1892/1998: 186 original emphasis). At this moment, Cooper as a black woman was included and excluded from both bathrooms simultaneously. There, the hierarchies of power in that place and in that

time operated as 'both/and' (Zinn and Dill 1996: 321). This example highlights that power does not operate in isolation, but rather hierarchies interlock with other methods of oppression (and sometimes privilege). Coopers "Catch-22" at the train station demonstrates her, and others, simultaneous exclusion and inclusion. Individuals like Cooper can experience both the privilege of belonging and the discrimination of not belonging at the same time, a common theme of my own fieldwork experience (Collins 1990; Moraga 1983; Narayan 1997; Zinn and Dill 1996).

Another example of an intersectional analysis comes from Williams (1997), who discusses the way in which a woman named Eleanor Bumpurs was "located at the boundaries of race, class, gender, and disability... [and each identity] played an integral part in weaving the violent tapestry" of her life (Williams 1997: 271). Eleanor was living in the Bronx in 1984 when she was killed by two police officers attempting to evict her from her apartment. At the time of her death, Eleanor – a heavy, 67-year-old black woman with arthritis - was one month behind on her rent. Eleanor resisted her eviction, and according to a statement made by the police commissioner, she had escaped her restraints twice and had wielded a knife as a method of resisting against her eviction. The knife was considered threatening by the officers involved and she was shot at twice with a gun. It is alleged that the first gunshot "removed half of her hand so that, it was anatomically impossible for her to hold the knife" (Williams 1997: 271). In discussing the death of Eleanor, it is important to note the deadly consequences which people with multiple barriers to fair treatment face in moments of exceptional violence. Eleanor, as a disabled, elderly, raced, and fat woman, was caught in the intersections of unvalued identities leading to an unnecessary and violent outcome.

Gill Valentine (2007) also proposes an increased attention to intersectional identities and the ways in which this can open up spaces/opportunities or limit spaces/opportunities for individuals and the ways in which this intersects with violence. Although Valentine (2007) does

not discuss physical violence, structural and symbolic violence are still relevant themes in her article. One of the examples she uses is based on the life of Jeanette (pseudonym). Jeanette showcases the way in which identities “[emerge] and [unfold] in different spatial contexts and at different biographical moments” (2007: 15), which Valentine used to discuss the changing hierarchical powers that both privileged and oppressed Jeanette – often simultaneously. Jeanette began her life deaf and until marriage was an active member of the Deaf<sup>5</sup> community. Even though the man she married was hearing impaired, he was not part of the Deaf community and banned her from Deaf community meetings and activities. Her spaces of inclusion and comfort had been physically diminished, and after some time the forced exclusion was part of her decision to divorce her husband. On leaving her spouse, Jeanette re-entered the Deaf community as a single woman and fell in love with another woman. This marked a significant change to her previous identity as a married heterosexual woman, but at the same time, it reinforced her identity as part of the Deaf community. Jeanette’s girlfriend, unlike her former husband, was a sign language user, and so Jeanette’s sense of self-identity as Deaf and a member of the Deaf community became more significant – this identity shifted to the foreground for Jeanette (Valentine 2007: 16). She had been kept out of certain spaces by her husband, then allowed back into them – allowed once again to inhabit her version of “Deaf.” However, when her deaf peers discovered her homosexuality, she was subsequently excluded once again, but this time by the Deaf community. In this example, Jeanette’s identity and access to spaces and resources (friends/community members) was ever shifting. As such, Jeanette’s identities are relational. They have been formed and compounded by one another. Further, like all people, Jeanette highlights that identity is not fixed, and the spaces she was able to encompass changed based on the values attributed to her identity. All individuals will have components of their identity that are privileged and/or oppressed concurrently. These shifting dynamics are dependent on the

“location and space the individual occupies and the other individuals who share that space” (Schultz 2015: 28). It is our job as academics to both understand our own identity positions and intersections as they relate to the spaces we inhabit as researchers, as well as to make visible the various positions that people inhabit as part of their everyday lives and the circulation power relations that are central to them (Dhamoon 2011).

#### Body Composition and Fatness in Intersectionality

With any number of categories entering into analyses, intersectional methods consider a fair amount of complexity. There are three main methodological approaches used in intersectional analyses in order to mitigate this complexity: anticategorical<sup>6</sup>, intracategorical<sup>7</sup>, and intercategory (McCall 2005). For the discussion of my experience doing qualitative research in India, I feel that an intercategory approach is most appropriate. This is because, while I was at once an individual who held a considerable amount of privilege, I was also simultaneously marginalized. This is in keeping with what McCall discusses as part of an intercategory analysis where identities cannot and should not be fragmented and separated out during analysis. Instead “social divisions are concretely enmeshed and constructed by each other and how they relate to political and subjective constructions of identities” (Yuval-Davis 2006: 205). In this way, there is a strategic use of categories in different times and spaces. My identity in India was constantly in flux, and although many of these shifts were anticipated, some were not, and this is why I would like to further arguments for the inclusion of body composition to an intersectional analytical approach as well as why this approach should be more firmly enmeshed in geographic research methods.

One of the various categories that are part of the intersectional experience is body appearance and composition. Appearance often includes conceptions of race and ethnicity. For example, during my time in India, my ethnicity/cultural background was assumed based on

stereotypes regarding the way my body looked. Much like discrimination or assumptions based on race and sex, weight-based discrimination is incredibly relevant when discussing systems of oppression. In fact, there has been a 66% increase in this form of discrimination over the past decade in the Global North (Puhl & Peterson 2012). The same study indicates that weight discrimination is more common than other forms of discrimination such as discrimination based on ethnicity, sexual orientation, religion, or other aspects of physical appearance (ibid.). The stronger inclusion of body size and composition into an intersectional analysis would bring further attention to the embedded stigmas against certain bodies. It is not surprising that having a body that does not conform to standard norms of health and beauty is damaging for non-conforming individuals (Bordo 1990; Brooke 1999; Chrisler 2011; Cooper 2010; Longhurst 2005; Murray 2005). As such, to categorize oneself or be categorized as fat is an intimate part of how an individual sees her or himself and how he or she understands her or his place within the constellations of current heteronormative systems of power (Schultz 2015). In this way, it was important that I use an intersectional analysis to complicate and critique my fieldwork experience by the way in which my body was perceived in different spaces and what this meant for my own inclusion, exclusion, and access to information.

There has been a considerable amount of work done by social activists on body positivity and body image in recent years. Popular sources and magazines have begun to highlight the stigma against fat bodies (see West 2015 for example) through features on plus size models and even athletes who do not fall into a typical slim “athletic” body type<sup>8</sup>. Academics have also responded to this issue in a myriad of ways. Traditionally academics have focused on body size and composition through medical/ health discourses (for example, Mokdad et al. 2004; McHughen 2000; Prentice 2001). However, there has also been a recent move to critique the medicalization of body composition through what is referred to as “critical fat studies,” a topic

which now has its own journal and conference (*Fat Studies: An Interdisciplinary Journal of Body Weight and Society*). Critical fat studies often employ a Foucauldian framework to discuss the ways medical discourses can and do discipline the body (Braziel and LeBesco 2001; LeBesco 2004). Some additional work coming from critical fat studies covers the ways in which the everyday negotiations of a fat body often reproduces the spatial “reality” that a fat body cannot and should not fit and thus must be disciplined (Murray 2012). An example of this is the work of Rachel Colls (2006), which examines women’s emotional and embodied experiences of shopping for clothing for a “big” body. Being unable to shop in certain stores, or in certain locations within a store (i.e., when plus-sizes or extended sizes are on a different floor or room from other similar clothing) was part of how a large body was deemed unacceptable as perceived by the women interviewed. Similarly, Harrison (2012) discusses the emotional experiences of parents – particularly mothers - whose children have been labeled obese. The risky and undisciplined bodies of these children represent a cost for certain governing authorities. This is because there are perceived medical/social expenses, and this cost to the state (or relevant governing body) is a cost that has come to be considered the moral failing of the parents. There is even pressure on the parents of children in utero in North America, Western Europe, and South Asia (Yajnik 2004) due to the way in which mothers who practice “poor” diets during pregnancy have been accused of “over nutrition of the fetus” (Warin et al. 2012:360), thus causing obesity for children later in life.

In India, although there has been less scholarship on the subject, body size has become a subject of concern and medicalization as well. Many studies demonstrate that obesity among Indian adults and children have increased, particularly in urban areas, while also coexisting with undernutrition (Kalra 2012; Misra et al. 2009; Yajnik 2004). The trends for body-size correlate with socio-economic status, in that affluence dictates body size and composition (Bhardwaj et al. 2008; Chhatwal et al. 2004; Yajnik 2004). As such, there has been discussion on how higher weights were

once coveted as a way to demonstrate wealth (Parker-Pope 2011). This correlation between status and weight has shifted though, with weight-based discrimination becoming more normalized and acceptable in India. As one individual noted, “people have come up to me to suggest how my lifestyle is wrong [because of my size] ...I don’t want to explain to them that I have a body type, or my genes play an important role in how I look” (Jenny 2014: np). This experience has been further reinforced by a report produced by UNICEF India, which studied how Indian individuals with larger body sizes contend with significant amounts of stigma (Agrawal et al. 2015; Sharma 2015). Women, in particular, were found to face high levels of discrimination and intolerance based on their body size. Some participants even suggested to the research interviewers that they would “prefer to be normal weight with a major handicap (deaf, dyslexic, diabetic, legally blind) than to be obese” (Agrawal et al. 2015: 640). Preferring a major handicap over body fat demonstrates the ways in which body shaming and weight-based discrimination causes serious harm to an individual socially, further reinforcing the necessity of this category within intersectionality.

There is also considerable literature regarding the portrayals of fat bodies in the media. Media produced for people living in the Global North are less likely to feature large bodies, whereas slim people are significantly overrepresented (Puhl & Peterson 2012). Overweight actors are more likely to play the “sidekick,” or comic relief whereas thin actors are more likely to be main characters (ibid.). This also true in India where one author stated that “The only reason fat people are shown in popular media is so that they can be an object of ridicule. No fat person is ever taken as a main protagonist. He or she is always the centre for jokes” (Jenny 2014: np). These media representations, along with social stigma, may be one of the reasons I had difficulty in Shimla (Field Note 1).

Beyond the media representations of health and the connection between body size, there has also been a significant amount of scholarship written about the connection between body size and economic success in the Global North. In the workplace, weight discrimination and stigma are a persistent problem (Puhl & Peterson 2012). According to one American study, people who are considered overweight or fat face barriers at all levels of the employment process – from hiring to promotions, and even firings. This is most likely due to common stereotypes that suggest people with large body sizes are lazy and lack initiative in the workplace, similar in many respects to the medicalized fat body (Brazier & LeBesco, 2001; Chrisler 2011; Colls 2006; Cooper 2010; LeBesco, 2004; Puhl & Peterson 2012). Glass et al. (2010) does discuss the idea of the limitations and advantages for people in their paper which examines the economic earning potential for individuals considered fat, however, the loss of income based on appearance is slightly different than barriers to research and qualitative data collection and thus requires further academic attention.

Another similar paper to Glass et al. (2010) written by Burmeister et al., (2013), discusses the ways in which weight factors into graduate school admissions in the Global North. Their findings were that individuals with a higher BMI had fewer offers of enrollment after an application interview. The correlation existed for both men and women, however, the relationship between weight and graduate school rejections was stronger with applicants who identified as women (Burmeister et al. 2013). This study suggested that this bias in favour of slim applicants is unconscious, however more recently a controversial tweet by University Professor Dr. Geoffrey Miller, suggests that the bias is more conscious than Burmeister et al. (2013) anticipated. Miller's tweet reads: "Dear obese PhD applicants: if you didn't have the willpower to stop eating carbs, you won't have the willpower to do a dissertation" (see Pettigrew 2013: n.p. for a screen shot from Twitter). In India, work and education opportunities have been limited for

individuals considered fat, similar to the data from North America and Western Europe. One of the most provocative examples of this is Air India's policy that flight crew maintain a certain weight (Potarazu 2015). Any employees who are unable to maintain an Air India specified weight are "recommended diet and exercise before being reconsidered for employment" (Potarazu 2015: np).

Even with the above literature in mind, body composition should be more highly integrated into understandings of positionality and intersectionality, especially as it relates to research methodologies. Body size, including fatness, does not exist in a vacuum, but rather in conjunction with numerous other identities, such as ethnicity, and gender. In research done by Jean Ochtersky regarding body size in the Netherlands (2015), one of the findings was that there was an understanding among the interviewed research participants that "it is easier to be a big woman of colour than a big white woman" (36). This largely had to do with desirability politics – that men of colour are more likely to find "thick" women more beautiful, and thus there is increased inclusion and acceptance. Whether or not this is true is debatable, but the connection of weight and race is an important one. Similar research in the United States revealed that the study of body size as it intersects with race is still discussed from a specific point of view that privileges the experience of white, or white-passing, individuals. This does not mean that that "fat-identified women of color do not experience fat stigma in the United States rather that their marginalization is complicated" and most likely under considered (Schultz 2015: 13). In this way, the experience of raced and gendered "others" is an important avenue of study for researchers conducting fieldwork both within and outside their local context. Within my personal experience conducting qualitative research, I was categorized as white, regardless of my mixed-ethnic background. This granted me significant advantages, and yet I was simultaneously, gendered, sexualized, and sized, in different ways and in different spaces.

### Experiences from the Field

*Field Note 3: I've been in India five days, and I've already been invited to an important conference regarding water management and organic farming in Punjab. Now that I am at the conference, I've been given permission to run a focus group with the participants. Not only this, but I am being given access for an interview with Rajendra Singh – the Water Man of India and award winner of the Stockholm Water Prize. I was under the impression that gaining access to gatekeepers and key stakeholders would take time, but this doesn't seem to be the case – I am being given access based on my social capital, economic capital, race, and position as a foreign scholar. I had previously been told that many individuals in the Punjab region operated according to patriarchal hierarchies, so I am surprised and feel lucky, but I also uncomfortable with the status I hold here because I question whether or not my darker skinned family members (individuals who cannot pass for as Caucasian) would be granted the same opportunities.*

Privilege within the research and learning environment is not a new phenomenon for academics. In fact, regardless of race, gender, sexual orientation or age, there is a common experience of a sense of privilege when a researcher enters the field and works with participants (Catlett & Proweller 2011). This is often considered a destabilizing or “triggering” experience that forces the self-reflection and interrogation of deeply embedded assumptions about power that are often taken for granted (King 2004). As such, the experience of privilege may and should be used by researchers to understand their own positionality and the role that research plays in defining who is powerful within research relationships. There is, of course, a risk of research being used to reinforce notions of superiority for certain individuals if critical reflection regarding responsibilities, the goal of the research, and or the relationships formed, is neglected (Westheimer & Kahne 1994). In this way, the critical reflection should be part of both quantitative and qualitative research methods in order for there to be an opportunity to interrogate assumptions, discourses, and practices outlining researcher power and privilege. This will increase the likelihood that privileged moments and experiences in research are understood (Catlett & Proweller 2011). The following field note is another example of a privileged moment

*Field Note 4: I am in Manali (a city in the state of Himachal Pradesh), and a group of men are interested in my presence in town. It is tourist season for wealthy nationals, and uncommon for foreigners to visit India during this time of year due to the summer heat.*

*The men are sitting and drinking beer out of a brown paper bag. They are (potentially) freer with their words, and as a consequence the insight they are willing to share with me regarding water issues in the region is incredible. However, regardless of their positions as knowledge holders, there is still a power imbalance. The men are more willing to speak to me in English, preferring to muddle through my discomfort with Hindi and their discomfort in English rather than use my research assistant and interpreter. I am in their country, asking for their insights, and yet I still seem to hold power by my position as an educated foreigner.*

As exemplified above, and throughout my own experiences of research in India, I came to understand my considerable privilege through interactions with other academics as well as my research participants. For example, beyond access to academic conference invitations, often it was easier to access participants as a foreigner than it would have been for local researchers (personal communication 2015). I was a novelty due to the colour of my skin and assumed Caucasian ethnicity, and although participants were often surprised as to what I was or was not interested in academically, most of the approached potential participants (92%) were still willing to be interviewed, this may be because traditionally privileged individuals have been able to define both problems and solutions for subaltern populations (Freire 1997). This continues to happen with many contemporary geographic research projects. Whether quantitative or qualitative, the questions researchers ask, the problems deemed worthy of study, and the subsequent solutions to these problems impact the lives of research participants – generally those who hold less social, and economic capital. There are however feminist research methods that avoid and undo the hegemony of elite members of society, which sustains “the status quo of privilege and oppression created” through standard research practices (Camacho 2004: 34), and they must be used in our research regardless of our potential discomfort.

*Field Note 5: I am out with a group of researchers and students from Panjab University. I am for once not the only woman on campus who is thought to be Caucasian – I relax, knowing I’m a bit less visible because I am no longer the only person being watched very closely – with both judgment and excitement - by the people around me. The novelty of my out-of-place body wears off when I’m not the only visible minority in sight.*

Generally, within my research sites in India, pale-skinned bodies are very visible. What this meant for me as a researcher in the field was that I stuck out. This will be the case for many researchers conducting non-local fieldwork who will be noticed as nonnormative. My perceived Caucasian ethnicity, and thus hypervisibility, was often both compounded and compromised by my being a fat woman. I was simultaneously visible and invisible.

*Field Note 6: Depending on my physical location, the time of day, or the people surrounding me, I was often hypervisible – which included comments about my fat body (undesirable) or my “curvy” body (desirable)- alternatively completely invisible. My invisibility as a women meant that even though I was there conducting doctoral research, my husband was the one people looked at, spoke to, or answered questions with. In interviews, my husband would often come with me, and although I usually asked the questions, sometimes he was the one receiving answers. Sometimes he would take a leading role in interviews if this seemed necessary based on the participants’ responses. When I speak to other women who had conducted research in South Asia, they describe similar scenarios. As previously stated, Punjab is often regarded as one of the most patriarchal parts of India, and I seem to be experiencing this side of the State, unlike before.*

My experience of being visible and invisible was highly raced, which is similar to what was described by Ochterski (2015). In Ochterski’s (2015) study, one participant, Hodan (pseudonym), had a unique experience with her body size, and in particular the curves of her fat body. Hodan discussed specifically how her size often intersects with her race in discussing her weight. Two salient points came out of Hodan’s experience, the first being that media representations of her body type were virtually non-existent. The second point she made was that her large and curvaceous body was considered desirable in ways that other bodies – such as those of the body of a middle and upper-class white woman - would not have been. As Hodan said, “[my] bigger butt made me feel like a target as well. Like, something that advertised my sexuality without me wanting to. Telling the world that I’m available. My size racialized my body even more” (Ochterski 2015: 25). In this way, much like my own body in India, Hodan’s body was both invisible and hypervisible. Part of the visibility of fatness is based on the negative stereotypes associated with

larger body sizes and the ways in which large bodies are perceived in certain spaces: risky in places of health (such as hospitals), inconvenient in confined spaces (such as an airplane), desirable and hypersexualized in public spaces (such as a busy city street), or as foreign and non-normative (such as during non-local field research). In some spaces, people may feel as if they have a right to comment on fat bodies in both negative and positive ways. In this way, some public spaces do not accommodate fat bodies – sometimes physically (as exemplified by the research by Ochterski 2015; Colls 2006; and Rice 2007) but more often socially.

*Field Note 7: I have returned to Chandigarh from a site trip where I was conducting focus groups and interviews. I am greeted by a friend who says “You have diminished!” She does not realize that comments about weight loss are not inherently a compliment. Although being fat is considered a “before” identity - something to transition through - it isn’t for me. The words have an odd effect on me, and I realize globally women’s bodies are policed and scrutinized constantly, even by friends and even loved ones. For fat women, the particular policing seems to coincide with the idea that these bodies are risky and need to take up less space – be diminished. In the words of Lindy West: “Feeling sick? Make your body smaller. Can’t find love? Make your body smaller. Undervalued at work? Make your body smaller. Can’t make your body smaller? Hide your body. Can’t hide your body? ‘Flatter’ your body (i.e. make it look smaller)” (2015: n.p.). So many individuals are constantly disciplined into taking up as little space as possible.*

Part of the visibility brought on by race and size is that during one’s personal life and work life (such as during research projects), friends, colleagues, family members, research participants and even complete strangers may think and feel as if bodies that are non-normative are open to comment and criticism, an experience shared by Jenny (2014) and discussed above. For me, this sometimes meant my body was hypersexualized, with people wanting to touch me, and other times comments about my apparent unhealthiness were considered acceptable dialogues. One report on fatness in the Netherlands discussed how participants were particularly uncomfortable with comments based on weight – whether “positive” through comments about weight loss or “negative about weight gain (Ochterski 2015). For example, one participant claimed “[a friend I have] feels like it's okay to comment on my weight. “Oh you're losing weight!” which, maybe I am

and maybe I'm not, but who fucking cares and why is it okay for this to be a topic of conversation?" (Ochterski 2015: 26). These comments are often considered appropriate because of the way in which fat bodies are "something to 'make better' rather than bodies with their natural rhythms, changes and ways of being" (Chrisler 2011: 51). In this way, commenting on another person's body – both in negative or positive ways – is considered acceptable or even natural if one has a non-normative body type. The comments can often be considered harmless observations or even advice, yet they still reflect the way in which some bodies are considered part of public dialogue – open to opinion and advice, particularly towards suggestions of change for the "better." In more recent research surrounding critical fat studies, academics discuss size in terms of the medicalized discourses of fatness and obesity and even changes to beauty based on patriarchal standards. Certainly, beauty and health discourses do intersect with discourses of body size, health, and patriarchal beauty standards (Ochterski 2015), however, it is also necessary to discuss large bodies in terms of their categorization as non-normative and thus stigmatized.

*Field Note 8: I am at a second workshop (held in Himachal Pradesh) for academics and activists regarding political ecology in India. It is close to the end of my research trip, so I have some preliminary findings to discuss and have been invited to speak about trends in political ecology and the gendered consequences of certain water management strategies. After my presentation, there is some discussion and I am told I cannot and should not participate because I am white and foreign and thus cannot comprehend the Indian context properly, which seemed to be connected to my critique of neoliberalism. I am also told I should "know better," because the social and environmental conditions in India were far worse before neoliberal mentalities began to permeate government policies. I am further told that no academic should conduct fieldwork abroad, and in fact, I should leave the conference and abandon my research project. The assumptions about my race and ethnicity leave me frustrated. I recognize that I have more privilege than many of my family members – my experience crossing borders reinforces this knowledge, but does that really mean my analyses are not valuable? I leave the conference quietly after lunch. Although my foreigner status and pale skin has afforded me significant access with my research participants, my peers and colleagues have excluded me due to the same physical attributes that afforded me such privilege.*

One element of research that I did anticipate was the way in which my hypervisibility would play into post-colonial politics. I did however wrongly assume that this would be an issue with my

participants more so than with my peers. Most participants of interviews and focus groups were willing and even pleased to speak with me. However, I also did some informational interviews with academics and activists. These individuals of high social and economic capital were less concerned with the validity of my research questions and more concerned about the way in which my body represented the historical and even contemporary colonialism in India. I discerned this primarily from disinterest in answering my questions and instead asking why I felt I had the right to do research abroad. One Indian academic in particular who was conducting research in Uganda (the implications of her foreign body in East Africa was not lost on me) was particularly opposed to my presence at the small conference, and in her country more generally.

Conclusion:

*Field Note 9: I am nervous about my people reading this article. In general, I do not make a habit of discussing my appearance, so this “coming out” process makes me uncomfortable, and may make others uncomfortable. I’ve neglected to mention the body size aspect of this chapter to people when discussing my writing and have talked instead about the mix of privilege and oppression of being perceived as a Caucasian woman in India – the way in which I had (metaphorical and literal) doors opened and closed based on gender, class, and (assumed) ethnicity. This is not a lie per se, but it is also not the whole story.*

In choosing to discuss my own intersectional experience conducting qualitative research abroad, I am hoping to equip other researchers with an understanding of ways to function within our various positions that are more successful and less damaging to our own senses of self as well as our work (Smailes 2014). As geographers engage with the violent past (and present) of the discipline, and attempt to change it through the engagement with our own subjectivity as researchers and academics, it is more common to see research that acknowledges the outsider or foreign “gaze” as well as the power relations and potential imbalances involved in research activities. This allows for the recognition of privilege, an understanding and sensitivity towards dimensions of oppression, and in general promotes the personal critical examination of our roles as researchers and “why we are here/there.”

Although there are always obstacles to research, whether in the local region of the researcher or further afield with research abroad, there are very rarely discussions of how the physical appearance, specifically the body size and composition, of the researcher is implicated in the research process. Being considered desirable or risky in a given location will impact what doors are opened or closed, the ways in which people perceive your research (for example the medical doctor in Shimla). At the same time, ethnicity also factors into the ways in which one is able to conduct research, and in particular if the research occurs in an area where your body is deemed “out of place.” While in India as a foreign woman, who can “pass” as Caucasian, I was afforded a considerable amount of privilege – a truly undeniable fact of my experience. However, while encompassing the space and position of an individual with privilege, I also was disadvantaged in my physical appearance. Having an undesirable and unconventional body type in India meant sometimes my research questions were, and my entire body was, ignored, or considered trivial and insignificant. There was an ebb and flow to my position, and which factors of my physical appearance were most important depended on the spaces I inhabited. My analysis of my own body in relation to my fieldwork is not an attempt to diminish the research and data I conducted, however I do believe that a heightened attention to body composition – fat, skinny, “curvy”, tall, short, etc. – within the intersectional categories and framework is an important step for researchers conducting fieldwork where body composition and appearance may in fact limit or free researchers in different and contradictory ways. Although most researchers agree that reflexivity is an important component of any research project, I ask other qualitative and quantitative researchers to extend their reflexive work to consider more fully the implications of our bodies in our research and the way our work and ourselves make up the field – in harmony and tension.

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- <sup>1</sup> Although there is relevance to discussing my ethnic identity or cultural background, what I think is important is how I *appear* rather than how I *identify*. I do have pale skin and blue eyes, and am generally perceived as Caucasian, but I come from an ethnically mixed family.
- <sup>2</sup> As said by Smailes, “there is something about the word ‘fat’ which holds a multitude of values, meanings and assumptions” (2014: 53). Words always hold a great deal of power, and a topic like fatness/body composition is no different – chubby, fluffy, obese, overweight etc. all mean different things to different people and there can be ramifications, socially and politically for using each term. For example, although some activists have been working towards reclaiming the word “fat” as a descriptor (like tall, short, blonde, brunette etc) it does not have neutral connotations across populations, and can still be considered a highly stigmatizing word. Therefore, although I will sometimes use the word “fat” and “body composition”, I am not naive to the potential problems associated with the choice of each.
- <sup>3</sup> There are personal risks involved with this method of research, for example while conducting reflexive research regarding eating disorders, Chatham-Carpenter (2010) was personally triggered and was drawn to her former anorexic behaviours. In writing about a personal topic and combining “the researched, the researcher and the research [in her] entire field of study” (Smailes 2014: 58), Chatham-Carpenter was retriggered and needed to take time away from her study in order to practice “self-care” (2010: 56-57).
- <sup>4</sup> There has been considerable work done on intersectionality and disability versus able-bodies, for example, the work by Erevelles and Minear 2010. I however, am advocating for the more specific consideration of physical appearance – both those bodies considered “attractive” and “unattractive” within and beyond the politics of desire, which is part of social construction but also part of a physical reality.
- <sup>5</sup> Valentine (2007) sometimes uses deaf and sometimes capitalizes the word as Deaf based on the medical definition (lowercase) versus the community (uppercase). I have used the same capitalization “rules” as she in my use of her article for example.
- <sup>6</sup> An anticategorical framework suggests that categories such as race, gender, class etc. are social constructions. This is inspired by poststructuralism (McCall 2005).
- <sup>7</sup> An intracategorical framework highlights the intersecting points of social categorizations (race, gender, class, sexuality etc.) that can sometimes be hidden and thus neglected. This framework “validates the reality of racism as it intersects with sexism and other social categories of difference in the everyday lives of women of colour” (McCall 2005: 130)
- <sup>8</sup> One example being Amanda Bingson, a record breaking American Olympic hammer thrower and all around amazing athlete – who also happens to be 210lbs - featured nude on the cover of the ESPN Body 2015 Magazine.

**Paper 2 - Changing Policies and Gender Practices: The Impact of Reverse Osmosis Water Purifiers in Rural Punjab**

*“People need to understand the importance of each drop of water and use it **economically.**” - N. Prasanna Murthy, Executive Engineer of Karnataka Urban Water Supply and Drainage Board (emphasis added)*

Globally, water is a vital resource for human consumption, agriculture, working ecosystems, and industry. Within Punjab, the challenge of water allocation is stressed due to the huge agricultural sector found within the state. Punjab is considered the “bread basket” of India and is thought to be the only region able to safeguard India’s domestic food security (De Schutter et al. 2015; Hira 2009; Polycarpou 2015). With changes in agricultural practice, the demand for water is on the rise, particularly with the increase to rice farming, also known as paddy farming, in the region while quantity levels decrease (Kaur, Sidgu and Vatta 2010). Within Punjab, as well as in many other states, the “problem” of water quantity has been addressed using neoliberal ideologies. That is, the problem of water quantity brought about by inefficient and wasteful government programs is “resolved” through financialization and commodification, among other policies. This way of “solving” the water problem has brought water management into new circuits of capitalism through the intensification of water technologies and their necessity domestically and agriculturally. It is estimated that by 2025, if current water consumption patterns continue, groundwater depletion could reach 850km<sup>3</sup> (Densmore 2012), thereby furthering the push towards water commodification based on hegemonic neoliberal ideologies that espouse an ethos emulating those of the tragedy of the commons – commodification and

privatization as a method of conservation. In reality though, this form of conservation emulates the tragedy of capitalism (Springer 2016a).

New instances of water scarcity mark a significant shift in the waterscapes of Punjab, as historically the state has been known for its abundance of water. However, the present situation of water resources is highly precarious. Originally, Punjab was the land of five rivers: the Ravi, Chenab, Jhelum, Sutlej, and Beas (see Figure 2.1). After partition, only two rivers flowed within the Indian state, and now because of global climate change, deforestation in Shivaliks, and the intensification of water needs for agricultural production, there is also a decrease in water flows for the citizens of Punjab (Dutt 2004). Socio-economic stresses are likely to increase for the population due to a lack of potable water and subsequent decrease in agricultural outputs (Rodell et al. 2009). With the decrease in river flows and the increase in water demand, groundwater reliance has increased, which requires significant financial and technological investments. To exemplify this change, one need only look at how the number of tube wells has changed in Punjab. In the 1960s, there were approximately 55000 private tube wells in Punjab, and as of 2011, this number had increased to over one million (Brar and Roychand 2011). The increase in tube wells coincides with a significant increase in the extraction of water, which has lowered the water table from 10 feet below the surface in the 1980s to over 100 feet below the surface in some areas today (Batra 2016; Chen et al. 2014; Das 2016; Franklin 2015; Ministry of Water Resources 2016; Rodell et al. 2009). The withdrawal of ground water is so high that water levels cannot recharge naturally (Batra 2016; Das 2016; Franklin 2015; Ministry of Water Resources 2016), thus ground water levels are negative within seven of the 17 state districts (Brar and Roychand 2011).

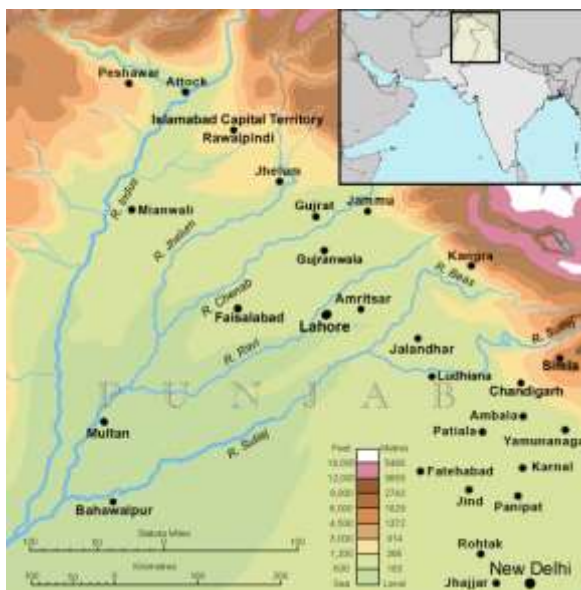


Figure 2.1 – Rivers Map for Punjab Region (Apuldrum 2012)

Along with and in part because of this extraction of ground water, drinking water has also become both less available and more polluted within the region due to agricultural and industrial intensification (CWC 2002; WaterAid 2008). There are areas of Punjab, such as the Bathinda region, where cancers and kidney disease have increased dramatically due to the poor quality of drinking water. Some researchers attribute the water pollution to pesticides from farming (Halder 2007; Kochhar et al. 2006; Pandey 2015; Thakur et al. 2008), while others attribute it to cement and pharmaceutical production in Ludhiana (Bhalla et al. 2011; Chabab 2011; Kakar and Bhatnagar 1981; Seth 2013). However, as one local NGO employee who was interviewed noted, “it is all of it... a toxic cocktail” (Male, 31 years old, May 2015). Regardless of the source of the problem, the availability of good quality drinking water has diminished and the government has attempted to solve this with the introduction of subsidized reverse osmosis filtration systems (ROs) for communal use at the village level and with financial assistance for families who purchase an individual RO for private homes (Department of Water Supply and Sanitation 2014c; Rana 2014). Massive educational campaigns have fostered a sense of need for these within communities, to the point that there has been fear-mongering within government initiatives (Personal

Communication, Male, University Professor, 55, May 25, 2015). Regular water from personal or communal wells was now seen as dangerous and something to be feared unless technological intervention had taken place. These claims, although often verified in certain locations, are very specific and require individualized analysis rather than an overarching designation of “dangerous.” It is from this new point of education that we can see a deliberate discursive and conceptual shift in the notion of water as a resource to be managed, and water as a commodity with an economic value (Bennett 2005). This is not the first instance of water commodification within Punjab, but the introduction of ROs as a necessity has added to the commodification and financialization of water.

As ROs present a new case of water commodification and financialization, the labour practices surrounding water collection have shifted. This paper will examine a discursive shift in the understand of water and gendered labour roles through the case study of changes to water and gender-based labours in the state of Punjab, where I conducted primary field research in rural areas of the Punjabi districts of Ludhiana, Moga, Barnala, Sangrur, Mansa, Bathinda, Patiala, and Jalandhar. Using data from these locations, I have analyzed shifts in the understanding of women, gender and water that come about within the neoliberal moment. In particular, I look to how the neoliberal changes to the conceptualization of water have shifted the ways in which people perform water-based labours. This requires what Foucault would call the ‘eventalization’ of the discursive shift in water discourses from a focus on water management to that of a capitalist understanding of water as an economic commodity (Rabinow 1991). For the purpose of this paper, the “event” generated by the use of ROs demonstrates a shift in the conception of women as water stewards to women as water consumers, with the introduction of men into the consumption pattern in novel ways. This discursive shift is not merely a change in vocabulary, but the event signals a new way that water is thought about as an object to be commodified as well

as a new way that the roles of women and men are conceptualized through a gendered division of labour (Some further literature on gender and neoliberalism include Cornwall et al. 2009; Gill and Scharff 2011; O'Flynn and Peterson 2007; O'Reilly 2010; Scharff 2011; Scharff 2016; Sultana 2009; Wilson 2013).

In order to more fully understand how water has and continues to be commodified and what this means for changes to social society and gender relations more specifically, the paper begins with an outline of my methods before beginning a discussion of the ways in which the lives, and even identities, of women have traditionally been associated with water-based labours, and what shifts to the water-based division of labour mean before discussing neoliberalism in India. Subsequently, I provide my empirical evidence on the ways in which the introduction of reverse osmosis filtration systems have changed how drinking water is accessed, and how this further changes what water-based activities are associated with masculine or feminine labours, and in what way existing gender hierarchies are reinforced.

#### Methods and Analytical Framework: Feminist Political Ecology

My discussion and analysis come from focus groups and semi-structured qualitative interviews. Interviews were conducted with seven government employees, five academics based at Indian institutions, and ten NGO employees. Interviewees were recruited through emails, phone calls, and contacts made during my attendance at a conference on water issues in Punjab, held in Barnala. The conference was also an opportunity to speak with rural farmers and farm workers, which was part of my focus group recruitment. Additional members were recruited through snowball and random sampling.

Interviews were held in the offices of the interviewees as well as over the phone. These interviews lasted approximately 60 minutes. Focus groups were held in coffee shops and public areas where snacks and drinks were provided. Groups consisted of 6-8 participants and lasted 60

to 90 minutes. I conducted nine focus groups with a total of 38 male and 29 female participants. In both the focus groups and interviews, I began with broad questions regarding participants' employment, family structure, and water access. I then moved on to questions about groundwater quality and quantity. All focus groups and interviews were digitally recorded, transcribed, and then coded in order to pinpoint major themes through discourse analysis (See Appendix A for further detail).

Discourse, within the parameters I used for this research, is defined as a social boundary that defines what can be said about a particular topic and its possible truth (Fairclough 2003). In this way, I have used post-structural ideas to disrupt perceived norms and to create plural meanings from the various typologies I discern from the relevant literature, interviews, focus groups, and grey literature (Lather 1992). I have done this while acknowledging the need to distance my analysis from any narrative "authority" to understand fully the social situation of women and men and their individual interactions with water after its changes based on commodification, without any preconceived socially constructed sensitivities (ibid.). This approach is particularly important since access to water, like many resources, has been and continues to be dependent on gender, race, social capital, and economic capital, similar to what has been described within the large-scale dam and irrigation projects (Braun 2011; Harris 2008). In this way, my study looks to avoid reproducing "women" or even "rural women" to a universal category and to move beyond the "singular monolithic subject" (Mohanty 1988: 61). As such, a study of this nature requires the lens of feminist political ecology (FPE), while also including the concept of neoliberalism as discourse from Springer (2012a). When considered a discourse, neoliberal processes and consequences beyond official policies and economic markets can be understood and addressed. The discursive performatives of neoliberalism have materiality that can result in the subjugation of certain individuals. This process is, however, hybridized and thus

not all peoples are subjugated in the same way – neoliberalism exists and is enacted differently for different people and in different locations. As such, “neoliberalism does not exist in isolation, but is actually connected to and recursive of the alternative views” (Springer 2012a: 137) based on the ways in which discourse is able to connect and bring synthesis to outcomes, processes, and political philosophies that often do not seem to align.

For the theoretical approach of this paper, I have blended the disruption of a Foucauldian approach as a way to more fully understand the discourses surrounding water, ROs, and gender-based labours. However, in an attempt to ensure the scaled approach necessary to FPE, I also include some elements of political economy within the FPE framework in order to examine the neoliberal and capitalist programs and policies at the international and national levels and how this impacts the gendered divisions of labour and conceptions of water at the local level. This blending is indicative of my epistemological stance, in which I take theory to be alive and multidimensional. As such, I do not use theory in a prescriptive or fetishized way, as this denies a living breathing theory.

Feminist political ecology (FPE) examines everyday resource-based practices that produce spatial differences and gendered inequalities. More specifically, FPE “seeks to understand and interpret local experience in the context of global processes of environmental and economic change” (Rocheleau et al. 1996: 4), which allows for the understanding of the ways in which lived experiences are a production of gendered ideologies and power relations that can be traced from the local to the global scales (see for example Cameron and Gibson-Graham 2003; Mohanty 2003; Nagar et al. 2002; Sultana 2009). In this way, FPE begins by looking at the practices and social relations surrounding the access of an ecological resource (as an example) to analyze the ways in which micropolitics in daily life both impact and are impacted by different scales of action. Within

FPE there may be various approaches, such as a Marxist or Foucauldian lens but in general, it is the attention to gender within a scale-based examination that unifies this body of theory.

There has been considerable work done within FPE on water and sanitation issues around the globe (Harris 2009; Laurie 2005; O'Reilly 2010; Sultana 2009; Zwarteveen and Meinzen-Dick 2001). The work done in South Asia, in particular, highlights the various ways in which gender is experienced, reinforced, and disrupted within communities and households based on the different experiences of water and sanitation access, control, and governance. In this way, the authors contributing to FPE literature highlight the importance of socially produced practices in the shaping of gender roles and ideologies within the complexity of water governance and management. One example of this is a study by Sultana (2009) that discusses, in part, the decision-making processes of women collecting water in Bangladesh. Due to the arsenic poisoning in many of the local tube wells, some women must decide whether to collect water from women-dominated spaces with tainted water or venture into male-dominated spaces with untainted water. Both spaces, whether male or female dominated, are both unsafe and safe in different ways, either through arsenic contamination, or the potential for physical and mental abuse (Sultana 2009). In this way, collecting water is an embodied task that produces specific gender identities and exemplifies the ways in which power and gender coalesce with everyday practices of resource management and control.

Similarly, in a study by Truelove (2011), FPE is used as an analytical tool in order to bring attention to the ways in which changing water policies and even water improvement strategies can and do contribute to "wider patterns of urban and social differentiation" (150) in Delhi. Specifically, the study outlines the way social exclusion, illegal activities, and risk-taking are reproduced and deepened through water practices, which then become "inequalities forged on the body" (Truelove 2011: 145). One example given for this is the ways in which "women's bodies

encounter differing degrees of gendered hardships” (147), such as through physical ailments stemming from water collection activities, health issues based on the consumption of low-quality water, and even the experience of punishment for illegal practices related to water collection. For this reason, even when water quantities are increased and “improved,” lingering social inequalities and spatial differences still systematically challenge everyday lives. With this in mind, Truelove (2011) calls for a more localized research focus on gender and urban water issues to capture the lived experiences of individuals rather than accepting stories of increases to water quantities and qualities at face value. This work supports and strengthens the increased need for research on the ways in which resource-based policies can be and are gendered through control of access and use, as seen in the special issue on gender and water within the journal, *Gender, Place and Culture* (O’Reilly et al. 2009).

### Women and Water

In Punjab, women have been the primary suppliers of drinking water for their families. In rural areas in particular, women collect and haul water from local wells or community ponds, which is both a necessity and a social occasion. In this way, the lives of women have been and continue to be intimately linked to water in rural areas based on the division of labour within households (Ahmed 2005; Donoso, Bakkum and Troetch 2000:13). The gendered division of water-based labours is common across the world where women are consistently considered water stewards (Donoso, Bakkum and Troetch 2000; Wallace and Coles 2005;) and play a central role in the management and conservation of water (Beekman and Costin 2000; Bennett 2005). This arrangement is based on the reproductive labours associated with the daily collection of water, which is almost entirely the responsibility of women as well as water allocation responsibilities within the home and often times in “kitchen gardens” or other forms of subsistence farming (Ahmed 2005; Donoso, Bakkum and Troetch 2000). The situation is so

common that the World Water Council equates the inclusion of women in water-based development projects as “cost effective” (2003:145) because of the ways in which women are the providers of increased water productivity and provisioning. In essence, women are considered more thoughtful and conservative water users. Thus, successful water management has usually included women more strongly than men. Beyond their ability in the maintenance of cost-effectiveness, women are also the individuals most strongly impacted by water management changes and policies (Donoso, Bakkum and Troetch 2000). One example of this is the unequal effects of water scarcity on women in rural areas (Ahmed 2005), where women may face greater levels of seclusion or lifestyles may change to increase nomadic activities to ensure adequate water supply (Coles 2005; Sultana 2009).

A further case study that exemplifies how water management more strongly impacts women comes from Mehta’s (1996) work in the Northwestern region of India. In her paper on the agricultural practices of rural women in the Himalayas, Mehta analyzes the ways in which land reform practices have reshaped women’s access and control to agrarian resources, resulting in diminished power and authority. Although previously women and men had worked together within their agricultural plots, men’s labours had shifted to a focus on export crops, while women remained responsible for subsistence farming (i.e., home gardens/plots). This has meant a segregation of women and a devaluation of women’s work since the crops for exports have a higher economic value.<sup>1</sup> As such, “while men’s spaces are expanding (if not literally, then in terms of the importance associated with them), women’s are shrinking without enabling them access to new arenas of prestige” (1996: 193). These changing gender relations give new meaning and experience to spaces within rural communities, but can be traced to changes in the global economy, where intensive agriculture for the purpose of export has been fostered and promoted within India.

Another example of the unequal distribution of impacts based on changes in water management comes from Avila-Garcia (2000). In her case study of water management shifts in Mexico, she discusses the “modernization projects initiated by the state” (Avila-Garcia 2000: 134), which included a decentralization of governance to neighbourhood associations, a downloading of responsibilities common under a neoliberal economic and governing agenda. The state wanted and legitimized the neoliberal shift in governance to reduce costs (Avila-Garcia 2000: 147), and thus pushed for increased public participation as a way to garner more “free labour.” Women were encouraged to take steward or committee roles within this water governance structure, often making them leaders in their communities. However, their labour was never fully recognized as being worthy of payment,<sup>2</sup> and often it caused severe clashes in the home between husband and wife, father and daughter, and/or brother and sister. For this reason, women were once again encouraged to “remain only in the private domains [of the home]” (Avila-Garcia 2000: 148) to avoid “male chauvinism ... [and] sexual harassment”, which would be incurred if women attempted to show further community-based leadership (Avila-Garcia 2000: 149). As such, although water governance had been potentially improved, women faced more serious consequences due to their involvement in water management.

The negative consequences faced by women have often been ignored or even reinforced through the ways in which gender has been conceptualized in the discourses of international development and water-based development projects. In general, a gender mainstreaming approach (Bennett 2005: 2), which reduces gender to sex, means that “gender” is equated with women only (Wallace and Coles 2005). Programs that go beyond this conceptualization of gender increasingly include men with women, but still fail to fully utilize gender as a social-based category. Gender is defined as the socially constructed identities, roles and responsibilities of women and men, and the relationship between them (Zwarteveen and Bennett 2005: 28). It is a

term that does not refer to either women or men alone, but to the way behaviours and activities are shaped by a process of socialization involving a range of factors and institutions. As such, gender and associated gender identities are based on historical, social, economic, ethnic, political, and cultural contexts that determine access to resources, endowments and decision-making processes (Ahmed 2005: 3; McDowell 1999: 101). Even with gender and gender identities being based on the above, they are not fixed but instead are malleable (McDowell 1999:139) and as such can change in response to productive and reproductive labour (Bustamante, Peredo and Udaeta 2005; McDowell 1999). In this way, notions of gender, gender identity, and gendered labours can change while still being associated with a single sex.

Alternatively, some researchers have noted the ways in which neoliberal changes may provide women, particularly in rural areas, a chance for fuller participation in water management decision making since neoliberal labour markets often necessitate the migration and absence of men (Ahmed 2005). Men leaving home for work in urban centres have limited control of water, since men cannot be considered the real users of water when they are out of the region (Zwarteveen and Bennett 2005: 25), which exemplifies how certain gendered spaces can be challenged (McDowell 1999: 64). Shifts in the gendering of spaces can provide a mode of identity change and disruption. For example, the labours associated with crop irrigation are connected with masculinity and can “be seen to mutually constitute and define each other” (Zwarteveen and Bennett 2005: 25), but if men leave a rural area to pursue work in secondary economic sectors, the women taking over their labours may experience a change to identity. Gender identities are in part associated with labour and the way in which these identities interact with society (Ahmed 2005; McDowell 1999: 134). Gender identities are fluid and thus are created and recreated through work, so while the gendering of labour activities change so too do the identities of the women involved with said labour. This is particularly important since identity, in part, determines

the right to speak and to have a voice and, consequently, the ways in which one's voice is heard, and interpreted (Zwarteveen and Bennett 2005).

### Neoliberalism in India

Neoliberal politics and processes began to emerge in India during the early 1990s. Due to a balance of payments crisis, Narasimha Rao, the Prime Minister at the time, employed widespread economic liberalization policies in order to reduce the deficit and encourage foreign investments within the country (Hill 2016). Although neoliberal policies are generally seen to diminish state sovereignty, Oza (2006) claims that the Indian state maintained its power over the population by establishing “sovereignty over national culture and identity” (2) – particularly those identities associated with female purity and the strength of the military. As such, one of the most compelling and relevant elements of the neoliberal moment in India is based on the ways in which social and economic liberalization came to be embodied by women. Liberalization in India opened up identities for women beyond the traditional through Western media. The response to this was a “moral panic” associated with women’s bodies (Oza 2006: 30). Controlling women’s bodies became a way of protecting India and as such, “scales of the nation [collapsed] onto the body of the women” (Oza 2006: 45). Traditional women, those who would “make grandma proud” (Oza 2006: 31) became important for national identities. Neoliberalism in India has thus often had material impacts for women in terms of their bodies and identities.

In terms of water access, neoliberal thinking has changed the ways in which people access water globally. The philosophy of neoliberalism is a specific moment in the history of capitalism (Akhter 2015), changing water policies at all levels of governance and encouraging privatization, corporatization, financialization, and marketization (Loftus and Budds 2016). In India, Sanagameswaran (2014) suggests that reforms to water go beyond increasing commodification, to new governing schemes that are *only* evaluated in terms of profitability. This is a shift from a

capitalist understanding of the value of water to a new governing mentality that encourages accounting at a project level rather than a regional level, which then limits “possibilities for cross-subsidizing loss-making” (Sanagameswaran 2014: 130) for projects considered politically desirable. Sanagameswaran (2014) further recognizes the differences between neoliberal water and commodified water by stating that not all forms of water management “lend themselves to commodification in the strict sense of the term” (135). However, this does not mean neoliberalism has not been further embedded within water management activities beyond commodification. For this reason, water has to be considered beyond economic changes and challenges to include the transformation of socionatures, because water policies are one of the ways in which power relations are reproduced and reshaped. For individuals in India, this reproducing and reshaping has meant a general stagnation and decline of water allocation for individuals with lower social and economic power (Walker 2008).

Neoliberalism can be understood as a regulatory project, but one which is open-ended, at times contradictory, and changing (Peck and Tickell 2002; Springer 2012a). Sanagameswaran (2014) in particular highlights this by describing neoliberal water reforms as fluctuating based on conditions at the local levels. Thus, privatization, commodification, and market influences are not necessarily the only ways to which neoliberalism impacts water policies and governance (Akhter 2015). However, neoliberalism still involves a “regulatory restructuring” under which lies a “mythology of market progress” (Peck 2010: 7). This type of economic reshuffling, Peck (2010) claims, is rooted in “(mis)intervention[s] in the form of market-friendly governance” (7).

The rise in popularity of neoliberal agendas in the 1970s was, according to Peck and Tickell (2002), “associated with crisis conditions that were considered ‘external’ to ... [neoliberalism] itself” (390). In contrast, market changes occurring throughout the 1990s reflect ‘internal’ conflicts resulting from the failures of previous neoliberal strategies (Peck and Tickell 2002).

'External' crisis conditions, on the other hand, revolve around the macroeconomic instabilities commonly associated with the 1970s, which, as Peck and Tickell (2002) suggest, led to the rise in prominence of neoconservative agendas and the institution of neoliberalism as a state project. 'Internal' tensions of the 1990s, conversely, involved governments which were forced to respond to the "previous market, state, and governance failures" that were "partly ... initiated by neoliberalism itself" (Peck and Tickell 2002: 390). States attempted to mitigate the previous failures of neoliberalism by "downloading ... resources, responsibilities, and risks to local administrations and extrastate agencies" (Peck and Tickell 2002: 391). Municipal governments, as a result of the neoliberal project, increasingly emphasized, "local growth strategies and economic development" over the "local provision of welfare and services" (Hubbard and Hall 1998: 2).

When access to water changes through neoliberal changes to water usage, women in India, as well as most other nations, are most affected by the change, whether positively or negatively (Ahmed 2005; Koolwal and van de Walle 2010; Sultana 2007; The World Bank 2007). As previously outlined, improvements to water supply, can increase women's human capital and can lessen the time necessary for traditional reproductive labours (Ahmed 2005; The World Bank 2007). On the other hand, often the neoliberal changes in water policies demonstrated through technology and subsequent financialization, like The World Bank's promotion of water pricing to promote sustainable usage, often fail to promote women's interests (McDowell 1999; The World Bank 2007). For women, this usually means a double payment for water, as water has never been free for women, based on their burdens through the sexual division of labour associated with the collection and hauling of water, plus the new financial cost of water (Ahmed 2005: 3; Zwartveen and Bennett 2005: 26-27). The debates on how women are affected by neoliberal policies, including privatization, are many, but where my research attempts to fill the gap is in the particulars of water usage and the implications for gender identities in the particular case of ROs

in rural Punjab. In this way, I hope to provide a nuanced understanding of the commodification of water and the ways in which policies promoting commodification have changed the labour-based gender performances of both women and men.

#### Changes to Drinking Water: The Introduction of ROs

Providing clean and safe drinking water to citizens is the duty of the State under Article 21 and 47 of the Indian Constitution. There are a number of ways in which the State of Punjab has attempted to enact these elements of the Constitution to ensure safe drinking water. This includes the provision of public water pumps, funding to ensure the maintenance of village ponds, and subsidizing of domestic indoor water hook-ups (Asthana and Shukla 2014; Department of Water Supply and Sanitation 2014c; Jain et al. 2007). More recently, however, the Punjab government has changed tactics and partnered with Kent, an Indian company that manufactures and distributes RO devices for both community and household usage (Department of Water Supply and Sanitation 2014a). Within grey literature, the government of Punjab discusses the introduction of ROs as a way to increase potable rural water supply, “merge the skills, expertise and experience from public and private sectors” and “adopt appropriate options under public-private partnerships,” particularly for the building, operating, and maintenance of communal ROs, also referred to as RO plants (Department of Water Supply and Sanitation 2014c: 7; Rana 2014). In this way, the issue of potable water is being addressed through increased use of technology, which has increased the cost of water to consumers even though the government (in partnering with Kent) subsidizes the infrastructural costs of ROs in homes and communities. For home-based ROs, standard cost-recovery through metering is enforced, and within community-based RO plants, users pay a monthly fee of between 200rs and 900rs depending on the region (Deswall 2014; Personal Communication, Female, University Professor, 45 years old, May 26, 2015). To put this in some perspective, many people make 100rs per day working in factories or as farm

labourers (Labour Department of Punjab 2013). However, even at this price, one NGO employee said, “This is not too expensive... yet, but we are concerned for the future” (Interview, Male, 34 years old, June 2015). Responding another NGO employee said, “Prices only increase, and many people have no other options than to pay... we have started to plan for the [inevitable need to intervene]” (Interview, Female, 29 years old, June 2015).

As previously discussed, the introduction of ROs is not the beginning of commodification of water in India, but it does represent an intensification or a furthering of previous commodification techniques. Broadly, the commodification of water involves a variety of arrangements to take water out of public hands for the purpose of making water a tradable economic good. The justification for these shifts is based on the idea that public water provisions are ineffective and wasteful. Accordingly, it is assumed that it is best for water to have a specific dollar value to protect the resource against misuse. The policy directive of many governments favours market solutions to resource issues (Walsh 2011). In India, commodification has been part of a “wide range of changes in the water sector... [including] an emphasis on people’s contributions to costs... [and] the involvement of private corporate players in specific aspects of water provision” (Sangameswaran, Madhav, and D’Rozario 2008: 60). These changes to water processes serve to “speed up the process of capitalist commodification as the solution to the world’s ‘water crisis’” (Castro 2013: np).

Another reason for why water has become integrated in new ways into the circuits of capitalism arises from the increased interconnectedness typical of globalization processes. As Barlow (2009) points out, water is now often seen as a profit-making opportunity. Free trade, marketization, and deregulation as promoted by certain governments, The World Bank, International Monetary Fund (IMF), United Nations (UN), and water companies often give corporations the power to shape government policies. As such, certain “public” water projects

can and do still constitute forms of privatization. Direct ownership of water sources and assets is only a small portion of the ways in which water is privatized (Sangameswaran, Madhav and D’Rozario 2008: 64; Bakker 2003b). The RO-based water project in Punjab does not officially constitute privatization, since “the source assets continue to remain with the state, [as well as] the final decision-making powers” (Sangameswaran, Madhav and D’Rozario 2008: 64). However, this still represents a form of neoliberal water governance. Karen Bakker (2005) describes this neoliberal approach to water management as “market environmentalism” (542) because of how the approach attempts to meet both economic and environmental objectives at the same time. There is significant controversy and doubt among academics, activists, and government employees, as to whether the commodification of water can help improve quality and access. Nevertheless, the commodification of water is a clear indication of the ways in which markets and capital are being included in new social and ecological relations.

The pressures of commodification within water governance have financial, physical, and analytical consequences. This is in keeping with commodification, which Karen Bakker (2005) describes as multidimensional (545), including changes to pricing, changes to identity and values, changes to the material and physical elements of water allocation and quality. It is not unwarranted that water would have a more complex commodification structure or process. Water is a “complicated object of analysis... because of the idiosyncratic nature of water and the peculiarities of the hydrological cycle. It is hard to establish ownership rights over a good that is in a constant process of recycling” (Walsh 2011: 91), and therefore the changes to gendered practices and identities is only one part of the commodification processes and impacts.

Further under recognized functions of commodification within water management include the implications regarding how the provision of water itself is viewed – which dimensions are emphasized (economic versus engineering), whether water is viewed as something that

satisfies basic needs or as something that will bring ‘development’ and/or ‘modernization’ (Walsh 2011). Even when neoliberal goals and practices are not wholly fulfilled, there is still a process of changing subjectivities and presentations of certain technologies – such as ROs – as the only method of improving water quality. One of the ways this has been brought about in Punjab is through intensive education campaigns and advertisements within the state.

To ensure that people use the new RO plants in communities, or put these ROs within their homes, the Punjab government, in partnership with the private corporation, Kent, and the Indian Medical Association (IMA), has begun intensive education and awareness campaigns (“IMA, Kent RO partner” 2015). Some of the language used for these campaigns is that a “healthy India” is connected with working with Kent RO (ibid.), and that “99% of water provided to [Indians] is polluted” (‘Save Water Campaign’ 2014: np). This mode of behaviour modification through anxiety and misinformation creates the impetus for RO usage, regardless of the downside of ROs by intentionally ignoring other modes of filtration and other options that may be more readily available for the individual household needs, budgets, the most common contaminants, and technological understandings.

To further impel the use of ROs, Kent has begun working with Bollywood actors to campaign and educate people on safe water (‘Save Water Campaign’ 2014). At the same time, the Government has mandated that “WASH,” a program aimed at educating people on water-based hygiene and safety, be included in the syllabi of government and private schools, and even in universities within the state (Department of Water Supply and Sanitation 2014a). What this attempts to teach people is one specific way – namely ROs – to address water quality that comes from a certain politic. The neoliberal commodification of water within India is therefore reinforced through the way in which the problem is described and addressed – the material consequence of the neoliberal discourses within India. A neoliberal mentality has been used to

“tell the truth” about water – how it should be accessed, delivered, and what constitutes “quality.” This could be considered a Foucauldian regime of truth, or a “general politics of truth” (Foucault 2000: 131) and each society, each field and/or space, has its own regime of truth where only particular discourses are accepted (Weir 2008). A truth regime qualifies and justifies certain truths, giving credence to those subjects and experts who speak said truth. Within the study area of Punjab, what has been constructed in part by the truth regime is the use of ROs as a necessity both as a means of water delivery, and a means for ensuring quality. This is a form of “government in the name of truth” (Gordon 1991: 8) and as such results in an “authority and legitimacy generated by the supposed objectivity of science [to produce] new kinds of knowledge/power and techniques for regulation” (Rutherford 2007: 267) of the environment and the population of the region.

#### Water and Gender: Changing Performances, but Reinforcing Tradition

With the introduction of ROs has come a change to domestic water management. For those rural families accessing water through community RO plants, men now largely go to collect drinking water instead of women. During interviews and focus groups, asking questions about this caused a significant amount of laughter, joking, and even embarrassment. Men were quick to assure me, “we are not carrying pots on our heads (laughter) we use plastic” (Focus Group Participant, Male, Laborer, 38 years old, May 2015). The men in this particular focus group all nodded their heads in agreement. When pressed further, one man, to the agreement of his peers, said: “the plastic is better, we can take it on our bikes or motorcycles” (Focus Group Participant, Male, Farm Laborer, 27 years old, May 2015). Although some people may argue that this change in water collection shows changes to domestic and reproductive labours, and maybe even a move towards gender equality, in reality, this is an indication of reinforced gender norms. Instead of challenging the distribution of domestic labours, what and who is “modern” and “traditional” is

reinforced within communities, due to the activities and policies reinforced as either modern or backward.

Within the grey literature pertaining to Kent Ros, there are consistent discussions on the way in which scientific and technological advances are essential for the social and economic development of Punjab. For example, the Punjab Department of Water Supply and Sanitation launched a “Technology Mission,” later renamed the “Rajiv Gandhi National Drinking Water Mission,” which aimed to provide technological interventions to support rural water supply (Department of Water Supply and Sanitation 2014b).<sup>3</sup> As such, the ROs are symbols of resourcefulness, skill, science, and modern engineering. The language used to describe the RO filtered water is one of conquest due to the ways in which the ROs overcome “environmental” limitations – meaning the poor water quality. This is only one of the ways in which the discourses surrounding the Kent ROs espouse a certain “truth” or “logic” that necessitates dominion over nature. Water is dangerous, may cause illness and loss of life at any moment and as such requires “progress” to foster human life. As such, the ROs and the modern technologies of water management, tell a story of domination and human ingenuity. Punjab’s water, having been dominated by human engineering must conform to progress, to the modernization project. Further, through technological advancements and commodification, the water is now worthy of payment. As a consequence, women’s labour is no longer appropriate because their gendered performance with respect to water is still considered “traditional.”

Another way in which modern and traditional subjectivities are reinforced between men and women are the water collection methods. For the collection of RO water from community plants, the men interviewed described using either a bicycle or motorcycle to collect water. One participant remarked “we are not walking – we take our bikes or [motorcycles]” (Focus Group Participant, Male, Retail, 33 years old, May 2015), another said, “my wife, my mother, my sister –

they used to walk, but now I take my bike and use the saddle-bags [to carry the water back home]" (Focus Group Participant, Male, Labourer, 42 years old, May 2015). Walking was the traditional transportation method of women and men continually assured me that their labours were nothing like those of their female counterparts. One participant during an individual interview told me the reason men do not walk to the plants is because, "the community RO plants [are] too far to walk to, that is why we use a bike... it gives the women a break, as it would be too far to walk to" (Interview, Male, Village Leader, 62 years old, May 2015). This sentiment was echoed by focus groups in the region, where one participant claimed, "the women are much happier now that they do not have to walk [as far as the RO]" (Focus Group Participant, Man, Labourer, 47 years old, May 2015). However, under further scrutiny and an actual walk to both the village pond and the community RO, it was clear that the two water sources were of equal distance in this particular village. Instead, it is the combination of the modernized water and the modernized task that meant modern transportation was now necessary for what had been transformed into a job for men – or a masculine labour worthy of modern technologies.

At an even more detailed level of transportation, the containers for carrying water have also been modernized. During my focus groups with men, all participants claimed to have been transporting water using large plastic containers. Not only was this superior to traditional (read: feminine) clay pots due to their ability to fit into bicycle saddlebags, but also because plastic is lighter weight and, therefore, easier to transport. These modern qualities afforded to plastic – lighter and easier carrying shape – were required and used by men instead of the traditional clay pots that women had used previously.

When I spoke to women-only focus groups about the changes to their gendered labour, there were quite a few discrepancies between what the men had told me and how the women felt about the loss of their water labours. "We have just as much work as before" (Focus Group,

Female, Homemaker, 44 years old, May 2015). Women claimed that there was not less work for them now within the home, as the men-only focus groups had claimed, but rather women's work had changed in some ways: "we may not be collecting water [in the same way] but we are still working, cleaning, cooking. The water is still ours" (Focus Group, Female, Homemaker, 45 years old, May 2015). There was also the sense that by losing their water collection labours women were more isolated because the expectation was that they would increase their home-based labours. One participant noted this loss saying, "I used to go [to the well] at the same time as my sister and auntie, now I do not see them as often" (Focus Group, Female, Homemaker, 32 years old, May 2015). Another participant responded saying, "my trip was not so much a burden because I did it with my daughter" (Focus Group, Female, Homemaker, 42 years old, May 2015). The introduction of Ros, and the subsequent shift to men as the primary collectors of drinking water, decreased the time women had for socialization, something afforded to women who previously had planned their water-collection times to congregate and visit with friends and neighbours. Rather than experiencing a decrease in labour then, women are dispossessed of their mobility, and by extension their opportunity to socialize. While their spaces of action have physically diminished, men's spaces are growing, and their hydrocracies have expanded more fully into the domestic sphere. One woman participating in a focus group exemplified this saying, "I do not leave the house very often anymore...at least not [as regularly]" (Homemaker, 29 years old, May 2014).

The commodification of water has changed not only the way in which water is consumed, but these processes have also changed the gendered performances of water collection within many rural Punjabi villages. That is, the actions and activities, which were part of defining and living-out gender, have shifted. No longer is the collecting and hauling of water a women-only activity. As men begin to participate more in water collection, they have modified traditional

labours to ensure that any form of feminine gender activity is removed (i.e., It is no longer pots on your head, rather it is plastic containers on your bike). This has not changed gender norms in the long run nor has it altered the relationship between men and women within households. With the increased modernization of water through ROs, women are still considered “traditional,” and men are still the primary providers of modernity. In this way, although certain gender-based hierarchies are reinforced, there is a shift in the activities attributed to a given gender identity. What it means to be a man now includes the collection of water in novel ways. Water also changes, as it is now a modern amenity worthy of male intervention and a sign of a modern economy.

### Conclusion

In this paper, I have discussed how gender is implicated within drinking water supplied through reverse osmosis filtration systems (Ros). Historically, women have been the water stewards of the Punjab region. However, with increasing technological developments and the commodification of water within villages through the implementation of community RO plants, men have been included in domestic water gathering. Although this could be seen as a benefit, since the labours are now being shared between women and men within a household, the gendered relations around water may in fact further exclude women from the public sphere and has already reinforced certain problematic gender associations. Women have been conceptualized as “traditional” and are excluded from the “new” and “modern” water practices. Men, however, are further reinforced as modern as they are the individuals able to manage the acquisition of water now that it is worth payment. Gender-based forms of domination, and in fact all forms of domination, are predicated on these binary modes of thought.

The changes presented are part of an overwhelming drive towards the commodification of water, which includes an increased need for technological intervention/and the financialization

of water within Punjab. Although this is not the first instance of water commodification in India nor the state of Punjab, it does represent a material moment or “event” around which to discuss the before and after impacts of ROs. With the introduction, or “event” of ROs, water has been “modernized,” and thus the collectors and users of water have been changed to represent the “modern” user necessary for this new technology. As such, women in this instance have been replaced by men, and thereby dispossessed of certain forms of decision-making powers and even leisure. This new relationship and gendered labour has not gone uncontested by women, who from personal interviews, indicated a desire to have both the new “modern” water while still maintaining the social capital they possess as water collectors and managers. Although the men, who now collect water, joke and laugh about their newfound responsibilities, it is unlikely they will give up this new addition to their hydrocracies. Accordingly, it is important to continue to examine the gendered relations around water – particularly as it relates to new technologies. In doing so, new spaces of contestation and community management may emerge as viable options to undo these new forms of control via water held by men or to generate new spaces of gender equality in order to reverse the loss of power and leisure for the women of Punjab.

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<sup>1</sup> Under neoliberal governing mentalities, substance farming, which does not increase economic growth is devalued regardless of how this activity feeds families, safeguarding against famine.

<sup>2</sup> This is incredibly common for labour deemed “feminine” (du Gay 1996; Halford and Leonard 2006; Joshi 2011; Ross 2008; Walkerdine and Jimenez 2012).

<sup>3</sup> Other examples can be found in the operating guides and major projects in the following departments within the Government of Punjab, Punjab Department of Agriculture 2014; Department of Animal Husbandry, Dairy Development and Fisheries 2016; Department of Forest & Wild Life Preservation 2014; Department of Science, Technology, Environment, and Non-conventional Energy; Department of Irrigation 2014; Department of Water Supply and Sanitation 2014d, and the Department of Public Works 2014.

### Paper 3 - Water Contamination as Slow Violence in Two Districts of Himachal Pradesh

*“There is a real violence. This is more than mere violence: this is criminal ... like uh... (crosses throat with finger) ... murder. This is the murder of the millions of people by one man. And we are never able to send them to jail” (sic. May 2015 - Interview with Rajendra Singh, the “Water Man of India” and winner of the Stockholm Water Prize, referring to water contamination and constructed water scarcity).*

In 2016, the Information and Public Relations office for the Government of Himachal Pradesh declared it a necessity to find ways to control jaundice and other waterborne illnesses. This response was due to a series of outbreaks of waterborne illnesses, which had been worsening since 2014 due to mismanagement, corruption, and out-of-date water purification products (Bisht 2016; Himachal Watcher 2016a; Himachal Watcher 2016c; ‘Jaundice Outbreak in Shimla’ 2016; Sharma 2016). The Chief Minister of Himachal Pradesh stated that “necessary steps had been taken by the State government to check and control the spread of Jaundice” (Government of Himachal Pradesh 2014: np, sic.). However, one local paper suggested that “contaminated water [is] a regular feature in [Himachal Pradesh]” (Makhail 2016: n.p) which can vary in severity but “takes on *epidemic proportions* on an average once in three years” (ibid., emphasis added). The majority of these outbreaks are concentrated in the districts of Shimla and Solan (see Figure 3.1), where there has been severe mismanagement of water and consequent negative human interventions in the hydro-social cycle (‘Borewells Adding to Water Woes’ 2016; Himachal Watcher 2016a; Singh et al. 2013). The 2016 outbreak in Shimla and Solan comes after three years of continued outbreaks of waterborne illnesses caused by effluent and other contaminants in government-supplied water and leading to a significant number of deaths and illness for the citizens of Himachal Pradesh (Anand 2016; Bisht 2016; ‘Borewells Adding to Water Woes’ 2016; Himachal Watcher 2016b; ‘Jaundice deaths spark protest in Shimla’ 2016; ‘Jaundice Outbreak in

Shimla' 2016; 'Jaundice Toll' 2016; 'More Than 500 Jaundice Cases in Shimla' 2016). In spite of these illnesses and deaths, there has been very little national or international attention given to the severity of the problem. Furthermore, there has been even less attention given to the ways in which the state willfully neglected the problem during the early stages of the mass poisonings. The crisis is therefore a human-made problem arising from the shifting hydro-social landscape and from an overarching neoliberal project in the state.<sup>1</sup> Throughout 2014 and up until August 2016, citizens in Shimla and Solan have been drinking, cooking, bathing, and farming with contaminated water due to the lack of support for alternatives or even for coping mechanisms to assist in the elimination of contaminants. As such, the people of Solan and Shimla are living in a contaminated landscape, an unnecessary violence that disproportionately impacts on the poor (Sultana 2012).



Figure 3.1: Map of Himachal Pradesh, Shimla and Solan can be found at the Southern tip of the map. (Himachal Pradesh State Legal Authority 2016)

The intent of this paper is not to discuss forms of violence fueled by economic gains arising from the use of resources, violence as part of securing resources, or the violence used to physically exclude people from resources, but rather it is to add further discussion to the growing literature on 'slow violence' in environmental management and degradation (Nixon 2011). In particular, I have focused my discussion on the social processes defining water "problems" in the region, and the ways in which solutions to these problems as well as the impacts on health are conceptualized and defined by a neoliberal governing mentality. These social processes allow, in part, for waterborne illnesses to be used politically against the most vulnerable citizens – further entrenching social inequalities.

Along with this form of water-based slow-violence, water contamination in Shimla and Solan also exemplifies the concept of "letting-die." "Letting die," although a non-action, can be the outcome of state-based slow violence and thus I have integrated this concept into the discussion on slow violence and the neoliberal environmental project ongoing in Shimla and Solan. In particular, I focus on the neoliberal responsabilizing techniques used in Shimla and Solan, which make water quality and quantity the responsibility of individuals – removing the state as the appropriate water management agent, despite the Indian Constitution which dictates otherwise (Article 21 and 47). As individuals become more responsible for their own water quality, the economic purification falls to households. Although boiling water and other purification techniques are understood and desired, they are often economically unavailable to citizens who live within contaminated landscapes, which will be elaborated upon in this paper.

In the following sections of this paper, I discuss my methods for data collection before introducing a participant of my research and then subsequently beginning my literature review on slow violence. Following the literature review, I discuss the ways in which slow violence is

indicative of the water quality issues in Shimla and Solan, before further connecting the empirical data to the violence of water contamination and the concept of “letting die.”

### Methods

In order to examine the various ways in which slow violence is enacted and experienced in Shimla and Solan, I conducted 9 focus groups of 7-9 individuals each, and 23 individual interviews in the districts of Shimla and Solan (Figure 3.1), for a total of 94 participants. Participants for the focus groups were chosen at random, and further participants were found through snowball sampling. Although most people were willing to participate in my study once queried, government officials and the business owners of tourist industries were, in general, less likely to agree to be interviewed regarding water quality issues.<sup>2</sup> With individuals making up one of the above professions, their participation tended to be shorter in length than others, which in general fell between 30 and 60 minutes for individual interviews and 60 to 90 minutes for focus groups.

Each interview and focus group was taped and subsequently transcribed in order to code for themes and discourses. These themes and discourses were then triangulated through analysis of primary, secondary, and tertiary sources (including scholarly publications, news articles, government literature, and publications by NGOs). My process was generally possible and effective, for my analysis, although some data was, apparently, unexplored and thus triangulation was not possible for all common themes and discourses. This was principally evident in the information retrieved concerning citizens living in rented accommodations, as some of these narratives had apparently never been documented or recorded – or at least not documented with differentiation for dwelling ownerships (Holterman 2014).<sup>3</sup> The differences in water quality based on dwelling type is an area of particular concern for my research considering the socio-economic

positions of those individuals who cannot afford to own property and thus rent a dwelling that may or may not provide them with appropriate access to clean water.

I have focused a significant portion of this paper on the narrative of Avni (pseudonym), a key participant. Avni was, and still is, an interested and engaged contributor to my research. She also personifies the lived experience of disproportionate impacts related to water contamination and environmental degradation felt by many individuals in socially marginalized positions. This does not mean that Avni represents all life or lived experiences in the region – she is not Shimla or Solan “writ small” (Auyer 2015). However, Avni’s story illustrates not only the larger forces behind water quality issues but also the slow violence ongoing in the region. Nixon (2011) discusses slow violence as “an inhuman process starring nobody...because of the diffuse and long-term causes of environmental harm which can be ascribed to no one in particular” (Cecire 2015: 166). By sharing a narrative focused on Avni, the slow violence in Shimla and Solan is no longer an inhuman process “starring nobody,” rather it is an illuminated situation, which is representative of some of the lived experiences in the region. Further, individual narratives allow subaltern voices to be highlighted with as little filtering as possible (Bruner 1986; Etherington 2000; Sarantakos 2005).

#### A Process Staring Someone: Introducing Avni

On my first trip to the districts of Shimla and Solan to conduct research, I met Avni, a student at a local government college studying in the social sciences department. Avni quickly agreed to be an interview and focus group participant, and even assisted in my snowball sampling by introducing me to further participants and gatekeepers. During my time with her, Avni shared many details of her life. Avni has faced many obstacles since the death of her father. Without a patriarch, or support from her paternal uncles, her mother had a difficult time supporting the two of them. After losing the family home, Avni’s mother took a job at a local elementary school

dormitory as a live-in caregiver. The job gave Avni's mother a place to live and a small income, while Avni was obliged to live on her own in a rented room. Avni was left in a precarious position due to this living arrangement. Although she is smart, kind, talented, and jaw-droppingly beautiful, Avni has had a hard time ensuring her water quality. Like most people who rent a room or apartment, Avni receives water from her landlord through a communal tap. She has unmitigated access to the tap for 15 minutes per day – as do most renters in similar housing<sup>4</sup> (i.e., in rented rooms, rather than full dwellings). The water is government-supplied, rather than from a private well, but the landlord does not provide a secondary filtration method – a necessity in her region. “If we had a separate tank, or an AquaGuard [water filtration system], it would be better... even if I had the money [which I don't] since I am not the [home] owner I would not be able to install any filters” (Avni, Student, 22 years old, June 2015). Avni is not alone in this issue. Renters have very few options for recourse if the water access provided by landlords is not in keeping with state regulations, and as such, nearly all research participants (86 out of 94) had either contracted a water-borne illness or has a close relative fall ill from poor water quality. Thus, the health-related impacts of contamination, indicative of slow violence, are part of the social tensions and inequalities inherent in the hydropolitics in the districts of Shimla and Solan.

Bioaccumulation, Environmental Degradation, and Embodied Environmental Impacts: A Brief Review of Slow-Violence

There is an almost imperceptible violence arising from the contamination of landscapes, and affecting citizens who call the region home (Sultana 2012). It is a slow and silent violence that often escapes media, state, or even citizen focus (Nixon 2011). The flow and cycle of water naturally and via human manipulation aids in the invisibility of the violence of contamination through its constant movement and the complex socio-environmental interactions it surrounds. In India, in particular, water-based violence has become so enmeshed in the social and political

fabric of life that it is perhaps even more insidious than more exceptional forms of monumental violence due to its normalization (Springer 2012b). Violence surrounding the use of water, or other essential resources, is not new. In fact, resource-based conflicts are some of the most well-researched areas of violence studies from a critical geography perspective (i.e., Le Billon 2012; Gregory 1995; and Megoran 2011; Watts 2000). This is not surprising, as control of individuals, and entire economies, has often come from the control of geography and the subsequent control over resources. Since power and violence are often so connected to resources and landscapes, it must be understood that multiple forms of violence exist in relation to resources, slow violence being one such form (Le Billon 2012).

In order to begin the discussion on slow violence arising from water quality and contamination in Shimla and Solan, it is important to first define slow violence. Slow violence was originally termed by Nixon (2011), who attempted to provide a different analytic terminology to describe the human and more-than-human suffering caused by changes to the physical environment brought about by anthropogenic forces, including global climate change. Nixon (2011) argues that certain forms of suffering are visible only to the marginalized communities impacted when a crisis unfolds slowly, such as with deforestation and ocean acidification. Our current ways of thinking cannot easily incorporate low-drama catastrophic events, making them harder to take seriously – we are more accustomed to thinking of violence as immediate and explosive. However, some of the most devastating disasters take decades to come to a head. Because these forms of violence happen so gradually over time, and out of the public eye (since they do not result from sensational events like a tsunami for instance), they become invisible and thus remain under or unaddressed by regional governments. This has strong linkages to biopolitics (Foucault 1978/1990) and necropolitics (Mbembe 2003). Both of these concepts, along with slow violence, are theories under which political power comes to control the lives of

individuals – attempting to either make individuals live or to expose individuals to death.<sup>5</sup> In the case of Shimla and Solan, the government exposes individuals to death by not changing inappropriate water management techniques. This concept is in keeping with the thesis of biopolitics, which is essentially the political control over “bare life” (Agamben 2005). Bare life, or *Zoe*, refers to a basic animalistic state of being, which is devoid of *Bios*, which refers to social and political life (ibid.). Bare life, then, is bare existence, and thus biopolitics refers to the quality of life held by the state (or governing authority) over individuals - the political control over life and death. Two of the main concerns of biopolitics are health and illness, which can be problematized and thus secured and “fixed” through solutions based on the governing mentalities (Huxley 2008: 1639).

Although coined by Nixon, the term slow violence is inspired by and derived from many works within the literature on violence. Scholars such as Michael Watts (1983), Peluso and Watts (2001), Simon Springer (2011c), and Rachel Carson (1962), among others, have attempted to extend the definition of violence beyond monumental and physical moments of violence to include those actions and inactions which are indirect and slowly build towards human and non-human suffering. In the following paragraphs, I review the most salient and impactful works on slow violence as they connect and overlap with the themes and situations uncovered in Shimla and Solan.

To begin, both Carson (1962) and Nixon (2011) attempt to illuminate an undetected violence, which with the passage of time, has obscured its consequences from the original causes of the violence, decoupling cause and effect. Carson discusses this in relation to the buildup of pesticides in humans and non-humans, highlighting the slow bioaccumulation that results in early death and suffering (1962). She begins her argument by explaining the ways in which pesticide spraying has negatively impacted wildlife, and how these impacts may similarly affect human

populations (ibid.). Although DDT, the pesticide Carson targeted in her critique, has largely been banned around the world – including India – (UNEP 1991), there is still relevance in Carson's description of the delayed violence indicative of environmental degradation. The unintentional poisoning of farm workers due to pesticide ingestion and even the links between pesticides and chemical weapons are two large-scale examples of the slow violence of certain chemicals that are relevant beyond DDT, as well as illnesses due to environmental degradation (Jarman and Ballschmiter 2012). Carson's description of the impacts of DDT illustrates the concept of slow violence, which as Nixon describes, is "a contest not only over space, or bodies, or resources, but also over time" (2011: 8). Thus, just as Carson (1962) argues for the recognition of bioaccumulation as violence, Nixon demands readers "adjust our rapidly eroding attention spans to the slow erosions of environmental justice" (2011: 8), in order to take notice of those forms of change which happen slowly over time. This consideration provides academics and activists with the conceptual language to illuminate the ways in which ecosystem degradation is an invisible and commonplace form of violence, to which there is frequent indifference shown by government and citizens alike.

Murray Bookchin's book (1962), *Our Synthetic Environment*, also implicates the state in issues of environmental degradation and, similarly, the negative impacts of pesticides on the bodies of humans and non-humans. Going beyond Carson's (1962) analysis, Bookchin (1962) focuses his discussion on the environmental impacts and health-related consequences of urban environments. He sees the current level of urbanization and the rural to urban move as part of "the decline in the quality of urban life, on the one hand, and the growing imbalance in agriculture, on the other" and as such, contemporary living is witnessing a convergence of accumulated negative impacts (1962: 96). Bookchin (1962) scales out from Carson's focus on the embodied impacts on human and non-humans, suggesting that cities – in their current form – will never be

healthy for any organism or organic system. He connects this unhealthy urban environment to problems inherent in a capitalist economic system. In particular, Bookchin (1962) connects the increase of pesticide usage to the quest for increased productivity, and by extension profit but warns against this saying that,

*“nearly all the abuses man inflicts on soil, plants, and animals are returned to him in kind, perhaps indirectly, but all the more malignantly because the damage is often far advanced before it can be seen and corrected” (Bookchin 1962: 12).*

Environmental justice then is directly tied to social justice, and by critiquing the use of pesticides in the agricultural sector, Bookchin (1962) exposes government complicity in the poisoning of citizens and the environment at large. As such, Bookchin’s (1962) call to action is much farther reaching and more radical than that of Carson (1962), as he calls for a complete change in the capitalist status quo and government institutions because of the ways in which these systems are tied to corporate – rather than health-based interests. Environmental degradation is a consequence of capitalist (and neoliberal) governing ideologies, and it is this system that needs changing rather than the construction of further environmental protections.

Another example of environment and resource-based violence can be found in the book *Silent Violence* (Watts 1983), which thoughtfully examines the social and political factors contributing to famine in Nigeria. Naturally occurring droughts in Nigeria are often blamed for lower food production leading to famine. However, Watts (1983) demonstrates that it is more complicated than this explanation. He gives a historical account of the ways in which poor agricultural labourers in Nigeria experience famine even when drought has not impacted the harvest, arguing that it is not always droughts that cause famines. Watts (1983) points to the 1970-74 famine that followed the Sahelian drought of the 1960s <sup>6</sup> and illuminates the socio-political factors that contributed to lower food yields. The drought during the 1960s was not the first time the poor had been vulnerable to crop failures, but rather what was novel was the

connection to capitalist expansion within the country and the socio-political relations that allow for food shortages, which disproportionately impacted and continue to impact the poorest citizens. The policies in place to encourage the development of the oil and gas industries in Nigeria were a key component of capitalist and liberal expansion. The construction of industrial plants, the extraction of oil, and refinement processes are often the cause of water, soil, and air pollution and as a consequence, there is an eventual agricultural decline stemming from the many stages of oil and gas production. Accordingly, the development of oil industries is linked, over time, to an increase in rural poverty and food insecurity. Watts (1983) also demonstrates the significance of the Sahelian drought of the 1960s in particular by connecting the outcomes to neocolonial development programs aimed at increasing agricultural production. These programs resulted in resources being assigned to a minority of investors and farmers, thus furthering the unequal distribution of impacts based on certain class and caste relations. Watts' (1986) arguments are similar to Bookchin's in his implication of capitalist economic programs that bring about human suffering (1962). His argument also connects with Nixon's (2011) work in that both authors work to illuminate the politics of dominant environmental narratives in order to point out inaccuracies and thus add weight to those stories, images, and symbols that illuminate "the pervasive but elusive violence of delayed effects" (Nixon 2011:3).

A further case study that demonstrates slow violence comes from rural China where there have been increasing rates of cancer creating what are colloquially referred to as "cancer villages" (Liu 2010). Most academics and medical authorities recognize that the cancer is caused by contamination of water sources by industrial pollution (see for example, Khan et al. 2014; Liu 2010; Lora-Wainwright 2016; Shagun 2016; Tilt 2013; Tremblay 2007; Van Rooij 2012; Zhao and Yin 2011). These industrial pollutants have increased simultaneously with the number of economic developments that allow China to remain competitive in the neoliberal world economy.

As such, although China is still called a Communist country, neoliberalism is an impacting force on its economy and environments, similar to the situation in Nigeria (Nonini 2008; Watts 1983; Wu 2010). The economic shifts in Nigeria and China based on a capitalist and neoliberal governing mentality may increase the economic “bottom line,” but the resulting pollution disproportionately impacts poor citizens, both physically (via illnesses) and economically (i.e., via reduced economic capacity, resulting from soil contamination impacting agricultural yields). It is a common feature of slow violence, whereby people in more precarious socio-economic positions are impacted more strongly in large part based on their inability to adapt as quickly as those with more access to credit and capital (Bookchin 1962; Nixon 2011; Watts 1983). What this means for China is that poor populations are more vulnerable to polluted drinking water because they are unlikely to have access to filtration systems or government-supplied and treated water (Griffiths 2007). Instead, most low-income families in “cancer villages” obtain water from shallow wells, or rivers and lakes – all of which are prone to contamination resulting from toxic runoff (Gleick 2009; Lora-Wainwright 2010; Yardley 2004). However often these are the only sources available to low-income peoples, who may not have the economic capacity to filter their water.

*Flammable: Environmental Suffering in an Argentine Shantytown*, a book by Auyero and Swistun (2009), offers another example of violence via water contamination. In the book, the authors illuminate the impacts of toxic pollution in a community adjacent to petrochemical refinement and storage facilities. Chemicals had leaked into the soil, air, and groundwater causing illnesses and other forms of human suffering, similar to the Chinese and Nigerian cases above (Auyero and Swistun 2009). This suffering is differentiated largely along socio-economic lines, because those with financial capital are able to move out of the region, or have access to coping strategies that require investment (like buying bottled water, or installing home-based filtration systems). Auyero and Swistun (2009) trace these effects back to neoliberal reforms made in the

1990s that encouraged foreign investment and relaxed environmental codes in order to increase business development in the country, which is another example of what Bookchin (1962) considers a consequence of a modern capitalist system. In order to keep these businesses in the country and encourage further investment, the government ignores the negative environmental and human impacts, limiting responses to help citizens.

In South Africa, there is a similar case of companies contaminating a region with toxic waste. South Durban, in particular, is facing an increase in the number of citizens, and animals, being diagnosed with asthma, cancers, and kidney diseases. These diseases are the result of toxic chemicals being emitted into the air, water, and soil, by a petrochemical company operating in the region (Butler and Hallows 2002). Citizens with financial means have left certain neighbourhoods in South Durban, which are now described as “wastelands” (Butler and Hallows 2002: 17). The human and environmental impacts on these neighbourhoods, and South Durban more generally, are consistent with the attributes of slow violence, because the impacts have been gradual and went unseen for extended periods of time. Similar to the previously mentioned Argentinian case, “there was no moment of impact when physical surroundings changed suddenly” (Levin 1982: 193). Instead, for years, the pollutants moved slowly through the air, water, and soil until they were internalized as illnesses.

As can be seen from the above examples (Auyero and Swistun 2009; Butler and Hallows 2002; Bookchin 1962; Carson 1962; Liu 2010; Nixon 2011; Watts 1983), although the cases exemplifying slow violence are varied, there remain some common themes. The examination of slow violence usually includes an element of environmental injustice, based on the inequitable distribution of negative consequences, while also including a prolonged temporal element, and deregulation based on capitalist and neoliberal expansion (O’Lear 2015; Reed and George 2011; Schlosberg and Collins 2014). All of these factors coalesce causing suffering and early death for

certain groups of citizens. This makes slow violence a socio-political concept with which scholars and activists can engage, allowing for the illumination of the often-invisible costs associated with extractivism.<sup>7</sup> In the Shimla and Solan districts, manifestations of slow violence are exposed through the growing health impacts of water contamination. Throughout the remainder of this paper, I will illustrate how water quality issues can constitute acts of violence in Shimla and Solan, particularly when the state chooses to do little (or nothing) to limit human and non-human suffering.

#### Background: Water Contamination in Shimla and Solan

Although there has been an increase in access to drinking water across India in the last decade, there continue to be issues surrounding water quality, water contamination, and the consequent negative impacts to human health. Currently, the reality of the water situation in India is that approximately 21% of all communicable diseases in India are related to poor water quality (WHO 2002). Although there are a variety of contaminants in the water across India, in Shimla and Solan, water is mostly polluted by persistent organic pollutants (POPs), such as DDT (Khurana and Sen 2008). POPs are chemicals which can be found in the cells of plants and animals, including humans, for long periods of time due to their slow rate of degradation. This means that POPs slowly accumulate within people and animals without the ability to be eliminated from the body (ibid.). Even more common though is water contamination due to untreated sewage or effluent (Central Ground Water Board 2008; Sharma and Kanwar 2009; Shiao et al. 2015). This may also be magnified due to adverse impacts of climate change, which is known to change the seasonality of water discharge, increasing floods and/or changing drought patterns (Shiao et al. 2015).<sup>8</sup> These changes to water patterns, particularly the increase in flooding, can mean that in a short period of time the contamination of water can spread to large numbers of citizens. In Shimla

and Solan, citizens are vulnerable to all three of the above factors – POPs, effluent contamination, and flooding (Central Ground Water Board 2008).

The contamination of water in the Shimla and Solan districts has caused an increase in hepatitis,<sup>9</sup> as well as kidney diseases, jaundice, and other waterborne illnesses (Sharma 2016a). Authorities, although having knowledge of the contamination, did not act until after human deaths were reported. “We had had reports, you know....um... we knew they were getting sick, but there was no intervention – not even after the first death. It took a while” (Interview, Male, State Water Board employee, 38 years old, August 2015). By the time action was taken, 25% of the capital regional district of Shimla had been affected (Bisht 2016), and as such, the actions taken by the state came late for a large portion of the population.<sup>10</sup> Official government reports suggest that 2,431 citizens developed waterborne illnesses, resulting in the deaths of 22 people due to contaminated water (National Health Mission 2016).<sup>11</sup> Unofficial estimates suggest that more than 10,000 citizens have developed waterborne illnesses, with 60 to 70 new cases arriving in public hospitals daily (Bisht 2016).

Although there is often what could be seen as depraved indifference towards the impacts of slow violence on behalf of governments, what is particularly noteworthy in this case is the way in which the government in the region has attempted to blame the situation on individual citizens suggesting that “water was contaminated due to draining the sewerage in the open as many houses neither have proper septic tanks nor are linked with the sewerage network” (Interview with Chief minister Virbhadr Singh, as cited in Bisht 2016:np). Similarly, the World Health Organization advocates for *citizens* to make behavioural changes, and has sponsored programs at raising awareness and encouraging the safe consumption of water in communities with water contamination, such as Shimla and Solan (WHO 2002). The encouragement of behaviour modification is part of an overarching neoliberal project which attempts to download

accountability to the scale of the individual, responsabilizing people for their own health – irrespective of the Indian Constitution’s guarantee of adequate safe water (Article 21 and 47).

The shift towards a neoliberal governing model attempts to restructure population controls in order to foster new behaviours and modes of conduct (Ilcan and Philips 2010). Although many water advocates suggest that governance is the issue in Shimla and Solan, the neoliberal causes of these governance failures have been neglected. An example of the governance issues in Shimla and Solan is that regardless of the number of institutions that prescribe water quality standards, there is very little coordination among the agencies (Naz and Subramanian 2010). Further, these water standards are rarely operationalized through monitoring or enforcement, nor are the downstream impacts taken into account where there are changes and developments to land and forests (ibid.). While true, this analysis misses the way these failures in governance are based on neoliberal rationalities and how this contributes to a truth regime favouring the need for a responsabilized population. Further to this point, in Shimla and Solan, the reality is that the treatment plants were the cause of the contamination. However, the ways in which the treatment plants became the site of the recent contamination is based on neoliberal rationalities, especially those of responsabilization and the downgrading of decision-making powers. The infrastructure and water-treatment chemicals were out of date and the manager of the plant “had no technical expertise or skilled manpower... This is a [case]... of sheer carelessness” and a case of downloading of responsibilities by the government to inappropriate agents (interview with Police Chief Negi, as cited in Sharma 2016a).<sup>12</sup>

Governing officials issued a statement claiming that water from the contaminated source was no longer being distributed in Shimla and Solan (Sharma 2016a), however, when interviewing medical students at the Indira Gandhi Medical College and Hospital in Shimla, I was told, that “at any time in the emergency room, there are at least half a dozen beds being [occupied by] people

with bacterial infections, parasites, and kidney ailments due to unclean water” (Interview, Male, 24 years old, August 2016).<sup>13</sup> High rates of water-borne illness remain because, as suggested by Bookchin (1962), the problem lies beyond the out-dated purification process, and instead reflects a system of governance which “[deploys] the values and norms of the market” (Ilcan and Phillips 2010: 847), allowing for continued embodied impacts of environmental degradation.

#### Distrust, Financial Necessity and the Increase of Illness

There were a number of ways in which people described their relationship with water in Shimla and Solan, and how the problem of water quality was conceptualized. The major themes that came out of the focus groups and interviews regarding water contamination in the region were a general distrust of government-supplied water, the necessity of capital, and the more current nature of these water-borne illnesses. This is not to say that water-borne illnesses, including jaundice, are novel, but rather the rates at which people fell ill were surprising and new to a significant portion of my participants.

Out of the 94 participants, 37 (or 39%) discussed, without prompting, a general distrust of the state government with regards to water supply. This was based on a few factors including, how government employees receive better water than other citizens, that the government is not properly treating state-supplied water, and how traditional, unregulated sources of water – such as older wells, and *baudis*<sup>14</sup> –are of higher quality. The following interview and focus group excerpts are representative of these sentiments. These responses parallel the discussion of slow violence via environmental degradation proposed by Bookchin (1962) who implicates the government and the governing system in the processes of environmental degradation and the subsequent impacts on human and non-human health. There is indifference on the part of the Himachalese government, which, regardless of the fact that incidents of illness are increasing, has blamed the general population and limited the amount of formal intervention. Although the

commercial interests highlighted by Bookchin (1962) have yet to be illuminated in Himachal Pradesh, I would not be surprised if soon the commercial interests behind government inaction came to light.

*“I often use a [traditional] boudis for water. It is 1km from home, but it is covered, and the water is better quality than what comes out of the taps from the government” (Focus Group Participant, Woman, Homemaker, 34 years old, Shimla District, August 2015)*

*“You know what they do? They recycle used water without treating it back into homes”(referring to government-supplied water, Woman, 44, Solan District)*

*“Because I’m a government employee, filtered water is provided at a discount...The difference is 300 rs versus 1000 rs per month” (Focus Group Participant, Woman, Homemaker, 37 years old, Shimla District, August 2015)*

*“The people [working for the government, and living in housing provided with their jobs], they have no issues... but the rest of us don’t have the same consideration” Focus Group Participant, (Man, Retail, 27 years old, Shimla District, July 2015)*

*“The government doesn’t check [the water coming into the house], so we have an AquaGuard or use the [traditional] boudis” (Focus Group Participant, Man, Service Industry, 53 years old, Solan District, July 2015)*

The second theme uncovered during this research project was the acknowledgment of the necessity of financial capital to ensure appropriate water quality for participants and their families. This theme was found in remarks by over half of the participants, as a total of 63 (67%) participants indicated this concern over quality and the necessity of financial capital. However, only 22 participants (23%) indicated they had the financial capital necessary to buy water or a filtration device to ensure their health. The following excerpts from participants are indicative of this overall theme. This situation is very similar to the accounts presented by Nixon (2011) and Auyero and Swistun (2009), which both highlight the necessity of financial capital and specialized infrastructure as a means of coping with environmental degradation and the human suffering it causes. Further, this case demonstrates the downloading of responsibilities onto the citizens of Shimla and Solan who must now ensure their own health if using government-supplied water.

*"I buy [bottled] water every other day... I know the tap in my home isn't pure" (Focus Group Participant, Man, Sales Manager, 31 years old, Solan District, August 2015).*

*"I wish I could store up rainwater – then I would know it was pure, but it's too expensive – 2500rs [for the tank], and even if I had the money, my landlord wouldn't allow it on his roof" (Focus Group Participant, Woman, Student, 23 years old, Shimla District, July 2015).*

*"I bought an AquaGuard because the quality of the water where we live is not good. It was 30000rs, but the health of my family is worth it" (Focus Group Participant, Man, IT, 35 years old, Solan District, July 2015).*

*"I use bottled water – we buy it from the store every other day. I don't trust the water provided by the government" (Focus Group Participant, Woman, Student, 24 years old, Shimla District, July 2015).*

*"You need to own a filter, or pay for tanks for adequate water – that's the only way to prevent illness" (Focus Group Participant, Woman, Student, 21 years old, Shimla District August 2015).*

The third major theme was an understanding of how the contamination was a more recent phenomenon. At first glance, this may not seem to indicate slow violence, however slow violence involves the accumulation of negative effects, which are not felt until there is a tipping point. In Shimla and Solan, this tipping point has been met, particularly with the POPs, which is why in the last three years water-borne illnesses have increased so dramatically. The following statements given during interviews and focus groups demonstrate the temporal element of the health concerns in Shimla and Solan. This was discussed by 31 people in either interviews or focus groups (33%).

*"50 years ago there were no issues, we did not need chlorination, and still the water was fine" (Man, Banking, 63 years old, Shimla District, August 2015).*

*"It's worse when tourists are here.. there is much less quality, but that has only happened in the last 30 years" (Man, Stone Owner, 57 years old, Shimla District, August 2015).*

*"Rainy season is worst for water quality – that's when I worry most about myself and my children" (Woman, Homemaker, 32 years old, Solan District, August 2015).*

*"the biggest issues we have here now [at the hospital] is jaundice, kidney disease, liver disease, cholera, dehydration, and diarrhea. But this is new – I don't remember this being the case 15 years ago" (Woman, Nurse, 36 years old, Shimla District, August 2015).*

*“liver issues, and dehydration – these are definitely our biggest issues coming into the hospital, but my teacher says this is worse than usual in the last 5 years” (Man, Medical Student, 23 years old, Shimla District, August 2015).*

Not all participants indicated a concern with water quality in Shimla or Solan. Some individuals indicated that government-supplied water was of high quality and that there was no need to collect or purchase water from seemingly more “pure” sources. Interestingly, all participants who indicated this difference in the understanding of quality were men between the ages of 25 and 45, many of whom were business owners. Some of their comments are included below. When I asked a very passionate participant why there was this discrepancy, that some people did not indicate a water quality problem, he said “there are problems for everyone, anyone not saying there are no issues is lying... [but] I don’t know why” (Male, Restaurant Owner, 52 years old, Solan District, July 2015).

*“I use tanker water, but only when water from the government doesn’t come for a day, not because of an issue with quality” (Man, Hotel Manager, 42 years old, Shimla District, July 2015).*

*“I don’t use a filter, but I do store my water from the government... I haven’t had an issue with illness” (Man, Service Industry, 37 years old, Solan District, July 2015).*

#### The Violence of Contamination: A Critique of the Neoliberal Program in Shimla and Solan

While I was in Shimla, Avni was not someone who had contracted jaundice or any waterborne illness. However, upon returning to Canada I have remained in contact with her, and she recently (June 2016) told me she had contracted jaundice. She was frustrated because she had been unable to sit a necessary examination for entrance to a Masters program saying “[I wasn’t] able to attend... Got jaundice” (June 6, 2016). This was the “last straw” for Avni, who took her illness as a sign that she needed to move. “I have got a room without any water issues hahaha! My [new] landlord is more [responsible], he maintains the [water] tanks and allows me more than 15minutes per day” (June 6, 2016). However, Avni’s original situation is more ordinary than exceptional. As such, the attempts to ensure that citizens are responsible for their own water

quality have been relatively unsuccessful – neoliberal downloading can only assure safe water for those who can afford the necessary investments.

Awareness campaigns aimed at informing people that government-supplied water is/was contaminated have suggested cleaning home-based water tanks, boiling water, and buying an ultraviolet filtration system until “safe drinking water is made available” (Office of the Deputy Director Higher Education 2016: np). These suggestions made by the State government, although valid and appropriate, cannot help the majority of the population because awareness was not and is not the issue. Avni, and the other individuals I spoke with, know the dangers of untreated water. However, more often than not they did not (and probably still do not) have the economic means with which to treat their water. Out of the 94 participants for my research, 37 (39.4%) claimed the fuel costs for boiling their water were prohibitory, and 44 (46.8%) claimed purchasing a filtration system was too expensive. These responses were provided without prompting and given in order to explain their illnesses even though they understood the dangers of untreated water. “If I could buy an AquaGuard I would... I know it would be better for my family” (Male, Retail, 37 years old, Solan District, July 2015). This is clearly not a case of lack of education, which is so often the focus of misguided development initiatives.<sup>15</sup> Instead, to avoid illness, citizens need a great deal of capital in order to buy and maintain appropriate filtration systems for their water. One focus group participant holding a higher socio-economic position exemplified this because she told me that, “after we [had] learned of the water [contamination], I bought a new tank to replace the old one, which was probably tainted. I also now use boiled and filtered water for drinking” (Interview, Female, Teacher, 37 years old, July 2015). This investment was successful, and neither the individual nor the other people living in her home had been affected by the water contamination. This would not, however, be an option for many households in Shimla and Solan.<sup>16</sup> Another individual of similar socio-economic standing said, “I make sure to have the tank

bleached-out<sup>17</sup> every fortnight... it kills anything that shouldn't be in the water" (Interview, Man, Pharmacist, 43 years old, July 2015).

These responses resonate with the accounts of Nixon (2011) and Watts (1983), both of whom discuss the ways in which contamination and drought, although widespread throughout their respective research populations, impacts those individuals with less social and financial capital. Water flows: it is not static, and as such, contamination cannot be contained within one single area. This means that the entire population relying on the contaminated water in Shimla and Solan is at risk - both rich and poor. What makes the difference however, is the way in which people are able to manage and cope within a contaminated landscape. Those with the financial capital, as the two participants quoted previously, have more options than people like Avni to keep themselves and their families free of illness. This presents an emerging and important theme within the case studies of slow violence – the neoliberal project as a cause for degradation and eventual illness.

Neoliberal ideologies have successfully infiltrated economic and social programs globally, including India (Harvey 2003; Harvey 2005; Hill 2015; Hill 2016; Oza 2006; Palan 2000; Springer 2010a). Harvey (2005) describes this permeation as an overarching project, which in the case of environmental degradation in Shimla and Solan, allows for global economic processes (such as policy changes, and new governance models) to have an impact at lower scales of governance. The decisions to deregulate get lived-out at the state, municipal, and district levels and often result in the kinds of environmental contamination found in Shimla and Solan. Although some academics focus on the bottom-up propulsion of neoliberalism in the Global North (see for example Barnett 2005) the neoliberal project in the Global South has been overwhelmingly top-down and coercive (Springer 2015).<sup>18</sup> In this way, the illusion of necessity inherent in neoliberal prescriptions (Castree 2006) has materialized in violent ways in India, being the cause of the

overwhelming slow violence in Himachal Pradesh. Slow violence is thus the outcome of economic violence – “a core feature of capitalism” and neoliberalism (Duménil and Lévy 2004: 24; Springer 2015). In Shimla and Solan, the neoliberal project continues to exacerbate social and economic inequalities all the while reshaping politics and human rights (Springer 2009).

This is where the notion of violence, and in particular slow violence, becomes an even more important component of a neoliberal critique. Although it is frequently disguised as natural, inevitable, and rational, it can be considered an assault on the body. From Foucault (1975/1996), we can understand that the governmentality of violence is enacted with rationality. What Foucault is putting forward is that certain forms of violence are normalized and therefore go uncontested and can even be fostered by a population once the mentality of this “rationality” is embedded. For this reason, the concept of slow violence should be used by academics to critique neoliberalism, while also being used to highlight environmental injustice.

#### Conclusion: More than Letting Die in Shimla and Solan

There is a “need to understand violence as encompassing all forms of 'controlling processes' that assault basic human freedoms and individual or collective survival" (Scheper-Hughes and Bourgois 2004: 21-22). In attempting to understand violence in all of its forms, it is clear that violence is more than the exceptional moments, either physical or structural: instead, violence is a process and as such takes on a variety of qualities that often go unnoticed (Springer 2011c). Slow violence exists without monumental, eye-catching images, but whereas the absence of war is not peace (Megoran 2011), so too the absence of spectacle is not indicative of an absence of violence. By looking at certain resource management practices through the lens of slow violence, we can avoid the silence and misrecognition that further embeds it and allows slow violence to remain “an inhuman process starring nobody” (Cecire 2015: 166). Further, the

concept of slow violence can also be a method of critique, illuminating the economic violence of neoliberalism that can result in embodied environmental injustice.

Although there is no one individual, nor even a group of individuals, making people ill, there is an ongoing violence based on destructive environmental practices in Solan and Shimla, which are overwhelmingly encouraged via neoliberal economics. This is a subtle form of violence that has occurred “gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all” (Nixon 2011: 2). It is for this reason that the waterborne illnesses that have become rampant continue: they are not viewed as violence, nor is the economic violence imposed via deregulation and the downloading of responsibilities. In large part, this is because the bodies most strongly impacted are those of individuals without economic or social power. As such, water is a spatial fix of power to a specific location that embeds violence within the everyday landscape (Tyner 2012).

This case serves to exemplify slow violence and the economic violence of neoliberalism, and in particular, how embodied environmental contamination is an active, intentional, violence. Often slow violence is considered a violent form of inaction, similar to the concept of “letting die,” which refers to government action that neglects to “make live” (Foucault 1978/1990; Foucault 2007; Tyner 2012). Considering the extent to which neoliberal reforms create the environmental crises inherent in slow violence, water contamination in Shimla and Solan cannot be considered passive. In Himachal Pradesh, the government knows of the environmental contamination and yet has done little to remediate conditions. If this were the extent of the situation, perhaps “letting die” would be an appropriate label for the ongoing violence in Shimla and Solan. However, at scales far above the governing bodies in Himachal Pradesh, the active infiltration of neoliberal rationale throughout social and economic programs ensures economic violence and the subsequent slow violence in the everyday lives of citizens in Shimla and Solan. By encouraging

environmental deregulation through neoliberal policies and reforms, which also encourages the downloading of the responsibility for clean water onto individual households, there is an active neoliberal program being played out in Himachal Pradesh. As such, critics of neoliberalism and scholars focused on slow violence need to continue to attend to the conditions under which both environmental degradation and economic violence impact populations in congruent and intentional ways. In Shimla and Solan, the economic and slow violences are inseparable. This is because the reasons that governing bodies are able to neglect the impacts of degradation are based not only on the snowballing impacts of contamination but also on the implementation of the neoliberal project which encourages environmental neglect and deregulation. Neoliberalism thus demands capital investment and responsabilizing behaviours on the part of individuals due to the wastewater and POPs contaminating drinking water sources caused by deregulation— a neoliberal solution to a problem created with a neoliberal mentality. For those individuals who cannot afford the capital investments, there are very few options, which is why many people in Shimla and Solan have died or fallen ill. Therefore, although the environmental degradation in these two districts might be seen as a non-active violence, the active neoliberal project ongoing in India suggests otherwise. By ignoring the water contamination which causes suffering and death a “unique [form] of social existence ... is [ongoing] in which vast populations are subjected to conditions of life conferring upon them the status of living dead” (Mbembe 2003:40), or more aptly in Himachal Pradesh – the living ill, and perhaps the soon to be dead.

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<sup>1</sup> Discussing neoliberalism is no easy feat, multiple articles and books have been written discussing what a neoliberal program or project entails. In general, neoliberal refers to higher levels of integration between national economies, and decreased friction of distance for both people and products. These processes are helped by policies that decrease barriers to trade, but also includes a decrease in state-provided services. *The Handbook of Neoliberalism* (Springer, Birch, and MacLeavy 2016), discusses these processes while avoiding reifying neoliberalism as hegemonic. This nuanced understanding, which avoids essentializing, neoliberalism is where my discussion of the neoliberal program comes from.

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- <sup>2</sup> I believe one of the reasons business owners were less comfortable talking about water issues is the way in which poor water quality negatively impacts tourist industries. Admitting water quality was an issue for the region could negatively impact their income and livelihood. For government, some water managers have been criminally charged with negligence, so admitting knowledge of the problem could implicate them in both the court of public opinion or legally.
- <sup>3</sup> Or may simply be unavailable from my institutions library, which does have its own limitations. Further, the relevant literature may be unavailable in English.
- <sup>4</sup> Sometimes the water pressure is extremely low, and as such the 15 minutes of access does not go as far as 15 minutes at a higher pressure.
- <sup>5</sup> Exposing individuals to death is not the same as the “right” of a governing authority to kill (Mbembe 2003).
- <sup>6</sup> The Sahel is an area in West Africa made up of arid and semi-arid lands. Drought is common, however the drought in the 1960s and the subsequent famine in the 1970s caused heightened global attention on the region (Watts 1983). Although human suffering was not a new feature of the landscape, the 1970 famine has been used as an example for “poor land use, desertification... life boat ethics in practice”, global climate change, and/or Malthusian economics (1983: 347). Watts’ purpose of writing the book *Silent Violence* is to show the ways in which droughts and famines are part of social, political and environmental forces that shape the landscape in Nigeria, rather than blaming local farming practices (Watts 1983).
- <sup>7</sup> Extractivism refers to any activities which remove unprocessed resources for export. This includes more than minerals and oil, but also fishing, farming, and forest resources (Acosta 2013; Bagelman 2016). As such, extractivism is a form of accumulation predicated on the capitalism model and often fostered through colonialism. There is also often a periphery-core relationship, with specific regions extracting natural resources for the benefit and use of other areas.
- <sup>8</sup> There is an increased risk of water contamination, and this waterborne illness through excess precipitation, drought, and flooding. For flooding in particular, flash flooding, ongoing-rain, and even snow-melt often wash manure, human bio-waste, and wildlife dung in drinking water sources, contaminating drinking sources (Charron et al. 2004). This is not only an issue in Shimla and Solan, but globally floods are major contributors to an increase in bacterial and parasite contaminants in drinking water (Kistemann et al. 2002). During times of flooding, water treatments may become less effective since existing filtration and chemical purification are generally designed to meet expected bacteria and parasite loads, and thus may not be able to mitigate against an increase in either (Charron et al. 2004).
- <sup>9</sup> One of the major forms of Hepatitis that has been diagnosed in the citizens of Shimla and Solan is Hepatitis E, which is commonly spread through effluent. In particular, Hepatitis E negatively impacts the liver, which is why jaundice is so common throughout the region since it is a side effect of a liver disease/disorder (Gurav et al. 2007).
- <sup>10</sup> The major action taken by the state was the implementation of awareness campaigns, aimed at informing people of the necessity to boil their water. This was disseminated in

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particular through school systems with pamphlets for parents (Office of the Deputy Director Higher Education 2016).

- <sup>12</sup> Further, criminal charges have also been levied against the Irrigation and Public Health department and the contractor operating the plant for negligence and apathy ('Jaundice Outbreak in Shimla' 2016; 'More Than 500 Jaundice Cases in Shimla' 2016; Sharma 2016a; Sharma 2016b; Chakravartty 2016).
- <sup>13</sup> Even supernatural treatments for waterborne illnesses have seen an increase in patrons. There are now enough ill people to encourage a year-round business in Solan and Shimla, using "exorcisms" to rid the body (particularly the liver) of the possessing devil (Makhaik 2016).
- <sup>14</sup> A baudi is a pit dug where ground water naturally percolates from the surface. Rocks and stones are placed in a particular pattern towards the centre of the pit in order to ensure continuous percolation (Sharma and Kanwar 2009). Baudis are considered very pure, and as such are generally used for drinking water purposes rather than for other domestic purposes or for animals. People will often build a shelter or roof to cover the baudi to maintain the high quality of water and prevent contamination.
- <sup>15</sup> As many geographers and development practitioners are familiar, some scholars and/or NGOs attempt to "teach" people how to farm/fish/conservate local resources without considering the validity of local knowledges.
- <sup>16</sup> Further proof of the link between investment and economic status is the lack of increase in water filtration sales from Kent or AquaGuard. During a previous outbreak of waterborne illnesses in Himachal Pradesh, there had been a huge influx of advertisements for these water filtration systems (often called "awareness campaigns" but aimed at increasing sales) (Makhaik 2016). AquaGuard in particular used the increase of infections to push the notion that their filtration system would eliminate any threat to users of their products (ibid.). However, during the 2015 and current epidemic, these private companies have not attempted to increase their sales (ibid.) The primary reason for this is because affluent members of society, those who could afford the AquaGuard filtration system, already own a filtration system due to previous outbreaks and successful advertising, and those who cannot afford a filtration system are still unable to buy a filtration system regardless of convincing advertisements.
- <sup>17</sup> As this participant described it, the bleaching-out process involves emptying the water tank, and then having someone clean the inside with bleach which also flushing much of the connecting tubes with bleach.
- <sup>18</sup> Neoliberal policy prescriptions, in particular via international development, become a condition of loan agreements to certain countries from granting agents like The World Bank, the IMF, and other organizations following the economic policy prescriptions of the Washington Consensus. In this way, loans where nations often deem essential to survival come with conditions – a coercion to ensuring neoliberal policies are embedded in the national framework – dripping down to more local levels of governance. These policy prescriptions may also be encouraged for nations who have difficulty paying back development loans, another coercive measure

**Paper 4 - New Constellations of Neoliberal Water in India:  
Water Tanker Usage as De Facto Privatization in Urban Punjab**

*“Silence, they say, is the voice of complicity. But silence is impossible. Silence screams.  
Silence is a message, **just as doing nothing is an act.**”  
- (Leonard Peltier quoted in Saldaña 2009, emphasis added)*

In the urban areas of Punjab and Haryana, water tankers (see Figure 4.1) are a common sight. Water tankers are trucks that haul blue painted tanks filled with water, and in Chandigarh, these tankers litter the streets everywhere from affluent gated communities to informal settlements. The delivery of water via these vehicles has been a small business operation for generations, with various companies taking water from inexpensive and public sources in peripheral areas to the Tri-city core<sup>1</sup>(Betigeri 2014; Ranganathan et al. 2009; ‘Tanker Water All the Way’ 2010). Private tanker companies also drill illegal borewells or buy water from illegal borewells and agricultural borewells (where the water is often given to farmers for a very low cost), paying the landowners 50Rs to fill the 4000L tank, which is then sold at a profit of between 300 and 500Rs. (Betigeri 2014; ‘Borewells Adding to Water Woes’ 2016; Nagarkoti 2013; Ranganathan et al. 2009; Srinivasan 2014; ‘Tanker Water All the Way’ 2010). This service provides water to people who do not have a physical connection supplied by the municipality, such as individuals living in informal settlements (sometimes referred to as slums), people renovating their homes, or individuals trying to mimic a continuous 24/7 flow of water - an uncommon provision throughout India (Bakker K. 2003b; FAO 2012; Keller et al. 2000).



Figure 4.1: Water Tanker in Chandigarh, June 2015

Without a constant or even a predictable delivery of water, most households have developed coping mechanisms to collect and store their water for those times when water does not come during the municipally scheduled access or to augment inadequate water supply (Burt and Ray 2014; FAO 2012; Keller et al. 2000). Coping strategies commonly follow the tactics summarized by Woelfle-Erskine (2012), who describes the ways in which people augment their water supply through shared public taps (see Figure 4.2), individual household taps (but without rooftop or underground storage tanks), and houses with both individual household taps as well as rooftop or underground tanks (see Figure 4.3). In Chandigarh, one coping mechanism not discussed by Woelfle-Erskine (2012) is the strategy of renting a water tanker. This tactic, used for many years in India, involves paying for a tank to be driven to a specified location for a specific period of time, filling up household water tanks or leaving the truck and tanker on the grounds in order to meet both acute and ongoing needs (see Figure 4.1).<sup>2</sup> Each of the above coping strategies are considered informal,<sup>3</sup> or alternative, access strategies (see Bakker K. 2003a; Burt and Ray 2014; Kumpel and Nelson 2013), and each requires a different level of investment in terms of both time and money. As such, strategies will vary between households along economic lines.



Figure 4.2: Public Shared Water Tap with a Queue of Containers Waiting to be Filled, photo taken by author 2015



Figure 4.3: Rooftop with a Green Rooftop Water Tank, Punjab, photo taken by author May 2015

Coping strategies to access water are necessary given that only 29% of Indian households have access to municipally supplied water, either through pipes linking the water source and

individual households, or pipes linking communal water collection taps with communities (Bakker K. 2003b; Burt and Ray 2014; Prakash and Kumara 2012). For this 29% of the population, these taps only have running water for a specified number of hours each day (ibid.). Thus, even with piped water, tankers may be employed to fill gaps in service. This situation fits with what Bakker (2003b) describes as the reality of water provision in many non-OECD countries (Organization for Economic Cooperation and Development), where water delivery consists of a mix of overlapping strategies, both public and private. An increase in private water delivery is generally considered a feature of neoliberal economics, however, water tankers have existed in India for many years before the adoption of neoliberal economic and resource management strategies. Regardless, I argue that water tankers in Chandigarh are still part of the non-linear transition from community-based modes of provision, such as public wells, to a common OECD system, such as a piped and treated water network (Burt and Ray 2014). The reason for this understanding and interpretation of the role of water tankers is due to the new acknowledgment of State responsibility within the provisioning of basic necessities, which have been codified in the Indian Constitution (Article 21 and 47). Under Article 21, the right to life includes, “sufficient light, pure air and *water, electricity, sanitation and other civic amenities... [it means the] right to all the infrastructure necessary to enable them to live and develop as a human being*” (Suresh 2010: 68, emphasis added). Further, under article 47 of the Indian Constitution, it is the duty of the state to improve nutrition and public health, this includes a “bounden duty of the state to assure *the supply of sufficient amount of [high quality] drinking water* to its people” (Lucknow Grih Swami Parishad 2000: n.p., emphasis added). In spite of these rights, the State has neglected the formal management of water tankers and thus is making a specific choice about how water is managed for and provided to citizens. As such, although tankers have operated for decades in Chandigarh, the rights to citizens regarding both water quality and quantity provides an example of “actually existing neoliberalism” (Brenner

and Theodore 2002). This form of privatization is of particular importance to discuss as it confronts the notion of neoliberalism as a monolithic artifact or process and instead allows for neoliberal practices to be framed and evaluated as “real” or “existing” neoliberalisms with geographically specific processes (Bakker 2007; Castree 2008a; Castree 2008b; Larner 2003).

In order to discuss this form of neoliberal water management and elaborate upon the lived experiences individuals impacted by this strategy, I will begin by presenting the methods I employed for collecting the data presented in this paper, while also providing a background discussion on the region and why Chandigarh is an important area of study due to the way in which the knowledge-truth regime works within this powerful location. I then summarize the literature reviewed, which is an exploration and critique of neoliberalism. From here I discuss the impacts to water access associated with neoliberal reform, before discussing the specifics of water tanker operations as a form of public-private partnership in Chandigarh, and finally how this recent method of water management constitutes a new local form of neoliberalism.

### Methods

My discussion and analyses are drawn from focus groups and interviews with eight government employees, 20 water-tanker employees, and 107 citizens in Chandigarh and the surrounding Tri-city area.<sup>4</sup> Interviewees from the government and relevant water distribution companies were recruited through email and phone calls. However, I often spoke to water-tanker drivers who I happened to meet on city streets, and thus no preliminary phone call was made. For focus groups, initial contacts were recruited through random sampling, and additional members were recruited through snowball sampling. Due to some of the potentially illegal activities<sup>5</sup> regarding some of the ways participants accessed water, I felt it was important to omit some of the demographic qualifiers used in previous papers. Informal, and potentially illegal means of accessing water systems include hacked pipes and non-registered connections (Burt and

Ray 2014). These ways of coping are often necessary for urban residents who are not serviced by municipal water supplies (Bakker et al. 2008). Thus, the mixture of “vended, public, negotiated, illicit and self-provisioned sources remains the only option for the politically and geographically marginalized” (Burt and Ray 2014: 108; and for further examples see Kacker and Joshi Forthcoming; Swyngedouw 2004; Ranganathan et al. 2009; Schaub-Jones 2008).

Interviews with government and NGO employees were held in their offices and/or over the phone and lasted approximately 30-60 minutes. Focus groups were held in public areas, such as coffee shops where I provided snacks and drinks to the participants. I conducted 15 focus groups consisting of 6-8 participants, which each lasted 60 – 90 minutes. 30 participants were high-income earners, 19 were middle-income earners, and 58 were low-income earners. I interpreted these economic designations based on information about participants’ occupation, marital status, age, and education level (Cairns and Johnston 2015; Gilbert 2008; Lamont 1992). In both the focus groups and interviews, I began with broad questions regarding participants’ jobs, family structure, and housing before moving on to questions regarding water quality and access. All focus groups and interviews were digitally recorded, transcribed, and then coded in order to identify major themes.

#### Background: Private Sector Participation in Chandigarh and the Neoliberal Regimes of Truth

Water scarcity and accessibility are important to examine in Chandigarh, since Chandigarh is a Union Territory, serving as the capital of both the States of Punjab and Haryana. Power and power relations are able to extend from the Government Union buildings found in Sector 17, making Chandigarh a central node of policies, politics, and economic relations throughout the States (Massey 2005). This power is exemplified by the presence of some of the most influential state organizations found in Chandigarh, such as the Water Board and the Human Rights Commission. Thus, the ideas, logic, and mentalities, of this central location are exported

throughout both Punjab and Haryana – so the power of the Union Territory is more than political, it is also economic and ideological (ibid.). There needs to be strong attention paid to the power that some groups and locations have over others. As such, it is important to consider the ways in which Chandigarh, and other powerful locations, play a role in the domination of certain economies, and economic ideologies (such as those dictating water management decisions and schemes) around the rest of the country, and in particular the Northwestern region.

The conception of power as ideological and place-based elucidated by Massey (2005) and others, draws on Foucauldian notions of power via regimes of truth (Foucault 2000). This is important because the politics of knowing and truth have played a large role in how water has been managed, modified and/or ordered in Chandigarh and beyond. The standard strategies for water management, such as physical modification, privatization, and responsabilization, assert a specific version of “truth” which is often considered objective and yet is inherently bound up in power dynamics (Boelens 2013; Huxley 2008). In this way, water management can and does produce new knowledges and truths spreading and extending outwards from governing mentalities put forward by state-based authorities in Chandigarh representing a “water policy-truth regime” (Boelens 2013: 7). This truth and knowledge become a powerful part of the collections of governing technologies that attempt to mold not only the body of water in question but also relevant individuals and populations, such as the “modern,” “economic,” or “responsible” citizen (Brenner and Theodore 2002: 343). Understanding the “truth” of water and/or the ways in which water is “dealt with,” is essentially a way to understand the governing mentalities being used. It is by working through these mentalities that the neoliberal techniques of governing become clear within certain water management programs. This practice lends itself to understanding what solutions are put forward based on the mentality of rule and thus redefines

what is thinkable and what is ignored or obscured through the discursive practices of government (Dupont and Pearce 2001; Traub-Werner 2007).

Over the past decade, one of the changing economic ideologies, which in turn dictates water management strategies, has been the inclusion of the private sector in the construction, financing, and management of water supply and infrastructure (Bakker K. 2003b). The formal inclusion of the private sector presents a new truth-knowledge-power triangle (Foucault 1975; Foucault 1980), connecting these shifting policy-truth regimes towards a neoliberal policy-truth regime (Boelens 2013). This is not a new phenomenon, even with the novel neoliberal constellation in Chandigarh, there have been continual shifts between public and private entities in both OECD and non-OECD countries over the last two decades (*ibid.*). Further, as previously stated, water tankers are not new to Chandigarh, however, with changing constitutional laws, their presence has established a new form of privatized water management.

One of the reasons for the increased involvement of the private sector and the shifting public-private control in Chandigarh, and beyond, is that the entire nation of India is considered an area of high growth for the water supply and sanitation industry (“Intensifying Demand” 2014). In 2013, the market revenue for the combination of municipal water supply and wastewater treatment was over 31,260 million rupees and is estimated to reach 49,000 million rupees by 2018 (*ibid.*). This growth is based on the speculated increase in population and the continued rural to urban movement of the population (*ibid.*). Further, India is considered an emerging neoliberal market, with a government that openly supports different privatization schemes (Capital Markets Consultive Group 2003; Megginson and Netter 2001; Petitjean 2013). India’s openness contrasts with governments in China, Latin America, and most OECD countries, which limit the ways in which foreign direct investment (FDI) can be involved in the water and sanitation sectors (Bakker K. 2003b; Carmody et al. 2003; Petitjean 2013; The World Bank Group 2013;). It makes sense then

that India is a sought-after market for Veolia and other large private water companies, not only based on the potential for commercial success, but also as an avenue for the rehabilitation of the popular conception, or reputation, of water privatization (Petitjean 2013).

As of March 2012, Veolia has successfully entered the Indian market. The contract, based in Nagpur (in the state of Maharashtra) gives full control of the city's water delivery to the company for 25 years (Lappe 2014; Petitjean 2013). Although this is one of few large-scale projects in the country, there are many smaller formal arrangements and contracts over specific water bodies such as Jog Falls in Karnataka and Shivenath River in Chattisgarh, and throughout cities and even individual neighbourhoods, such as in Delhi (Asthana 2009; Burt and Ray 2014; Nair 2015; Petitjean 2013; Purohit 2016; Rao 2015). Additionally, there are also 30 other formal public-private partnerships ongoing in India. These projects, although not fully privatized, are not without their criticisms. Critics of these pilot projects suggest this is the "foot in the door" for more and larger privatization projects, which should be avoided considering the reports of corrupt financial transactions in the contracts and increases in water rates of up to 100% (Cullet 2009; Lappe 2014; Nayar 2013). For example, one author reported a multitude of service delays and billing errors on the part of the company even as it was raising the cost of water for impacted communities (Nayar 2013).

#### Literature Review: Neoliberalism and Neoliberal Reforms to Water Management

Neoliberalism has had and continues to have an ideological hold on economic, social, and political dogma in India (Hill 2015). There is no one particular moment, or rupture, to describe the beginning of neoliberalism in India; however, neoliberal policies and ideologies appear to have intensified in the 1980s and 1990s (Hill 2015; Oza 2006). During this time, the country was opened to foreign investment, industries and business standards were deregulated, and there was an increase in privatization (or Public-Private Partnerships) for the delivery of state services (ibid.).

The influence of neoliberalism began to impact State-based delivery of water services in the early 2000s when the government at the time declared, “private sector participation should be encouraged in planning, development, and management of water resources projects for diverse uses, wherever feasible” (Government of India Ministry of Water Resources 2002: 6). To act on this, the current Modi-lead government has issued the “Draft National Water Policy.” The objective of the policy, as stated in the document, is to create an “overarching system of laws and institutions” (Government of India Ministry of Water Resources 2012: 1) for the purpose of centralizing water-based decision making, allowing for an easier shift to “free market” solutions, including privatization and increased tariffs (ibid.). These solutions are presented as a method of addressing continued deficiencies with the water infrastructural system. It is easy to find the neoliberal discourses within the draft water policy, which states that water “needs to be treated as an economic good...priced to promote efficient use and maximizing value” (Government of India Ministry of Water Resources 2012: 7). It also seeks to impose the “full recovery of the cost of administration, operation, and maintenance of water resources projects” (Government of India Ministry of Water Resources 2012: 8).

Scholars attribute many of the changes to water management prescriptions made in India and beyond to the policies of the Washington Consensus endorsed by The World Bank and the International Monetary Fund (Barlow and Clarke 2002; Burt and Ray 2014; Gore 2000; Ilcan and Phillips 2010; Peck 2001; Prasad 2006; Todhunter 2014; Williamson 1993). To date, The World Bank is the largest funder of water management projects in non-OECD countries, since the rationale is that growing cities require high investment in water-based infrastructure, which is generally beyond the capacities of local governments (Lappe 2014). The private sector is thus pressed as a solution to water quality and quantity issues because private companies are considered more capable of providing the capital, technology, and skills necessary to meet the

demands of the human population (Nayar 2013). This is similar to the rationale for all private sector involvement. In order to alleviate poverty, governments – including the Indian Federal government – need (ostensibly) to include the private sector in public services, and to liberalize the economy in order to entice foreign investors and thus increase economic development and GDP growth (Bakker K. 2003b; Bardhan 2002; Kulipossa 2004). In addition, the State is considered a failure in the appropriate provision of services, thus "there is no good economic reason for state ownership to persist in tradable goods industries" (The World Bank 1997: 64). As such, the inclusion of the private sector will "free up public resources for high-priority activities: pave the way to better, cheaper services; and unlock opportunities for private sector development" (The World Bank 1997: 61-62). The experiences with water companies in non-OECD countries have generally demonstrated that privatization schemes involve bribery or corruption (Davis 2004), as well as unmet needs due to "non-compliance with contractual agreements, layoffs, tariff increases, and environmental pollution" (Prasad 2006: 682). These issues are so common that The World Bank has produced a manual to assist with the renegotiation of contracts where companies have failed to meet previously negotiated outcomes (Kerf et al. 1998).

The neoliberalization of water supply and management goes beyond domestic and international economic policies. Instead, neoliberalism encompasses "ideological commitments, discursive representations, and institutional practices, all propagated by highly specific class alliances and organized at multiple geographical scales" (McCarthy and Prudham 2004: 276). Within national Indian water management programs and discourses, there is an emphasis on decentralizing governance and management of water as well as a shift in seeing water as an economic commodity (Sangameswaren 2010). As part of the circuits of capital (rather than as a right), water is priced and valued based on market fluctuations (Bakker 2005; Linton 2012; Swyngedouw 2005). Governments, then, are able to ignore the various ways in which class, caste,

race, gender, and economic status can limit access (Joshi 2011). These changes are related and, in fact, contribute to the overall neoliberalization of India, and in particular to the neoliberalization of water management policies and strategies. As discussed by McCarthy and Prudham (2004), neoliberalism can be considered an environmental project. This is true for the provisioning of water because of the unique way water crosses spheres of physical, social, economic, cultural, and religious uses. As such, “changes in water [access and management] in the wake of neoliberalism have taken particular forms and trajectories” (Sangameswaren 2009: 229) that include issues beyond allocation and quality, separate from other natural resources.

There are different viewpoints and understandings of the origins, ideologies, implications, and experiences of neoliberalism and, as such, there is also a significant amount of critique on and of neoliberalism. While all these differing conceptions may be confusing for scholars trying to bite off a piece of the neoliberal pie, these differing underpinnings of neoliberalism have blurred the fundamental conceptions of neoliberalism and thus have allowed for a pluralistic, as opposed to monolithic, understanding of neoliberalism and its various manifestations. Rather than review and discuss the considerable academic literature on the subject of neoliberalism, (which may indeed be impossible at this point), I will instead discuss neoliberalism as it pertains to recent reforms in water management in the Chandigarh Tri-city area. There are three important neoliberal processes at work: neoliberal roll-back and roll-out programs (Peck and Tickell 2002), neoliberalism as governmentality (Larner 2003), and neoliberalism as discourse (Springer 2012a). These three conceptualizations of neoliberalism provide the framework I use to discuss the use of private water tankers and water policies more broadly throughout this paper.

Peck and Tickell (2002) conceptualize neoliberal processes as two distinct phases: roll-back and roll-out. Roll-back neoliberalism is the “active and purposeful destruction of the Keynesian welfare state program (Peck and Tickell 2002: 384). Within a resource management

context, this generally includes descaling, or withdrawal, of the federal government, including service provisions and legal protections (Bakker K. 2003a; Furlong 2010). In Chandigarh, this has included the original federal decentralization based on the Swajaldhara scheme (Sangameswaren 2009), along with the removal of environmental regulations and consumer protections as well as “price hikes for physical connections” (Female, Government Employee, 36 years old; Chandigarh Administration 2011). As one participant said regarding this form of water conservation through pricing, “they [the government] talk about [the] environment, but they don’t care about the [ecosystem] – it is all protection of money” (Participant, Female, 51 years old). This contrasts with the second phase of neoliberalism, referred to as roll-out neoliberalism. Instead of state withdrawal, roll-out neoliberal policies and practices include “active statebuilding and regulatory reforms” (Peck and Tickell 2002: 384). These processes are purposeful and consolidate neoliberalism in codified policies and programs. So, while there is a previous dismantling of state infrastructure, there is subsequently a purposeful reconfiguration of political institutions, economic systems and even social agendas (Peck and Tickell 2002). When implemented, the draft water policy will be part of this reconfiguring, or “rolling-out” processes. Further roll-out policies can already be identified in Chandigarh through the inclusion of new water metering technologies, which are necessary for people wishing to access municipally-supplied water and in particular for new connections such as those to “[informal settlements], and rehabilitation colonies, and new businesses” (NGO employee, Female, 34 years old, critiquing government impacts for the poor, rather than the rich who have fewer water restrictions). This fits with the understanding of roll-out neoliberalism, which consists of a deployment of new state-based power through control and surveillance, which usually disproportionately impacts subaltern populations (Aguiar 2006; Bakker I. 2003; Furlong 2010; Loftus 2006; Peck 2001). Further, the example of Chandigarh highlights the way in which roll-out neoliberalism embraces “a range of extramarket reforms of governance and

regulation” (Peck and Tickell 2002: 390), and thus this offers opportunities for locally-specific neoliberalisms while still being part of the broader networks of neoliberalism (Brett 2000; Peck and Tickell 2002).

Concurrent to the processes of roll-out neoliberalism, neoliberal programs tend to involve an attempt to change the conduct of subjects and populations (Brenner and Theodore 2002: 343). As such, neoliberalism has also been conceptualized as a form of governmentality – the conduct of conduct (Dean 2010: 21). The governmentality approach to neoliberalism suggests that neoliberal processes rework the identities and subjectivities of citizens. In this way, neoliberalism is a method of restructuring the welfare state in order to “develop” and “modernize” by first modernizing citizens of the State (Larner 2000). Wendy Larner (2000) discusses this in her description of the ways in which neoliberal modes of thinking and acting can be deconstructed or illuminated within the routine practices of the state, in particular, those actions of the state that are normalized. Through this process, both the role of citizens and the role of the state are reshaped by encouraging people to act as “responsible” subjects (in accordance with State objectives) complicit in their own policing, rather than seeing said policing as direct interference (Larner 2000:13). As one interviewee suggested, “people must be taught to use water responsibly” (Interview, Male, Government Employee), where responsibility refers to current political ideologies. A further example of neoliberal governmentality in India is the way in which conservation is discussed. For example, the Centre for Science and Environment (CSE) document on water management discusses the way in which there is a “callous waste of water [burning a] hole in the pockets of the citizens” resulting in a loss of income equivalent to 300Rs crore per year, or \$696,756,150.00 USD each year (‘Citizens’ Participation’ 2015a). In order to address this “waste,” the CSE document stresses that every citizen must be involved in water management through self-regulation.

By attempting to regulate citizen behaviour for self-policing, neoliberalism moves beyond market-based policies and programs (such as in the roll-back neoliberal phase) and is also actively engaged in deploying social provisions and changing the subjectivities of citizens (Larner 2000; Peck 2010; Rose-Redwood 2006). With this understanding, neoliberalism can be considered a governmental rationality that “shapes conduct by repositioning and deploying [neoliberal] values and norms ... as the principal means by which people measure themselves and others” (Ilcan and Phillips 2010: 847). Neoliberal ideology suggests, and in some instances demands, that development and progress can only be achieved and advanced through changes to human qualities and values such as individualism, entrepreneurialism, private property rights, and the freedom of markets (Harvey 2005; Prasad 2006). As such, the neoliberal “modernization” of the water sector supports capital accumulation while making water a strategic resource (Bakker K. 2003b). This discussion and understanding highlights the complexity and specificity of neoliberalism,

“centering on knowledge production through the ensemble of rationalities, strategies, technologies, and techniques concerning the mentality of rule that allow for the de-centering of government through the active role of auto-regulated or auto-correcting selves who facilitate ‘governance at a distance’” (Springer 2012a: 137).

Springer’s description of neoliberalism implies that neoliberal processes are unambiguous rather than manipulative and that change can be induced by outside trustees, or “experts,” who modify conduct based on the benefits of market opportunities (Li 2007). There are a variety of different behaviours and practices involved in neoliberalism, and thus an understanding of governmentality emphasizes these differences for a deeper understanding of the varied processes (Larner 2003). Neoliberalism as governmentality would include, among others, educational campaigns aimed at changing behaviours associated with water collection and usage (Lockie and Higgins 2007). For example, in Chandigarh, there exist campaigns aimed at the promotion of reverse osmosis filtration systems (ROs), which suggest ROs are the only method of ensuring health and well-being

(Department of Water Supply and Sanitation 2014a; “IMA, Kent RO partner” 2015). Educational campaigns, including changes to the curriculum at primary, secondary, and tertiary levels (called the WASH program), push for the use of ROs in order to indoctrinate citizens into a new mode of water usage (Department of Water Supply and Sanitation 2014a; “IMA, Kent RO partner” 2015; ‘Save Water Campaign’ 2014). This process of neoliberalism includes, but also moves beyond, the codified forms of neoliberalism indicative of roll-back and roll-out neoliberalism, and suggests an analytical commodification and neoliberalization of water and water management. By understanding neoliberalism as a form of governmentality, the different ways in which water is understood and managed (such as through engineering, technology, and economic ideologies) emphasize the truth regimes most powerful in a given location.

The attempt to change conduct through certain ideological notions and analytical commodification is also part of the conception of neoliberalism as discourse (Springer 2012a). When discussed as a discourse, the neoliberal processes *beyond* official policy can be addressed. For example, although it is not a codified policy in Chandigarh, informally there is limited access to water and water-based positions of power (such as positions on the water board or the municipal corporation) for certain populations (Joshi 2011). Lower caste members and menstruating women are often denied access to certain wells or bodies of water because it is understood by many community members that, as one participant said, “they dirty the water” (Participant, Male, 39 years old). Penalties for accessing water for members of these undesirable populations are informal but nonetheless severe. For example, one focus group participant said: “No, there is no police stopping me, but then no one would buy my [buffalo] milk” (Participant, Female, 42 years old). Accessing certain bodies of water would significantly hamper her ability to survive later on when trying to make a living wage. In this way, neoliberal discourses, in combination with cultural mores, have material consequences in large part due to “discursive

performatives” (Springer 2012a: 143), which impact everyday actions that result in the subjugation, and denial of resources, of and for certain individuals. There is, however, a hybrid process to the subjugation of citizens via this method, and thus, a discursive understanding of neoliberalism reveals the ways in which neoliberalism exists differently in various locations. This understanding of neoliberalism highlights that the economic and political ideology “does not exist in isolation, but is actually connected to and recursive of the alternative views” (Springer 2012a: 137) based on the ways in which discourse is able to connect and bring synthesis to outcomes, processes, and political philosophies that often do not seem to align.

Although each of the ways of understanding neoliberalism put forward by the authors above differs in certain ways, what is important to understand is that each framework, or approach, recognizes the ways in which particular places have outcomes shaped by the people engaged in/with the technologies and practices of/by neoliberalism. In this way, neoliberal processes, although similar, are enacted differently in different places based on unique political, economic, and cultural dynamics.

#### Neoliberal Impacts to Water Access

Although neoliberalism in Chandigarh is locally specific, there are some common ways in which neoliberalism has impacted water management strategies in Chandigarh, as it has elsewhere, such as the commodification, financialization, and ultimately the privatization of water. Under neoliberal ideologies, the privatization of water and public-private partnerships (PPP) become the solution for scarcity,<sup>6</sup> as well as inefficient governments, and becomes a way to further demonstrate modernity and a “developed” economy (Bakker K. 2003b). In this way, the private sector is considered (by some) better suited to ensuring appropriate conservation “through higher prices, thereby discouraging wasteful overuse” (Bakker 2010: 81, discussing the mentality - not her argument). Part of the reason for the popularity of this notion is based on the

*perceived* tragedy of the commons. Hardin's (1968) theory asserts that resources that are equally shared will be misused and exhausted because people inherently act in their own self-interest. The tragedy, under this conception, is that even though people understand that acting in an unsustainable and self-interested manner will negatively impact the group, they will still continue to act in a selfish manner (*ibid.*). This idea stands in stark contrast to the reality of the commons, which "has worked for centuries and is still working today" (Bakker 2010: 163; Springer 2016a). One participant in Mohali echoed this saying, "we are all drinking water from the same well. When it gets low, I don't take more, I take less" (Participant, Female, 32 years old). Instead, what the tragedy of the commons notion furthers is the assumption that nature, or "the environment," constitutes a separate spatial and conceptual category, which is independent of people and practices (Jonas and Bridge 2003). Therefore, it is social norms and ongoing societal structures that define the ways in which access to potable water is either equal or unequal (Swyngedouw 2006). This problematic notion of the environment has been constructed with the aim of further embedding a particular mentality, through the discourses of neoliberal rationality, which contributes to the government's larger goal of managing the lives of its constituents.

Justifications for neoliberalizing resource management have not gone uncontested. Within academic and popular literature there is a considerable amount of debate over the merits of privatization and public-private partnerships. This is especially true of water management literature. However, proponents and opponents *do agree* that new regulations, which include commodification, financialization, and privatization, have reshaped urban water supply throughout the world. The debate is whether or not these changes are for the better. Some examples (among many) include discussions on the privatization of water and water distribution in Cochabamba, Bolivia (Bakker 2008; Barlow and Clarke 2002; Budds and McGranahan 2003; Castro 2008), Nagpur, India (Kumar 2010; Pangare et al. 2004); Guayaquil, Ecuador, (Swyngedouw

2005; Swyngedouw 2008), Manila, the Philippines (Wu and Malaluan 2008), and Buenos Aires, Argentina (Loftus and McDonald 2001). These five locations are considered to be examples of the ways in which the market and private enterprise have impacted local communities, fundamentally changing urban water supply. In these and other places throughout the world, private enterprise has been allowed into municipal water services via codified public and private partnerships necessitated mainly because of internal pressures from conservative governing authorities and external pressures from organizations like The World Bank and IMF (Bakker 2008; Loftus and McDonald 2001). Although these pressures continue, the move to include private enterprise in the water supply and services has rarely garnered positive results.<sup>7</sup> In fact, critics of privatization point out that not only is privatization unethical,<sup>8</sup> it is also an unsuccessful mode of increasing water access, or of dealing with scarcity and resource competition (Bakker 2010). One of the reasons for the lack of success is that private water management has a tendency to concentrate the majority of resources with only some citizens, usually the wealthy and elite groups (Bakker 2010: 83).

An example of the concentration of water quality coinciding with wealth can be understood from a case in South Africa. Many areas of South Africa are currently undergoing a socially constructed water crisis based on a lack of adequate infrastructure (Bond 2002; Linton 2010; McDonald and Pape 2002). This case is considered a *created* water crisis because the basis for insufficient water supply arose from political interventions during apartheid, which dictated water provisioning. This is common within scarcity discourses, but it does not refer to “absolute scarcity, but of relative scarcity, due to factors such as increasing pollution, population density, and water use per capita” (Bakker K. 2003b: 43). In South Africa, and the town of Richards Bay in particular, this meant that scarcity was politically produced, encouraging unequal distribution of water. Historically, Black neighbourhoods were denied water services in favour of White

neighbourhoods (McDonald and Pape 2002) based on the ability for companies to generate profit from citizens who are considered “reliable” customers. Even today in South Africa, with a new constitution that includes the right to water and infrastructural subsidies, the amount of water received is increasingly linked to individual income (Flynn and Chirwa 2005; Loftus 2006). The policies and capital investments in place to overcome the issues of historic asymmetries have not undone the lingering inequalities of apartheid. Distribution and access are therefore limited for citizens living in poor townships (most of whom are Black) and further, these residents are charged “multiple times the price per liter of water as is charged in the previously advantaged suburbs of Richard’s Bay” (Flynn and Chirwa 2005: 66).<sup>9</sup> Privatization in this context would only further deepen these inequalities.

Examples of these deepening inequalities from India include the 2005 PPP signed by the Tamil Nadu government with a 30-year contract to the New Tiruppur Area Development Corporation Ltd (NTADCL) (Aziz and Shah 2012). This contract was one of the biggest water supply projects launched in India, which was to supply water for industry (rather than citizen drinking water), with 185 million litres per day (Aziz and Shah 2012; Prakash and Kumara 2012). This resulted in an intensification of industrial developments, and thus waste-water run-off from textile factories, which brought about the contamination of local rivers with approximately 87 million litres of toxic wastewater (Ninan 2003; Prakash and Kumara 2012). Ground and surface water have thus been contaminated and as such drinking water for local citizens must be trucked in from non-contaminated sources (Aziz and Shah 2012; Ninan 2003; Prakash and Kumara 2012). As such, although business has benefited from increased access to industrial water, local populations have been negatively impacted. For those who have financial means, retrieving water from non-contaminated sources is relatively easy, either through the purchase of filtration systems or the purchase of water from non-local sources. For those in less secure positions

financially, choices are limited and thus – as above, marginalized citizens geographically and economically will be disproportionately impacted (Burt and Ray 2014; Lappe 2014).

Similarly, in the state of Madhya Pradesh, the government awarded a contract to Radius Water Ltd. (Cullet 2009; Das and Pangare 2006; Prakash and Kumara 2012). The contract was to build a dam and reservoir, and thus the company was given property rights to 23 km of river (Cullet 2009; Das and Pangare 2006; Shrinivasan 2010;). Understandably, this dam restricted local residents' access to the river, which had been part of common use for drinking water, irrigation, and fishing (Cullet 2009; Das and Pangare 2006; Prakash and Kumara 2012). The local community protested the removal of access, and although the state government has made promises to change the contract, the 23km of the river in question still belongs to Radius Water Ltd (Cullet 2009; Das and Pangare 2006). Often in these cases, although locals are denied access, the company will give "its own employees [access] to [water] free of cost" (Nayar 2013: np), formalizing distribution patterns which most severely impacts the poor.

#### Water Tankers in Chandigarh: Privatization and Public-Private Partnerships (PPPs)

In order to promote privatization, and avoid the standard criticisms, many water privatization schemes have been "repackaged" as public-private partnerships (Prasad 2006: 687).<sup>10</sup> This may be why in Chandigarh, there is not a private water supply per se, but rather private water tanker companies fill a gap in the municipal water supply service. This is similar to a form of resource-based entrepreneurialism (Bakker 2005) or an *informal* public-private partnership. In this instance, citizens (and government) see private sector participation as a way to overcome the inefficiencies and inadequacies of municipal governments in supplying water and running public services (Ouyahia 2006). The government of Chandigarh has not attempted to regulate this private sector involvement, and thus by knowing about, but doing nothing to

regulate water tanker quality, quantity, or prices, the government is complicit in the private sector involvement. There is an implied agreement in the understanding of the ways in which water is managed and the ways in which people cope using tankers, and thus this presents as a public-private partnership. Generally, it is the presence of large foreign companies which are the subject of academic and activist attention, however, in India, there are more, small, local firms involved in the privatization and commodification of water. Chandigarh alone is serviced by over 28 companies in the region. As such, this is an equally important avenue for research currently under-examined, particularly due to the federal constitutional law, which makes privatization of water a human rights violation and thus is illegal (Cullet 2013; Pandey A. 2014; Sachar 2012). In an interview, Justice Sachar was quoted saying, “handing over ownership of water to private companies is cheating the Constitution... [because it denies] the citizens their right to quality water at affordable prices” (Ramachandran 2013: np). Not surprisingly, Justice Sachar does not support the Government’s move to include private companies in water service delivery.

Unlike the situation in Chandigarh, with standard public-private partnership arrangements, a private company is generally seen as an extension of the public governing authority (Marin 2009). The private sector is directed by a municipal or state governing authority and thus is simply doing the work of the government. As one interviewee from the Water Board in Chandigarh stated, “if someone needs it, there are those services available” (Interview, Male, 43 years old). This constitutes a form of public risk management (De Bettignies and Ross 2004), meaning that a public venture, such as a utility, public good, or service (water supply, mineral extraction, mail delivery, etc.) will have an associated economic risk, and often this risk *may* be beyond the standard bank rate of that nation (De Bettignies and Ross 2004; Marin 2009). In this instance, where the risk is beyond the normal bank rate, the public governing body may want to contract out the delivery of services to private enterprise, where that private entity will absorb

the risk, and offer the service using economies of scale to make a profit. As a simplified example, a municipal government needs to deliver barrels of water to its citizens but is concerned about investing in the necessary infrastructure for transportation. In this instance, the costs and risks for service delivery are very high (because of the potential for failure and income loss) and as such the public office contracts with a private company to transport the water to citizens. In an ideal situation, the company collects a (reasonable, fair, and/or not coercive) fee for each of the deliveries and as such the private sector receives a small benefit, the government avoids risk, and people receive the water they need.

The aversion to risk by the public sector can also be enacted in a different way. The most common example of a PPP is one based on infrastructural developments where capital investment is needed (Fourie and Burger 2000; Martin 2009). The government may want new or updated infrastructure, but the state does not have the capital to invest in said infrastructure. In this situation, the government can contract with the private sector to build the infrastructure, and then pay them for it, as a government might contract out the building of a public bridge. Another option would be that the government has a company build a bridge, allowing the company to charge a toll for its usage (De Bettignies and Ross 2004). In many ways, this business relationship presents as a good idea. There is very little risk to public monies, but services remain consistent and stable. This relationship is called a *de jure* PPP, which denotes that a strategic and codified agreement exists between the state and the private sector, its terms and conditions are specified (Fourie and Burger 2000; Martin 2009).

Within Chandigarh and the surrounding areas, the private supply of water to citizens cannot be considered a *de jure* relationship, since no formal agreement is in place governing the expectations regarding access, quality, amount, or price. Instead, the private water tankers are a form of *de facto* privatization. Under *de facto* privatization, the state has agreed to provide a

service but then fails in doing so because either the cost is too high for citizens, or the service is inadequate (Fourie and Burger 2000; Martimort and Pouyet 2006). This is however still a partnership per se, and in particular for the Union Territory Government of Chandigarh. Under the Constitution of India, Article 21 and 47, individual states are required to provide adequate water to citizens (Cullet 2013; Pandey A. 2014; Sachar 2012). The state has failed to do this, and yet has complete knowledge of the workings of private water tankers. Through the inaction and lack of regulation by the state, regardless of knowledge of the extortionist practices, the activities of private water tankers form a *de facto* relationship that allows for the privatization of water. These issues were discussed in many of my focus groups. For example, 12 individuals discussed the “necessity to rent tankers [that bring] water” (Participant, Male, 44 years old) due to inadequate supply to their homes. For individuals living in informal settlements, this was particularly needed since many do not have official access to water supplied by the municipality. In order to cope, one participant said, “When we cannot afford water tanks, we must [steal] the water or go to the Gurdwara” (Participant, Female, 37 years old). This method of coping was common, as 27 other low-income participants discussed “stealing”<sup>11</sup> water from businesses with external pumps or taps at night and from hospitals that turn a blind eye. These participants rarely used words related to theft and instead invoked discourses of necessity and borrowing, and in fact resented the necessity of the activity. One participant, in particular, said, “I don’t want to be [driven] to this... but my children still need water” (Participant, Female, 29 years old).

Very little of the discussion about *de facto* privatization is focused on water or the management of resources in general. More often, *de facto* relationships are used in the discussion of the failings of government-based education, and the subsequent increase in the number of private schools because the company sees a business opportunity in filling the gap between what citizens need and what services are provided (see for example Aggarwal 2000;

Akyeampong 2009; Jones and Bird 2000; Levin 2003; Patrinos et al. 2009). Frequently, this private education system is even supported by the state through incentives such as tax breaks and income credits for the families of students enrolled in private schools (Ball 2007). In this instance, even though there are tax-based incentives for citizens, there is no *explicit* or codified agreement between a particular private entity and public authority to provide education. However, the government, through both actions and inactions regarding private schools, is in partnership with the private organizations (Lyll and Sell 2006; Savas and Savas 2000; Tooley and Dixon 2006). Although new to resource management discussions, this relationship is still an important one in the shifting neoliberal landscapes of the city, along a scale between absolute public and absolute private water supply (Bakker K. 2003b).

#### Public-Private Partnerships and Shifting Neoliberal Cityscapes

The shifts occurring in Chandigarh are part of a continuum upon which private and public sector involvement exist, and the “distribution of responsibilities for various water management functions are variously allocated between the state and private actors” (Bakker K. 2003b: 38). Full privatization is rare, and more often the arrangements are an assemblage of private and public strategies and involvement (ibid.). The relationship in Chandigarh is thus not undergoing a conversion from public to private water management and supply, but rather is on a trajectory oriented “towards the market and private corporations and away from the state” (Bakker K. 2003b: 40).

*De facto* PPPs and privatization are just one of the ways in which neoliberalism is shifting traditional policy landscapes. In Chandigarh, this local form of PPP reinforces the way the city has increasingly become the site where issues of resource management are being negotiated, decided, and thus where neoliberal discourses are further embedded. Although there is no formal contract between the municipal corporation and the private water tanker companies, the way in

which water tankers operates represents a (neoliberal) partnership and a neoliberalization of water supply. In particular, the relationship is notable because of the ways in which the governing authority willfully ignores the extortionist policies involved with water tankers in the Tri-city area. This is why, although water tankers are not new, they present a new situation due to shifting government policies within urban centres. The current *de facto* PPP presents further significance because cities are often considered the best scale at which to resist neoliberalism policies and programs established through federal arrangements (Purcell 2002) and yet in Chandigarh the government has enabled such transaction through inaction. However, in Chandigarh, instead of resisting or pushing back against neoliberalism, the city allows for the embedding of a form of predatory entrepreneurialism, benefiting private interests.<sup>12</sup>

One example of this benefit to private enterprise is the actually existing neoliberalism found in the water management within formal colonies. Formal colonies are areas of “rehabilitation” set up by the government for populations who have often been displaced from informal settlements for the purpose of development and industrial growth (Nijman 2008; Interview, Male, Government Employee 38 years old). During the 1990s, Indian Federal and State governments attempted to “reshape [major cities] as slum-free environments” (O’Hare et al. 1998: 280). These areas of rehabilitation were established to re-home people, which meant that the land of informal settlements could be opened up to private investment and development, and the citizens living in this land informally would be moved to a new location. These new locations were, as one interviewee noted, “usually less desirable” (Male, NGO Employee, 31 years old; Nijman 2008; O’Hare et al., 1998). In these new formal areas of settlement, the municipality agrees to provide water services to the inhabitants (Teotia 2013; Thieme and Kovacs 2015). Often, however, participants said that “this [municipal] water supply is inadequate and unpredictable” (Participant, Male, 31 years old). In one rehabilitation location, the water supply had been cut off

for ten days. One participant claimed that “It wasn’t until we complained to [media] that the city did anything” (Participant, Female, 38 years old). Only then did the city supply the citizens with a water tanker. In this situation, a *de jure* partnership was contracted. However, as another participant noted, even with tanker supply, “there were fights – the water ... it was not enough” (Participant, Female, 46 years old). Two tankers with a total of 8,000 liters of water for 2000 citizens was simply not adequate; one participant told me that “line ups were long and arguments [became] common” (Participant, Male, 35 years old). For this reason, some individuals pooled their money in order to rent a third and fourth tanker, one of these individuals told me they did this to, “meet [basic] need” (Participant, Male, 29 years old) – thus enacting a *de facto* PPP. The situation could have been different though if as one participant noted, there had been an upcoming election. However, “There wasn’t an [upcoming] election. We would have had better water if politicians were campaigning” (Participant, Female, 37 years old). In a newspaper article, similar quotes were made from citizens who said, “we are literally struggling to store potable water for our daily usage. Year after year, the same problem persists, but MC [the municipal corporation] continues to be in slumber” (‘Water Crisis Spreads’ 2012: np). Another individual stated, “Every year in summer we face water shortage, but this year the problem has increased manifold. I feel the civic body is incapable of controlling the situation or coming up with a solution as the problem has slipped out of their hands” (ibid.). People then must rely on water tankers for their water, which has even been encouraged by the government of the Union Territory, however one Justice of the Punjab and Haryana High Court said from the bench, “how long will residents survive on water supplied through tankers?” (‘HC Drinking Water’: np). The case being heard at that time concerned homes and apartments in Chandigarh that were being built without basic amenities, neither shared water access or individual piped water, although the government had issued building certificates for these homes. The state did not care that these homes would not

have basic water services for tenants, instead assuming tankers would be the method of water access, thereby further embedding the *de facto* public-private partnership, for the benefit of private companies.

This constitutes a new constellation of neoliberalism at the local level, an “actually existing” neoliberal formation (Brenner and Theodore 2002). As Karen Bakker (2005) suggests, this is because reforms to water management – and, in fact, any resource management – are tied to reforms to and of governance. By tolerating the unregulated sale of water from private companies supplying tankers, the city allows for the private sector to gain power and influence in the delivery of public services and beyond. What this creates, then, is a form of governance that reflects global processes in local conditions – a hybrid form of service delivery where providers of essential services have authority, but no obligation to their patrons. This local form of *de facto* public-private partnership is reflected in the national expressions of neoliberalism, and as such is especially compelling, because as previously mentioned, water privatization within Chandigarh is mostly accomplished through small companies, rather than larger multinational companies.<sup>13</sup>

#### Conclusion: Water Governance after Neoliberalism and the Importance of the Right to the City

The processes of neoliberalism in Chandigarh have demonstrated the ways in which the governance of water has shifted away from a centralized state-based approach towards a localized form of neoliberalism, which in this situation has allowed for informal privatization in partnership with the governing authorities through complacency. As such, this is not a question of necessary corporate responsibility, but rather the State is part of the relationship and allows exploitation of the public through knowledge of the situation and subsequent inaction. While this complex *de facto* system has emerged locally, it is also important to trace the ways in which the complexity of the informal public-private partnership is linked back to the national and international processes of neoliberalism. The policies enacted on a national and international

scale (such as trade liberalization, labour market flexibility, deregulation and export-oriented economic policies (Prasad 2006) allow for and encourage private sector participation without providing guidelines or policies that protect citizens from predatory entrepreneurialism. This relates to the idea of human worth – the worth that citizens, their individual bodies, their basic needs - hold either intrinsically or not based on the values, espoused by the state. Within resource management and water rights, worth plays into how decisions about allocation are made. Thus, those people who have limited water access are considered unimportant or unworthy of political attention and as such water flows away from them. In Chandigarh and area, those people with unequal access have found a way cope through private enterprise. In this way, water can be used as a lens to discuss the ways in which water flows towards power, towards money, and in effect flows towards those considered as being of worth by the state. Citizens who have developed these coping mechanisms are not passive victims to neoliberalism, but rather they demonstrate resilience through ad hoc coping mechanisms, such as purchasing additional water from private companies or “stealing” water - but these two, of many strategies, come at a high cost.

There is another similar way of conceptualizing these coping mechanisms. In considering Foucault’s conception of power (1972), the informal modes of water management (particularly those considered illegal) can be considered as a form of resistance. As such, the circulation of power moves away from the urban elites and towards traditionally marginalized citizens. This is further discussed by Meehan (2013b), who re-conceptualizes the use of grey water and rainwater harvesting as a way for citizens to regain control over water. Even more extreme, Loftus (2006) discusses how the non-payment for water as resistance against those people who control water. He uses examples of plumbers who reconnect the disconnected water pipes after midnight in Durban, South Africa (Loftus 2006). This not only provides citizens with an essential resource, but it also aids the recirculation of power from a Foucauldian perspective.

What the Chandigarh case demonstrates and adds to the overall discussion of power in water management is that “Right to the City” movements are all the more necessary yet at the same time more challenging to imagine. Although there is no consensus on specific policy prescriptions for the Right to the City, the concept is most closely associated with Henri Lefebvre’s (1968) work “Le Droit a la Ville [The Right to the City].” Some cities have adopted this right formally, primarily in Latin America; however, it has not yet become mainstream in Indian urban politics. Rights to the City recognizes the “‘social function’ of urban property” (Mamani 2009: np), meaning that there is recognition that collective rights to city space (public spaces) outweigh individual rights (traditional private property rights). As such, the democratization of cities involves the participation and opportunity for all citizens to produce, negotiate, operate and even govern cities for a common good. For example, in Brazil, it is now necessary for the public to be consulted and to participate in the planning processes of cities (Rigitano and Barbassa 2010). Further, there is a Ministry of the Cities and National Council of the Cities to ensure proper attention is paid to the ways in which cities are negotiated and renegotiated under capitalist expansion (Fernandes 2007; Rigitano and Barbassa 2010). Under this form of governance, the bulldozing of informal colonies or gentrification of poor neighbourhoods could be avoided, and in fact, informal housing would be recognized as legitimate by municipalities and thus provided with services. In Chandigarh, this might mean formal water delivery serviced by the municipality for individuals living in informal colonies. Urban poverty would no longer considered an unwelcome blight on the landscape in Chandigarh, a common attitude which has displaced and dispossessed tens of thousands in India (Doshi 2013; Nijman 2008). As such, the implication of the Right to the City is that inequalities, dispossession, and displacement can be recognized and reversed before some individuals are forced to move to the peripheries of cities and even consciousness. Right to the City movements are therefore bottom-up exercises, where localities attempt to push for state

recognition of inequalities, reshaping of the city to benefit all citizens, but this has yet to gain strong traction in the Chandigarh region.

The ability to remake cities, or even to demand that the municipality monitors the remaking of the city by private enterprise, is “one of the most precious yet most neglected of our human rights” (Harvey 2008: 2). There is a transforming nature to informal privatization and *de facto* PPP that exists at the level of the everyday in cities. This needs to be attended to in order to avoid the dispossession of water and other resources during urban transformations (ibid.). If segregation, marginalization, and inequality are to be addressed in the city, as demanded by Lefebvre, it is important to ensure that cities are not turned into little more than “company towns” (1968). As Castells (1983) discusses, resistance to economic regimes enforced by governments has historically been an urban project. Cities can be spaces of refuge, as in the sanctuary city movements, and spaces of resistance through protests and the development of unions, and spaces of inclusion for different subculture activities. These activities allow for the increased access to the city as well as a reconstruction of the city materially. As such, there is hope for Chandigarh. The informal privatization of water in the city, particularly for the urban poor, could be renegotiated through a reinvigoration of the discourses of the Right to the City and attention to the localized forms of neoliberalism that *do* and *have* transformed the city. The potential then is that citizens in Chandigarh could organize more formally to subvert authority and regain control over the basic necessities of life.

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<sup>1</sup> Often the water is taken from the outskirts of Mohali and Zirakpur in order to meet the needs of the core, which in this case is Chandigarh. This happens primarily because sources are either free or they charge a much lower rate to the water tanker companies, so that the sale of water in the core can ensure a substantial profit (Interview with government official, 2015).

<sup>2</sup> It is common for individuals living in informal settlements will organize daily water tanker deliveries, in this instance water tankers are used to cope with ongoing water inaccessibility rather than novel inaccessibility.

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- <sup>3</sup> Informal access is considered part of a variety of alternative water delivery mechanisms unregulated by the State or relevant governing authority (Burt and Ray 2014). Alternatively, the formal system refers to piped delivery, at least partly treated, and regulated by a state governing body (ibid.).
- <sup>4</sup> Zirakpur is not usually considered part of the “Tri-city”, however for the purpose of this paper I have included it as water management is also controlled by the Union Territory and water has often been taken from public areas of Zirakpur and brought to the city centre for distribution (Interview with water tanker employee 2015).
- <sup>5</sup> There are significant consequences for individuals who are found to have an illegal water connection. For example, one resident of Wadhamna (Maharashtra), was booked by police for diverting water from a main pipeline, and very large fines levied (Parmar 2014). Including these fees, the municipal corporation of Wadhamna discovered 10,500 illegal water connections found in three months, which allowed for the collection of 16,600,000Rs in fees (ibid.).
- <sup>6</sup> Scarcity, in this case, can be natural (drought), or a social construction (Linton 2010) based competing resource needs, such as hydropower and agriculture which are often at odds.
- <sup>7</sup> In India, there has been research published that suggests the privatization of water services has decreased child mortality rates (Galiani et al. 2005), however there is some skepticism around these findings since the inclusion of private enterprise is only one piece of the puzzle and thus there are other factors that may have contributed to the decreased mortality rates.
- <sup>8</sup> The consideration of privatized water being unethical is based on the understanding that water is essential for life, ecological health, and human dignity (Bakker 2010) and thus should not be governed by profit seeking initiatives.
- <sup>9</sup> Richard’s Bay is a predominantly wealthy and White area, which continues to be granted affordable and adequate access to water.
- <sup>10</sup> For example, the ADB states that it supports participation from the private sector, but does not support outright privatization (ibid.). As stated in the ERD Working Paper, covering private sector participation (PSP) in water supply services published by the ADB, “PSP can produce socially desirable outcomes... Conditions under which the private water supplier can be more efficient include an innovative approach to competition, effective regulation, good governance and contract enforcement, and sufficient effective demand” (Gunatilake and Carangal–San Jose 2008: 22). This demonstrates a sympathetic perspective of privatization, while maintaining some distance from the critiques of the same.
- <sup>11</sup> Although neither I nor the majority of my participants saw this as stealing, the word best corresponds to the Punjabi and Hindi words used during interviews, however, language is imprecise and translations add more cloudiness to communication.
- <sup>12</sup> “The city” is not monolithic, there are still methods of resisting neoliberalism within Chandigarh at the individual scale. However, as a whole, the municipal Union Territory government is allowing for the informal privatization of water.
- <sup>13</sup> Chandigarh is smaller both geographically and economically than other locations with private sector participation such as Buenos Aires and Manila, thus necessitating this

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difference. Also, as previously mentioned formal (*de jure*) privatization also contradicts constitutional laws in India (Sachar, 2012; Pandey A. 2014; Cullet 2013), which necessitates a hybrid governance.

## Paper 5 - The Politics of Water Scarcity and Conservation in Northwestern India

“Save Water, Save Life, & Save the World.” This sign, posted on a water storage and filtration facility in Shimla, Himachal Pradesh, hints at the complex relationship between people, water, and the need to conserve water in an effort to avoid scarcity (see Image 5.1). In India, as in many countries, there is a material need to conserve water, as scarcity and drought are significant problems facing the population. However, behind water scarcity lies a mix of physical, environmental, and social factors. Water scarcity is a biophysical phenomenon as well as a powerful discursive tool, making scarcity both a material environmental phenomenon and a manufactured situation (Mehta 2001). Although often attributed to global climate change, the environmental reality of water scarcity is often obscured by the ways in which the situation can be augmented or even created by water management strategies and other human interventions. As such, water scarcity arises from a mix of environmental constraints and socio-political interventions. Similarly, conservation as a mechanism to deal with scarcity can be part of an overarching socio-political agenda. Conservation of water as a way to stave off scarcity is a respectable and important goal, however, conservation narratives may be used to legitimize inappropriate interventions and obscure underlying political motivations. This is the case because, in general, the popular legitimizations for water conservation have tended to be conceptualized as arising from a “natural force rather than ... [being] human-induced” (Mehta 2001: 2025). Other contributing factors then are negated.



Figure 5.1: Poster Stating “Save Water Save Life & Save the World,  
photo taken by the author in July 2015

This paper addresses the complexities of scarcity and questions the appropriateness of current conservation projects in order to uncover how perceptions of scarcity legitimize a specific form of conservation put forward by the federal and state governments - specifically, the ways in which scarcity has been normalized by the states of Punjab and Himachal Pradesh, while denying some important political motivations. Often times, conservation is used as a method of further disciplining populations (Agrawal 2005; Darier 1996; Dickinson 2011; Fletcher 2010; Jones and Macdonald 2007; Meehan 2013a) and may encourage new regulatory regimes as well as new modes of surveillance (Escobar 1998; Youatt 2008). With 2016 designated the Year of Water Conservation in India (Ministry of Water Resources 2014), the disciplining and surveilling efforts have increased across the country along with programs to conserve water. For example, new State-based water policies have been put in place along with education campaigns aimed at disciplining children, adults, and even state officials. Furthermore, community members have been tasked with monitoring neighbours with respect to their water consumption and subsequent conservation efforts (Government of Himachal Pradesh 2014; Punjab State Council for Science and Technology 2014). These campaigns illuminate the way in which the management of water

is not only connected to the management of water but also the control of human populations. It is therefore necessary to understand how solutions to water scarcity and efforts to conserve allow for the practice of politics and assist in the circulation of power.

In order to better understand scarcity, water management, and conservation, it is important to trace the ways in which water has been “conserved” in India, and the forms of power the management strategy indicates. This paper attempts to elucidate the various ways water management has and can be practiced in Punjab and Himachal Pradesh. By conducting an analysis of the academic articles, news reports, advertisements, and campaigns, along with my participant data, I have attempted to illuminate the underlying mentality of conservation in India and the politics of scarcity, more broadly. I begin with a discussion on socially produced scarcity, and the ways in which this form of manufactured scarcity becomes material. I then describe the research methods used for the paper before presenting my analysis of conservation techniques employed within the two states, while drawing connections both to naturally occurring forms of scarcity and to the socially constructed scarcity (also referred to as manufactured scarcity). Although there are overlapping similarities in discourses between the two states in Northwestern India, I have divided my findings by state in order for more local specificities to come through the analysis. These findings speak to the ways in which the Indian case of water conservation reflects a neoliberal governmentality which downloads responsibility for water quantity onto individuals through the essentialization of water scarcity as a naturally occurring situation. As such, water conservation has been promoted by obscuring the problems of water management in favour of framing water scarcity as a crisis brought about by individual households, climate change, and population growth,<sup>1</sup> thus essentializing scarcity. This is part of a neoliberal project based on how the problem of water quantity and quality are addressed via a neoliberal lens. Specifically, that water scarcity can be overcome through pricing, commodification and other neoliberal policies.

However, these solutions to water scarcity only further integrate water into capitalist accumulation strategies.

### Conservation, Discipline, and Socially Produced Scarcity

There is a growing number of researchers who articulate the ways in which water has symbolic, social, cultural, environmental and material content. By acknowledging these different conceptions of water these authors recognize the ways in which resource management is connected to power relations, expert knowledges, and social structures along with the hydrological cycle (Bakker 2012; Bruns and Meizen-Dick 2000; Davoudi 2006; Escobar 1997; Hobart 1993; Linton 2010; Loftus 2006; Mehta 2001; Mosse 2003). This literature further discusses the way in which the politics of knowing and truth have played a substantial role how water has been managed. As Davoudi (2006) suggests, having one specific truth regarding environmental management can shrink “the space for dialogue and collective learning” (697). This sentiment highlights the ways in which the scarcity of water can be based on a specific version of “truth,” so that the resulting solution to scarcity is conservation, which is inherently bound up in politics and power dynamics. In this way, water management policies can and do bring about new knowledges and truths in populations and localities through a close look at the governing mentalities (Rose-Redwood 2006). The resulting truth and knowledge becomes a powerful component of how citizens are governed, and in particular, may attempt to mold and protect not only the body of water in question but also relevant individuals and populations, reinscribing individuals as “modern”, “green”, and/or “responsible” citizens (Brenner and Theodore 2002: 343; O'Reilly 2006).

Critiquing the “green” citizen discourses is of particular importance because the notion of conservation, protection, and preservation of water (or many other aspects of the environment) is rarely seen by the average person as anything other than beneficial. However, conservation of

the natural environment often comes with a new rationale and legitimization of regulatory regimes (Escobar 1998; Youatt 2008). The way in which this is done is through a specific mentality that requires “appropriate behaviour” and inevitable discipline if and when that behaviour is not followed (Tyner 2012). Violence emerges as part of disciplining space and producing conserving places (Tyner 2012: 20) and embedding the mentalities of conserving, environmental citizens. For example, “we conserve for a large number of utilitarian reasons – water supply for domestic, agricultural and industrial uses, fisheries and other natural resources, recreation, navigation, hydroelectricity” and more (Moulton 2012: 423) and yet the decision as to why the entity requires conservation is inherently political and based on a specific mentality that problematizes the environment and people in very particular ways.

Linton (2010) writes that the way in which the “truth” about how water and humans interact is understood primarily through a scientific, engineering, and economic lens, which is fostered by neoliberal governing mentalities. These mentalities define water scarcity in a specific way in order to further embed neoliberal policies as the only viable solutions to scarcity. In India, scarcity has been used as a political tool to legitimize inappropriate conservation strategies and infrastructural developments (Mehta 2001). As Mehta (2001) highlights, the construction of scarcity as a naturally occurring phenomenon has depoliticized the building of dams and canals in Western India. By fostering a narrative of scarcity based on drought and low rainfall, politicians, industrialists, and farmers are able to benefit from the construction of the Sardar Sarovar Dam, which has fundamentally altered the ecosystem by flooding a large area of land, disproportionately impacting low-income residents of the region (ibid.). As such, understanding the “truth” of water and/or the ways in which water is “dealt with,” is essentially a way to understand the governing mentalities employed. By examining certain programs within a water management context, not only do the different forms of power that are enacted on the relevant

human population become clear, but also the ways in which those powers attempt to construct both the self and the population as a whole (Traub-Werner 2007: 1444), through the discursive practices of government (Dupont and Pearce 2001; Traub-Werner 2007).

In a more thorough understanding of conservation, when people and their ability to access water, are problematized, water usage and collection activities are often targeted for discipline (Darier 1996; Fletch 2010; Foucault 1978; Meehan 2013a). Although this discipline is not inherently violent, there is an attempt to intervene upon the characteristics of human existence and thus the potential for biopolitical violence exists. An example of this can be demonstrated through the case of water conservation in Israel. In this case, the conservation of water was born out of an understanding of scarcity, which links "new apparatuses of water management with new apparatuses of government" (Bridge 2013: 4). For Israel, what this meant was that water has been constructed as scarce, and thus requires conservation based on specific political agendas. These agendas include and justify certain state actions, such as centralization, surveillance, hawkish foreign policy and the "abrogation of customary rights in water" (Alatout 2008: 978). However, there is limited indication that water is, in fact, scarce. "(A)s a matter of fact most water and political experts believed water to be abundant from the mid-1930s through the mid-1950s to late-1950s" (Alatout 2008: 960). Nevertheless, this view is not the dominant one among politicians and scholars; instead, scarcity is normalized as common sense (*ibid.*). Scarcity and thus conservation "policies [were] made to serve dominant political-economic interest" (Peet 2007: 10) and as such reproduce hierarchies "that do not put [water scarcity] into question" (Alatout 2008: 979) and instead represent a "sophisticated kind of domination [enacted] through disciplinary institutions, including policy-setting institutions" (Peet 2007: 55).

A similar situation to the Israeli case exists in Punjab and Himachal Pradesh where the myth of scarcity has been maintained, regardless of information contrary to this myth, thereby

reinforcing a political agenda. These states are therefore able to discipline citizens through new conservation policies which "supports and legitimizes the prevailing social order" (Peet 2007: 10) in unquestioned ways. This "involves modes of subjectification... [since people are] made to work on themselves in the name of the environment" (Clark 2012:116) and to a certain extent in the name of the state. This is one of the reasons why water management, and in particular the management of scarcity, has become a strong point of political tension - water scarcity and conservation have demanded an increase in the "apparatuses of government" (Bridge 2013: 4), presenting new disciplinary controls as justified (Braun 2008). These actions "largely served the interests of powerful people [such as] politicians, business constituencies and irrigators" (Mehta 2011: 382) and thus are used by the State to enact specific policies, which are often inequitable (Alatout 2008; Bakker 2011; Bond 2002; Swyngedouw 2006). This is already a common occurrence in India, where in the Kutch region scarcity has legitimized the "unequal access to and control over ... water" (Mehta 2011: 382) and the creation of dams. These dams have dispossessed people of water and land, such that "less than two percent of" the Kutch population stood to gain from the scarcity provisions (Mehta 2011: 375), while industrial firms were supported. This use of a specific "truth" of a situation (scarcity) has led to policies which further unequal resource distribution while maintaining and reinforcing the State's sovereign power.

The examination of truth, and how truth is political is one of the most important features of Foucauldian analytics. Notions regarding power formation and retention involve acknowledging mechanisms of power and how these can produce different types of knowledge, which act in a way that orders and manages people's actions and lives (Foucault 1991). Truth in this way can be "eventalized" and is something that is produced by certain techniques, rather than "fact." As stated by Foucault (1991), "each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true" (73). In the

case of water management in the Kutch region, the “truth” of scarcity functioned as a method of further consolidating authority by giving the State further embedded control over life in the region through the “apparently neutral language... [used] to gain adherence of people convinced that” (Peet 2007: 16) scarcity entails the need for State intervention. In this way, scarcity discourses are treated as inherently objective. Instead, they are a political act immersed in a very specific rationality (Bridge 2010; Peet 2007) that encourages power for specific stakeholders. Truth is never entirely separate “from the global political and economic forces that make it possible” (Peet, Robbins and Watts 2011:38).

### Methods

In order to examine the various ways in which conservation is enacted and presented in Northwestern India, a variety of data collection methods were used. I began by compiling state and government grey literature concerned with water management and conservation for the 2016 initiative, as well as popular sources of writing on the topic. Once completed, I read through these documents for common themes and discourses using a guide, included in Appendix A. Within the 140 documents consulted, the themes most common were as follows: concern over the decline in groundwater levels; the misuse of water by individual citizens; the contamination of water sources; the necessity of rainwater harvesting; and the importance of technology and foreign investment in water conservation.

With these themes in mind, I developed interview and focus group questions in order to “test” the grey literature and popular sources against the lived experiences of people involved with water conservation initiatives, as well as the experiences of those facing water scarcity. I wanted to challenge existing assumptions provided by theory, grey literature, and popular sources, in order to ensure their relevance. I conducted 48 focus groups of 7-9 individuals each, and 54 individual interviews for the collection of data presented in this paper. These were done

in the districts of Shimla, Solan, Mandi, Kullu, and Kangra in Himachal Pradesh, and the districts of Mansa, Sangrur, Patiala, Mohali, Ludhiana, Bathinda, Barnala, and Jalandhar in Punjab for a total of 438 participants. Most participants for the focus groups were chosen at random,<sup>2</sup> and some participants were found through snowball sampling.

## Punjab

### *Discourses of Scarcity*

The State of Punjab is generally considered water rich, and in fact, the name of the state translates to “the land of five rivers” (Singh 2008: 3). However, there is significant water scarcity within the State, which is particularly evident when looking at the decline in groundwater levels.<sup>3</sup> This is certainly a legitimate concern, but narratives surrounding the reason for groundwater decline focus primarily on indulgent water usage by individual citizens and households, climate change, and population growth. As such, conservation campaigns throughout the state have focused on education, increased prices for water, new forms of water metering, and the acceptance of technological assistance from foreign governments to ensure that less water is wasted at the level of the household (Department of Water Supply and Sanitation 2014a; Department of Water Supply and Sanitation 2015b; Punjab State Council for Science and Technology 2014; Sharma V. 2016; The World Bank 2013).

One of the major projects initiated by the Government of Punjab is the construction of rainwater harvesting infrastructure and “percolation pits.” Many of these can currently be found in public spaces, such as parks, and public schools (also referred to as government schools) in order to provide an educational opportunity along with the conservation projects (Department of Water Supply and Sanitation 2015c; Edwin 2016).<sup>4</sup> However, while conducting field research, I often saw rainwater harvesting structures in disuse, with no water in them and after looking at some popular sources of information, I found that this was a common occurrence (“Himachal

Pradesh CM' 2014; Pathania 2016). This problem has been brought about because although there is government financing for the building of rainwater harvesting infrastructure, there is very little (and in some instances, even none) for maintenance, leading to neglect (Pathania 2016; Personal Communication, NGO employee June 2015). The lack of maintenance policy and funding severely limits both the educational and conservation capacity of rainwater harvesting. Furthermore, rainwater harvesting as a method of conservation cannot overcome the overuse of water through agricultural production norms.

In spite of the narratives blaming citizens, population growth, and climate change induced scarcity, groundwater decline, although in part connected to climate change,<sup>5</sup> has more to do with the ways in which water used for agriculture has encouraged over-exploitation. Within India, the annual extraction of groundwater is the highest in the world (Suhag 2016; The World Bank 2012). This water is primarily used for agricultural irrigation. Industrial and domestic purposes for withdrawal only make up between 4% and 12% of the annual groundwater extraction, whereas irrigation makes up between 84 to 91% (Kant 2016; Suhag 2016; The World Bank 2012). Clearly, the reliance on groundwater for agricultural production is the greatest contributor to the exploitation and resulting decline in the groundwater table, and yet this method of agricultural production is encouraged and subsidized by both State and Federal governments (Kant 2016; Sidhu et al. 2011; Toan 2016). The narratives of scarcity then, do not match up with the realities of water usage and, in fact, water level declines are manufactured through inappropriate management policies. I do not use the word "manufactured" as a way to dismiss the water scarcity that people face on a daily basis, but rather to highlight the ways in which the situation has been brought about by inappropriate government policies and management strategies and to dispel the notion of scarcity as natural or as the fault of individual households.

Agriculture is an important economic activity in Punjab, as the State has long been considered the breadbasket of India.<sup>6</sup> As one of the most agriculturally productive states in the country, Punjabi produce is considered a safeguard against national famine and hunger (Dev and Rao 2010; Radhakrishna 1966). This has largely been achieved through an increase in agricultural inputs and green revolution technologies like high-yield seeds, new fertilizers, and new irrigation technologies (Mathauda et al. 2000; Sidhu et al. 2011). These advances have increased crop productivity and provided food security across India because, with the increase in yields, the government was able to develop the national grain program, which procures, stores and distributes food in an effort to combat famine (Sharma 2016). In Punjab, in particular, new canal systems and the Shakhra Dam on the Beas and Sutlej river provided the water necessary for their crops (as GMO seeds generally require more water), along with groundwater-based irrigation encouraged through free electricity provided by the Government to farmers (Kumar et al. 2005; Mathauda et al. 2000; Sidhu et al. 2011).

In order to ensure that farmers grow food intended for the country, rather than for export, the Federal Government has instituted minimum support prices (MSP), which is guaranteed pricing of foodstuff bound for national consumption (Sidhu et al. 2011).<sup>7</sup> One of the major MSP crops in Punjab is rice, commonly referred to during planting as “paddy.” This is particularly interesting because, as one participant told me “rice is not a traditional food in Punjab” (Interview, Woman, Wife of Paddy Farmer and Homemaker, 35 years old). Instead, the common starch offered around the dinner table is roti made from wheat.<sup>8</sup> As such, wheat has traditionally been a staple crop in Punjab. However, because of government programs and incentives, rice is now more commonly grown and is bound for dinner tables outside of Punjab. Unlike wheat, rice is an inefficient water-using crop. Paddy plants require approximately 2,800 cubic meters of water to produce one ton of grain, whereas wheat requires only 1,654 cubic

meters of water to produce one ton of grain (Suhag 2016). This is because the amount of water needed for sowing paddy generally requires that fields be flooded,<sup>9</sup> necessitating extensive irrigation (Saha and Bharti 2016; Sidhu et al. 2011).<sup>10</sup> Although necessary for successful growth, the flooding of fields is inherently water wasteful since water is lost via seepage, percolation, and evaporation thereby decreasing the productive capacity of each ounce of water (Saha and Bharti 2016).

As such, the MSP program, although successful in ensuring food security within India, has overwhelmingly changed the water-food nexus within Punjab, because water intensive crops cover approximately 80% of the cultivated land in the state (Sidhu et al. 2011). This means that although the decline in the water table and the scarcity experienced by farmers is highly material, it is also part of an overarching socially produced, or manufactured, scarcity. The natural environment within Punjab is not the most appropriate for paddy production, although this agricultural choice is encouraged through subsidies provided by the State and Federal Governments (Sidhu et al. 2011; Toan 2016). This goes beyond MSP as farmers receive unmitigated (and free) electricity for running water pumps, as well as unpriced water extracted from underground aquifers regardless of the amount used.<sup>11</sup> Without any costs associated with electricity or water, and needing more water to grow paddy, more tube wells have been constructed for the purpose of irrigation, thereby contributing to further declines in the groundwater table (Rodell et al. 2009; Sidhu et al. 2011). As such, the water scarcity has been fostered and constructed through government policies, which attempt to ensure high levels of economic growth and food security through agricultural production. In order to ensure that this level of productivity remains, regardless of dwindling water resources, the government has decided to encourage conservation of water in various, and sometimes contradictory ways. This form of conservation has, in part, been achieved by obscuring the problems of water management

in favour of framing water scarcity as a crisis brought about by individual households, climate change, and population growth, thus essentializing scarcity.

#### *Water Conservation for Whom?*

The government of Punjab has stated that water conservation is an important goal of the state in order to ensure economic growth, continued food production and food security (Punjab State Council for Science and Technology 2014; Sharma A. 2016; Sharma V. 2016). As such, even though water conservation encouraged via education and increasing awareness is laudable, it seems as if conservation efforts are being targeted toward people and industries, which are *not* the largest consumers of water in the state. For instance, as part of the new water conservation goals set out by the Federal Government for the 2016 Year of Water Conservation, the state has developed a new water policy which explicitly targets illegal water connections in private homes, but does nothing to regulate agricultural water use (Department of Water Supply and Sanitation 2014a; Department of Water Supply and Sanitation 2015b; The World Bank 2013).<sup>12</sup> For individuals currently obtaining water through an unofficial hook-up, there is a voluntary disclosure scheme, which allows citizens to regularize their connection for a smaller fee than the fine for the discovery of an illegal connection (Department of Water Supply and Sanitation 2014a). However, very few people have taken this opportunity, considering the financial burden of the fee too high in spite of it being a smaller amount than the fee for an illegal connection. There is also more extensive metering planned within the new Water Policy, which includes the proviso that the “consumer will also be liable for any damage or sabotage or tampering caused to the meter” (Department of Water Supply and Sanitation 2014a: 11), placing a further financial onus on individuals. The state also intends to check residents for overuse of water, which along with the pricing and metering further reinforces the narrative that scarcity is caused by the overuse of individual citizens and thus conservation efforts must be targeted towards them (Department of

Water Supply and Sanitation 2014a; Loftus 2006; Nagarkoti 2016). As the Year of Water Conservation came to a close, then, changes to water management remained relatively superficial. As such, even with high-school students organizing walk-a-thons to raise awareness of water scarcity and encourage water conservation (Mehta 2015), it seems as though water conservation is an afterthought for the state, the more important issues being economic development and agricultural production. Groundwater depletion due to agricultural production supported by government subsidies has remained unchanged, and instead, other methods of conservation have been initiated – leaving a major factor of the problem unaddressed.

### Himachal Pradesh

#### *Social Construction of Scarcity*

Similar to Punjab, the state of Himachal Pradesh is also considered water rich. The name of the state means “in the lap of the Himalayas,” and the location in the foothills of the Himalayan mountains gives Himachal Pradesh a geographic advantage with respect to water, as there are high levels of water flowing into the State due to glacier and snow melt. This abundance is socially and culturally reinforced so strongly that children sing folk songs about the ways in which the gods and goddesses have brought water to the Himachalese people.<sup>13</sup> Although there is a natural abundance of water, the allocation of resources among citizens of the State is inequitable, making water scarcity a manufactured condition. Water has been conceptualized through an economic lens and as such, has been (neo)liberally manipulated and governed through the creation of dams and the diverging of rivers and streams for economic purposes. As such, water meets economic needs rather than the needs of the human population, and the ecosystem more generally.

The manufactured scarcity in Himachal Pradesh first came to my attention during a focus group when I met with students at a local public college to discuss conservation efforts by the state, and how individual citizens were adopting them. Most of these students indicated that

they do not receive enough water to participate in conservation, but still, this discourse is used to explain or legitimize the limitations to their personal water allocation. The common experience of the students was that based on their living situation their water was limited. Most students who participated in this research rented rooms within larger homes, similar to a boarding house. A landlord ran the house, and water was provided from one common tap for all the tenants (often more than five). These students said that on average their landlords allotted them 15 minutes to collect water from the communal tap each day.

*“We know when the water will come at my [house], so the landlord gives us an [allotted] time to collect water. My time is from 8:30-8:45am” (Focus Group Participant, Male, Student, 21 years old, June 2015).*

*“I only get 15 minutes each day – I have to be very organized, so I can fill as many containers as possible during that time” (Focus Group Participant, Female, Student, 19 years old, June 2015)*

*“He (the landlord) says it’s about conservation of water, but we all know it is not” (Focus Group Participant, Female, Student, 20 years old, July 2015).*

The tap that all the renters use is in a central area, and each tenant gets unmitigated access during their 15 minutes. When water pressure is high, the students indicated that they were generally able to collect enough water from the communal tap in their many plastic containers to meet drinking, washing, cooking, and cleaning needs for the day. However, during peak tourist season water pressure is often very low, which means that there is very little water that can be collected during the 15 minutes when it is available. As one participant noted, “obviously when it just drip-drip-drips: no amount of time is really [enough]. It goes to the paying tourists...no offense...but to people like you” (Female, Student, 22 years old, July 2015). This participant was right, at my hotel, myself and my research assistants were able to turn on the tap and get hot or cold running water at any time, night or day.

*Realities of Abundance and Scarcity: Tourism and Climate Impacts*

The conservation of water is undermined by the influx of tourist and service populations (Ridolfi 2014). Peak tourist season is generally between June and August during India's hottest months. Visitors during these months, predominantly Indian nationals,<sup>14</sup> come to the mountainous region because the temperatures are much lower than in the more Southern States of the country (Jreat 2004). Because of its geographic location, and other local characteristics, Himachal Pradesh is a dynamic tourist centre for both national and international visitors, particularly if they are trying to avoid the heat (Jreat 2004; PHD Chamber of Commerce and Industry 2012). This was as true during British colonial times,<sup>15</sup> as it is today.

Tourism is vital to the economy of the state and country. For example, tourism accounted for 6.3% of India's total Gross Domestic Product in 2015 through direct and indirect activities and services<sup>16</sup> and thus is the third largest industry in India (Jreat 2004; Turner and Freiermuth 2016). The economic impacts of tourism were expected to grow to 13.8% in 2016, while employment from the travel and tourism sector was to increase from 8.7% to 11.7% between 2015 and 2016 (ibid.) – making tourism one of the fastest growing industries in India (Jreat 2004). The federal government has fostered the growth of this sector with more relaxed visa requirements for international tourists, as well as with an increase in national and foreign travel advertisements. For Himachal Pradesh, this has meant an increase in the number of tourists of over 14% between 2006 and 2011 (PHD Chamber of Commerce and Industry 2012), which has brought both positive and negative impacts to the region. On the positive side, the economic growth due to tourism has increased incomes for some individuals (Jreat 2004), but it has also exacerbated the “drip-drip-drip” issue, highlighted by my participant.

Compounded by the arrival of the tourist populations in the summer months, climate change is also challenging water management in Himachal Pradesh. Global climate change is impacting the Himalayan region at a much higher rate than the rest of Asia and the World

(Bajracharya 2007; ICIMOD 2012; Singh et al. 2011). For example, there has been a rise in temperatures of 0.6°C each decade in the Himalayan region, whereas the global average is 0.74°C over the last hundred years – so the Himalayan region has experienced in 10 years what the rest of the world has experienced (on average) over 100 years (Erkisson et al. 2009). These temperature increases cause stream flows to increase throughout the state as glacier melt occurs at higher than average levels, so in fact, there is *more* water available to citizens,<sup>17</sup> even during seasonal population increases. However, current water management strategies change the allocation of water flows and the ways in various public and private interests intersect with abundance and scarcity.

*Abundance for Development: Water Saved is Energy Generated*

Due to the political and social controls involved with water allocation, instead of there being an increase in water available to citizens due to climate change-induced snow and glacier melt, the government of Himachal Pradesh and the federal government are attempting to harness the regional “untapped hydropower potential” (Asian Development Bank 2013: 82). Accordingly, the increase in water throughout the state “present[s] an opportunity to ...maximize growth and development” (Hurford, Wade and Winipenny 2014: viii). With water as a development asset, the State and the Federal governments have begun over 300 hydroelectric projects, including dams and run-of-the-river schemes since 2010 (Iyer 2010).<sup>18</sup> These projects will increase the hydropower production by 15,000MWs by 2017 and 23,000MW by 2020 (‘Himachal to generate 15000 MW’ 2012). The rationale for the increase in “hydroelectric projects [is]...to meet the energy requirements of Delhi” (Pratiyogita Darpan 2007: 591) as well as those of other major cities, and as such 163/438 of the participants described feeling resentful of these projects, because they “are the ones suffering the [ecological] consequences so others can benefit” (Interview, Woman, NGO Founder, 48 years old, June 2015).<sup>19</sup>

Hydroelectric projects have created a surplus of electricity, but have also diverted water traditionally supplied to the general public – thereby creating a scarcity that would not otherwise exist. In order to manage scarcity due to these human impacts then, water conservation campaigns have been initiated by the state via the Central Water Commission, and by various NGOs such as The Global Water Partnership, the Himalayan Nature & Environment Preservation Society, and the Himalayan Eco Horticulture Society. Like the conservation efforts in Punjab, the Himachalese strategies rely on rainwater harvesting techniques and priced metering to encourage conservation (Government of Himachal Pradesh 2014). Some of the signage and slogans which promote these modes of conservation are as follows:

- Energy Saved is Energy Generated (Figure 5.2)
- No Waste: Let us turn off the taps that are needlessly left running
- New Meters: Those who have paid water tariff may use water; others may not
- Save Water, Save Life & Save the World (Figure 5.1)
- Water is Precious! Be Wise in Using It! (Himachal Pradesh Irrigation and Public Health Department n.d.)
- Don't Waste Water or the World won't get any Better (Himachal Pradesh Irrigation and Public Health Department n.d.)
- See Mother Nature's Face Turn Sour when You take a Long-Long Shower (*sic.*)
- You have some Nerve if you don't Conserve (Himachal Pradesh Irrigation and Public Health Department n.d.)

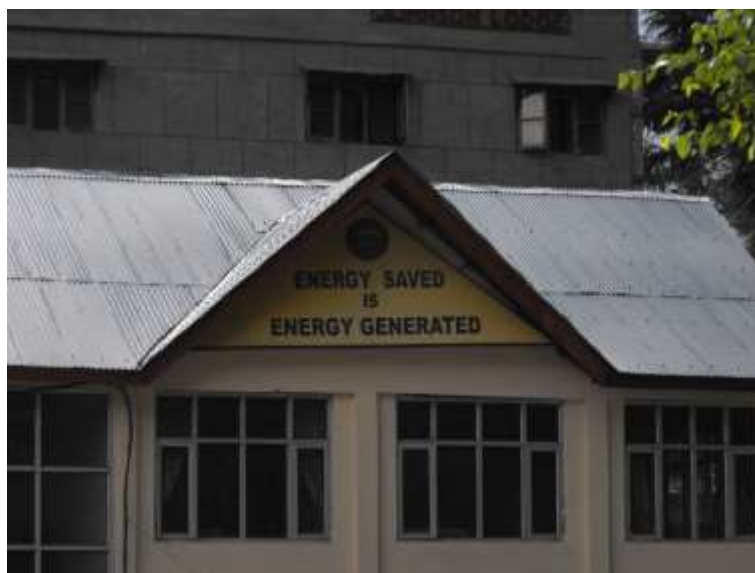


Figure 5.2 – Sign stating “Energy Saved is Energy Generated,”

photo taken by author, July 2015.

*Unintended Consequences of Conservation*

One issue that is often neglected when considering the politics of water allocation is the impact on female public school students when water levels are low for the purposes of “conservation.” There are significant restrictions on access to drinking water in public schools, which impacts both female and male students.<sup>20</sup> However, water inaccessibility is not limited to drinking water, the lack of water in bathroom facilities has a distinct impact on the health of female students. During one all-female focus group with public school students, women discussed contracting urinary tract infections, including bladder and kidney infections, which they attributed to poor sanitation in school bathrooms, along with dehydration. In particular, although their school had western-style toilets, often times, these were left unflushed due to lack of water. One student discussing this situation said that these toilets would fill with waste, “for entire days – not just at the end of the day” (Focus Group Participant, Female, Student, 20 years old, July 2015). When I asked about options to leave the school grounds in order to access better facilities another participant said, “if I leave school, I may be [penalized] by my professors, so instead I try not to use the bathroom at school” (Focus Group Participant, Female, Student, 19 years old, July 2015). Another student responded “it makes it easier when there’s no water [to drink] anyway” (Focus Group Participant, Female, Student, 21 years old, student, July 2015), to the response of a further student who said, “well everyone who uses them [the toilets] eventually gets sick – better to avoid” (Focus Group Participant, Female, Student, 21 years old, July 2015).

“You see – [we] have suffered for years ...But no one in government cares – the politicians have enough [water] so what does it matter to them” (Focus Group Participant, Female, Student, 20 years old, July 2015). The situation described by my research participants has been allowed by the state by the ways in which the availability of water and human conduct towards water have

been problematized. According to current government rationales, new flows of water can and should be used for economic development, and any scarcity created for human populations as a result of these programs has led to pressure on the citizenry to conserve. Conservation is the solution rather than any change to the current thinking about water management and economic development, which in turn highlights the social construction of scarcity and the politics of conservation.

#### Conclusion: Scarcity and Conservation as Control

Water conservation as a method of mitigating scarcity is, hypothetically, a positive strategy. However, water conservation is currently being used as a way to control the use of water by citizens in order to ensure continued economic growth in Northwestern India. By ensuring that the general population conserves water, and by limiting the access to water by certain citizens, agricultural and hydropower production are maintained and fostered. Both of these economic activities significantly benefit citizens in other states, while simultaneously limiting the water access of internal citizens. So, who and what is conservation for? How can conservation aimed at changing household usage overcome scarcity produced by government policies that encourage the over-exploitation of groundwater or the diverting of water from household use for the purpose of hydropower production? Primarily, blaming water scarcity on misuse at the household level, climate change and/or population growth has gained a certain amount of traction at the state and federal levels because it legitimizes new water conservation initiatives aimed at decreasing demand at the household level, rather than forcing change that could decrease the economic capacities of both Punjab and Himachal Pradesh. As such, framing solutions to scarcity serve certain political agendas, denying a plural reading of the situation (Fairhead and Leach 1996), disciplining populations for political and economic purposes, while also limiting the ways in which scarcity can be thought about and addressed.

Although climate change and population growth do impact the hydrological cycle in both Punjab and Himachal Pradesh, to focus on these factors, and misbehaving households, obscures the ways in which current water management practices have manufactured scarcity. The complexities of scarcity, which involve both biophysical and human impacts, are universalized – ignoring the multidimensional nature of water scarcity. Conservation then also becomes essentialized – focusing on interventions at the household level rather than tackling those industries which may lose economic productivity should changes to their water levels be made. As such, the manufactured nature of scarcity legitimizes inappropriate conservation techniques to be used on the public, which in Punjab and Himachal Pradesh is not going to address the material consequences of scarcity for individuals within the two states, but instead will embed neoliberal logic within water management, obscuring the more realistic reasons behind water quality and quantity issues in the name of conservation.

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<sup>1</sup> Crisis and stress are terms used by the state government, federal government, academics, and media outlets (Asian Development Bank 2010; Babu and Ramakrishna 2008; Bansil 2004; Bhardwaj 2014; Department of Irrigation and Public Health 2013; 'Erratic Water Supply' 2014; Equations Tourism Option 2007; Gandhu and Namboodiri 2001; Gupta 2008; Kumar & Sharma 2005; MPP & Power Department 2014; Planning Commission Government of India 2005; Sharma and Kanwar 2009; Uppar 2015; Zee News 2012)

<sup>2</sup> For my random sampling method, I went to several public areas and would ask every third person who walked by my if they would be interested in sharing their opinion and answering some questions about water scarcity and quality in their neighbourhood. In general, this meant people had an equal chance of selection. By doing this I was hoping to increase credibility, rather than foster repetitive responses from like-minded participants discovered through snowball sampling.

<sup>3</sup> In Punjab, ground water exploitation is as high as 172%, which means that water levels cannot naturally recharge (Batra 2016; Das 2016; Franklin 2015; Ministry of Water Resources 2016). Furthermore, the mean rate of decline of groundwater in Punjab is -  $17.7 \pm 4.5$  Gt/yr<sup>3</sup>, which is equivalent to a net loss of 109 km<sup>3</sup> of water (Chen et al. 2014; Rodell et al. 2009). It also means that farmers, who often need to access to groundwater for agricultural production, must dig down deeper in order to reach the water table (Das 2016). The problems associated with this were brought by 33 out of the 57 farmers interviewed.

<sup>4</sup> The federal government has also initiated projects to ensure conservation through different forms of water management. For example, there is a new program, initiated from the Ministry of Water, which is funding projects in Punjab, and other states facing negative groundwater balances, that create ponds and watersheds (Sharma A. 2016).

<sup>5</sup> Punjab is experiencing an increase in average temperature of between 0.5 and 1.5 degrees Celsius, while also experiencing a decrease in the average amount of precipitation

- (Mujumdar 2008; Punjab State Council for Science and Technology 2014). Along with this, monsoon rains are less predictable. With temperatures increasing, precipitation decreasing, and weather becoming less predictable, water availability will become less certain and thus water availability and crop vulnerability has increased within the state (Rijsberman 2006; Sidhu et al. 2011).
- <sup>6</sup> Although Punjab makes up 1.52% of the totally physical area of India, the state supplies approximately 50% of the total grain reserves held and distributed by the government to ensure national food security (Sidhu et al. 2011).
- <sup>7</sup> For example, in 2014-2015 “Common” rice was 1360Rs/quintal, “Grade A” rice was 1400Rs/quintal, and Basmati Rice (for international export) 1,750-1,800Rs per quintal. However anytime there is a market shift in demand for basmati, farmers may face a loss of between 10,000-15,000Rs/ acre of crop (Department of Agriculture 2016; Singh 2016). So the sure bet of the MSP crops are very popular among Punjabi farmers.
- <sup>8</sup> This is a staple in part because the climate and physical geography of Punjab is better suited to growing wheat. Culture then adopted the product more readily.
- <sup>9</sup> Flooding the fields is important for paddy growth, because the roots are better able to infiltrate the soil with the tiller production facilitated with water depth (Saha and Bharti 2016).
- <sup>10</sup> Throughout India, just over 50% of the total rice crops are irrigated. These irrigated crops are those that contribute 75% of the grain to the overall rice production in the country (Saha and Bharti 2016).
- <sup>11</sup> This costs the Punjab State Government approximately 45 billion rupees each year (Sharma 2016). For canal water, this is slightly different. There is a clocking in and clocking out situation where some farmers get water from 12noon until midnight, with another group getting water from midnight until noon the next day. There is a lottery for when you get the unmitigated canal water access.
- <sup>12</sup> This is in part due to the complexity of water governance throughout India, where the usage of water for agriculture, industry, and household use is all decided by different government departments.
- <sup>13</sup> One of the most popular songs celebrating water is “Panni Peena Ho”, which translates to “Water to Drink”. I met a group of school children, who after hearing I was doing research on water issues sung the song for me and even performed a short dance.
- <sup>14</sup> Many foreigners also go the Himachal Pradesh, but not generally during the summer months because in general there are fewer foreign tourists visiting India during the summer (Jreat 2004).
- <sup>15</sup> Shimla has a long colonial history, known as a “Little England” during the days of the Raj (Kenny 1995). Each summer, the English colonial rulers would migrate from Delhi to Shimla (then called Simla) because they could not cope with the summer heat (Tucker 1982), something I quickly related to during my summer data collection in Punjab. For a century, Shimla was the centre of power and control over what is now Bangladesh, Burma, India, Pakistan, and Sri Lanka, which can still be seen in the architecture of various homes and other buildings in the Shimla district (Pandey S. 2014).
- <sup>16</sup> To put this amount from tourism into perspective, IT businesses contribute only slightly more at 7.5% according to NASSCOM (National Association of Software and Service Companies in India; Venkataramakrishnan 2014).
- <sup>17</sup> This will eventually be followed by decreased river flows as the glaciers recede, but while the glaciers are in a period of increased melting it does mean more water in the present (Eriksson et al. 2009). Although this could lead to further conservation rationale, at this time the increase due to climate change has not been addressed by the government in this way. Instead, the increase has only been considered an asset for economic development through power production.

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- <sup>18</sup> Interestingly, the hydroelectric projects – and thus control – is mostly in the hands of the federal government, rather than the state of Himachal Pradesh (Koschel 2013). In fact, “the Sates function under the guidance of the Central government” (Saxena and Kumar 2010: 1), so even when there is a state-based hydropower project in place there is still a significant amount of control held by the Federal government. As such is comes as no surprise that often these projects may economically benefit India, local populations are neglected to face the consequences of development with limited support.
- <sup>19</sup> This participant in particular raised concerns about stray animals who depend on reliable watering holes and ponds. These watering sources have been modified with changes due to hydropower diversions, so places where animals originally found water have sometimes no longer exist.
- <sup>20</sup> During my focus groups with public school students, I was told that “Often I cannot fill my bottle at the [water] fountains: the water just doesn’t come on... This means to get water, I have to leave campus to fill my bottle” (Focus Group Participant, Male, Student, 21 years old, July 2015). This leaves students attending public schools at a disadvantage because “it happens 2 or 3 times a week”(ibid.), meaning that students may be missing valuable educational content while they go to collect water throughout the day something that “private school students don’t need to worry [about]” (Focus Group Participant, Male, Student, 20 years old, July 2015). I later confirmed this after holding a focus group with private school students, who discussed unmitigated water for drinking and hygiene.

## **Conclusions: The Diverse and Parallel Consequences of Neoliberalism on the Hydro-Social Cycle**

*“Perhaps one of the most interesting findings... is that singular processes can give rise to highly diversified and highly complex as well as often quite unpredictable results.” (Harvey 1996: 58)*

In Northwestern India, the allocation and quality of water has been deeply intertwined with power hierarchies at local, state, national, and global levels of interaction. This has been the case throughout history, before colonialization, during the British occupation, throughout partition, and currently. More recently there have been attempts to redistribute resources within the country in order to overcome issues of inequalities among castes, classes, religious affiliations, and gender. These initiatives include provisos through Articles 21 and 47 of the Indian Constitution, which include the right to adequate quantity and pollution-free water, however, there still remain significant barriers to water equality. Although the way that water governance has been enacted in India is specific to the country, there are still clear linkages to global political and economic shifts. In particular, the new Indian water policies in Himachal Pradesh and Punjab show increased connections to neoliberal economic models. This includes financialization, privatization, and new governance models all aimed at embedding neoliberal governmentalities within water management frameworks. This governance model thus frames water problems as an issue of economic efficiency and sustainability, demonstrating the priorities of sustainable management and conservation within national and international administrations.

Throughout this dissertation, I have considered sustainability and sustainable development a political and economic rationality – these are concepts that carry a specific worldview, or governing mentality, implementing and reproducing a certain model of water

governance. The idea that water policies can be considered lenses for understanding the political rationalities at work within various scales of interaction is a common theme within critical water management literature (Bakker 2013; Death 2013; Elden 2007; Hill 2015; Hobson 2013; Holden 2011; Huxley 2007; Sultana 2007; Sultana 2012; Sultana 2013; Swyngedouw 2005; Truelove 2011). With this dissertation, I have critically scrutinized the way the discourses on water conservation, sustainability, allocation, and quality, frame both the problems and solutions as part of an overarching neoliberal project. As such, I approach water policies as a form of political action that changes and defines the conditions of life for certain populations under a neoliberal mentality. The conditions of life are different for different communities because neoliberalism is a tricky beast – shifting and changing to suit local norms, and as such does not present a homogeneous outcome or application. Understanding this has enabled me to approach and problematize water allocation and quality as an aspect of neoliberal policies, which encourage a market-based approach to water management.

The intent behind the research put forward in this dissertation has been to contribute to understanding the plurality of experiences and impacts arising from the hydro-social cycle based on governing rationalities and “expert” knowledges, rather than to focus solely on scrutinizing governance structures. Based on this intent, I have used a qualitative methodological approach in order to discuss my overarching question - *How are hydro-social cycles changing in relation to neoliberal shifts within Northwestern India?* This approach has enabled a study of both the governing mentalities as well as their impacts on individual communities and water users.

The particular location for fieldwork, Himachal Pradesh, Punjab, and Haryana, were not randomly chosen. Instead, together, these three states in Northwestern India can be seen as an exemplary site for understanding the impacts neoliberalism has on water management. These states are each considered water rich, and thus often there is inattention to the ways in which

water is used, and water policies are implemented. In considering the research presented in this dissertation in relation to my original research question, what I have elucidated are the ways in which people are impacted by shifts in water service delivery and water policies within the context of Northwestern India. In order to address this overarching question; the following section presents a summary of the most salient findings and discussions offered in my first through fifth. I have structured these insights by discussing some of the common themes presented within and between the papers.

#### New Modes of Financializing and Commodifying Water in Punjab

There have been significant efforts on the part of the government of Punjab to ensure that high-quality water is accessible to individuals in both rural and urban settings within the state. One of the ways in which the state has attempted to do this is by increasing private sector participation, as well as further integrating water into circuits of capitalism through intensified commodification and financialization. My papers look at two specific instances of this shifting trend in provisioning and management, one rural and one urban. The first example investigates the ways in which the Punjab State has partnered with private companies to supply individuals and communities with reverse osmosis water purifiers (ROs). Individuals are encouraged to put an RO in their homes through advertising campaigns, which use “experts” as well as emotion,<sup>1</sup> to encourage people to use these devices in their homes. In rural communities, individual water installations are less appropriate and thus the Government of Punjab has built community RO stations. These ROs allow people to procure water which has been filtered for contaminants, like bacteria. However other contaminants, such as formaldehyde and methanol cannot be filtered out. On the surface, this can be considered a highly beneficial program implemented by the State Government. However, these new technologies within water provisioning are increasingly

connected to capital accumulation strategies, leading towards further commodification (Bakker 2005; Braun 2011; Castro 2013; Loftus 2006; Shiva 2002).

As an even more direct example of intensified water commodification, I analyze the growing significance of water-tanker usage in urban areas of Punjab and Haryana, specifically Chandigarh, Mohali, Zirakpur, and Panchkula. The States of Punjab and Haryana are required to provide water to citizens, however, the water needs of individuals often go unmet. This is because there is a considerable amount of competition among water users, and during times of drought water provisioning becomes stressed. In order to cope with water insecurity, individuals often purchase water from private sellers who deliver water using truck-driven tankers to individual homes in order to refill the plastic tanks common to the roofs of middle-income homes. This is an interesting situation, wherein the state knowingly fails to provide adequate water services to individuals and allows for the gaps to be filled by private companies. I suggest in this paper that this is a new form of *de facto* public-private partnership (PPP) and thus presents an example of “actually existing neoliberalism” (Brenner and Theodore 2002: 349) that is locally specific, and yet still traceable to national and global neoliberal processes.

The empirical evidence and theoretical perspective speak to a number of ongoing debates within the discipline of human geography. In particular, scholarship surrounding water privatization, the different ways governing models that encourage privatization as a management tool, the different lived experiences under privatized water, and the various ways in which privatization may present (Bakker 2010; Budds and McDonald and Ruiters 2005; McGranham 2003; Swyngedouw 2005). In terms of its broader significance to the field of geography, one of the chief insights which I believe the study of increased commodification and financialization in both papers offers is a deeper appreciation of how neoliberalism is changing localized forms of

water management, demonstrating to the transforming nature of privatization and the neoliberalization of water allocation.

#### Economic and Slow Violence via Water Management Reforms

A second overarching theme to the research presented in this dissertation is the ways in which certain water management strategies present emerging forms of violence within Northwestern India. In Himachal Pradesh, in the Shimla and Solan districts, water contamination has become an increasingly material concern for individuals. This contamination has been allowed to continue through the inaction of the State, and thus pollutants have accumulated within the environment and the bodies of citizens. This pollution slowly impacts the health of individuals, thus acting as a form of slow violence. This slow violence is reinforced and instigated by a form of economic rationality, which considers economic development to be more important than the health of individuals. Individuals with higher levels of financial capital are able to overcome contamination, either through buying filtered water or buying filtration devices for home usage. As such, the bioaccumulation of pollutants is connected to levels of financial capital – making the embodied impacts of environmental degradation more significant for low-income earning individuals. This situation presents a further form of violence, which is the economic violence present within neoliberal rationalities, adding a new empirical basis for the arguments surrounding the violence of neoliberalism (Springer 2016c).

The analysis presented on the forms of violence above speak to the ways in which hydropolitics are influenced by shifting political rationalities, further impacting the possibility of survival and well-being for individuals in Northwestern India. This discussion highlights the power that water management has as both a political and economic potential. Currently, the power wielded through water management has created disparities and human suffering. However, what if this power were redirected more equitably? A reimagined water management strategy

provides the possibility for a more equitable society based on the potential future positive impacts of the hydro-social cycle (Linton 2010). The significance of this research then indicates not only to the importance of better understanding the shifting hydro-social cycle in Shimla and Solan, but it also adds to the increasing evidence regarding the negative impacts of neoliberalism on waterscapes, and the potential for futures beyond neoliberal-influenced water governance models, while also suggesting the opportunity for change in the future – that change is possible given the right governing mentalities and techniques.

#### Gendered Impacts of Shifts in Water Policies

There are a variety of consequences, both intended and unintended, when water management strategies shift. In Punjab and Himachal Pradesh, changes to the management and provisioning of water have brought about negative consequences for women in particular. In Punjab, with the introduction of communal reverse osmosis filtration technologies, women have been replaced by men as the collectors and haulers of water within many rural communities. This gendered shift represents a major change in the divisions of labour, as in Punjab women have traditionally been the water stewards and haulers. However, as water provisioning has been “modernized” with technological intensification, men have increasingly replaced women within rural waterscapes. Instead of women walking to collect water in traditional clay pots, men now often go by bicycle or motorbike and collect water in plastic containers. During interviews, men assured me that their new involvement in water collection emancipated women from some of their water-based chores, freeing them to engage in more leisure activities. However, women interviewees claimed that their work had shifted to the more private spaces of the home. Without the labour of walking to collect water, women were limited in their social activities in many ways. As such, although the communal ROs provide filtered water to community members without individualized piped access, they have also had severe impacts on the daily lives of women in

rural Punjab who may no longer have the same access to social and leisure time with their peers and family members.

In Himachal Pradesh, the shifts to water management also disproportionately impact women. Although there has not been a similar change to gender-based labour norms, women's bodies and activities have been impacted. With increasing levels of water contamination, and low levels of water allocation in certain public spaces, such as the restrooms in public schools, women's health has been disproportionately affected. Focus groups with female participants in Himachal Pradesh demonstrated a disproportionate health-related outcome for women, as the majority of female students consulted had experienced urinary tract infections, including bladder and kidney infection due to the poor sanitation in school bathrooms, along with dehydration. The poor sanitation is based on inadequate amounts of water to flush toilets and wash hands, making women in particular, susceptible to illness. This situation presents an embodied, physical, impact to women based upon certain water management strategies implemented by the State government.

Although there is a considerable amount of literature on the subject of gender roles in relation to water collection (see for example Sultana 2007; Sultana 2009), the health-related impacts to women based on water management (see for example Duflo and Topalova 2004; United Nations Department of Economic and Social Affairs 2005), and even gender and water-based modernity (see for example Gandy 2008; O'Reilly 2006; O'Reilly 2012), this analytical work and empirical data not only presents a new case study in the shifting hydro-social cycle, but also advances discussions within Feminist Political Ecology.

#### Legitimizing Discourses of Development and Sustainability

In many of my papers, I have scaled out from the local impacts of water management shifts in order to look more broadly at the discourses surrounding water management in Himachal

Pradesh and Punjab. Because 2016 was The Year of Water Conservation in India, new management strategies and policies aimed at “saving water” by decreasing consumption and increasing technical prowess (with regards to water “capturing”) have been put in motion throughout the nation. In general, the national media coverage and response to these efforts has been positive. As is the case in many different regional contexts, conservation is generally considered a positive goal within water management and governance policies. However, by critically examining these policies and conducting a study of the discourses surrounding water conservation, an overarching neoliberal governing mentality became clear. This mode of economic rationality was particularly evident in relation to scarcity solutions, and how citizens should govern themselves based on a neoliberal rationality. In particular, I found that citizens were encouraged to police themselves and others with regards to water amounts through responsabilization and increased costs for individual citizens.

The above example of responsabilization is similar to the ways in which discourses have impacted the conduct and self-governance of rural Punjabi citizens. Rather than discourses of neoliberal rationalities, however, the discourses most prevalent in changing the self-governance of individuals in Punjab, are discourses of modernity – that increased use of water-based technologies is part of an overall “modern” domestic and international economy and appropriate water provisioning. This case presented above and in my second paper, demonstrates that water has been commodified, not just through the increasing need to pay for it, but also through linking water to technological modernization within the waterscape. The situation in Punjab delegitimizes women as modern subjects, instead reinforcing them as “backward” based on their traditional water collection methods, rather than modern through the adoption of new modern technologies. The discourses of modernity and traditionalism “necessitate” male intervention within water-hauling activities. In this way, traditional constructions of gender are reinforced

through natural resource management activities – constructing the labours of men and women in relation to increasingly commodified waterscapes.

#### Limitations to Research

One of the benefits of being a novelty in India was the ease with which I was able to convince individuals to participate in focus groups or interviews. Further, individuals who came to focus groups often brought one or more friends with them, as unplanned “piggybacking” participants. In general, these unintended participants are what made my total number of participants so high, even though my actual time spent in India was limited (May 2015 – September 2015). I was able to interview (either individually or in focus groups) a total of 680 participants. Even with this high number of participants, there are considerable limitations to the work I have completed in order to fulfill the requirements for my doctoral degree. While I did take Punjabi and Hindi language lessons, my skills were limited, and thus I required an interpreter for many interactions. Further, although many of my participants spoke in English, many others only spoke in local dialects further limiting my comprehension and reinforcing the need for an interpreter. This language difference was most evident for those participants who “piggybacked” into my focus groups with their friends as unplanned members. Needing an interpreter to help me does increase the potential for misunderstandings and misrepresentations of the interview and focus group data.

I am also unable to read Hindi and Punjabi. Thus, I did not engage with academic or popular sources written in languages beyond English. My language skills, or rather lack of, limited my findings within my first paper, as it was difficult to engage in discussions on Indian subjectivities relating to body size and composition without consulting academic or popular sources available in Hindi or Punjabi. However, as English is an official language in India, this meant there was still a great deal of information available to me, but it should be acknowledged that there are still newspaper sources and local print media I was unable to read and did not have

adequate funding to have translated. Thus, there is a lack of engagement with Hindi and Punjabi texts.

As a woman, there were also significant limitations to accessing certain individuals and certain spaces. Although this was often overcome by my being a foreigner who can pass as Caucasian, there were still some interviews and focus groups that either I could not conduct personally, relying on research assistants, or could not conduct at all – both situations presenting limitations to data collection and validity.

A further limitation is the regional focus of the study, which potentially limits more generalized theoretical claims about commodification, financialization, and other neoliberal shifts to water management. Making global generalizations was not an aim of my research. However, I still believe it is an important limitation to note. My academic practice is based on an idea of multiplicity and plurality – I do not aim to make large international comparisons and assertions about water management and neoliberalism, preferring instead to discuss specific lived experiences and how these often link to overarching national and global economic, social, and political processes. As such, although I have not made any new claims to understanding metatheories, I do think this dissertation speaks to the ways in which these theories get “lived out.”

Finally, for the manuscript style of my dissertation, there are some style and content limitations. In writing the constituent papers, I have attempted to work within the length restrictions of different journals to which I have submitted, thereby changing the potential scope of each paper, and leading to some repetition, particularly in the discussion of methods.

#### Potential for Future Work

The hydro-social landscape is changing at a very fast rate in India, as is common in most countries internationally. The Indian government, NGOs, and other academics have initiated a

significant amount of work on ensuring safe and equitable access to water while also maintaining conservation goals. However, discussions surrounding neoliberalism within resource management and beyond will never be “over,” and as such, this dissertation provides only more stories to the constellation of neoliberal impacts. These stories are still important to understanding a piece of the larger picture, and thus I see future work being necessary for understanding even more of these stories. As such, there is always room for more research surrounding the politics of conservation, and how the political and economic rationalities of neoliberalism can influence the success and consequences of conservation and management practices.

For my future research, I am specifically interested in engaging with violence studies and the impacts to water management further. In particular, I’m interested in symbolic violence and symbolic power as discussed in the literature by Pierre Bourdieu (1989; Bourdieu and Wacquant 2002). Bourdieu uses these concepts to analyze those power relations which unnoticed within socially reproduced activities (like the collection of water), allowing for certain social hierarchies to be normalized, rather than understood as constructed. What is important to understand about this concept is that symbolic violence maintains its effectiveness through complicity and acceptance (Bourdieu and Wacquant 2002: 167). Geographers have examined this in regards to “how lifestyles, urban designs, and residential geographic locations are differentiated and chosen by different urban classes” (Shin 2012: 270). As such urban environments and lifestyles are chosen based on the inevitable nature of social structure and class systems and thus is “inscribed in social relations” (Springer 2010b: 931). These inscribed social relations denote a form of violence wherein socially constructed ways of thinking and perceptions are imposed as natural or neutral and thus individuals no longer question the social ordering – it is normalized and thus rational (Bourdieu 1989; Bourdieu and Wacquant 2002). Potentially this rationalization is more

difficult to confront than physical violence, and thus is exceptionally dangerous to individuals and societies which have embedded these modes of thinking as legitimate (Bourdieu 1989).

In Northwestern India, the different hierarchical relations are matched by different forms of violence, from the “structural violence of mass consumption in retail spaces to physical violence on the bodies of workers and [even] entire ecosystems in production sites” (Le Billon 2012: 22). This hierarchy is not based on hegemonic domination dictating social relations, but rather on the normalization of these social relations as inevitable. This concept of power and violence comes in stark contrast to notions of power in a Marxist understanding, which suggests that capital is the way in which power is maintained, without much reference to the impact of knowledge or social structures. Bourdieu (1989; Bourdieu and Wacquant 2002) asserts that factors beyond the economic, such as cultural and social, are also imbued within the reproduction and maintenance of hierarchies. Although this work would be difficult, it is my goal to review my data and return to India in order to ensure that all the forms of violence encompassing water management are analyzed and discussed.

Further to this work, I think it is important to mention that water issues are not an Indian or Global South problem. There is significant work to be done in Canada and elsewhere in the Global North. I hope the work presented in this dissertation may provide a springboard for discussing the similarities between the neoliberal impacts to the hydro-social cycle in India, Canada, and beyond. In Ontario, the Grassy Narrows Nation is under a water advisory due to poor water quality (Klasing 2016). The quality is such that children who bathe in the local water end up with rashes and other skin problems, which is similar to some of the impacts to citizens in Shimla and Solan (ibid.). This situation of low-quality water is common across Indigenous Nations, as 158 drinking-water advisories were in place across 114 indigenous Nations during the summer of 2016 (McClearn 2016). As in India, legacies of colonialism have intersected with neoliberal

economic rationalities in order to produce these results across Turtle Island. Although my research had been originally set in Canada, it was very difficult to attain federal or provincial funding for this Canadian project. When I reframed the project for India, I was able to receive federal funding. Although this is an assumption on my part, I believe this speaks to the ways in which Canada has been constructed as a water-rich nation (Sprague 2007), and thus a discussion on power relations in water quality and quantity was not considered a valid or important line of inquiry. The Canadian myth of abundance, is similar to the scarcity discourses in India, obstructing political and economic rationalities which often limit potable water access.

Elsewhere in North America, Mexican farmers can no longer count on water from the Rio Grande, a river flowing between Mexico and the USA (Barajas 1999; Kibel and Schutz 2007; Utton 1999; Ward et al. 2007). Scarcity has been produced, or manufactured, in Mexico due to inappropriate management strategies employed throughout the USA. Further to US management practices, President Donald Trump has removed protection for water quality and quantity in regions where there are coal-producing districts (called the Stream Rule), which means that now coal mining can dump waste in local streams (Tabuchi 2017). This water management decision intentionally places the “health” of the economy in conflict with the health of individuals. I suspect we will see the beginnings of the long-term processes of slow violence in these regions, similar to the outcomes presented in my third paper. Across North America, then, neoliberal management strategies and governing mentalities, seem to define the solutions surrounding water management available to governments. As such, my discussion of Indian water management is part of the constellation of stories so far (Massey 2005) in an overall examination of the neoliberal impacts to the hydro-social cycle, a constellation the is not bounded by physical geography and thus must have more stories added. My hope is that I can continue to play a role

in documenting these stories and transforming their narratives into something more emancipatory and hopeful.

*"Everything will be alright in the end, and if it is not alright then it is not the end."  
- Indian proverb*

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<sup>1</sup> Such as, tht the quality of your mothering is dependent on your ability to give your children RO water ("IMA, Kent RO partner" 2015). Some of the language used for these campaigns is that a "healthy India" is connected with working with Kent RO (ibid.), and that "99% of water provided to [Indians] is polluted" ('Save Water Campaign' 2014: np).

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## Appendix A – Question Guide for Common Themes and Discourses

<b>Deconstructing and analyzing water quality and quantity discourses</b>	
<b>Question</b>	<b>Steps to be taken in analysis</b>
1. How is water and/or water management considered in the document, interview, or other discourse?	Analysis will identify the various subject-forms addressed in the document of the archive i.e. citizen, consumer, household owner, etc.
2. a. How or why is water or water management considered a problem?  b. Which practice or practices are the problematic uses or management styles related to, in the document, interview or discourse?	These questions involve several steps:  First, the type of conduct associated with the various subject-forms must be delineated.  Following this, analysis should extract the mode of reasoning that makes this conduct towards water usage or management problematic.
3. How does the document, interview, or other discourse seek to have this problem resolved?	Advanced in the document are the technical means that will be used in order to govern either the population in relation to water, or water itself through specific water management strategies.
4. a. How is the solution, and the particular techniques decided upon?  b. How are the solutions (going to be) evaluated?	Following the identification of the technical means, analysis will also attempt to understand how they are selected and evaluated.  These questions (3 & 4), then, are directed towards isolating the mode(s) of reasoning that determine the deployment of the technologies of government in the programme <sup>1</sup> .

<p>5. What objectives are made explicit in the document, interview, or discourse:</p> <p>a. For the increase of water quantity?</p> <p>b. For the increase of water quality?</p>	<p>By identifying the objectives that are going to be sought through the exercise of government, connections can then be subsequently made concerning how they reflect those generally associated with the differing rationalities of government.</p>
<p>6. a. How are these objectives justified in the document?</p> <p>b. What are the consequences if these objectives are not met?</p>	<p>This question concerns how the exercise of government is positioned in relation to the transactional realities that occupy the modern field of government i.e., society, economy, environment, etc.</p> <p>These questions (5 &amp; 6) are oriented towards further drawing out the rationalities of government that are articulated in the programme.</p>

## Appendix B – Questions Asked during Interviews and Focus Groups

Interviews and focus groups were semi-structured. The following are the questions that I began with, however often the ways in which these questions were answered required individualized follow-up questions.

### Interview Questions

1. Is water conservation a priority in India?
  - a) Is it a priority in your community?
  - b) When or how is water not conserved?
    - i) What might prevent individuals or yourself from conserving water?
  - c) What is the best way to conserve water? Can this be accomplished individually or is government intervention required?
2. Have you seen any advertisements or campaigns for conservation? What do they say?
  - a) How often do you hear about water conservation via the media?
- 3) Is water conservation as important for Northern India as it is for Southern India?
- 4) How effective is the government in managing water for your community?
  - a) Which practices are more or less effective?
  - b) How might this be solved or improved?
- 5) Are current water management strategies focused on certain peoples/groups/communities?
- 6) If water management is inefficient, what are some of the ways in which people cope with the inefficiency (i.e., Insufficient water quantity)
  - a) What practices do you engage in that ensure high quality and/or high levels of accessibility?
    - i) Are there specific organizations which help ensure high quality or quantity or fill any gaps in service?
- 7) What is your opinion on water privatization and/or public, private partnerships (PPPs)?
  - a) Are governing authorities for or against privatization or PPPs?
  - b) Who benefits from privatization or PPPs?
  - c) What are the possible positive or negative outcomes of this management strategy?
    - i) Is this different for different stakeholder? (i.e., Communities vs. environment vs. the Indian economy?)
- 8) What is the quality of the water in your community?
  - a) How does this compare with surrounding areas or other states?

- b) If the quality is poor, what are the best means to improve quality?
  - i) Is this method common among the population?
- c) How do individuals cope with low water quality?
  - i) Are there advertisements / information campaigns to educate individuals on these or other coping mechanisms?
- 9) Who is targeted for change in water management?
  - a) Demographic based (i.e., women)
  - b) Location based? (i.e., rural peoples)
- 10) Who else should I speak to with regards to water management strategies

### Focus Group Questions

- 1) How do you access water? (i.e., Common well, individual tap, etc.)
  - a) Is there a way you would prefer to access water?
- 2) How is water conserved?
  - a) Do you conserve water?
    - i) How/Why?
    - ii) Does price or environmental concerns (or other?) influence your decision to conserve?
  - b) How does the state conserve water?
    - i) How and why?
    - ii) What influences the state in promoting or discouraging conservation?
- 3) Is your water access dictated by the government, or a company, or a community association?
- 4) Does the potential for the private ownership of water concern you?
  - a) Why or why not?
  - b) Would your water access change under private ownership?
    - i) Why or why not?
- 5) What is the biggest problem facing water access or quantity levels in India? (i.e., Infrastructure? Management? Governance? Environment?)
  - a) Is this the same for your community?
- 6) What is the biggest problem facing water quality levels in India? (i.e., Infrastructure? Management? Governance? Environment?)
  - a) Is this the same for your community?
- 7) Where do you access information on water quality and/or quantity levels?
- 8) What are times (common or extraordinary) when water access has not met your needs (basic or otherwise)?

- 9) Have you or someone you know contracted a waterborne illness?
  - a) Is this a common occurrence?
- 10) How do you cope with or overcome insufficient water quantity?
  - a) do you know of other methods used by community members?
- 11) How do you cope with or overcome poor water quality?
  - a) do you know of other methods used by community members?
- 12) Considering everything we've discussed, what do you think is most important to write about and report?

### Appendix C – Demographic Data of Respondents

The following is a table of the demographic variables as reported by research participants. Some information was left undisclosed, and as such not all numbers total the entire pool of participants.

Demographic Variable	Percentage of participants reporting the variable	Number of participants reporting the variable
Age		
0-18	6.17%	42
19-29	22.79%	155
30-45	31.32%	213
45-60	28.82%	196
60+	9.26%	63
Sex		
Male	55.44%	377
Female	44.55%	303
Income level		
Low Income	60.14%	409
Middle Income	28.97%	197
High Income	8.08%	55