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The Paradoxes and Possibilities of Urban Water in Interdisciplinary Anthropological Discourse for the Underprivileged

Priti Bhowmick[1*], Bidhan Kanti Das[2], Arnab Das[3]
[1]*Junior Research Fellow (UGC-NET), Department of Anthropology, University of Calcutta, West Bengal, India;* [2]*Associate Professor, Institute of Development Studies Kolkata, West Bengal, India;* [3]*Associate Professor, of Department of Anthropology, University of Calcutta, West Bengal, India.*
**Corresponding Author: Priti Bhowmick,*

Abstract: Even though urban water has been considered as a crucial domain to sustain the overflowing population, the government often reckons solely on the upgradation of the technical efficiency which graciously has denied the cardinal relationship between people and water. While anthropology has a long tradition to deal with the question-'what is water?' Since decades it is (re)organizing the relationship between water, space, and citizen. In this paper authors explore how the contemporary 'consensus and conflict' about the conceptualization of urban water are perceived within the colossal discourses of anthropology. By criticizing the hitherto hegemonic concept of 'modern water', anthropology provides the concept of 'hybrid water'. It religiously recognizes the 'socio-political nature' of urban water flow through the inquest of quotidian water governance related to health, infrastructure, legality, citizenship and state for the underprivileged.

Keywords: Anthropology, Hydrology, Hydrosocial, Urban water, Citizen

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I. INTRODUCTION

Water is a pre-eminent constitute for perpetuating all living entity, therefore, the access to clean and contamination free water is the fundamental requirement and right of human beings (The momentous resolution A/RES/64/292 of the United Nations General Assembly on 28th July, 2010 proclaimed the prerogative rights of human to the safe and clean drinking water and sanitation as essential for the full enjoyment of the right to life[1]. On 2011 the Human Rights Council also defended the access to safe drinking water and sanitation as an indispensible human right: a right to life and to the human dignity through the resolution 16/2[2]). Rendering water is essentially a pivotal concern of a nation's development ambitions- food security, job creation, GDP growth and social goals including poverty reduction[3]. A significant expanse of derogating urban health can be imputed to the abjection in access to innocuous drinking water, sanitation, and other salubrious practices. According to the very recent WHO/UNICEF JMP (Joint Monitoring Programme) assessment report, 660 million people still unable to obtain water from the improved drinking-water sources; approximately 10% of the world's populations still live without safe drinking water[4]. More recently assessed that 2.1 billion people still deprive from the 'access to safe water'. Among those 2.1 billion populace, 844 million have been devoid of a preliminary drinking water service. From them, 263 million people everyday engage in near about 30 minutes per trip for fetching water from the outdoor sources. Even more people, 2.4 billion, deprive from access to the quintessential sanitation system[5]. The coupled failure of the absence of secure drinking water and sanitation can be accounted for 3.5 million waterborne diseased deaths[6]. This becomes the third paramount cause of death of the minors (children aged less than 5 years) is 'diarrheal disease'. The estimated total about 1,000 children per day die from such preventable disease[5].

Since pre-modern society the physical constitution of water becomes marginal because of its mediation in our psyche as a metaphorical symbol of life. The flow of water and wastewater within the urban body have been enrolled within the interplay of power to alternately grant, enforce, deny, or resist particular ways of living and being[7]. Hence, water is patterned, perceived and constituted of, the relations of social power[8,9,10]. During present neoliberal globalization, the most prominent discussions about the urban water is the crisis of 'safe water' or 'improved water' which manifests in a growing apprehension about its inadequacy to sustain the massively growing urban populations. As a solution, the dominant technocratic approaches seek ways of improving the technical efficiency through which water can be pertained for human conveniences[11,12]. On the other hand, disciplines like anthropology tried to critically rethink the relationship of water, people and society.

In the same vein of Jamie Linton[13] here in this paper, we aim to address the basic question-'what is water?' through the critical analysis of the contemporary consensus and debate on the multiple water realities, (i.e. 'ways of being with water'). By focusing on the multiple ontologies of water, our approach is to focus on the iterative process of scanning the varied ontological assumptions[14] within the theory and praxis of anthropology.

II. CONSTRUCTIVE HISTORY OF WATER: HYDROLOGY VS. HYDROSOCIAL

Water remains a chaos until a creative story interprets its seeming equivocation…[15]. This age old quotation highlights the internally coherent 'ontological disjunctures'[16,17] within the regime of 'Water' which is within a very notion of 'anthropology'. The approach taken to decode the 'history of water' is 'constructivist' through which anthropology makes 'situated question' about the taken for granted dominant ideologies of water, like the conventional hydrological model.

Fixation of Water: The Quantitative and Scientific Hydrological Model

Water being a basic element of human life, is a domain about which school students gain experiences and 'scientific' knowledge. The prime focus on this scientific knowledge of 'water' is about of the existence of hydrological cycle (often known as 'water cycle'). The concept came in the light with the paper by Rober Horton[18]. He presented it as foundation for the modern science of 'hydrology'. This kind of rigorous solidified knowledge makes a fundamental historical change in the way water was perceived and conceptualized. The changes described in different terms- 'the paradigm change from waters to water'[19], 'the conquest of water'[20] the change by which 'the waters of forgetfulness' were transformed to 'H_2O'[15]. Illich laments that by treating water in 'modern' way people usually become accustomed to think as if water itself (which) has no history[15], but its histories are far richer. As Linton[21,22] points out, the 'modern water' is a hegemonic ways of knowing, representing and relating to water while abstracts it from the social, cultural, religious context, is a social construct. By deconstructing the 'natural' hydrological cycle, it reveals important hidden assumptions about the explicit history which was engendered in a specific time period of 1930s, within the typical scientific, secular and bureaucratic context. This legible water[23] evinces them in a commensurable substance[24] which permits the state to survey and possess the water resources of res publica. In this cue, the adjudicating for, and channelizing of water resources have gradually reinfornced the apparatus of the state[25] with which formally begins the age of state-hydraulic paradigm[26] or what Gleick termed as old water paradigm[27]. The federal government gets the unquestionable authority over it by envisioning water as a natural resource. The central concept of modern water is the fundamental separation between water and society. Despite all the asocial and apolitical appearances the internal contradictions becomes obvious within the model with the emerging issues like- water pollution fostered by populace, critical cognizance of the differentiated social effect of the construction of large dams, noticeable disparity in access of water, and critical recognition of the implication (reference) of state-hydraulic paradigms. In Linton's word, modern water is in a state of crisis[13]. With the emergence of neoliberal globalism, within anthropology there is a growing recognition of counter-hegemonic model called hydrosocical model.

Hydrosocial Model: Humanizing Hydro cycle

From the past decade the term 'hydrosocial' has been repeatedly used by the anthropologist, political ecologists, political scientists, and geographers for studying the differentiated anthropogenic interventions in the basic character of water cycle[28,29,30,31]. Though the configuration essentialized the concept of the 'hydrologic cycle', it was amended significantly. While the hydrologic cycle prioritizes the distinctness of nature and society, the hydrosocial cycle deliberately acclaims the social disposition of water itself. The core idea of this model is the relation between water and society as an unending dialectic within the human history that is constructed on the Marxian nature/society dialectics[32,33,34]. Linton and Budd defined it as a socio-natural process by which water and society make and remake each other over space and time[29]. This dialectics produced the concept of hybrid water[32,36,7] that captures and embodies processes that are simultaneously material, discursive and symbolic[7].

By deploying this model, an increased number of scholarly articles concentrated on the varied ways through which the 'natives' and other social actors discern waters to contrive their 'hydrocosmology' or 'waterworlds'[37,38,39,40]. The 'waterworlds' are socially, politically constituted spaces that are (re)created through the interactions amongst human practices, water flows, hydraulic technologies, socio-economic structures and cultural-political institutions[41]. These imaginary, engineered or eventuated spaces have been confronting obligations, values and essence, as they materialized the system of incorporation/rejection, development/oppression, and the allocation of welfare and distress. These in turn reinforce or alter the existing socio/political hierarchies, contestations and genre of association[42,43]. Hence, water, technology and culture are intrinsically allied and interactively regulated phenomena that together articulate the hydro social networks based on social relations connecting the local human actors with nonhuman actants[44,45]. Swyngedouw strategically exemplify this network of social relations and their intersection as- If I were to capture some urban

water in a glass, retrace the networks that brought it there and follow Ariadne's thread through the water, I would pass with continuity from the local to the global, from the human to the non-human…[7].

Within the contemporary anthropological work the hydrosocial model has questioned the apparent apolitical notion of 'technical' which is often used to veil to the legitimized political choices and specific political orders. It calls for a 'repoliticization', which recognition the political nature of 'hydrosocial territories' through the study of everyday water use praxis[46,47]. By acknowledging the contradictions, conflicts and societal responses of the multiple stakeholders having divergent interests within configuration of hydrosocial territories it tries to focus on how the socionatural arrangements and water politics either amplify or confront the biased distribution of resources and decision-making power within the water governance[48]. In order to render water thoroughly social anthropologists Orlove and Caton[49] conceptualize water as a 'total social fact' (which was earlier the concept of Marcel Mauss). According to them, its connectivity is mediated by every facet of social organizational complexity. If we thematize the concerns of anthropologists regarding water-there will be four major themes, which as follows-

III. HEALTH AND WATER: HYDROSOCIAL ENGAGEMENT OF DEVELOPMENT

Earlier anthropology often correlated water supply and waste water circulation in the city with the degree of health and civility of a society. The efforts to improve the basic facilities were understood as fundamental to 'improve the race'[50]. Closely tied with modernist visions, systems for water and sewage handling were fundamentally linked to processes of growth of industrialized cities and nations[51]. Acknowledging the health consequence for prolonged exposure to sewers and meagerness to clean and safe water was the mainstream approach of the discipline. A generous amount of literature especially medical anthropology devoted on the issues like health hazards and infirmity among the underprivileged, particularly from third world countries[52]. Some researchers purposively appealed to water services and sanitary improvements for the indigent segment of the society, hence to minimize the risks of disease exposure for the 'general' population[53]. While some scholars like Allen[54] critically concluded that as the access to water and wastewater treatment and administrations are not candidly perceived for the benefit of non-poor and affluent residents, they will never be designed solely for the benefit the underprivileged.

Taking the concern of the underprivileged, on the trend of development entangling globalization in Latin American context, Mulreany et al. warns about privatization of different public sectors (focusing on water and public health) that might encourage a minimalist conception of social responsibility for public health that may hinder the development of public health capacities in the long run[55]. In addition, all his concluding points are suggestive of the issues of many developing countries and concerning the interests of the 'poor'. Firstly, the affairs of the access and affordability of the 'poor' under privatization are within the pertinacious concerns of the global politics. Secondly, the instances of privatization's incompetency argue that privatization alone is not a viable way for promulgating service extensions for the 'underprivileged'. Thirdly, the privatization turned into a fiasco concerning the upgradation of the health care systems. It not only does confiscate the authority of these crucial institutions out of the control of citizenry, but also wane the dexterity of the public institutions significantly, which it turn shackled the further developments of additional capabilities.

More recently Confalonieri and Schuster-Wallace's formulation is a leading one for many scholars that establishes that there is the interface between the biophysical system of water (ecosystem), the socioeconomic and political system of water (the hydro-social cycle), and human health[56]. This water-health nexus runs where groups of people have different degrees of power or control[57] that leads to the urgency of actual participatory evaluation of change. It was further conceptualized by Valters[58] as the paradox of 'planned change' by adopting merely critical policy. According to Valters, such change is nothing but a superficial process of critical thought, where people who engage with the theories (donors as well as implementers) do not actually reflect sufficiently on how power dynamics change in practice and how local people see change happen[58].

Thirty years back Antonovsky[59] with his radical 'ease/dis-ease continuum' for all human beings between total absence of health and total health proceeded to the suggestion to 'salutogenesis' or the movement towards water-based total health. Antonovsky identified a set of culturally-framed enablers of human health. His 'sense of coherence' (SOC) had been constituted of three facets; comprehensibility (cognitive), manageability (practice-oriented), and meaningfulness (emotional). They all implicitly invested within the 'salutogenic umbrella', i.e. social capital, cultural capital, empowerment, resilience, and coping[60] for the promotion of 'health'. The Human Development Report by United Nations similarly argues against the dominant 'apolitical' 'hydrological' paradigm by stating that the roots of the crisis in water can be traced to poverty, inequality and unequal power relationships, as well as flawed water management policies that exacerbate scarcity[61]. It fits rather, as a 'hydro-social' phenomenon combining capital, empowerment and resilience, where water access is always reshaped through socio-political processes[7,35]. Gandy[9] throughout his works chose to question the very notion of 'development' through exegesis of the 'modernization of the drainage and sanitation system of Paris'. It showed how in a camouflage of transforming the city of mud to the city of light[9] it altered the moral purity,

hygiene and encouraged the growing polarization within the contested urban space. Throughout the discussion he emphasized the cultural appropriation of urban infrastructures[9] through water.

IV. INFRASTRUCTURE, BODY AND THE POLYTECHNICS OF GOVERNANCE

The classic work of Wittfogel[62] on 'hydraulic society' is one of the leading studies in anthropology which acknowledges the historical-dialectical relationship between the large scale infrastructure and the consolidation of the centralized bureaucratic state power. Later the studies[63,64] consider the water and wastewater infrastructures as an integral element of an urban space where the scientific knowledge and technologies transform the affinity between the 'built environment' and individuals[34]. In context of modern state, these infrastructures are the symbolic souvenir of supremacy and status. The technologies of production, treatment, and distribution of city's physical infrastructure systems are the product of contested and contradictory relations of rule and power regimes. Moreover, these particular infrastructure systems and the socio-natures that are produced were both requisite to, and constitutive of governance[65]. Gandy's concept of 'bacteriological city' based on the infrastructure and governance model was manifested first as the public health movement during the mid-nineteenth century. It was directed to how water should be used domestically by the citizens and how to develop centralized water and sewerage infrastructure. Gandy envisages it as part of a 'bio-political' dynamic wherein social relations and codes of bodily conduct were increasingly subjected to indirect modes of social discipline[9].

The discourse of urban water and wastewater infrastructure and the involvement of citizen as an agency is a relatively under-studied concept in certain disciplines like anthropology. Traditionally urban space is conceptualized in an undifferentiated manner which ignores the dynamics of differentiated and contested relationship between 'body' and 'city'. Some of the recent studies[66,67,49] focused on the conjugal relationship among the conceptual triad, i.e. co-constitution of waters, spaces, and populations to conceptualize the ways in which power plays have been worked through networks of urban water and wastewater mobilization, which are subsequently used to explain the conditions of management and access within the contemporary globalized city and the distinctive 'metropolitan' (re)production of space[68,69,70,71]. Within anthropology there are growing recognitions of this production of space by acknowledging the multiplicity of worlds animated in different ways[72] which in turn generates the concept of 'territorial pluralism'[73,74].

V. 'TERRITORIES IN TERRITORY': CONCEPTUALIZATION OF THE WATERWORLDS

Though some of the preceding literatures[75,76] gave elaborate documentation about the socio-spatial fragmentations of urban water and wastewater channelization; they highly overlook the ongoing contested relations between urban governance and urban infrastructure in the relations of power and production of urban spaces. By criticizing this oversimplification, Agrawal[77] argued that the configuration of subjectivity is related to its material environment in a broader sense by retaining the binary notion of nature/society. These multiple subjectivities within society are possible along with a continuum wherein a number of citizen will be rendered of utmost security and advantages of being a 'ideal subject' (according to state) while others, due to their destitution to adhere to the dominant beliefs regarding ethical ways of living, will be black listed from those benefits.

In this age old discussion on water and wastewater governance and its impact on the people vice versa, the 'structure-agency' question is the central issue[78,79]. Fundamentally, it's concerned with the issue of determinism (agency of government) against the individualism (agency of governed), i.e. the ability (intentional or otherwise) of the subaltern agents (apparently powerless citizen) to alter their fate against the structuring power of invisible external forces that are out of their control[80]. In the contemporary critique, the two extreme dichotomous positions are explained as a coherent system where there is a consistent power imbalance between these two poles. There are a series of publications[81,82,83] which accentuate the public contestations for their water rights (in Limbert's word the sense of water) whether in relative restraint or tactically or head-on manner. But the distributions of the benefit of these struggles are very much equivocal in nature which concedes the idea of 'multiple water users'[74,84] or in other sense, multiple water citizens.

VI. 'GOOD/BAD' CITIZEN: SUBJECTIFICATION BY THE STATE

In recent years, the unified singular 'citizen' concept is somewhat outdated with a newer addition to the 'approach of citizenship'[85]. According to this approach, certain individuals are allowed to have rights and legitimacy within the system while others were subjugated as lacking the necessary understandings of the body/hygiene, health/cleanliness and were consequentially excluded from or denied from the decision-making processes which Nugent points out as the (in)ability to engage in everyday bureaucratic practice is itself an expression and result of power relations[86]. Though these downcast subjects are pushed beyond the ministration of the state, it is not separate or apart from the total structure. Instead, they exists in a state of limbo[87] that, though its position as 'Abject citizen' within the system[88,89,90,91].

It perceives the regulation and technicalities of water governance as a perpetual project of the 'government'. The presence of technological infrastructure should not be viewed as a historical achievement of a society along its pathway towards development, but rather a feature of an ongoing biopolitical project of the state necessary for the organization of the body populace and for the management of the total health of the society[92]. With the cue of the approach a number of literatures address the relations between power-citizen-government[93,94]. In their study, the imposed power on 'others' by 'government' referred as 'dispositif'[95], which is a complex amalgam of discourses and practices, exercised through 'state and nonstate' actors both below and above level of the state, which shapes the conditions of the governed below[96]. Here they implemented the method of rendering technical, which describes the exercise of abstracting, depoliticizing and simplifying the 'problem space'[17] of urban space and populations in order to represent them amenable to developmental interventions.

VII. THE DISCUSSION: SCOPE AND FURTHER HORIZONS

Throughout this paper we discuss about the emerging possibilities and paradoxes within anthropology and allied social sciences those are actively engaged in the most intriguing question: how is the complex alliance between water and people are mediated through 'culturally, socially and biopolitically'?[7,29,31,90] It began with the urban water flowing through 'hydrological' cycle that acts as a tool to shield the political agendas behind the governance of water. This 'modernization of water' is in turn triggered new form of governance, water use practices and water technologies' which again call for a counter hegemonic model, i.e. hydrosocial model. According to this model, water is perceived as a 'wicked problem' due to its inherent increasing complexities and lack of any singular 'right' approach as a solution[97,98]. Though now a day within scholarly work the 'hybridity' of water supersede the 'modern water', Swyngedouw[29] argued, 'it is not the hybrid water that should have ontological priority, rather the process of hybridization'.

This process of 'ontological being of water' questioned many 'precepts and concepts' of our quotidian life which in turn demands in-detailed accounts of the role of divergent actors across the 'waterworlds' which Goubert described as-Indeed, we have become so accustomed to the presence of water in our daily life that it has been a long time since we have questioned its existence[99]. But there are significant lacks of literature on the issues about what are the everyday changes in the perceptions, preferences and patterns of access and action of the agencies engaged in urban water governance. Where and how the interactions and/or contentions of divergent actors are negotiated, democratized, silenced and unleashed to deal with? These compelling questions call for further studies of urban water governance within anthropology and allied social sciences. Finally we want to conclude the paper with the quotation of Sunita Narain where she mentioned that water is not about water. Water is about building people's institutions and power to take control over decisions[100].

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