

# Water Ethics – Lessons from Post-Normal Science

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## Abstract

Water ethics is an emerging field in application-oriented ethics. It reviews the normative and evaluative implications of human water practices and aims to argue for (more) justified practices. The text corpus on water ethics continues to grow, reflecting an increasing demand for moral orientation. It is time now to take stock and reflect how to address inherent tensions within this corpus, in particular regarding its practice and object. In this vein, the paper does not intend to produce a reductionist and uniform account of the diverse field of water ethics. On the contrary, it perceives itself as a critical and constructive reflection of this rich field. In order to capture the water ethical scholarship, the analysis in this paper addresses ethics primarily as a form of social activity rather than a body of different theories, which it also is. It will first unfold tensions and dividing lines within the water ethical literature. Subsequently, after introducing post-normal sciences (PNS), the paper asks how this approach might help to bridge some of the tensions in the water ethical literature. PNS challenges the dominance of scientific representations in dealing with real-world problems and constitutes an innovative mode of knowledge production for environmental governance under conditions of complexity and uncertainty. The approach of this paper helps assess the potentials and aspirations of water ethics as a field of application-oriented ethics.

Keywords: Water, water ethics, ontologies of water, social movements, post-normal science

## 1 Introduction

Water is the *sine qua non* for life on Earth (Schmidt and Peppard 2014). Without it, no human life is possible; without enough of it, living decent lives becomes restricted. Worldwide, a billion people do not have access to safe and secure water and sanitation. This situation may worsen with the expected effects of climate change on precipitation patterns and water bodies. Yet, water shortage results from both physical *and* social conditions. While water liberalisation was advocated as a means for better and more efficient governance, in effect it has produced more and other forms of water shortage and injustices (Leese and Meisch 2015).

Water has always been the subject of moral and power struggles, yet only in the last 15 years have we witnessed the emergence of a scholarship within application-oriented ethics that calls itself water ethics. So far, the corpus of literature remains heterogeneous and contradictory. On the one hand, this heterogeneity reflects the actual contentious water reality itself and as such does not need to be an issue of concern. On the other hand, the current water ethical debate might give rise to expectations it cannot easily meet. Against this background, the paper suggests *one* way of mapping the diverse field of water ethics. In this vein, it unravels inherent tensions and argues for an approach that better grasps the potential of water ethics as a field of application-oriented ethics aspiring to be a practically relevant theory and a theoretically grounded practice. In order to capture the water ethical scholarship, the paper deploys a wide understanding of ethics in two respects. First, generally, ethics is distinguished from morals. Morals comprise the set of beliefs about the evaluatively Good and the normatively Right held by an individual or a group. Ethics is the systematic and methodical philosophical reflection on morals, making morals the research subject of ethics. In principle, the paper sticks with this distinction, but it acknowledges that the terms are used differently within the water ethical debate. Thus, if we only considered scholarship that falls under the abovementioned

tioned textbook definition, we would unnecessarily restrict the scope of literature and ignore a rich body of normative deliberation on water. Second, the analysis of this paper regards ethics as a form of social activity rather than a body of different theories, which it also is. This activity can become subject of ethical reflection itself – just like any other research activity. Dietrich (2005) described this approach as ‘ethics of ethics’. Emphasising the social practices of water ethics contributes to two aims: first, assessing the potentials and aspirations of water ethics as a field of application-oriented ethics and second, providing a more solid basis for water ethical reflection within social contexts and decision-making processes.

Below, I will suggest a way of mapping the water ethical scholarship and discuss some of its inherent dividing lines (2). I will introduce Post-Normal Science (PNS) and argue how it helps bridging some of these tensions (3.). This paper aims to support *self-critical reflection* within water ethics and improve the *process of decision-making* on water.

## 2 Water Ethics

In the last decade, water ethics has emerged as a new field in application-oriented ethics (Grunwald 2016, Meisch 2017a). It aims to provide moral orientation in a social field in which the morally right course of action has become uncertain and contested (Meisch 2014). Water ethics reviews the moral implications of human water practices and aims to argue for (more) justified practices. Currently, there is a growing interest in water ethics within and outside of academia. This interest is driven by challenges related to sustainable development such as water poverty, or the (over-)usage and pollution of water resources. These challenges are expected to worsen due to climate change and population growth. In general, the goal will be to ensure safe access to and a fair distribution of clean water. Meanwhile, global trends of privatising water have spurred further debates on water justice (Feitelson and Chenoweth 2002, Pahl-Wostl *et al.* 2013). The text corpus on water ethics continues to grow, reflecting an increasing demand for moral orientation. Different approaches to water ethics might be classified with regard to the moral subject and can be thus subdivided into theories that place either humans only, sentient animals, ecosystems or nature at the centre of their ethical reasoning. Alternatively, a dividing line can be drawn according to ethical theories, such as deontological, utilitarian, eudaimonic or other approaches (Brown and Schmidt 2010, Kowarsch 2011, Ziegler and Groenfeld 2017).

This paper suggests a different way of structuring the domain of water ethics by separating it in two subdomains: (a) practice and (b) epistemology. The *practice* subdomain refers to the basic orientation of ethical reflection. It focuses on the role of the water ethicist and his or her relation to ethical theories and locates this scholarship in-between the poles of ‘academic reflection’ and ‘social transformation’ (Dietrich 2007). The *epistemology* domain refers to the object of study and deals with ethicists’ perspectives on water (Schmidt 2014, Yates *et al.* 2017, Budds and Linton 2014). Regarding the first (*practice*) subdomain, the paper uses distinctions suggested by Thompson (2016) and Floyd (2013). In his review of food ethics, Thompson separates academic food ethics from food ethics described as social movement. He discusses what both learn from critically engaging with each other. In this vein, he aims to draw attention to the “ways in which the very language we use to articulate the nature of an ethical problem in one domain becomes implicated in oppressive or obfuscating measures in another” (Thompson 2016: 70). In addition, Floyd sorts the environmental security literature according to the role of the analyst and his or her view on security. Based on both approaches, this paper separates the water ethical literature with regard to the ethicist’s orientation within the practice of water ethics. This results in a continuum that ranges from general ethics reviewing moral arguments, to water ethics arguing for different water practices, and finally to water activism with various normative agendas. Yet, I expand on Thompson’s approach, which seems to imply that food ethics *qua* social movement only consists of NGOs. To me,

his view seems too restricted because it underrates commercial economic actors, who also aim for different social water practices (Leese and Meisch 2015, Schmidt and Matthews 2018). The second (*epistemology*) subdomain refers to the lively debate in the water (ethical) community on the ontological status of water i.e. *what* water is. Accordingly, we would analyse whether water ethics takes place within the ambiguous frame of ‘modern water’ based on the society/nature dualism and reducing water to its predominant scientific representations of H<sub>2</sub>O and the hydrological cycle (Schmidt 2014). Most (natural science) water research aligns itself to this epistemic paradigm, and in general application-oriented water ethics also starts from this perspective: academic ethicists aim to find and define principles for the allocation of and access to water (*qua* H<sub>2</sub>O) and social movements call for a different way of dealing with water (*qua* H<sub>2</sub>O) (Groenfeldt 2013, Harremoës 2002, Ziegler *et al.* 2017). The opposing view questions the ‘modern water’-frame as reductionist, historically contingent and an expression of Western approaches to nature. Related scholars claim that water has ‘multiple ontologies’ (Yates *et al.* 2017, Schmidt and Peppard 2014): academic scholars point to the cultural constructions of water and the embedded value systems. Their disciplinary backgrounds range from political economy to anthropology, cultural and literary studies (Böhme 1988, Krause and Strang 2016, Linton and Budds 2014, Swyngedouw 2009). In this way, water ethics is also an ethics of water cultures (Meisch 2017b, Haker 2010). Meanwhile, water ethics *qua* social movement transcends academic reflection and suggests the recognition of local or indigenous conceptions of water. Again, there are various approaches within each camp turning the fields into continuums instead of oppositions. Against this backdrop, we can create a four-field matrix (*see Table 1*) correlating water ethics (academic reflection, social movement) with the frames (modern water, multiple ontologies).

*Table 1: Subdomains of water ethics*

<b>Epistemology</b> <b>Practice</b>	<i>Modern Water</i>	<i>Multiple Ontologies of Water</i>
<i>Academic Reflection</i>	<i>I</i> Finding and defining principles for the allocation of and access to water ( <i>qua</i> H <sub>2</sub> O)	<i>III</i> Highlighting the different social and cultural constructions of water and the embedded value systems
<i>Social Movement</i>	<i>II</i> Calling for a different ethics with regard to water ( <i>qua</i> H <sub>2</sub> O)	<i>IV</i> Calling for equal recognition of local or indigenous conceptions of water

Scholarship in the different fields (I-IV) has its respective strengths and weaknesses and poses particular ethical challenges. In a textbook understanding of ethics, only scholarship in field *I* would be considered as water ethics because it is the only approach that explicitly and methodically reviews the moral reasons why we should do (or refrain from doing) something with regard to water. In contrast, social movements in both frameworks (*II*, *IV*) argue from particular moral viewpoints that they believe ethically more justified than the status quo, but they vary in the degree to which they make their ethical reasoning transparent. Scholarship in field *III* critically analyses current water practices and reveals how they embody power relations and value systems. Yet, most of these approaches are inspired by various post-structuralist traditions, which usually tend to reject universal ethical systems (Floyd 2013: 26, von Beyme 2007: 190f.). Consequently, they face difficulties in arguing what a better water practice would look like. In this respect, their ethical challenges are inverse to the one in field *I* which risks losing sight of the different ways of knowing waters and inbuilt power relations. Thus, in a first approximation, we can argue that while the one (*I*) has epistemological and power blind spots, the other (*III*) leaves its ethical presuppositions implicit and cannot tell how to proceed from their critical analysis. In addition, there is the challenging question of

commensurability: How can we deal with ‘other’ forms of water knowledge and related norms and values of, for instance, indigenous people? Can we translate and include them in established academic forms of ethical reasoning? If yes, how?

The tensions within water ethical scholarship are interesting from a theoretical perspective. They also have consequences for water practices. First, a narrowly defined academic water ethics (*I*) might overlook hidden epistemological and normative assumptions of the ‘modern water’-frame. This could result in theoretical and practical blind spots. Second, water ethics as a social movement (*II, IV*) aims to reform the water sector, yet by doing so it has to critically consider possible injustices that it might create through new practices, or by reproducing other morally problematic social practices (regarding gender, race etc.). Third, scholarship in the ‘multiple ontologies’-frame (*III*) raises awareness of the many different water worlds and the injustices embodied by them. While this critical perspective is essential, it needs to be supplemented by (other) ethical approaches in order to be able to adequately argue for more just water practices. This paper suggests PNS as a solution to bridge many of the tensions within the water ethical literature.

### **3 A Post-Normal Water Ethics**

Strand (2017: 288) characterises PNS as “a critical concept originally developed to describe situations in which there are important or controversial public decision problems informed by an incomplete, uncertain or contested knowledge base”. The challenges that water ethics typically deals with correspond well to this problem description. PNS pursues an epistemic and a social aim. First, it challenges the (growing) dominance of scientific representations in dealing with real-world problems. Second, it constitutes a different mode of knowledge production for environmental governance under conditions of complexity and uncertainty (Benessia *et al.* 2011, Funtowicz and Ravetz 1993: 744). In order to classify both perspectives, I take the distinction ‘descriptive’ for the former and ‘normative’ for the latter, as recently suggested by Bremer (Bremer 2017, also Bremer and Meisch 2017). The *descriptive* perspective “helps diagnose the problems of imposing a scientific representation where the science is highly uncertain, values in dispute, stakes high, and action urgent” (Bremer 2017: 73, also Funtowicz and Ravetz 1993). It also questions the status of science itself, how the boundaries are drawn between scientific research and other forms of human activity and how this affects the process of democratic decision-making (Benessia and Funtowicz 2016: 71, Strand *et al.* 2016). In this way, PNS resembles the science and technology studies aiming for “the possibility of seeing certain ‘hegemonic’ forces not as given but as the (co)products of contingent interactions and practices” (Jasanoff 2004: 36). In this way, PNS can be an analytical, interpretative tool for better seeing certain social phenomena such as ‘the hydrological cycle’. It exposes and challenges dominant narratives in water governance (Bremer and Meisch 2017). The *normative* perspective “offers an alternative mode of scientific enquiry; engaging scientists and non-scientists alike as members of an extended peer community, to collaboratively produce new representations and knowledge, and appraise its quality” (Bremer 2017: 73). As such, it aims for socially robust, accountable and legitimate knowledge in the face of uncertainty (Bremer and Meisch 2017: 8f.). PNS also deals place-based knowledge and value systems and how they enter debates on sustainable development (Bremer and Funtowicz 2015, Lam 2015). In the following, I will discuss three fields in which PNS can bridge some dividing lines in the water ethical literature and thus improve the process of decision-making in water governance. *First*, the descriptive perspective of PNS inserts additional layers of self-reflexivity into the ethical research within the ‘modern water’-frame. With this, it becomes possible to challenge scientific representations of water and the ways in which water science demarcates itself from other forms of knowledge making. From here, it will also be possible to critically assess the related implications for democratic water governance. This means that PNS challenges the

contexts in which water ethics is done. Doing so, it takes a first step to connecting a self-reflexive ‘modern water’- to the ‘multiple ontologies’-frame. As mentioned above, the latter looks critically at the ways power relations and value systems are embedded in water systems and suggests alternative ways of organising human-water relationships. However, they often need to be supplemented by ethical approaches to indicate how to proceed from a critical assessment of the status quo. *Second*, in this regard, the normative perspective of PNS can be a useful supplement. It constitutes a different mode of knowledge production that is more sensitive to normative and evaluative issues. Actually, the normative perspective applies to both the ‘multiple ontologies’- and to a more self-reflexive ‘modern water’-frame. *Third*, engaging with PNS can help to address two issues related to water ethics *qua* social movement. One concerns the ethics of water activism. As mentioned above, water ethics as a social movement focuses on transforming actual water-related policies. By doing so, it might unintentionally reproduce old or create new injustices. Another concerns the epistemologically difficult question if, and to what degree, place-based value systems with regard to water can be reformulated within the language of academic ethical reasoning. Both, ethics of water activism and of indigenous water cultures, are relevant when claims are taken seriously that stakeholders are to be included in water governance. Thanks to its sensitivity to values and silencing, PNS can inform water ethics as a social movement.

#### **4 Conclusion**

This paper mapped the field of water ethics and unravelled some of the tensions within the field. It pointed to specific challenges and argued how PNS might help to deal with them. One might object that PNS has weak spots when it comes to normative ethics, which can be readily acknowledged. But thanks to its dual character (descriptive, normative), it provides a critical perspective on knowledge production at the science-society interface as well as a constructive approach to producing socially robust knowledge for decision-making. With this, PNS supports *self-critical reflection* within the field of water ethics and improves the *process of decision-making* on water.

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