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Water Value Ambivalence: A Qualitative Exploration of the Multitude of Water Values

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Abstract: Tap water and its pricing have predominantly interested economists, partly due to the perception of water services primarily as production processes. As a result, much of the existing literature focuses on the economic value of water, leaving the social and cultural importance of water for citizens underexplored. This study adopts a sociological lens to explore the significance of water, delving into citizens' experiences and perceptions regarding their water usage. Applying a social practice approach to value creation, we conducted 15 in-depth interviews. The results show that although the price of tap water is a concern for people, the actual value of water extends well beyond its price. Water has direct values for citizens in their everyday lives, as well as indirect value by contributing to broader societal systems. In their everyday lives, citizens use water not so much for the sake of water itself, but in various household water practices (e.g., showering) associated with certain values: hygiene, health, relaxation, warmth, and so on. Finally, our study directs attention towards the tensions people may experience between the various values they attach to tap water and the sense of responsibility to use it prudently. Future research needs to consider this water value ambivalence when encouraging water conservation.

Keywords: (tap) water; value creation; social practices; water conservation

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1. Introduction

Recent data from the World Resource Institute (WRI) reveal that 25 countries are facing extremely high water stress, meaning that they are using at least 80 percent of their available water resources every year [1]. This situation is likely to be exacerbated by climate change, economic development, and population growth [2]. To mitigate the worsening of global water stress, there is an urgent need for transitioning to a climate-robust water system. Belgium, the focus of this study, is ranked 18th out of the 25 countries experiencing extremely high water stress [1]. Belgium, and Flanders in particular, is a densely populated and urbanized region with limited surface water availability. In Flanders, governance responsibilities pertaining to the provision of drinking water are shared among the Flemish municipalities, the Flemish region, and the Belgian state. Currently, six publicly owned drinking water companies monopolize the regional drinking water supply, issuing unified bills covering both drinking water and wastewater management.

Addressing the urgent issue of water stress demands not only policy interventions but also a deeper understanding of citizen's perceptions regarding water usage. In Flanders, citizens play a significant role, accounting for 35 percent of total water consumption and a substantial 65 percent of tap water usage [3]. This considerable contribution underscores the imperative to promote more conservative water practices among citizens. Research by Brouwer and Sjerps [4] reveals that 56 percent of Flemish respondents express a desire to conserve more water. Nevertheless, several studies have demonstrated that there exists a disparity between what people say and what they do and that individuals frequently

encounter difficulties in translating this awareness into action [5,6]. In this paper, we demonstrate that the reality is complex. This complexity can be elucidated by the concept of 'water value ambivalence', encapsulating the conflict between the diverse values people attach to tap water and its significance in their lives, and the efforts aimed at conserving water. To comprehend this ambivalence, it is essential to delve into the underlying perceptions and values associated with water in the daily lives of Flemish citizens. Exploring these values can help us to better understand current patterns of water use and help to explain why saving water is not always easy.

In the past, the value of water has mainly been approached from an economic perspective. Water allocation is seen as a problem of supply and demand, and the value of water is reflected in the market price [7,8]. Performing an economic valuation of water resources involves the process of quantifying the benefits (values) of these resources in monetary terms and comparing them to the associated costs [9]. Some values can be quantified based on market prices, but to capture the broader intangible values of water in monetary units, economists use non-market valuation techniques such as contingent valuation or revealed preference techniques [9,10]. This economic valuation logic is also reflected in much of the existing literature on tap water, where the focus is often on investigating price perceptions, pricing structures, price elasticity, price as an incentive to conservation [11–14], or on the economic valuation of water services [9,15,16]. While some of these studies try to capture the broader values of water, the focus remains on quantifying these values. However, some values, for example the cultural or spiritual values of water, are difficult to translate into monetary units. Economic valuation methods therefore carry the risk of overlooking crucial dimensions [17], leaving the broader social and cultural values of water underexplored.

This trend in the literature is unsurprising given the dominant management paradigm within the water sector that emphasizes the technical and economic dimensions of tap water. Within this paradigm, water is seen as a product and water utilities as value creators through their production process. Value creation is perceived as a linear process in which the created value of the water utility is simply consumed by the consumer. The value of water is thus determined by the water utilities and reflected in the price [18]. This dominant paradigm holds a narrow, economic view of water services and does not consider the world these services are part of. Although this economic paradigm is still dominant, there is growing attention on the development of an alternative paradigm in which water is seen as a service. Value creation is hereby perceived as a social process in which water is used and integrated with other resources to create value. Water has value to people because they can use it to create value in their daily lives. But water also has indirect value because it is used by others and contributes to, for example, economic development or public health. By focusing on the service and the interactional experiences that water utilities provide, they are connected to the world of which they are a part [18]. This paradigm therefore allows us to look beyond the economic value of water and consider citizens' experiences of this service and the associated values.

This research takes a sociological perspective on the values of water and studies citizens' experiences and perceptions about (their use of) water. This user perspective has been on the rise in Western Europe in recent years, with water companies increasingly focusing on the user 'beyond the meter' [19]. Water companies are no longer just a water supplier but are evolving into a customer-oriented service provider [20]. While there is increasing attention for the alternative paradigm in which water is seen as a service, little research exists on the role of citizens and especially on what values citizens attach to tap water in their daily lives. Therefore, this study examines the values of water from the perspective of the citizen. In doing so, our aim is not to quantify social values, but to embrace the complexity of citizens' value perceptions and to explore the multiplicity of water values beyond the exchange value of water. While our investigation encompasses the broader spectrum of water values, our primary focus within domestic settings centers on tap water.

This article is structured as follows. First, we discuss the concept of water values. Water, when perceived as a service, holds a multitude of values for individuals. We highlight the subjective and context-specific nature of water values, emphasizing that different values are formed within specific contextual systems. Second, we discuss value creation from a social practice perspective. We argue for a practice-oriented approach to water consumption, focusing on the daily practices and emphasizing the (often unconscious) integration of water with other resources to create values in people's lives. In the findings section, we present excerpts of 15 in-depth interviews with a wide range of people, showcasing how respondents link various daily water practices to distinct water values. The discussion then explores the phenomenon of 'water value ambivalence', wherein the presence of various values associated with water practices complicates the translation of the importance placed on water conservation into practical and effective conservation efforts.

1.1. Values of Water

If water is perceived as a service, value creation of water takes place in people's daily lives. Water thus has value for citizens because they can use it or they have the possibility to use it in their everyday life. For example, many water activities are performed in order to clean oneself and one's surroundings [21–25]. Using water, or having the possibility to use water, also provides people with a lot of comfort and convenience in their daily lives [18,21,22,24–28]. It contributes to people's physical health and to their mental wellbeing [25,28–30]. Using water is something that brings people pleasure and relaxation [22,23,25,29,31], warmth and refreshment [23,25,31], and other physical sensations [29,31]. These examples from the existing literature are not always explicitly formulated as water values but can be considered as such in the context of this study.

Water values are subjective, meaning that for each person, a certain value will play a role to a greater or lesser extent. Water values are also context-specific. For example, the water practice of showering carries the value of cleanliness, but is also connected to refreshment, warmth, relaxation, etc. These are all different water values that are connected to showering, depending on the context in which this practice takes place. Consequently, water does not have a single absolute value, but can have different values as these are created within a certain contextual system [18]. Some of these water values are more functional; for example, water has an important hygienic value as it is used to clean oneself and one's surroundings. But water also has emotional or symbolic values, e.g., water as a source of relaxation. The distinction between these two categories is not always clear-cut. For example, the seemingly functional use of water can also have a symbolic value [17]. Cleaning seems a very functional practice to which the value hygiene is attached, but for some people, cleaning can also contribute to their mental wellbeing.

In addition to these direct values of water to citizens, at a higher level, water also has indirect values because it is used by and available to others (e.g., other citizens, companies, future generations, etc.). Citizens do not need to use water themselves for it to have value and affect their lives. Water, for example, contributes to the economy as a resource for industrial activities and agriculture [8,17,28,32,33], but water also contributes to the physical health and wellbeing of the population [8,28,30,34]. Water, and by extension water services, are essential for a stable and well-functioning society [18,34]. In summary, access to and the use of water provides a multitude of values to citizens in their daily lives and at a higher level in society. This variety of benefits, however, makes it difficult to value the full impact of water [26]. In this paper, the focus is on the household context and the daily lives of citizens, which concerns mainly tap water.

1.2. A Social Practice Approach to Value Creation

Water management is becoming more "people-oriented" by focusing on the demand side of water supply, rather than exclusively on the technical supply side [19,35]. While this trend is encouraging, we agree with Browne [35] that a "practice-oriented" approach is better suited to capture the complexity of water demand and social change than a "people-oriented" approach. "People-oriented" water management considers individuals

as average consumers of aggregate resources who make rational and informed decisions about their consumption [23,35]. Consumption is equated with aggregate consumer demand [36], and efforts to reduce consumption predominantly involve appealing to individuals' environmental values or using price incentives to encourage an overall reduction in consumption [35]. However, research has shown that there is limited connection between these methods and the everyday water practices of water consumption [37]. Consumption is not recognized as an unconscious and habitual activity in people's daily lives [35]. A people-oriented approach thus falls short in acknowledging the daily practices in which people consume water and the reasons *why* water is consumed. A practice-oriented approach, on the contrary, takes these daily water practices as the unit of analysis [38]. This enables a shift from studying what people think about water to what people actually do [35]. The focus is on what is done and how this is configured [39].

Using practice theory involves "letting go of the focus on water" and instead "focus on the services such resources provide in everyday lives (. . .)" [35] (p. 418). Water is not consumed for the sake of water itself, but because of the services and experiences that water enables [18,22,35,40]. Consumption is considered "a moment in every practice rather than a practice itself" [41] (p. 137). This social practice approach therefore lends itself very well to studying water values from the alternative paradigm in which water is no longer seen as a product but as a service. Value creation is then seen as a social process in which water is used and integrated with other resources to create value [18]. This integration of water with other resources happens in people's daily lives, in the performance of water practices. Practices are therefore "fundamental units of value creation" [39] (p. 238). It is in the performance of water practices, in the integration of different practice elements, that value creation takes place. For example, people consume water to perform the water practice of showering because showering is associated with values of cleanliness and refreshment.

2. Materials and Methods

Our research focuses on Flanders, the Dutch-speaking region of Belgium, which is facing extremely high water stress according to research from the WRI [1]. In Flanders, both the Flemish municipalities and the Flemish region, as well as the Belgian state, have governance responsibilities related to the organization of drinking water supply. Currently, there are six publicly owned drinking water companies that hold a regional monopoly on public drinking water supply [42]. Households receive one integrated water bill, that covers both the supply and production of drinking water, as well as the disposal and treatment of wastewater. The tariff structure, which includes a fixed and volumetric component, is consistent across all water companies, but the price levels differ [43]. According to the Flanders Environmental Agency, the quality of tap water in 2021 was, to a very high extent, in line with the high quality requirements [44]. Despite its high quality, Flanders consumes more bottled water than the European average, with 127 L per capita a year (in 2022) compared to the European average of 121 L per capita a year [45]. In addition to its drinking water policy, the Flemish government is strongly committed to rainwater. Since 2004, new houses and major renovations are required to install a rainwater tank. Although the policy was not initially intended to conserve drinking water, it has become an important outcome of the policy. Since 2023, there has been a regulation in place for the mandatory reuse of rainwater for applications for which no drinking water quality is required [46].

For this research, 15 exploratory in-depth interviews were carried out with the aim of identifying the values that Flemish citizens connect to (tap) water. As there is limited research on water's wider value to consumers, conducting in-depth interviews with households is a valuable initial step to explore their perceptions and values. The interviews were conducted using a semi-structured questionnaire. This method of interviewing allows the use of a general topic list while leaving room for further questioning and responding to interesting answers [47]. The interview started with questions about consumers' perceptions of their consumption, quality, and price of water. These questions put respondents at ease and encouraged them to start thinking about water in a domestic context. The second

part of the interview explored their values of water. For this purpose, photos depicting different everyday household water practices (e.g., cooking, cleaning, bathing, showering, etc.) were used. The interview questions and the use of the photographs were previously tested in four pilot interviews, and any necessary adjustments were made. The complete semi-structured questionnaire can be found in the Supplementary Materials.

Visual research methods, including the use of photographs, are particularly effective for studying the everyday [48,49]. By showing the photographs to respondents, the taken for granted water practices were made visible, enabling a reflection and conversation on these activities in a manner that would be more difficult in a solely verbal interview [48]. The use of these photos also provided respondents with increased focus. It gave them a greater role in the interview and more freedom to address certain topics that the researcher might not normally raise [49]. During the interviews, respondents were asked to arrange the photos according to the importance they attached to the practices and encouraged to explain this ordering via the following question: Why is this practice important in your life and what values do you attach to it? Figure 1 shows one example of a ranking of practices.

Figure 1. An example of a ranking of practices.

Fifteen respondents were interviewed between October 2022 and February 2023 in Flanders. To gather participants, purposive sampling was employed [50]. The sampling method involved searching through online platforms and personal networks of the researchers. In this process, an effort was made to interview respondents with different characteristics and opinions to obtain a rich and diverse data set and to explore as many different water values as possible. Participants were selected to represent both those with no particular relationship with water and those with a special relationship with water, such as people suffering from brown water, people not connected to the mains, owners of a swimming pool, and an owner of a water softener and an osmosis device. We interviewed seven women, six men, and two couples of different ages and educational levels. Furthermore, there was variation among respondents concerning their family situation, home ownership, and whether they were born in Belgium, as it was hypothesized that these factors could impact perceptions and usage of water. Details about the characteristics of the interview respondents can be found in the Supplementary Materials Table S1. Almost all interviews took place in the respondents' homes and were audio recorded after respondents gave their informed consent. The interviews were then transcribed (anonymously) and coded in NVivo R1.7, a qualitative data analysis software package. This interview process followed the University of Antwerp's ethics and integrity guidelines. Given the explorative nature of this research, an inductive coding approach was used, which allows the emergence of insights from the data itself. The coding process started with open coding where the transcripts were carefully read and searched for relevant phrases. Then, these codes were grouped and related to each other (axial coding). Finally, during selective coding, the different categories were linked together, and a story or theory was constructed around this [51].

The following sections explain the topics discussed, each illustrated with excerpts from the interviews. To ensure the confidentiality and anonymity of the respondents, fictitious names have been assigned to each participant in this paper.

3. Discussion of the Results

3.1. Beyond the Economic Value of Water

When asking respondents about the value of tap water, the economic value was not the (first) thing that came to their minds. They mainly described tap water as an essential or important element in their life, as something they could not live without:

> "(. . .) When you get a letter like this that they are working on (. . .) the water (. . .) Then I feel, I am a (. . .) invalid, but then I really feel disabled." (Christine)

Tap water is seen as a basic need and certainly not exclusively as a product. The expression "water is life" was quoted several times. This general expression refers to (public) health and water quality as well as to the environment. Water is seen as necessary for the survival of the human species as well as for animals and nature. Consequently, it is regarded as something we should be conservative with.

This view of tap water as a necessity of life also leads respondents to believe that tap water should not be profitable and should therefore be publicly owned, as is currently the case in Flanders. If water companies were private, some argue, profit would become the main motive at the expense of tap water quality.

However, it is not because water is seen as an essential element for survival that this idea is reflected in the daily lives of citizens. Talking about this issue, an interviewee said:

> "(. . .) So I think value of water is almost the foundation (. . .) on which we build our lives, or on which I build my life. But you don't see it that way every day. It is only now if you ask it explicitly 'What is the value of water to you?' that you see that it's really the foundation (. . .) on which everything else is built. (. . .) Otherwise, you would get sick, you would be hungry, you wouldn't. . . It's (. . .) everything." (Max)

The excerpt illustrates that (the value of) tap water is not something people often think about.

In line with existing literature [52,53], awareness around tap water was shown to be rather limited. Most people do not (exactly) know how much water they consume or how much they pay for their water. People do not reflect on how many times a day they use tap water and on the role of tap water in society. In addition, people seem to have little notion of how the water sector works, what services and processes are involved, and thus what they pay for.

Interestingly, participants readily admit that tap water is often undervalued and taken for granted, as exemplified by the following quote from Florence:

> "I think water in the first place is just something indispensable and something undervalued let's say. (. . .) Yes, that maybe it is taken a bit for granted? (. . .) Tap open. Water comes out. We (. . .) consider that very normal here while actually (. . .) it's (. . .) not and there are still many parts of the world where that's not so (. . .) obvious at all. And for us, that's a given." (Florence)

Respondents feel higher awareness is necessary as water is a scarce resource with which we should be more conservative. Therefore, people should become more aware of their consumption and reduce wastage.

Talking about tap water during the interview did raise people's awareness, although this is arguably temporary, because most people never thought or talked about water so long or deeply before. The probability of increased awareness is thought to be higher if people experienced a longer period without tap water, or with lower availability of tap water. This is illustrated by the following excerpt from someone growing up in South Africa and experiencing periods without tap water:

> "(. . .) Yes, (. . .) I think everybody should have at least one day of day zero where they open the taps and there is no water. And I really think. . . Maybe even a week just to have like, let's call it some like detention because it is one of those things what you don't know what you have until it's gone. And then I think it would raise major awareness (. . .) of the value of water." (Max)

Respondents who grew up in (non-European) countries where tap water was less of a given, were remarkably more aware of the importance of water and the fact that we should be conservative with tap water. They learned from an early age that water is a scarce resource and still treat it that way despite now living in Belgium where tap water is always available and taken for granted by many. This finding is supported by existing literature showing that people's past interactions with water supply systems shape their water practices of today [22,23,54,55].

3.2. Connecting Values to Practices

In the second part of the interview, we examined the values of water in a household context by presenting pictures of household water practices. Our aim was to bring attention to these subconscious daily routines and the underlying values associated with them. By deliberately highlighting these actions (referred to as 'the doing') and prompting participants to engage in discussions about them, we facilitated a clearer articulation of their water usage habits and the significance and implications behind them. The use of this visual research method, and thus the focus on practices, during the interviews was therefore highly beneficial. Figure 2 shows a visual representation of the water practices and associated values of two respondents, referred to as Max and Sarah. This representation is the result of such an awareness exercise with pictures of the different practices during the interview. It shows that some practices are linked to the same values for Max and Sarah; e.g., flushing the toilet is connected to the water value hygiene. For other practices, the values that Sarah and Max attach to them are not always the same, highlighting the subjective nature of water values. Figure 2 will be discussed in more detail in the following paragraphs.

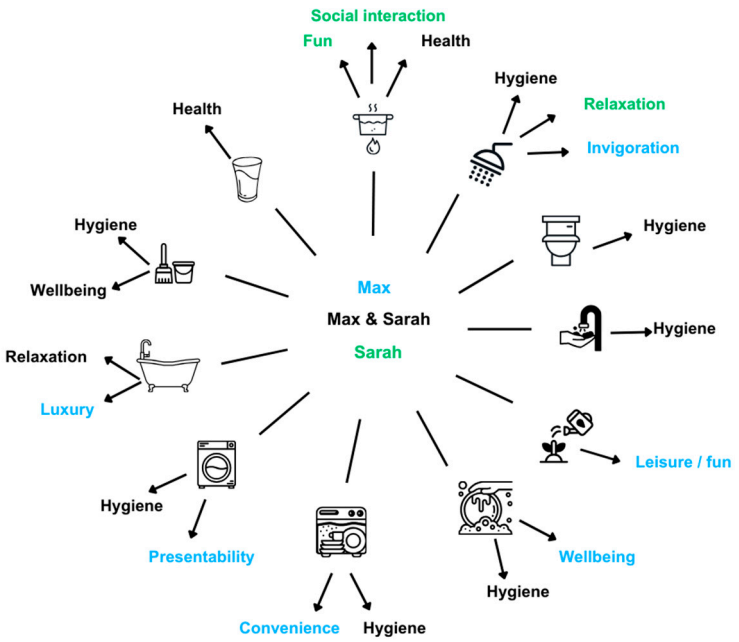

Figure 2. Visual representation of the connection between practices and water values.

3.2.1. Health and Quality

Although the practices of eating and drinking account for only a small percentage of total domestic water use, these practices proved to be the most important for Max and Sarah due to their essential role in maintaining good health and ensuring survival. Consequently,

in a lot of interviews, the discussion often revolved around the perceived quality of tap water. Despite many being satisfied with the overall quality of their tap water, it is currently deemed not good enough for the majority to drink. While respondents know that tap water is safe to drink, they often do not fully trust it. They therefore prefer to drink bottled water or filter their tap water "just to be safe". The following extracts illustrate these concerns:

> "(. . .) Yes everything is actually potable water (. . .) running through the pipes. (. . .) But I don't trust 100% is it really fully potable? How much lime is in it or other things? (. . .) From the water company itself but actually also, and then that's actually our own. (. . .) That's an old house. The pipes are old (. . .) so I don't have a clue either. The water may come into the house clean, but if the pipes are dirty or full of lime or whatever, it won't come in here 100% clean either." (Jonathan)

> "(. . .) Personally I don't drink my tap water. (. . .) There's a taste to it over here. Probably there are still old pipes or something, this is a very old street (. . .) And there are (. . .) neighbours who have (. . .) installed a filter, a carbon filter to filter out all the smells and flavours (. . .), but I haven't done that yet so I don't drink from my (. . .) tap water. I drink bottled water." (Thomas)

The quotes show people's concerns about specific substances in their water or the presence of (perceived) high levels of calcium. Others simply dislike the taste of their tap water. The reasons for not drinking tap water thus vary. Moreover, past experiences matter here as well. Respondents who were born in a country where they experienced lower drinking water quality trust that tap water in Flanders is 100 per cent safe to drink. In contrast, respondents who have experienced pollution or contamination problems have lost confidence in the quality of their tap water. Thus, those concerned about water quality perceive tap water to pose a certain health risk, whereas individuals who are content with the quality view consuming tap water as beneficial to their health.

Given that drinking and eating involves water absorption into the body, respondents expressed the need for the highest possible water quality in these activities. For other household practices, the quality could theoretically be somewhat lower. The crucial factor influencing the perceived quality is the proximity of water to the body during the respective household activity; the farther away the water is, the less critical its quality becomes. This is also evident in the literature regarding the acceptance of water reuse [56].

3.2.2. Hygiene

When it comes to health and survival, it is crucial not only to drink high-quality tap water, but also to maintain cleanliness of oneself and one's surroundings to prevent illnesses. Consider the following excerpt highlighting the consequences of not having tap water available:

> "The consequences would be a lot of (. . .) diseases that break out, a lot. It would be a major health hazard, really really a big problem, (. . .) because everybody's hygiene would go down. And only if you would eventually survive, which is then. . . (. . .) The people that adapt to these things are the ones that survive. It will become like natural selection basically." (Max)

This quote explains the integral connection between the water value health and the water value hygiene. Effective hygiene contributes not only to one's health but also to the health of others.

As illustrated in Figure 2, Max and Sarah's water practices predominantly emphasize the value of hygiene. Max and other participants consider it important to keep themselves and their surroundings clean. Key practices involve personal hygiene, encompassing washing hands at the sink, and washing the rest of the body at the sink, in the shower or in the bath, and cleanliness of surroundings, including cleaning, using the washing machine or the dishwasher, washing dishes by hand, and flushing the toilet. Personal

hygiene seems to be considered more important than the hygiene of the house, dishes, or clothes, indicating the significance of proximity to the body:

> "I think it starts with being able to wash yourself and then your clothes and your surroundings. (. . .) I would rather be able to wash myself for a week and not be able to clean than be able to clean for a week and not be able to wash myself, so to speak." (Mila)

While flushing the toilet may appear trivial, it is deemed a fundamental practice for reasons of hygiene. The importance of hygiene varies among individuals and is influenced by social norms, habits, and past experiences. For instance, Max showers daily, while others may find that washing up at the sink is enough and only shower every few days.

3.2.3. Water's Therapeutic Role

Figure 2 illustrates that some practices, which Max associates with the water value hygiene, have additional meanings for him. Max emphasizes the link between a tidy physical space and a clear state of mind, stating that "(. . .) It's also a representation of the kind of your mind. If you have a clean space, you have a clean mind." (Max). Hence, activities such as dishwashing and house cleaning not only align with hygiene but also significantly contribute to his overall wellbeing. In contrast, for some individuals, these practices are perceived merely as obligatory chores.

Showering and taking a bath are the two practices most often associated with hygiene but also with a form of enjoyment. Bathing, for Max, even transcends hygiene, as he perceives it as not only relaxing but also linked to luxury. For Max, showering is a moment to wake up and get ready for the day, while for Sarah, it is mainly a moment to slow down, relax, and take a moment for herself. These two meanings are illustrated by the following quotes:

> "(. . .) Then showering because everything does have to do with hygiene, but I don't think I get through the day if I'm not freshly showered in the morning. That would have a big impact on my life though. (. . .) It's hygiene first but besides that yes you don't feel awake or (. . .) ready for the day if you haven't showered, at least I don't." (Mila)

> "(. . .) I find that quite relaxing too. Yes (. . .) that's a moment for yourself, in that sense if you have a son, you like to have a moment for yourself (. . .) So yes actually as a value of (. . .) water. . . relaxation is part of it (. . .)" (Jonathan)

This quote illustrates how certain water-related practices are carried out at the beginning of the day, serving to invigorate and act as a means of refreshment and preparation for daily activities. Christine also notes that water provides refreshment during hot weather: "(. . .) Holding your wrists under running water for two minutes if it's too hot" (Christine). In addition to refreshment, water practices also have the ability to provide warmth or ease less pleasant moments. For example, Christine, who suffers from chronic pain, described the following: "I can ease my pain with ice-cold water, sitting with my feet in it. So yes. . . I'm very grateful for water, for everything actually." (Christine). Furthermore, water practices can enhance people's well-being, offer entertainment, and foster happiness. Max, for instance, associates gardening with enjoyment and relaxation, while Sarah finds joy in cooking with her family.

3.2.4. Comfort and Convenience

Figure 2 indicates that Max associates the practice of cleaning dishes with a dishwasher not only with hygiene but also with convenience. Max attributes the value of convenience primarily to the existence of technological applications that simplify various water practices. While the general availability of potable tap water provides considerable comfort and convenience in people's daily lives, this aspect often goes unnoticed. In interviews, the emphasis on the value of 'comfort' was less pronounced compared to values like hygiene or health. The true importance of comfort tends to become apparent only in specific situations,

such as when problems arise or during periods without access to tap water. For instance, a couple affected by brown water had to resort to bottled water supplied by the water company, revealing how the absence of tap water highlighted the significance of comfort.

> "(. . .) And you know what. . .. That water that may even be in (. . .) [large bottles], they may give me 150 litres of water a week. That doesn't get into my pipes, that doesn't get into my boiler. That's, that's (. . .) Yes you mean, it's bothering you and then yes. . . (. . .) You lose comfort and all that. And (. . .) it's not fun (. . .)." (Johan)

To enjoy the benefits or values of tap water, first and foremost comfort, well-functioning water services are essential. The value of tap water extends beyond its personal significance in an individual's life; it encompasses the value of the services and societal processes that enable the provision of potable water through taps. This recognition of water services is exemplified by a respondent with South American roots:

> "I come from a poor country and there we really had to carry water up to our house. And (. . .) those people here don't know that. So we don't pay water itself but really all those works that have to be done to get to it your house, so the pipe or what is called. . ." (Patrice)

3.3. Water Value Ambivalence

The interviews also explored individuals' perspectives on water conservation. Almost all respondents considered themselves to be conservative water users, citing environmental concerns as their primary motivation. Some also pay attention to their water consumption because it reduces the water bill. The extent to which price plays a role as an incentive to conserve water was influenced by the financial situation of the respondent.

Water conservation encompasses minimizing tap water usage and, alternatively, utilizing rainwater or groundwater. Common methods include showering instead of taking a bath and using dishwashers instead of handwashing. Additional practices involve shorter showers and not running the tap while brushing teeth or washing dishes. The use of rainwater and groundwater mainly happens outside. There seems to be a consensus among the interviewees that watering the garden with tap water is unacceptable. Consequently, the garden consistently ranks lowest in the hierarchy of importance among various practices.

Respondents frequently benchmark their water-saving behavior against others, highlighting the relative nature of conservation. For instance, one respondent, Jonathan, remarked, "You have people who shower for half an hour to an hour. I shower for ten minutes or so, I think."

Though all respondents reported being conservative water users, significant variation exists in their levels of conservation. The concept of conservation differs among respondents, but often involves only small changes to some practices. Furthermore, some indicated they would find it difficult to make additional savings as all their water practices are essential. They would opt to save a little across various practices, or use rainwater instead of tap water, rather than radically change certain practices. This finding could be the result of what we termed 'water value ambivalence'. Although many recognize the significance of water conservation and feel a sense of responsibility to be prudent in their usage, conflicts with deeply held water values present challenges when attempting to enact changes. People enjoy certain water practices and like or are used to the comfort and convenience of tap water in their daily lives. Therefore, saving water often means a certain loss of comfort or enjoyment. Kenneth candidly admitted the following:

> "Yes, I realize the value myself. . . Yes, that's convenience. I'm still human. Convenience is just. . . (. . .) I come home, and you don't want to think about it." (Kenneth)

Individuals may also experience ambivalent feelings in specific practices, as illustrated by Monique's conflict between wanting shorter showers for conservation and enjoying the relaxation they provide. Monique explained:

> "Yes (. . .), I can stand in the shower for a long time to relax. If I'm stressed, I just take a shower. . . (. . .) I know sometimes it's too long. They used to always say that like "you're in the shower too long again". But yes. . ." (Monique)

Similar conflicts arise in practices like bathing, where the desire for relaxation conflicts with water conservation concerns. Thomas reflected on this, saying the following:

> "A bath, I do like to do that, but I can't bring myself to do that anymore either and I actually think it's a bit wasteful. It's a seriously big bathtub I have here. I think it can easily hold 130, 140 L of water and if you lie there for ten minutes floating (. . .). (. . .) I find that really wasteful. (. . .) I keep that for when I travel or go to the spa or something like that." (Thomas)

In summary, while the majority of individuals acknowledge the significance of water conservation and possess the knowledge of how to attain it, conflicting sentiments hinder their ability to take action. The multitude of values associated with water and its integral role in people's daily lives create obstacles for some in their efforts to conserve water.

The extent to which people experience this water value ambivalence depends on a few factors. Firstly, it is influenced by the importance individuals attribute to water conservation. Secondly, it depends on their water values, and consequently on the practices involved. Individuals may engage in water-saving behavior in some practices without experiencing water value ambivalence, while in other practices, they may experience more of these ambivalent feelings, making it more difficult to save water. For example, an individual may willingly reduce their shower frequency but struggle with not flushing the toilet due to perceived hygiene concerns. In response to such ambivalence, individuals adopt varied strategies. For instance, Thomas decided to only take baths on special occasions, while others may choose to partially fill the bath, adapting their practices to address these ambivalent feelings. An alternative response is to abandon the practice altogether. Some people have decided to no longer take baths because they think it is an excessive water waste. However, individuals such as Monique may choose to persist in their practice because they perceive the water value associated with it as crucial to their daily lives. Thirdly, the degree to which people experience ambivalence may depend on how consciously they carry out their practices. During the interviews, we attempted to make the practices and their associated values visible by using an exercise with images. However, in everyday life, water practices are often performed unconsciously and routinely. It is possible that an increased awareness of these practices correlates with an increased sense of water value ambivalence.

4. Conclusions

The existing literature on the value of water is heavily dominated by an economic valuation logic. However, this logic tends to overlook the social and cultural values of water, which are crucial dimensions in both water use and associated experiences [17]. In this article, we adopted a sociological approach on citizens' perceptions of the values of tap water. Our results show that people perceive tap water as a necessity of life and recognize that it is often taken for granted, yet they tend not to consider its value on a daily basis. This could be explained by the fact that the use of tap water is often embedded in everyday activities that are performed unconsciously and routinely [21]. Moreover, water services in Flanders, as in other European countries, are extremely reliable and invisible [28], causing people to overlook water supply unless there is a problem [26].

In this paper, we adopted a social practice framework of value creation, enabling us to shift our attention from what people think to what they actually do. The findings highlight that citizens use water not so much for the sake of water itself, but in the pursuit of various household water practices associated with certain values such as hygiene, relaxation, health, or comfort. Our results support the importance for an alternative water paradigm in which water is seen as a service and value creation as a social process [18]. People place great importance on the experiences that water affords them and the values they associate with

its use. While the expense of tap water remains a concern for many, its value transcends mere monetary worth to encompass broader concepts such as warmth and comfort.

A large part of the existing literature on tap water centers around its quality and impact on human health [57–61]. However, our study shows that there are many different reasons why tap water is used, and that health is only one value associated with tap water use in some contexts. The majority of domestic water use is more likely to be associated with values such as comfort, relaxation, warmth, refreshment, and hygiene, as these values are mainly formed in water-intensive practices, such as showering.

Moreover, our study introduces the concept of "water value ambivalence", which denotes the tension between the various values individuals attribute to tap water and its importance in their lives, juxtaposed with efforts aimed at water conservation. While previous research has focused on water restrictions, the price of tap water, and promoting environmentally friendly behaviors to encourage water use reduction [52,62,63], our findings highlight the importance of considering individuals' water values. Although people may have pro-environmental values, they can still encounter conflicts between water saving behavior and their water values. The extent of water value ambivalence depends on factors like the importance individuals attribute to conservation and their water values. Individuals may engage in water-saving behavior in some practices without experiencing ambivalence, while in others, they may struggle, adopting varies strategies. The degree of ambivalence may also depend on how consciously individuals carry out their practices, with heightened awareness potentially correlating with increased water value ambivalence. However, overall, the pivotal role of water in everyday life poses challenges to the conservation of water usage. Such conflicts may explain why conservation efforts often involve only small changes. Rather than radically changing their practices, individuals tend to make their existing practices more efficient. This enables them to reduce the conflict they experience by still being able to attain their desired water values, whilst conserving (a little) water. For example, for many people, not flushing the toilet is perceived as unhygienic. However, installing an economy button on the toilet enables individuals to uphold their hygiene standards while also conserving tap water.

This research is a first exploration, based on 15 interviews, of the values of tap water for citizens in Flanders, and sheds light on the varieties and ambivalence associated with water values. Further investigation of these water values is encouraged. Specifically, conducting ethnographic research would be useful to gain a deeper understanding of these values. Future research is also necessary to understand the similarities and differences between the results of our case study in Flanders and other countries or regions. People from different cultures and countries, especially people from countries were (access to) clean tap water is not a given, may have very different perceptions of tap water and may experience other water values.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/w16091236/s1, Table S1: Detailed characteristics of interview respondents, Semi-structured interview questionnaire.

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