

Aspects of Value:
An Investigation of Washington State Water Governance

by

Jacob B. Fritz

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Certificate of Approval

This is to certify that the accompanying thesis by Jacob B. Fritz has been accepted in partial fulfillment of the requirements for graduation with Honors in Environmental Studies and Politics.

Arash Davari

Whitman College
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Abstract

This paper explores the formation of different manifestations of value within a context of increasing commodification of water. The project specifically investigates the relationship between the trend towards water commodification, as seen with the emergence of water trading markets, and the production of value. Grounded in the case study of Washington state water governance, the emergence of water trading markets can be understood as a specific process intended to enhance the various values of the state, both economic and otherwise. This marketization of water has been relatively successful in terms of the production of economic value but the expression of alternative forms of value (environmental, cultural, and spiritual) are limited as they are forcibly reduced to economic logic. This is problematic. By understanding water as a quasi-commodity and the history of its marketization we come to understand that dominant forms of political economic thought (Marxism and Neoliberalism) appear to be inadequate to the task of affirming alternative formations of value on their own terms. An opening is thus provided inviting imaginative thinking about natural resource management and the affirmation of various formations of value.

A young couple have just bought land in Whatcom County, Washington. They intend to start a farm and family. The water is calm, but there is an electric current of struggle just beneath the surface. There is a war over the water.

Should these young family farmers be allowed to use the groundwater? Or should the fish take priority? The Washington Supreme Court values the value that fish create. The Hirst Decision made that abundantly clear. In November, 2016 the court restricted permit-exempt wells in certain counties where recovering fish species are at risk. This puts the couple up a creek—a dry one—without a paddle. Their property value suddenly plummets and their prospects darken. But how can we compare the value that fish provide to that which rural communities contain?

The values the Court holds don't align perfectly with those of the state legislature. The latter has recently put forth a "Hirst fix" to set the values of the state straight. They intend to let the couple drill their well. At the expense of some fish? Maybe. But to encourage the production of economic value? Definitely. While the air is peaceful, there is a struggle raging. Perhaps it isn't about the water, but rather what aspects of value we should value.

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I. Introduction: The Head Waters

This paper explores the formation of different manifestations of value within a context of increasing commodification of water. My project specifically investigates the relationship between the trend towards water commodification, as seen with the emergence of water trading markets, and the production of value. Through this exploration, we see that the emergence of water trading markets in Washington state was a specific process intended to enhance the various values of the state, both economic and otherwise. This marketization of water has been relatively successful in terms of the production of economic value but, as we will see, the expression of alternative forms of value (environmental, cultural, and spiritual) are limited as they are forcibly reduced to economic logic. This is problematic. I will demonstrate that there are a number of values that are important to Washington state however, there are very few avenues to express them namely, through economic reductionism. This reduction

to economic logic reduces the effectiveness of the alternative value expression through markets in Washington state.

To accomplish this project, in the first half of this work, I situate Washington state water management within the framework of Karl Marx's theory of value. In so doing, I investigate the compatibility between water and commodification. This allows us to discern the qualities that are consistent between water and the abstract commodity Marx describes. I then depend on Elmar Altvater's theory of the ideal collective capitalist to move into a critical examination of the State's¹ role in both the production of value as well as the rationale behind production of the water commodity. This illuminates some integral points of disconnection between Marx's theory of value and how water is used, circulated, and ultimately managed in Washington state. Here we arrive at the critical observation that water exists in an interesting zone of limbo: as a quasi-commodity.²

To provide a multidimensional view of the various aspects of water's value, in the second half of the paper I move out of the realm of commodity theory into one of social and material relations. When considered through a lens of material relations, the values of water emerge as starkly different from the economic understanding that water markets encourage: specifically, as environmental, cultural and spiritual values. I look to key historical events and social circumstances most notably federal mandates

¹ State here is capitalized referring to the abstract State. Any time state appears as lowercase it is in reference to Washington state in particular. I assume congruence between theories of the State and how Washington state manages its waters. It might be a fruitful project to investigate if theories of the State apply to states within a federal system.

² Quasi-commodity is defined here as something not produced by human labor or is not produced to be bought and sold freely. Additionally, thing is a quasi-commodity when it does not meet all of the criteria set forth in Marx's theory of value. Quasi serves to indicate a level of incompleteness.

stemming from the Endangered Species Act, the social awareness of the effects of climate change, and continued population growth that all contribute to increasing strain on the water resources of the state. These considerations augment our understanding of the relationship between the incompatibility of commodification and water by highlighting the legitimacy of alternative aspects of value. Finally, I construct a critique of the dominant forms of thought within political economy (Marxism and Neoliberalism) centered around their inability to adequately express alternative formations of value on their own terms.

Ultimately, I seek to address the question: what is the relationship between the trend towards the commodification of water and the production of various forms of value? In response, I argue that the water in Washington state is incompatible with the classical Marxist definition of a commodity—it exists as a quasi-commodity—and, because of this incompatibility, the alternative formations of value inherent to water are as well. This claim comes with grave implications attached as the mismanagement of our water resources could have dire consequences for personal health, societal cohesion, and equity of access to this life-sustaining resource. Without designing sustainable, resilient, dynamic, and equitable management structures, which is predicated upon an understanding of the various values of water, we are putting the future of our society at risk. There are theoretical stakes involved as well. Observations stemming from this case study support critiques of the classical Marxist lens which claim it to be inadequate in its ability to interact with forms of value alternative to the economic. However, neoliberal logic too is called into question for its ability to incorporate and express alternative formations of value. This questioning of the

sufficiency of these two dominant forms of political-economic thought opens up a chasm to be filled with imaginative frameworks for resource management. While I am not the first to recognize any of these stakes, they are all at play within this case study and therefore beg engagement. In short, my political stakes are an affirmation of alternative values on their own terms, something Washington state governance structure is currently lacking. We now turn to Marx's theory of value to begin the analysis of the trend towards water commodification in Washington state.

* * *

II. Marx's Theory of Value

If we are to properly understand the emergence of water markets and the effects of water commodification, we must first understand the nature of the commodity. In this case, a discussion of water as a commodity is particularly salient because of the increasing marketization of water and therefore, I rely heavily upon Marx's theory of value in order to deconstruct the new water commodity. While there are certainly alternate discussions and theories of the commodity and its relationship with value, Marx is a logical starting point because of the foundational role that he played in the exploration and explanation of capitalism, the commodity, and value itself. Any more contemporary theory of the value therefore must operate in conversation with Marx's work in volume 1 of *Capital* and because of this fact, his theory acts as the guiding framework through which I will assess water as a commodity within Washington state.

Marx describes the commodity in great detail in the first volume of *Capital*. By investigating the production of the commodity, he seeks to illuminate the inner logic of

capitalism, asking the principle question: how are prices derived and what do they represent materially? In the first volume of *Capital*, Marx describes the formations of value within the commodity: its *use value* and *value*. Marx describes use values as a combination of natural material and labor which produce something which will satisfy a human want or need (133). However, it is not enough to simply satisfy the want or need of an individual; a use value expressed by a commodity must satisfy a social want or need, i.e. people in general have to desire the produced use value (Marx, 125). Finally, “use values are only realized in consumption,” (Marx, 126) which is to say that until someone actually *uses* the commodity, it cannot exhibit a use value. In this sense, all commodities contain a use value which is expressed qualitatively in essence. One use value can differ from another use value only in how it satisfies a social want or need. For example, a piece of bread and a coat both express specific use values which differ from the other only qualitatively (the bread’s usefulness is sustenance while the coat’s usefulness is warmth). The state of usefulness that a commodity may exist in is called by Marx, the “natural form.” It stands in contrast to the “value form” (to which I return later). In short, use value is utility for both the individual and the social body.

Just as use values differ in qualities, exchange values, Marx asserts, “can only differ in quantity and therefore do not contain an atom of use value” (132). The differences between a slice of bread and a coat’s use values are qualitative—one provides sustenance while the other warmth—but their respective exchange values can differ only in quantity. The difference between a coat and bread in terms of exchange value is the respective amounts paid for each. It is through exchange value that we gain a window into the nature of the commodity; it is how we can observe the root of value

which we would otherwise attribute to the price of a commodity (Marx, 128). Whereas use value is the embodiment of utility and a combination of natural material and labor, exchange value is expressed unequivocally through price. How a price is formulated—the value that price represents—however, remains an object of inquiry. Marx writes: “exchange value appears first of all as a quantitative relation, the proportion, in which use values of one kind exchange for use values of another kind” (126). By looking at the relationship of exchange between commodities Marx shows us that, at certain quantities, all commodities are equal. And because these commodities can be made equivalent, they “must therefore be reducible to a third thing” (127). What that third thing is, Marx alludes to, is the root of a commodity’s price (or exchange value) and the source of its value.

Marx argues that the only attribute that all commodities have in common is that they are products of human labor. In order to produce a commodity for exchange and subsequent use, one must combine natural materials through labor. Materials can change but the input of labor does not. David Harvey’s synthesis of these points helps clarify the matter: “when commodities are looked at as crystals of this social substance, common to them all, they are values” (1982, 14). Essentially, Marx argues that all commodities are congealed labor time and what is paid for within relationships of exchange is the socially necessary labor time taken to produce a certain commodity. Every commodity that is produced is subject to the injection of human labor and that simple act of production through labor is, in essence, value. The value of a commodity is the labor it contains. There is a key difference, however, between *concrete useful labor*—human labor exercised with a definite aim of producing use values—and *human*

labor in the abstract, which creates and forms the value of commodities in general. Harvey thus surmises, “the standard of value is that aspect of human labor which creates value” (1982, 14). While concrete labor is used to produce a commodity, abstract labor is both what creates value as well as how it is measured through price.

The social relationships that make up the production and exchange of commodities are central for Marx. But these social relations are not necessarily a given. The “exchange of commodities presupposes the right of private individuals to dispose of the products of their labor freely,” which is to say that these specific relations of production and exchange must first be enabled and facilitated. “This condition necessitates legal basis for exchange as well as the power to sustain private property rights and enforce contracts. Power which rests in the State” (Harvey 1982, 18-19). Marx notes that a commodity is produced by “the material provided by nature and labor” (133) and it is the State’s role to deliver nature to capital. “While some aspects of nature are hard to enclose, a variety of surrogate ways can be devised (usually with the help of the State) to monetize and make tradable all aspects of the commons of the natural world” (Harvey 2014, 250).

Moore and Parenti expand on this point as they write, “the state delivers nature and its utilities to production...with territorially based property laws” (2016, 171). The State plays an intimate role in the production of commodities as we will see further below. It is clearly integral that we understand the State’s role in water commodity production if we are to explore the relationship between water commodification and the formation of value. To begin this task, I will first situate Washington water management within the framework of value theory in order to identify how

Washington values its waters, what formations of value are expressed, and how these values are expressed as a commodity. This will bring us to a point where we may better consider the part the State plays in producing the water commodity.

* * *

III. The Value of Washington's Water

Marx's theory of value deconstructs the commodity, flipping it, turning it, and observing it from different angles. This system of analysis leads Marx to posit that the root of price, and the source of value, is abstract labor time. In light of the increasing reliance on market mechanisms to allocate and distribute water to disparate users, it is important that we engage with his theory of value in order to understand how water acts as a commodity. While this case study is grounded in Washington state, there is a growing prevalence of water markets all across the American West and in various corners of the globe (United States, Congress; WestWater Research, 2004). However, despite its inclusion in markets, when the emerging water commodity is analyzed through the Marxist value theory framework, it doesn't seem to fit satisfactorily. This is the first step in the process of teasing out the relationship between water commodification and the production of various forms of value. All of this leads to a realization of the potential consequences if alternative values are unable to be analyzed on their own terms. In this section, I will employ Marx's theory of value to deconstruct the water commodity and identify the ways in which it may not be compatible with commodification.

Due in large part to water's definition as a public resource, Marx's theory of value does not fit perfectly when situated within the scope of Washington water governance. But this allows us to access interesting questions of *why*. Karl Polanyi's work can then help us answer questions about the market compatibility of water. But first, I will explore where strong linkages exist between the state's policy framework and the theoretical principles that Marx outlines. Then, I will take a critical look at the State and its role in facilitating commodity production and commodification. Finally, I will attempt to identify significant points of friction and dissimilarities which will bring us to a discussion involving Polanyi who addresses the question of why water doesn't fit within the definition of a commodity. While Washington is a relative newcomer within the scope of water market usage in the U.S.,³ it serves more than adequately as a representative for the Western states as we look at the coherence between value formation and the movement towards commodification. In addition, its governance strategies have not been rigorously studied, as California and Colorado have been, which makes this case study even more useful in that it will contribute to a growing body of work investigating the emergence and effects of water markets.

The Washington State Department of Ecology (hereafter Ecology) is charged by the state legislature with the management of water resources. Ecology asserts that the Water Resources Act of 1971 functions "to set forth fundamentals of water resource policy for the state to ensure that waters of the state are protected and fully utilized for the greatest benefit to the people of the state" (RCW 90.54). This act became necessary because of increasing conflicts over water usage due to a continuous

³ Market mechanisms were first employed within the 2001 Yakima Basin Water Transfer Program.

increase in the population and changing climatic and precipitation patterns (RCW 90.38). Earlier water laws were not equipped to handle these new problems. The first sentence of the document states that, “the legislature recognizes the critical importance of providing and securing sufficient water to meet the needs of people, farms, and fish” (RCW 90.54.005). Very shortly thereafter, it describes how the “proper utilization of the water resources of this state is necessary to the promotion of public health, and the economic wellbeing of the state and the preservation of its natural resources and aesthetic values” (RCW 90.54.010). These excerpts from the very beginning of the Water Resources Act succinctly and directly delineate the values that water provides the people of Washington. These values remain consistent through many of the policy documents (RCW 90.03; 90.42; 90.38).

First and foremost, water is valued by the state for its use value for humans. It is a biological necessity, an imperative for life and undoubtedly useful in keeping humans and virtually all other organisms alive. Water is life. Moreover, all of the sanitation in Washington is dependent on water. Toilets, showers, sinks, sewers, etc. all function through its flow. In this sense, water bears a use value of sanitation and basic dignity. Biological sustenance and sanitation are demanded throughout society and, as Marx described, it is not sufficient for a commodity to simply satisfy an individual want or need; it must also satisfy a social want or need (Harvey 1982, 13).

Washington water policy recognizes the social need for agricultural production or, as RCW 90.54 describes it, for farms. It fulfills the need for crop production; in fact, about 80% of Washington’s water withdrawals are used at some point for agriculture (“Irrigation in the Pacific Northwest”). This again may be construed as an

intrinsic, life-giving use value of water. In this case, however, it is slightly more indirect. Nevertheless, it is an important use as Washington ranks first in the nation in the production of apples, hops, peas, and cherries, among other agricultural products (“Agriculture: A Cornerstone of Washington's Economy.”). In short, the use of water towards crop production is both highly necessary and desired by not just the individual farmer but by Washington state as a whole.

Water also fulfills many disparate needs as it is used by industries. RCW 90.54.020 adds that commercial and industrial uses as well as hydroelectric, thermal, and nuclear power production constitute needs of the state for which water can be employed. While not limited to the nuclear sector, a famous example of industrial water usage is from the Hanford site where Columbia River water contributed to nuclear power production and plutonium enrichment. However, water is used for many disparate industrial needs such as to cool machinery, produce power, and move materials around the state.

Listed last in the Water Resources Act’s concise introduction to water’s legitimized uses in Washington are fish. This implies that state policy and Ecology recognize instream flows as valuable for ecosystem health and the wellbeing of flora and fauna as well as for its aesthetic values. Here the linkage to Marxist value theory becomes frayed and tenuous. While instream uses can be understood as a desire for some to see ecosystems as functionally stable, this notion doesn’t fit cleanly into Marx’s conception of use value. Most notably, none of these environmental uses are exactly “consumed.” These values are nevertheless important to note because state policy spends a great deal of time outlining how instream flows must be managed.

Additionally, Ecology directly states that instream flows are a social value of the state. In this sense, Washington policy recognizes an inherent or aesthetic use value in water.

We have unpacked Washington Water's use values, now I turn to exchange value. Uses of water are determined and analyzed by Ecology on the basis of their potential exchange values. This means that uses of water are always considered within the scope of benefit to the public and the economic value it will create. The Water Resources Act states that "allocation of waters among potential uses and users shall be based generally on the securing of the maximum net benefits for the people of the state. Maximum benefits shall constitute total benefits less costs including opportunities lost" (RCW 90.54.020 (2)). This is fairly cut and dry. Water is valuable; through circulation it creates more value; and value is assessed through economic functions.

In 2001, a pilot water market program (RCW 90.38) was set up in order to combat the "insufficient supply of ground and surface water needed to satisfy the present and future needs of the basin" (RCW 90.38.005). It was designed to facilitate water sales, leases, and transfers in order to reallocate water and satisfy the various competing demands. One objective of the Department of Ecology was to "increase the overall value of the goods and services derived from the basin's water resources, by reallocating water from low-value to high-value uses," (United States, Congress, McCrea, Mary E, et al) once again, measured economically.

Water markets are upheld by three distinct mechanisms which facilitate water right transfers. One such mechanism is the Washington Water Bank. Water Banks operate as intermediaries as they purchase permanent water rights or temporary leases and then sell that water to willing buyers who may be short on their own necessary

water supply. The market structure varies between basins and banks but the majority of western water banks use a clearing house organizational method where buyers and sellers post their prices and bids for the water on a public forum. Most of these transfers involve “individual exchanges with bilateral negotiations between a single buyer and a single seller. Prices are determined by the market” (United States, Congress, WestWater Research, 2004). However, water banks do not operate with complete sovereignty. All proposed water transfers are reviewed by Ecology to ensure that the water will continue to be put to beneficial use and that public well-being is not infringed upon by private transfers of water. Nevertheless, the actual prices are determined by market forces causing the price of water to fluctuate depending on the time of year, amount needed, and drainage basin, along with numerous other factors. For example, the Yakima Basin Pilot Water Bank in its first year (2001) recorded a range of sale prices from \$0 up to \$495 per acre foot of water (United States, Congress, WestWater Research, 2004).

This doesn't make much sense within the framework of value theory. Up until 2001 in Washington state, there was no free exchanges of water. There were only unilateral, subsidized transfers from Ecology to private right-holders. But post 2001, water began to exhibit a wide range of exchange values. Some water transfers are donated back to the state, often to supplement instream flows, and are “sold” for nothing—recording an exchange value of zero dollars. However, some transfers can exhibit exchange values of hundreds of dollars per acre-foot. Marx describes “exchange value as the necessary mode of expression or form of appearance of value”

(128). This begs the question: is water's value really fluctuating that much to produce these differences in price?⁴

Ecology describes how prices are grounded in market equilibrium measures of supply and demand which fluctuate based on time of year, whether it's a relatively wet or dry period, amount needed, etc. (United States, Congress, WestWater Research, 2004). This too doesn't fit within Marx's work. Water is being exchanged and profits are reaped by both the individual as well as the state but the economic value in circulation is not one that is *produced* to be exchanged. What we should see, according to Marx, is a change in price due to the quantity of a commodity, which Marx calls its magnitude. In other words, the fluctuation of the quantity of water exchanged⁵ should run directly parallel to the fluctuation of prices. Instead, there is a large amount of variation in pricing which seems to have very little to do with the amount of labor which is expended on the "production" of water. I continue this discussion about the potential disconnect between the exchange of water and the production of value below.

Until the emergence of water markets, water was treated as a common pool resource and did not express an exchange value; it was provided to the right-holders by the State at a highly subsidized rate. In addition, the price that irrigators, municipalities, and individuals pay initially for their water funds the construction and maintenance of the infrastructure, not the water itself (Seattle Public Utilities). In this context, it is not the water that purports an exchange value but rather the infrastructure provided by the

⁴ A study of Adam Smith's theories on the relationship between prices and markets might provide a fruitful avenue of study as his work aligns more closely with this particular phenomenon.

⁵ Measured in either acre-feet or cubic feet per second.

State. An adequate understanding of the State is necessary to fully flesh out the ways in which Washington water management fits within the scope of Marx's theory of value with the ultimate goal of understanding the trend towards water commodification and its relationship with the various forms of water that markets support.

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IV. Understanding the State One Drop at a Time

The State plays an intimate role in water management and water commodity production therefore it is integral for us to understand how it operates. After all, it holds the water in trust for the people and is responsible for its sustainable and equitable management. Here however, I do not intend to insert myself into the vast debate centered around the nature of the State as the contributors are numerous and the discussions contentious.⁶ That lies beyond the scope of this work. But, how then are we to understand the State? I will rely upon Elmar Altvater's conception of the State as an ideal collective capitalist because it aligns closely with my observations of the role that Washington state institutions play in this case study. Additionally, his work provides us with the necessary language to explore the actions of the State in relation to the production of the water commodity and formations of value.

Altvater asserts that the State is a distinct political structure which acts in close correspondence with the needs of capital. He sees the State as autonomous and

⁶ There are numerous influential theorists of marxist state theories, including Poulantzas, Miliband, Jessop, and Offe. Exploring the nuances between their respective theories of the State is beyond the scope of this paper. For a more nuanced description of different state theorists and their respective theories, see Raju J. Das (1996) or Clyde Barrow (2000).

subjective insofar as the State contains its own fundamental interests. In these respects, Altvater describes the State as a collective capitalist which works to further the general interests of capital. Capitalist logic dictates that one must strive to maximize the generation of surplus profit, therefore, capitalists refrain from reproducing their own conditions of production. This subsequently threatens their existence as capitalists and consequently, the functioning of the State because it too depends on capital accumulation to survive. Because capitalists do not reproduce the conditions of their own reproduction, the State must perform these functions to preserve capital (Altvater, 1969). These conditions the State maintains are those that individual capitalists refrain from investing in because of their focus on the production of surplus profit or because it is simply too large of a capital investment to produce profits. This, materially, is manifested by the State maintaining infrastructure like highways, dams, or pumps and piping for water distribution, all of which facilitates the production of use values, exchange values, and, ultimately, the circulation of capital.

This conception of the State allows us to better understand one of the most important and influential phrases which arises throughout Washington water law. “Beneficial use” describes the uses which are deemed valid by Ecology and therefore may receive a portion of the public’s water. In order for a water right application to be approved, the applicant must first demonstrate that the water will be put to “beneficial use.” This connotes that the general public will directly or indirectly benefit in some way by the application of water in a certain context or by a particular method. What is actually beneficial to the state of Washington and what is actually beneficial for its citizens can absolutely be debated, but the policy states clearly that beneficial uses

include “domestic, stock watering, industrial, commercial, agricultural, irrigation, hydroelectric power production, mining, fish and wildlife maintenance and enhancement, recreational, and thermal power production purposes, and preservation of environmental and aesthetic values and all other uses compatible with the enjoyment of the public waters of the state” (RCW 90.54.020). This list encompasses many disparate ways that water may be utilized, many of which we looked at as manifestations of use value, and all of which are beneficial to different groups for different reasons. Through the lens of state theory previously presented, we will come to see the ways water is valued by the Washington state and how its commodification may facilitate the production of value. Ultimately this will aid our understanding of the values that are fully expressed within water markets.

Beneficial use is designed to limit the waste of water and to facilitate the production of the most value—primarily, although not exclusively, in an economic sense—for the state. The intention is to ensure that water usage goes towards the betterment of Washington state as opposed to solely the individual user or even worse, noone at all. This can happen through the economic vitality of the state (largely generated through the production and sale of agricultural products), economic gains such as increased GDP and job creation through industry, service of the biological needs of consumption and sanitation through municipal services, and the support of ecosystem functions for recreational, cultural, and spiritual values. Despite the preface that water uses must benefit the general public, apart from the application fees, the profit garnered from the sale or lease of water remains privately with the water right holder. The question therefore arises, how or why is it beneficial to the State, as well as

for the body public, to allow the private sale of a public resource? Altvater's concept of the ideal collective capitalist will help answer this question and get us to a place to finalize this inquiry into the State's role in water commodity production.

But how do these private market transfers work with regards to beneficial use? Market mechanisms are extremely useful tools for Washington state but don't necessarily fall under the banner of beneficial use. When bought and sold, water is effectively converted from a natural resource owned by the general public to a private good bought and sold. This use does not qualify as one of the outlined beneficial uses however it does serve a number of specific, strategic, and beneficial functions for the state. As we will see, this effectiveness of water markets as a water management tool thereby renders water commodification comprehensible. Water markets function to reproduce the state's own role and are used to reallocate water, effectively commodifying it. But, as we will see shortly, water's commodification is not perfect which has important implications for the formation of its value.

The prevailing logic behind utilizing market mechanisms to reallocate water hinges upon the conception that markets improve the efficiency of allocation, distribution, and application. Capitalists who employ water for beneficial uses seek to maximize profits and therefore reduce inefficiencies and waste of water. It is argued that, "under the appropriate preconditions, the creation of voluntary water markets can achieve the social optimum of economic efficiency," (Chong and Sunding 2006, 259). By thinking about water markets through the lens provided by Altvater, we can see that economic efficiency, inducing further circulation of capital as well as moving water around between uses and users serves to reproduce the conditions of production.

Essentially, the market mechanisms that Washington state has employed to reallocate water in times of need facilitate the smooth functioning of the state and provides economic incentive to limit conflicts between users and uses.⁷ RCW 90.38.005 makes this point: “there is an insufficient supply of ground and surface water to satisfy the needs of the basin, and the general health, welfare, and safety of the people...depend upon the basin’s water resources.” It goes on to describe how an increasing population continues to strain water resources and therefore the Yakima water trading system was put in place to “satisfy both present and future needs for water in the Yakima river basin.” As we can see, Washington benefits from increased levels of capital as well as decreased social conflict over resources.

The state therefore allows these private transfers of water, as long as it satisfies the beneficial use requirements. The circulation of water and capital through different uses and users continues to catalyze growth and economic vitality which, according to capitalist logic, reproduces capital itself. We can see proof of this economic growth in many sectors such as the agricultural industry⁸ as well as in municipal development trends.⁹ Additionally, Ecology maintains the stated goal of obtaining “maximum net benefits...through economic incentives and cost share programs” (RCW 90.54). This is

⁷ Washington state reserves the right to employ Overriding Considerations of Public Interest as defined by RCW 90.54.20 which allows them to reallocate water from current uses to satisfy alternative permit requests if it is deemed in the best interest of the public.

⁸ There has been approximately 2.5 billion dollar increase in total production in the agricultural industry between 2010-2017. There is a direct link between water access and agricultural output (Agriculture).

⁹ The WA Office of Financial Management reports strong and consistent growth throughout the 21st century. Specifically, Washington population grew by 1.76% in 2017. Because of the Hirst decision, for housing development to commence, counties must demonstrate sufficient availability of water resources (WSOFM).

desirable for the State because economic progress made can be mobilized as proof of effective action and aid in election bids. For example, membership of the legislature changed in 2017 and, as promised, one of their first tasks was to work on a way to address a state Supreme Court ruling on water rights (Camden, 2017). By utilizing market mechanisms and acting to reproduce the conditions of production for water users, the State solidifies its position in control of the resources of the state as well as facilitating the continued production of commodities and circulation of capital, upon which it depends. Due to both the State's reliance upon capital as well as its role in its reproduction, the commodification of water and the reliance upon markets serves to create both economic value and legitimacy.

The State's very role in these processes leads us to an understanding of why water doesn't quite fit as a commodity. As Marx describes, the only attribute that all commodities have in common is that they are products of human labor. Human labor is combined with nature to produce commodities and "when commodities are looked at as crystals of this social substance, common to them all, they are values" (Harvey 1982, 14). If one begins to think about water as a commodity, as we are prompted to do by the emergence and continued reliance upon water markets, one can expect to see substantial work done either by the individual capitalist or, more likely, labor employed by the capitalist. In either case, according to Marx, labor is a critical component of the production of a commodity and its value.

Let us consider these assertions with water sales and leases in mind. RCW 90.03.380, 90.42, and 90.38 all maintain the legitimacy of the sale, lease, and transfer of adjudicated water rights. As we have seen, those transfers, whether through water

banks or directly between the buyer and seller, express an exchange value and produce profits as one would expect a commodity to do. But where is the value? Where is the labor? It is Washington state that provides the labor and initial capital investment necessary to circulate water through society and eventually produce water as a commodity but that is labor for infrastructure, not for the production of water itself. This does not fit within the scope of Marx's theory of value. Altvater helps us understand why it is necessary for the State to provide labor and assume the role of producer of water through an example of the production of a bridge:

The building of the bridge is thoroughly profitable for capital, but not its use. General material conditions of production can thus be created quite easily, but cannot be profitably managed by individual capital units. The state ensures the general conditions of production by taking over all those material processes which cannot be operated on a capitalist basis. (Altvater 1972)

The State provides the labor necessary to reproduce the conditions of production by investing in the construction and maintenance of the infrastructure necessary to measure, capture, divert, and deliver water to those citizens who wish to employ it for the 'benefit of the state.' By providing water to users or resources to capitalists, Washington state creates a smooth functioning society. Livelihoods are created, capital is circulated, values are both produced and addressed by water, and biological necessities are satisfied. We can think about the investment of initial capital and labor by the State as an investment in the functioning of the state of Washington. And while these investments are absolutely productive for society and the state, the labor mobilized doesn't directly produce a commodity as the labor from a capitalist does. This explanation ultimately doesn't align with how Marx describes the process of commodity production. If the nature of a commodity's value is inherently connected to

individual labor geared towards production for exchange, as Marx asserts, then water cannot be considered as full-fledged commodity. Water must be considered a quasi-commodity.

Karl Polanyi too encountered this sort of incomplete commodity form in his work and aids our understanding of its existence. Polanyi asserts that land, labor, and capital were not produced for sale. He argues that this leads to crisis within capitalism, social dislocation, and ultimately the “demolition of society” (76). “Land is only another name for nature, which is not produced by man,” (75) so water certainly falls under his umbrella term “land.” Polanyi’s understanding of land as a fictitious commodity aligns almost exactly with the concept of the quasi-commodity that I have explored thus far. Water clearly doesn’t fit perfectly into the category of the commodity as Marx described and Polanyi shows us that this is due to the fact that land wasn’t *produced* for free market circulation. Polanyi warned that “labor, land, and money are obviously *not* commodities; the postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them” (75). According to Polanyi, land, or in this case water, simply doesn’t exist to be treated as such. We saw *how* water fails to be a full commodity in the classical Marxian sense and Polanyi reinforces the answer to questions of *why*. Polanyi tells us that these elements (land labor and capital) do not exist to be managed by markets and I assert that is because of the alternative formations of value which are inherent to water yet obscured and overlooked by the commodity.

In summation, Marx, in the first volume of *Capital* deconstructs the nature of a commodity and its value. While there are certainly numerous elements of Washington

water governance that fit into Marx's value theory, only a few pieces of information are rendered visible by situating the Washington context within this framework. First, it is clear that water in Washington state can exhibit use values in numerous different ways ranging from biological necessity to agricultural production to industrial use. Secondly, with the inception of Washington water banks and water trading markets in 2001, water began to express exchange values as water rights were sold, leased or donated back to the state agencies or to other private users. As time went on and environmental constraints sharpened, water continued to be treated as a quasi-commodity and increasing volumes of water have continuously entered into the market to be bought and sold. However, the production of this quasi-commodity and its expression of value remains stubbornly awkward.

First and foremost, water is one of the only biologically necessary components that does not need to be actively produced for consumption; it must merely be captured and transported and possibly treated (depending on its intended use). This already makes it unique and quite distinct from other commodities like a coat, bread, or steel. Furthermore, there is still the problem of the production of value. Washington state produces the infrastructure to circulate water; it does not *produce* water itself. And, while State labor does not preclude the production of commodities (think of the US steel industry at the turn of the 20th century), this dynamic does make water as a commodity a square peg in a round hole. The state historically has "produced" water not for exchange but for use and consumption; only relatively recently has the exchange value become readily evident within trades between different private users. Polanyi supports this observation about the incongruence between water and

commodification on the grounds of production, or lack thereof. So, if there is an absence of productive capitalist labor, it begs questions about the congruence between labor, value and water as a commodity. It also begs questions about the adequacy of a classical reading of Marx's value theory and what elements of water's value may still remain invisible.

Lastly, Marx's theory of value applies specifically to the production of commodities. While there seems to be a strong trend towards commodification and a widespread opinion that water markets can provide efficiency and respite from increasing strain on water resources, water in Washington state is simply not a full-fledged commodity. Ecology very clearly states that, "Waters of the state belong to the public and can't be owned by any one individual or group. Instead, a person or group may be granted a right to use a volume of water, for a defined purpose, in a specific place" (Ecology website). So far, a situation of Washington water management within the framework of Marx's theory of value coupled with Altvater's definition of the State has led us to recognize water's incompatibility with total commodification resulting in an understanding of the quasi-commodity. But seemingly few other salient conclusions have arisen. This deserves more investigation. What are the material conditions which led to the formation of this quasi-commodity? If water is not a full fledged commodity, what does that mean for the value it contains? How should we conceptualize value? And how do the answers to these questions influence how we think about natural resource management? I seek to address these questions in the next section.

* * *

V. The Neoliberal Splash

The young couple in Whatcom county are caught in the crossfire in a struggle over water. The Hirst decision pits groups against each other. Communities reliant upon permit-exempt wells struggle against the interests of tribal communities and fish, counties strain against Ecology's regulation, and the legislature wrestles against the court's decision.

It is not just the young couple who are caught in the crossfire of these tense relationships. The fish too are left swimming in murky waters. How the decision will be implemented remains obscured by the turbidity of bureaucracy. But, because of the court's Hirst decision, permit-exempt wells can't be approved until geologic and hydrologic surveys are finalized—a task the young couple nor Whatcom county nor Ecology seem prepared to perform. The Hirst decision effectively changes the relationships with and around water.

With dramatic changes to the hydrologic cycle roaring towards Washington like a flash flood, these water-centric relationships, which are already frayed at the edges like an old swimsuit, may unravel. But do these relationships, linked through the flowing waters of the state, have to be adversarial? What does the history of these relationships tell us?

* * *

We achieved a good understanding about the ways in which water fits or doesn't fit into the classical Marxist definition of a commodity. Simultaneously, we saw the ways that use and exchange values of water function to produce certain types of economic value. But as the Washington state policy attests, there exist aesthetic, environmental, and recreational aspects to water's value that Marx's framework of value failed to capture and express. The overarching goal of analyzing the relationship between the trend towards commodification and the production of various forms of value is still incomplete. I will complete this endeavor by exploring the social circumstances which led to the emergence of water markets. In doing so, we will encounter a space to discuss alternative formations of value and nuance some of the discussion of the State and economic value within the previous sections. To this task we now turn.

I identify a few critical environmental factors as key components in the construction of water trading markets. Rising demand due to population and economic growth increased strains on the resource annually and necessitated a solution. Next, an increase in awareness about climate change and the effects upon the hydrological processes forced Washington water users to realize their need for new and innovative management strategies. Finally, the passage and enforcement of the Endangered Species Act later provided the spark which ignited the change in the resource's management structure. Within this context, the mere existence of the prevailing capitalist mode of organization and specifically neoliberal ideology illuminated market mechanisms as a viable and efficient solution for water managers. These factors, although far from entirely comprehensive, were integral to the formation of water markets in Washington.

Through this exploration of the social circumstances where Washington water markets emerged, alternate formations of value arise—such as environmental, cultural, spiritual, values—which significantly augments our understanding of the relationship between Washington's trend towards commodification and the production of value. In fact, the neoliberal strategy of market-based reallocation of water ironically does a better job at expressing alternative values of water than Marx's theory of value but, this approach too ultimately fails to affirm alternative formations of value on their own terms. Alternative formations of value had to be reduced to economic logic in order to be expressed within the system which reduces their autonomous legitimacy. But, by acknowledging and legitimizing these alternate forms of value and their relationship

with the market mechanisms, we are better able to understand how water circulates through Washington state.

There are many events and relationships which contributed to the emergence of water markets but not all of them can be mentioned here so I have narrowed them to some of the most influential. One of the major reasons water markets emerged was because of the generally increasing strain upon the resource. Rapid population growth throughout the western U.S. definitely contributed to over allocation of water (RCW 90.38, 90.14, 90.03, Western Water Research). However, in addition to more straws in the stream, an increasing awareness of climate change and a changing hydrologic cycle had a transformative effect on water managers and users. The major impetus for the Yakima Basin Pilot Water Trading Market was climatic factors and a gradual trend of reduced flow levels. In the policy outlining the Yakima system, Ecology states that, “the future competition for water among municipal, domestic, industrial, agricultural, and instream water interests in the Yakima river basin will be intensified by continued population growth and changes in climate and precipitation anticipated to reduce the basin’s snowpack and thereby reduce the total supply available” (RCW 90.38.005(b)). In 1990, the International Panel on Climate Change (IPCC) published its first study on the effects of climate change (Intergovernmental) which predicted that the release of carbon dioxide and other gases that contribute to the Greenhouse Effect, “will result in a likely increase in the global mean temperature of about 1°C above the present value by 2025” (Houghton, Jenkins, and Ephraums 1990). Multiple IPCC reports were released that decade and, in 2001, the release of *An Inconvenient Truth* marked a pivotal moment for popular awareness of climate change. While our understanding of

global climate change is (obviously) much more advanced today, the late 90s and early 2000s initiated a major shift in concern by stakeholders about the sustainability and resiliency of our hydrologic systems due to fear of the effects of a warming climate. It is no surprise then that Washington's first water market emerged in 2001.

There had certainly been struggles over water appropriations and rights between both individual users as well as between states. Marc Reisner outlines these in the "bible" of western U.S. water management: *Cadillac Dessert*. But fears about changing hydrological cycles and subsequently exacerbated social tensions catalyzed the movement to find alternative ways to allocate increasingly scarce water resources. Warmer winters, more rain-on-snow precipitation, and lower snowpack levels all contribute to lower summer and fall flow levels; combined with the anticipation of hotter summers (which would require irrigators to provide more water to sustain crops), a heightened state of conflict was tensely anticipated. Fear of mounting strain on water resources produced social inertia to search for solutions.

Another significant event which drastically affected water governance in Washington state was the passage of the Endangered Species Act (ESA) in 1973. One of the main stipulations of the ESA laid out by the United States Fish and Wildlife Service (USFWS) requires federal agencies to "use their authorities to conserve listed species" and additionally "prohibits federal agencies from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its critical habitat" (U.S. Fish and Wildlife Service). Throughout the 1990s, Coho salmon, Chinook salmon, Steelhead trout and Bull trout were all listed as "federally endangered" and classified as either endangered or threatened at the level of the state

(“Endangered Listings”). “Runs of salmon and steelhead once numbering at least 800,000 fish, declined to about 8,000 fish by the 1980’s” (United States 2014). This had significant implications for Washington water management as federal guidelines mandate that states must protect and maintain suitable habitat conditions for the fish in compliance with the ESA. However, in many basins throughout Washington, water was already over appropriated, meaning that more users had staked claims than average water levels could support. This posed a significant problem for the federally mandated salmon conservation efforts.

The Director of Washington State Department of Ecology, Jay Manning stated that many drainage basins were “overallocated, and current instream flows are insufficient to support some native aquatic species, and the federal Endangered Species Act threatens to impose severe restrictions on agricultural and other water users” (“The Walla Walla Water Management Initiative”). In response to increasing federal pressure on states to uphold ESA protections, in 2000, Ecology began the process of setting “instream flows” for drainage basins with critical fish populations (“Setting Instream Flows”). An instream flow is essentially a water right for streams and rivers that establishes a minimum flow level that must be met before any junior right holders receive their water allocations. This remains consistent with the law of prior appropriation¹⁰ as instream flows do not affect senior water rights. No senior water right holder has to return water to the streams to meet minimum flow levels. Because of this, instream flow rights do not *guarantee* that water levels will always meet those

¹⁰ Also called the “first in time, first in right” law because the earlier your water right was applied for and adjudicated, the higher priority you maintain into perpetuity. All senior water rights (older by date) have precedence over all junior rights (more recent rights).

prescribed; they merely protect streams from future withdrawals if flows are low in the basin. Senior water rights still get their allotment of water before streams get theirs but this response to the Endangered Species Act had a significant impact upon the relationship between Washington state and its ecosystems. It is also important to note that these measures had been long advocated for by the native tribes of Washington as they witnessed a serious decline in salmon population which hold significant spiritual and cultural value (“The Walla Walla Water Management Initiative”).

The establishment of instream flows was a hugely impactful step that Ecology took in reshaping the character of its relationship with the environment. The new law signified that water in streams was now a legitimate beneficial use. A properly functioning and healthy ecosystem was now viewed as beneficial to the citizens and the state in general. No longer were human biological needs and economic gain the only values that water could exhibit. Rather, historic cultural values, spiritual values of the Tribal communities, and the aesthetic values of nature were legitimized. This affects the mentality of all water users because water is seen as tangibly different, no longer simply natural material to be commodified and sold but rather, it exhibits an intrinsic value separate from the realm of economics. The tribes, environmentalists, recreators, and the fish celebrated this shift in both public policy and public perception. The reaction was not always positive however. Many senior water right holders, especially irrigators, saw the support of ecosystem services as a threat to their water rights. It was either fish or farms; the relationship was adversarial. Instream flows do not affect senior water rights, but new water was increasingly difficult to obtain. The situation was not perfect.

Instream flows hold a junior status priority dates (they are far down the line to receive their water) therefore the levels set by Ecology are not guaranteed until all senior rights are fulfilled. This is problematic for the Ecology, WSDFW, NOAA, and WSDNR, as well as environmentalists, all of whom understand that a year without enough water to provide salmon and other fish with habitat would be disastrous for the recovering species. A more dynamic solution was needed. Enter water markets.

Karen Bakker, provides some historical context for the emergence of water markets in the global south. Bakker emphasizes that “support for privatization must be understood in the context of a new set of policy priorities adopted by many multilateral financial institutions in the 1990s. This set of policies included financial liberalization, privatization, deregulation, the creation of secure property rights, tax reform, the introduction of competition, and public-sector fiscal “discipline” (2010, 72). Water markets emerged in large part due to popular conceptions of the benefits of market efficiency, private management, and decreased State regulation. It is more than just a simple belief in economics as an organizing force; this ideology is a specific set of beliefs about the relationships that should exist between citizens and the State as well as between humanity and nature. It dictates a relationship between nature and humanity where natural resources are seen as things-in-themselves solely for human consumption and appropriation. They are viewed only as a method to facilitate the cheap production of commodities (Moore and Patel, 2017). Harvey adds that, “nature is viewed by capital as nothing more than a vast store of potential use values that can be used directly or indirectly in the production and realization of commodity values” (2014, 250). Neoliberalism dictates that the government should play a very limited role

with regards to regulating the markets and systems of exchange. At its core lies a belief about the relationship between citizen and State where the former is not bound by control from the latter within the realm of economic activity. Neoliberal ideology leads us to vest faith in the private sector which promises to streamline processes and increase cost efficiency of all operations. Neoliberalism's influence on the mindsets and the imaginations of Washington water managers was likely significant with regards to the emergence of water markets and the trend towards commodification.

When a dynamic solution was needed to get water back into streams and rivers during the driest times of the years, markets emerged as a logical answer. Here we see these three major factors coalesce to influence the establishment of water markets in Washington. Population growth, climate induced changes to the hydrologic cycle, and pressure from federal ESA mandates demanded solutions to increasing strain upon water resources and the social tensions that arose in conjuncture. The rationale behind market mechanisms runs parallel to neoliberal logic which suggests an influence upon a societal ideology. If this influence existed, it would have framed the thinking and problem solving, nudging Washingtonians to see market mechanisms as the most viable solution to Washington's water woes.

The establishment of water markets responded to the question of how to include alternative forms of value, that diverge from the strictly economic, into the Washington policy framework. The federal ESA requirements and general concern over climate induced changes to the hydrologic cycle are evidence of this claim but, in addition, Howitt and Hansen show that "direct purchases such as those made by state and federal entities to comply with federal environmental regulations (primarily augmenting

stream flow to enhance fish runs) accounted for one third of traded volume in 2001” (2005). Ironically water markets can be understood as a neoliberal strategy to express alternate values such as ecological, cultural, and spiritual values but in a way that is legible to capital and the capitalist State. This neoliberal approach did manage to express these alternate formations of value in a way that Marx’s value theory was not able, but ultimately, in order to include those environmental, cultural, and spiritual values they had to be subjected to economic reductionism. This approach to water management is attractive to the State for economic reasons i.e. the facilitation of capital generation, for the reduction of social tensions and conflict over water, for compliance with federal mandates, and for its work to shift the state towards general water sustainability and resiliency in the face of climate change. But while this response does legitimize and express alternate value, it is done so in a way that is legible to capital, they are not affirmed on their own terms.

Washington water markets are comprised of three pillars—Washington Water Banks, the Trust Water Rights Program, and the Water Acquisitions Program—all of which function together to facilitate the transfer of water rights from the private right holder to other users under the overarching conditions of beneficial use. As we previously saw, water banks act as mediators, bringing together willing buyers and sellers. The Trust Water Rights Program (TWRP) operates under the understanding that there is a “shortage of water in the state” and therefore the state must free-up portions of water previously claimed by users. To do this Ecology enters “into contracts to provide moneys to assist in the financing of water conservation projects.... The recipient of the funds shall convey to the state the recipient’s interest in that part of

the water right or claim constituting all or a portion of the resulting net water savings for deposit in the Trust Water Rights Program” (RCW 90.42.030). The TWRP also allows water to be sold, leased, or donated to the program to avoid relinquishment due to disuse.¹¹ Waters in trust may be reallocated to any other beneficial uses that Ecology deems fit, ranging from augmenting instream flows if they aren’t being met to transferring the water to a Washington Water Bank for subsequent sale to a different user. The final pillar is the Water Acquisitions program which is extremely similar to TWRP but works to acquire water for the sole purpose of supplementing instream flows and maintaining healthy ecosystems. Ecology states that:

The water acquisitions program gives farmers, ranchers, and other water right holders an opportunity to join the state fish recovery efforts by selling leasing or donating their water rights to streams where critically low flows limit fish survival. Water rights obtained through the program will assure that the amount of water specified will be left in the original stream to enhance flows. (“Finding Water to Restore Streams”)

As we can see, water markets, while set up to facilitate numerous forms of transfers from different users to various other uses is, in large part, geared towards the augmentation of stream flows to ensure healthy streams and rivers which provide habitat for recovering fish populations. While the policy documents present these programs, especially the TWRP and Acquisitions Program, as valuable for aesthetics, navigation, and recreation, it is clear that value is expressed by and internalized within ecological functions. For instance, the Confederate Tribes of Umatilla (among numerous other native communities throughout the state) recognize salmon as intensely valuable for spiritual and cultural reasons: healthy streams and fish

¹¹ Washington water law maintains that if a water right is not used in full for a period of 5 consecutive years or more, it is subject to relinquishment and reallocation by the Department of Ecology.

populations are valuable for biological sustenance as salmon are a staple of the Tribe's first foods as well as a cornerstone of their culture ("The Walla Walla Water Management Initiative"). Hirokawa and Gottlieb show that:

These values have been described as non-use values, in which worth appears to correspond to mere existence or existence over time. In the Pacific Northwest, wild salmon are valued in way that exceeds their market value. Symbolic values stem from [a] self-identification process where local families and community members identify with the salmon. (2012)

Wild salmon are revered in the Pacific Northwest for reasons well beyond their market value. Necessarily implicated in this value is the water through which salmon and humans are connected and upon which they both rely. The water market framework that Ecology upholds supports these values through market-based mechanisms of pricing and exchange. This reliance upon markets can be understood in one way as an attempt to express alternate formations of value apart from economic value, such as environmental, cultural, and spiritual, within the overarching framework of capitalism and in a way that is legible to capital. This trend towards commodification in part, seems to be both a political and an economic reductionist approach to environmentalism.

But our understanding shouldn't be confined to one that classifies the commodification of water as simply a market-based environmental tactic. It certainly functions as such in part. But we must keep in mind the events which combine to influence the formation and reliance upon market mechanisms. Water markets were also employed as a tool to reduce social tensions and change relationships. The relationships between the state, water users, and the environment combine to the produce water markets in Washington, as ESA mandates and climate change awareness

attest; these social relations are simultaneously *reproduced* by water markets. For example, the state's relationship to water and stream ecologies is fundamentally changed as instream use and environmental processes are now legitimate benefits to the state and the general public. Similarly, right holders relate to the water they use in a different way now that conservation is both encouraged and economically viable which results in an availability of conserved water for junior users and fish. Even relationships between users and the Department of Ecology has changed as users can work collaboratively with the state and not fear relinquishment of their water rights. Water markets are, in essence, an eco-economic process of value expression and production as they are constructed by and simultaneously reproduce certain relations within a geographical region.

We must understand Washington water management strategy within a system broader than simply an economic and class relational scope which a value theory framework pushes us to do. Ironically, the opposing economic ideology (neoliberalism) creates grounds for the expression of alternative values but ultimately falls short as well because of its necessary reduction of these values to economic logic. But, by focusing on contextual events and social relations we were able to see how water markets emerged, how alternative values arose and were legitimized, and the ways in which the water markets reproduced the social relations they were built upon. More importantly, we arrived at the conclusion that value and economics are not the same thing. Formations of value come in many different forms beyond just commodities, use values, and exchange values. This illumination is integral to the overarching project of identifying the relationship between the trend towards commodification and the

production of various forms of value. There seems to exist a gap in our theoretical ability to affirm alternative formations of value on their own terms. Polanyi's recognition of the distinct nature of land, labor, and capital may provide some of the first steps forward when considering this problem, but I am not convinced that he will take us all the way there. Perhaps engagement with alternative frameworks of thought on natural resources, such as those held by the native communities in Washington, can provide innovative paths forward.¹² Imaginative thinking is gravely necessary.

* * *

VI. Concluding Remarks: Where the River Meets the Sea

Marx's theory of value aides our understanding of how water in Washington acts as a commodity. Water itself clearly exhibits numerous and disparate use values as it is employed for biological needs of humans, crop production, raising of livestock, energy production, and ecological purposes, all of which service social wants or needs. Furthermore, with the emergence of water markets, water's value was expressed through exchange as it became legal to sell, lease, and donate water from one user to another. Lastly, we saw how the State reaps capital benefits from investment in the reproduction of the conditions of production as this catalyzes market activity and increases the circulation of capital parallel with the increasing circulation of water. By situating Washington water management within the framework of Marx's value theory,

¹² I have not outlined in detail these frameworks of thought as they lie outside the scope of my work but centering water management research around indigenous conceptions of natural resources is likely a fruitful avenue for future research. Eric Quaempts, Edward Hunn, or Albert Furtwangler are extremely useful resources in this regard.

we were able to see the contradictory ways in which water now acts both as a commodity as well as how it is incompatible with commodification. Due to Washington state's role in the production of water coupled with the prescribed relationship between labor and value that Marx describes, water's value as a commodity was incomplete and insufficient. In this respect, water in Washington must be understood as a quasi-commodity.

The second half of this work provided a multidimensional look at water markets and management in Washington state. In doing this, I focused on key events and particular social relations which produced water markets and policy that were subsequently reproduced by those same structures. Alternative forms of values (environmental, cultural and spiritual values) became visible through this material relations lens, specifically values disconnected from the economics. Because of these alternative formations of value, we can see Washington state actions as part of a larger process of value formation than when confined to the realm of value theory. We come to recognize that the emergence of market mechanisms is related to the expression of new and specific social values as well as a tool to reduce social tensions. I argue that water in Washington must be considered a quasi-commodity and is theoretically incompatible with the market because all forms of its values are not able to be expressed on their own terms.

In this exploration of Washington water management, I sought to identify the relationship between the trend towards water commodification and the production of various forms of value. The trend towards commodification at worst completely overlooks alternative formations of value and at best, reduces them to economic logic.

This has grave implications as mismanagement of water could have dire consequences for personal health, societal cohesion and equity of access to this life-sustaining resource. Without designing a sustainable, resilient, dynamic and equitable management structure which is predicated upon an understanding of the various values of water, we are risking the future of our society. Because two dominant forms of thought surrounding natural resource management were shown to be inadequate to the task of recognizing all forms of value, important consideration must be given to the fact that we rely upon markets to such an extreme extent. We must push ourselves to cultivate diversified methods for producing and expressing value that is integral to life. Valid questions can and should be asked about the merits of markets as opposed to alternate systems of natural resource governance such as community management strategies as advocated for by Elinor Ostrom and others. My research should also be furthered by investigating the relationship between market-based allocation methods and environmental justice. Many questions remain unasked and unanswered and therefore how we relate politically, economically, culturally, and socially to water should continue to be explored as it is clearly one of the most valuable and contested natural resources in the world.

* * *

In March of 2018, the young couple received a paddle with which they could navigate the treacherous waters of the Hirst decision. The powers that be within the state legislature decided that they may continue drill their well and pursue their dream of starting a family and farm—a dream which embodies of some of the cherished values of the state.

They will not, however, proceed without some important caveats. Problems of the security of access for fish is still paramount as prior appropriation reigns supreme. Counties, residences like the young couple, and Ecology will come together to hammer out a Watershed plan which determines available water, private well impacts, and

strategies to mitigate the effects of private wells resulting in net-positive environmental impacts.

People get their (slightly reduced) water. Fish retain their water right status and gain restoration efforts. Ecology gains information and gives transparency. Counties get to develop and environmentalists may continue to aid in fish recovery. Collaboration is happening which is a positive step forward but the young couple still refers to their water in terms of dollars and cents. While fish are now allocated water rights, they are still seen as a price tag. The water is calm for the moment but there remains a current of electric tension below the surface. The tension arises from the price put on value which is invaluable. How can you put a price on life?

Bibliography

- Aguilera-Klink, Federico, et al. 2000. "The Social Construction of Scarcity. The Case of Water in Tenerife (Canary Islands)." *Ecological Economics*, vol. 34, no. 2, pp. 233–245.
- "Agriculture: A Cornerstone of Washington's Economy." *Agriculture in Washington State*, WSDOA, agr.wa.gov/aginwa/.
- Altwater, Elmar. *Die Weltwirtschaftskrise*. 1969.
- Bakker, Karen J. "COMMONS VERSUS COMMODITIES: THE AMBIGUOUS MERITS OF COMMUNITY WATER-SUPPLY MANAGEMENT." *Privatizing Water: Governance Failure and the World's Urban Water Crisis*, NUS Press, 2011, pp. 162–189.
- Barrow, Clyde W. "The Marx Problem in Marxian State Theory." *Science & Society*, vol. 64, ser. 1, 2000, pp. 87–118.
- Camden, Jim. "Democrats Take Control of Washington State Senate." *Spokesman.com*, The Spokesman-Review, 8 Nov. 2017, www.spokesman.com/stories/2017/nov/07/democrats-take-control-of-state-senate/.
- "Endangered Listings." *State of the Salmon*, Wild Salmon Center, www.stateofthesalmon.org/resources/endangered_listings/.
- Finding Water to Restore Streams*. Department of Ecology, Feb. 2014, fortress.wa.gov/ecy/publications/documents/981813wr.pdf.
- Freyfogle, Eric T. "Good-Bye to the Public-Private Divide." *Agrarianism and the Good Society*, Feb. 2007, pp. 83–103.
- Gallagher, Patrick, and Danielle Dinovelli-Lang. 2014. "Nature and Knowledge: Contemporary Ecologies of Value." *Environment and Society* 5, no. : 1-6.
- Harvey, David. *The Limits of Capital*. The University of Chicago Press, 1982.
- Harvey, David. 2014. "Capital's Relation to Nature." *Seventeen Contradictions and the End of Capitalism*, Oxford University Press, pp. 246–263.
- Hirokawa, Keith H., and Charles Gottlieb. "Sustainable Habitat Restoration: Fish, Farms, and Ecosystem Services." *Fordham Environmental Law Review*, vol. 23, no. 1, 2012, pp. 1–54.

Intergovernmental Panel on Climate Change; Working Group I J.T. Houghton, G.J. Jenkins and J.J. Ephraums (eds.).Cambridge University Press, Cambridge, Great Britain, New York, NY, USA and Melbourne, Australia

“Irrigation in the Pacific Northwest.” *Washington Irrigation*, Washington State University , irrigation.wsu.edu/Content/Washington-Irrigation.php.

Leopold, Aldo. *A Sand County Almanac, and Sketches Here and There*. Easton Press, 1995.
Mary, Rose *The Indian Journal of Political Science*, Vol. 67, No. 4 (OCT. - DEC., 2006), pp. 759- 766

Lynn, Michael. 1991. "Scarcity Effects on Value: A Quantitative Review of the Commodity Theory Literature." *Psychology & Marketing (1986-1998)* 8 (1): 43.

Marx , Karl. “The Commodity.” *Capital: A Critique of Political Economy*, Vintage Books, 1867, pp. 125–177.

Meinzing-Dick, Ruth. 2014. “Property Rights and Sustainable Irrigation: A Developing Country Perspective.” *Elsevier*, vol. 145, 24 Apr. 2014, pp. 23–31.

Moore, Jason W. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. Verso, 2015.

Moore, Jason W., and Christian Parenti. 2016. “Environment-Making in the Capitalocene Political Ecology of the State.” *Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism*, PM Press/Kairos, pp. 166–184. (167)

O'Connor, James. 1998. *Natural Causes: Essays in Ecological Marxism* . New York, NY: Guilford Press.

Patel, Raj, and Jason W. Moore. 2017. *A History of the World in Seven Cheap Things: a Guide to Capitalism, Nature, and the Future of the Planet*. University of California Press, 2017. (46)

“Population Growth in Washington Remains Strong.” *Office of Financial Management*, Washington State Office of Financial Management , 30 June 2017, ofm.wa.gov/about/news/2017/06/population-growth-washington-remains-strong.

RCW 90.03 <http://app.leg.wa.gov/rcw/default.aspx?cite=90.03>

RCW 90.38 <http://app.leg.wa.gov/rcw/default.aspx?cite=90.38>

RCW 90.42 <http://app.leg.wa.gov/rcw/default.aspx?cite=90.42>

RCW 90.54 <http://apps.leg.wa.gov/RCW/default.aspx?cite=90.54>

- Reisner, Marc. 1986. *Cadillac Desert*. Penguin Group.
- Polanyi, Karl. 1945. *Origins of Our Time: the Great Transformation*. V. Gollancz.
- Richter, B. 2016. *Water Share: Using water markets and impact investment to drive sustainability*. The Nature Conservancy: Washington, D.C. 2016 The Nature Conservancy
 Smith, Milan D. “Public Trust Threat to Water Rights?” *Environmental Law*, vol. 46, no. 4, 2016, pp. 461–480., doi:<http://www.jstor.org/stable/43922013>. (472)
- Seattle Public Utilities. *Wastewater Collection System: 2016 Annual Report*. Seattle Public Utilities, 28 Mar. 2017, www.seattle.gov/util/cs/groups/public/@spu/@drainsew/documents/webcontent/1_060955.pdf.
- Setting Instream Flows in Washington State*. Department of Ecology, Feb. 2014, fortress.wa.gov/ecy/publications/documents/981813wr.pdf.
- Skocpol, Theda. *States and Social Revolutions: a Comparative Analysis of France, Russia, and China*. Cambridge University, 1980.
- Stern, David I. 1999. “Use Value, Exchange Value, and Resource Scarcity.” *Energy Policy*, vol. 27, no. 8, pp. 469–476.
- Tercek, Mark R., and Jonathan S. Adams. 2015. *Nature's Fortune: How Business and Society Thrive by Investing in Nature*. Island Press.
- The Walla Walla Water Management Initiative: Insights on Design and Implementation from Innovative Water Management Efforts*. The William D. Ruckleshaus Center , 2007
- “Understanding the Whatcom County vs. Hirst, Futurewise, Et Al. Decision.” *Understanding the Whatcom County vs. Hirst, Futurewise, Et Al. Decision | Water Resources Home | Ecology Home*, Washington State Department of Ecology, www.ecy.wa.gov/programs/wr/nwro/hirst.html.
- U.S. Fish and Wildlife Service/Endangered Species Program. “Endangered Species Act | A History of the Endangered Species Act of 1973.” *Official Web Page of the U S Fish and Wildlife Service*, USFWS, www.fws.gov/endangered/laws-policies/esa-history.html.
- United States, Congress, McCrea, Mary E, et al. “Technical Report on Market-Based Reallocation of Water Resources Alternative.” *Technical Report on Market-Based Reallocation of Water Resources Alternative*, Department of Ecology, Dec. 2007. www.usbr.gov/pn/studies/yakimastoragestudy/reports/07-11-044/Market_Based_Reallocation.pdf.

- United States, Congress, Washington State. “Yakima River Basin Integrated Water Resource Management Plan.” *Yakima River Basin Integrated Water Resource Management Plan*, WSDOE, Dec. 2014. fortress.wa.gov/ecy/publications/documents/1512003.pdf.
- United States, Congress, WestWater Research. “Analysis of Water Banks in the Western United States .” *Analysis of Water Banks in the Western United States* , WSDOE and WestWater Research, 2004. fortress.wa.gov/ecy/publications/documents/0411011.pdf.
- United States, Congress, Washington State. “Analysis of Water Banks in the Western States.” *Analysis of Water Banks in the Western States*, West Water Research, 2004, pp. 1–168.
- “Water Rights and Resources .” *Water Rights | Water Resources Program | Washington State Department of Ecology*, Washington State Department of Ecology, www.ecy.wa.gov/programs/wr/rights/water-right-home.html.
- “Water Trading.” *Water Market | Water Resources Program | Washington State Department of Ecology*, Washington State Department of Ecology, www.ecy.wa.gov/programs/wr/market/market.html.
- Whichelns , Dennis. 2016. “Agricultural Water Pricing: United States.” *OECD Study*, pp. 6–25., www.oecd.org/water.
- Woods, Kerri. 2010. Human Rights and Environmental Sustainability. E. Elgar, pp. 75-76