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**Cultures of Conflict, Cultures for Consensus**

**Boyd Fuller**

Assistant Professor

Lee Kuan Yew School of Public Policy

National University of Singapore

Email: [boyd.fuller@nus.edu.sg](mailto:boyd.fuller@nus.edu.sg)

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## 1. INTRODUCTION

*“[Water disputes] are emotional to both “conscience” and “beneficiary” constituents. At issue in many cases are matters of culture, economics, justice, health, risk, power, uncertainty, and professional, bureaucratic, and electoral politics. Political careers are sometimes created or destroyed because of water conflicts. And in some cases, the outcomes of specific conflicts have inter-generational, international, and global impacts.”<sup>1</sup>*

*“Whiskey is for drinking and water is for fighting.” Mark Twain*

Making decisions about water is complex. As in other negotiations about environmental resources, when we talk about water, we talk about who gets how much, who pays, who should clean up the mess, and how we should protect the water as a resource for our future. Yet water disputes have additional complexities as well. They often cover a broad area, have broad impacts, and are linked to our history and sense of self. The flow of water connects distant areas and increases interdependence. Direction counts, the actions of upstream water users affects those downstream.

Water is inextricably linked to many cultures. Looking at water disputes, it is hard to imagine one in which cultural values and narratives do not play some significant role. It is a vital component of our bodies; if we do not drink it every day we will quickly die. To many of us who live in western cities, water is something to which we have a right while in many countries, people will walk for several hours each day to get water for their families. Farmers around the world recognize that water is linked to their ability to make the land productive and fertile. To many ancient civilizations, water was and still is a vital component of religions, trade and people’s connection to their environment. In India, people bring their dead from across the country to burn their bodies on the Ganges River. In Southeast Asia, the Water Festival is one of the main cultural celebrations. When we think of earth from space, we think of a ball that is largely blue. In some ways, it is hard to separate the water from people.

In this essay, I will explore two conflicting cultures in the American West: agriculture and environmentalism. While the members of these two communities are generally American, they differ greatly in the narratives they have regarding the relationship of humankind with nature, including water. I will show how these cultures conflict across several different themes. Then, I will discuss one recent attempt to bridge the different narratives and values of these cultures and how it has succeeded, at least partially.

## 2. ANALYTICAL PERSPECTIVE

What is culture and how do we describe and analyze it? One way to do so is to uncover the common narratives that members of a group hold about issues important to them, especially those issues in which they believe an important resource or community value is at stake.<sup>2</sup> In this paper, I will examine the cultural differences between agricultural and environmental

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<sup>1</sup> (Adler 2000)

<sup>2</sup> For example, see (Ross n.d.), (Rothman 1997), and (Northrup 1989)

communities through the contradictory narratives they hold about the relationship of woman and nature. To justify this approach, I first look at some definitions of culture and why they are amenable to analysis of narratives. I then discuss why disputes between people of different cultures can be extremely difficult when matters of importance are in dispute.

## 2.1. What is culture?

*“Culture is a derivative of individual experience, something learned or created by individuals themselves or passed on to them socially by contemporaries or ancestors.”*<sup>3</sup>

Lederach proposes that culture is “rooted in shared knowledge and schemes created and used by a set of people for perceiving, interpreting, expressing, and responding to social realities around them.”<sup>4</sup> In this definition, culture is a lens through which members of a culture interact with and understand the world. This lens serves to simplify the world by comparing objects and events with a set of known schema; the best fit is then used to interpret the observed phenomenon. For example, consider a man from a western culture who is approached by a man with an outstretched hand. He will likely grab that hand and shake it, interpreting the gesture as the opening moment in a social exchange. Now, consider another man from a different culture approached in the same fashion. In his culture, men do not shake hands with each other. However, after chores are done, men in his culture often engage in wrestling. They signify their desire to wrestle by approaching aggressively with two hands outstretched. Thus, it is likely that in this situation, the two men will start wrestling.

As this example demonstrates, culture is not just about interpreting the world, it is also about how to act in the world. One way that culture constrains and guides action is through institutions<sup>5</sup> that delineate what behaviours are appropriate given the interpretation of the situation. Thus, in some ways, culture tells us stories about what is out there and what action we should take in that perceived context. In the story above, the man’s culture does not only provide schemas for interpreting the stranger’s actions, it also suggests actions based on that interpretation.

One way that we can understand the impact of culture on individuals is that it provides us narratives through which we interact with the world. Each narrative contains an analysis of a situation, a set of relevant actors and our relationships with them, a plot line, and a set of expected endings. Using the previous example, the actor sees the outstretched hand and then moves into a narrative of “wrestling” revolving around the actions of a friendly tussle involving the stranger and the man, to be completed when one or the other slaps the ground.

Furthermore, narratives are constructed through many entry points. For example, if the man told his son that he pinned the other man on the ground earlier, the son would likely be able to reconstruct the rest of the story starting with the outstretched hands. Similarly, if a woman from the same culture saw the two men wrestling on the ground, she might then imagine that they had

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<sup>3</sup> Page 5, (Avruch 1998)

<sup>4</sup> Page 9 in (Lederach 1995)

<sup>5</sup> By institutions, I mean sets of norms, rules, standard operating procedures, and shared expectations.

started by approaching each other with hands outstretched and will end when one or the other has had enough fun. However, if she saw a knife in the hands of either participant, then she will likely see another narrative unfolding.

### 2.1.1. Multiple Cultures

*Psychocultural interpretations are the shared, deeply rooted world views which help groups make sense of daily life and which provide psychologically meaningful accounts a group's relationship with other groups, their action and motives. They are at the core of shared systems of meaning and identity that define cultural communities and are revealed in the narratives recounting a group's origin, history, conflicts with outsiders, and in its symbolic and ritual behaviours. Understanding these accounts analytically means making sense of their origin, intensity, and significance for political actions. (Ross, unpublished)*

The above discussion has related human interaction with the world as occurring through the lens of one culture. However, as Avruch reminds us, most if not all people have more than one culture.

*“[B]y linking culture to individuals and emphasizing the number and diversity of social and experiential settings that individuals encounter, we expand the scope of reference of culture to encompass not just quasi- or pseudo-kinship groupings (tribe, ethnic group, and nation are the usual ones) but also groupings that derive from profession, occupation, class, religion, or region.”<sup>6</sup>*

Thus, for example, I, the author, am not only a Canadian, but also a male, Caucasian, Anglo-Québécois, professor at a professional school, and an irrigation engineer among other things. Avruch explains, and my own personal experience confirms, that one person can contain many cultures that overlap and sometimes even conflict with each other. For example, I sometimes find that my training and experience in engineering leaves me frustrated with the “overly complicated machinations” of social science thinkers. On the other hand, I find many engineers naïve about many social dynamics and how they impact design, implementation, and operation of systems.

Acknowledging the multiple cultures of individuals is important for understanding many intractable conflicts. In the conflict I will discuss in this paper, it will become apparent that although the disputants share a national culture, they come from very different cultures when the relationships between people and nature are being considered<sup>7</sup>.

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<sup>6</sup> Page 5 in (Avruch 1998)

<sup>7</sup> During this paper, I use the definitions below for nature, wilderness, and environment. I will try to be true to these definitions throughout this essay, but if I am sometimes inconsistent, the reader can take it as a lesson on how intertwined these concepts are when we think of the world around us.

“environment” – all the systems that we interact with, including society (laws, regulations, norms,...), nature, and other individuals. Environmentalists, however are usually more concerned with saving nature and wilderness.

“nature” – the non-human systems of our environment.

“wilderness” – that part of nature that is we consider to exist unaltered by human action or presence.

## 2.2. Why cross-cultural conflicts and negotiations are difficult

In *Beyond the Stable State*, Schön<sup>8</sup> shows how people identify with fixed images or narratives—including professions, regional identities, religions, ethnicities, and moral values. We protect ourselves from threats posed by uncertainty and change by providing ourselves with stable perspectives of the world and our relations with it. Once we establish these core stories that define who we are, we are usually very reluctant to change them, because to do so requires rebuilding the foundations of our identity<sup>9</sup>. When our identities are challenged, we often find it difficult to talk about “compromise” because having to reconsider everything we do and have done. For example, how easy can it be for the terrorist to confront their own actions and the impact they may have had on innocents? Perhaps this is the reason why many reconciliation efforts are initiated by the victims rather than the perpetrators. Furthermore, even when we may be willing to consider discussing new possible relationships and solutions, we may be impeded by the expectations and fears of others within our groups and constituents. These people may lose trust in us if we “talk with the enemy.”<sup>10</sup>

Once established, conflicts between cultures, values, and identities are often difficult to ever resolve<sup>11</sup>. As a dispute increases in duration and intensity, each group involved often feels increasingly threatened by the other group(s). The narratives that we use to interpret the actions of the others become stories of harmful actions and malicious intentions. What used to be friendly wrestling matches may become symbolic contests for dominance, while a friendly gift may become an attempt to bribe a cohort to treason. In doing so, we dehumanize our enemies and thus remove many social barriers that prevent violent actions against them. In the final stage of the conflict, a state of “collusion” comes into play in which the groups implicitly help each other maintain the conflict<sup>12</sup>. A terrorist bomb in one group’s marketplace gives that group the license to retaliate, which brings yet another response.

When representatives from each side do get together to discuss their differences, they are often handcuffed. Even if these representatives should come to learn through their interaction with their “opponents” that the groups can co-exist, yet it will be difficult for them to suggest actions

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<sup>8</sup> (Schön 1971)

<sup>9</sup> (Northrup 1989), (Susskind and Field 1996), (Rothman 1997)

<sup>10</sup> (Dobel 1990), (Benjamin 1990)

<sup>11</sup> This paragraph builds on Northrup’s stages of conflict escalation. (Northrup 1989)

<sup>12</sup> A good example of such collusion can be found in the conflict between Hindu and Muslim communities in India. There, former wrestlers have made themselves into leaders of each group. As leaders, they position themselves both as leaders who keep their community strong against the other and as the people who can resolve violent outbreaks. See (Kakar 1996)

and agreements that seem to “concede” anything to the other side. Those they represent are not at the table and so are unlikely to understand it when their representatives “change their tune” to positions that do not fit with the existing narratives of intractable enmity. Proposing such changes may threaten the representative’s legitimacy in the eyes of her constituents<sup>13</sup>. Once the cycle of escalation begins, it is very difficult to move towards reconciliation<sup>14</sup>.

### **3. WATER, THE LAND, AND AGRICULTURE—CULTURAL NARRATIVES**

Agriculture is one of the oldest activities of humankind and it continues as one of our most important activities. However, agriculture is also under new threats. Cities are expanding into traditional farmlands, resulting in the loss of some of the best farmlands. Furthermore, in today’s global market, food prices are done in America and farming has become a less important economic force. Yet, the agricultural community is far from dead. They still wield significant political clout and hold legal rights to much of the water in the West.<sup>15</sup> Furthermore, they are still important to the culture of America, being able to draw a line back to the founding of the country and the reclamation of the West. America is still proud of its heritage as frontier country in which bold pioneers carved a rich and robust country out of untamed wilderness.

More recently, environmentalists have become a significant force, although they can trace their roots back to the late nineteenth century in the creation of the Sierra Club and other clubs that worked to preserve the wilderness from human development. Over the years, the environmental community has become in effect the spokespersons for our society’s consciousness for nature (as non-human) as well as for the harmful effects of capitalism on our bodies and spirit.

Agricultural and Environmental cultural narratives have been at war in California for decades, each with their strong champions. For example, the environmental cultural narrative, while represented most directly by the ENGOs (environmental non-governmental organizations), has often also found a champion in federal agencies such as the EPA and the FWS<sup>16</sup>. Similarly, the agricultural community has often had allies in other government agencies such as the Bureau of Reclamation and the Department of Water Resources.

The result until recently was policy impasse—neither the federal nor state government were able to create a stable policy governing agricultural water use in California. Each effort to make a policy has always been undermined or defeated by the opposing narrative and its champions. Only recently, with the collaborative effort of the Agricultural Water Use Efficiency Steering Committee (hereafter the Steering Committee), has there been significant agreement between the agricultural and environmental communities on a policy governing agricultural water use.

How was this achieved? One important component was the ability of the Steering Committee to find creative ways to bridge the different narratives to construct one that links them both. To

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<sup>13</sup> (Dobel 1990), (Benjamin 1990)

<sup>14</sup> (Pruitt and Rubin 1986)

<sup>15</sup> For the rest of this essay, I will often refer to the “West,” by which I mean the western states of the United States of America.

<sup>16</sup> Environmental Protection Agency and the Fish and Wildlife Service, respectively.

better understand how this was done, I will first explore some of the specific narratives in dispute in the next two sections. Then, I will introduce some of the recent metaphors that have bridge some of the important differences and provide hope for a stable water policy and future cooperation.

#### 4. IMAGES OF HUMANS AND NATURE AND WATER

One of the key analytical entry points to the cultural dimensions of a conflict is through the narratives and images that each culture maintains as part of its identity vis-à-vis the world and each other. In this section, I will explore the narratives that the agricultural and environmental cultures have about nature and human relations with it. These narratives revolve around several main themes. The first theme contains the search to find or recreate Eden while the second theme revolves around whether the competition between capitalist and spiritual values in the settling of the West. The third theme revolves around the issue of the rights of communities—human and nonhuman—to use water. The fourth them looks at “knowing nature,” and the conflict between those who understand nature through work versus ‘play.’ The final theme looks at this use of water through the contradictory definitions each community has about what is “waste.”

Before Europeans and Americans<sup>17</sup> arrived in the West, Indians lived there and some used irrigation to farm the land. To them, water was treated as something with its own worth and identity; it was not owned but a living entity that helped them. When the Spanish settlers came later, they also used some irrigation to grow corps. Water was managed and controlled by the leaders of the settlements. Like the Indians, they did not seek to own the water, nor change its pathway in a significant way. Instead, water was obtained locally and used locally at a modest scale. This changed with the arrival of American settlers.

**Table 1: Comparing Narratives**

	<b>Agricultural (Big Farms)</b>	<b>Environmental (Mainstream)</b>
<b>Predominant metaphors about relationship between man and Nature.</b>	Eden recreated through labour and taming Nature. Nature as commodity. Prior rights to resources should be respected. Nature is best understood through work. Waste is water that is unused by man.	Eden as Wilderness. Natural and human systems equally important or, in some cases, natural systems more important. Rights of nature—animals, plants, and other forms of life—to continue to exist. Nature is best understood through spiritual interactions. Waste is using more water than is needed.

<sup>17</sup> In this essay, I will use the United States and America to mean the same thing. In doing so, I am using the same words as some of the narratives I am presenting in the paper. However, as some of my Mexican colleagues like to point out to me, Canadians, Mexicans, and others on the American continent can all claim that appellation.

	<b>Agricultural (Big Farms)</b>	<b>Environmental (Mainstream)</b>
<b>Goals</b>	<p>Increased profits.</p> <p>More clean water for agricultural, delivered at the right time.</p> <p>Maintain control and rights over land and water.</p>	<p>Reduced use of resources.</p> <p>Water for other uses including the maintenance of natural systems.</p> <p>More efficient use of water by agriculture.</p> <p>Measurement of agricultural water use in order to ensure efficient use.</p> <p>Preservation of natural systems.</p> <p>Protecting human health.</p>
<b>Fears</b>	<p>Loss of livelihood.</p> <p>Loss of culture.</p> <p>Loss of control.</p>	<p>Lost spirituality.</p> <p>Loss of culture.</p> <p>Lost wilderness, including species.</p> <p>Health impacts of pollution on humans.</p>
<b>Images of Other</b>	<p>They are urban dwellers who are protecting something they have never experienced first hand through work.</p> <p>Only in America do people stop others from growing the food that the world needs.</p> <p>They do not understand how the rural water system really works.</p>	<p>Those who do physical work to harvest the nature's resources are exploiters.</p> <p>Agricultural farmers and irrigators as greedy capitalists and monopolists who care little for nature and spirituality.</p> <p>Farmers and irrigators feel free to waste cheap, heavily subsidized water.</p> <p>Farmers and irrigators are not willing to improve their efficiency.</p>
<b>Areas of Conflict</b>	<p>How to balance the water needs of human and natural systems?</p> <p>How far should agricultural concerns have to reduce their use of water, chemicals, and land?</p> <p>How much water could be made available by more conservation?</p> <p>How important is continual economic growth?</p> <p>How can water be used sustainably over the long term?</p>	

The history of the United States is a story about the hunger for land—and often wealth.<sup>18</sup> Settlers came to the United States because it was the place where they could start a new life away from the restrictions and limited opportunities of their previous residence. Some settlers sought a place free from religious persecution where they could raise their family in an atmosphere of “wholesome values”. Others wanted a plot of land they could farm and own, rather than serve on another’s farm. In either case, they likely dreamed of being self-sufficient, reliant on the production of their own hard work and the land for their sustenance. Finally, some dreamed of more, to create a great fortune in a land of opportunity. Whatever their goal, settlers and opportunists coming to the western United States (the West) found that they needed better control of water in order to achieve their desires.<sup>19</sup> By the mid 1900’s, some of the most impressive, and in some eyes devastating, water works would be constructed to meet the ever

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<sup>18</sup> (MacDonnell 1999)

<sup>19</sup> (Hundley 1975)

growing demand of western Americans for water to sustain their economic and population expansion.

#### **4.1.1. The First Environmental Battle—Hetch Hetchy Dam**

The first battle between the Preservationists and Growth narratives was over the damming of the Hetch Hetchy valley in the early twentieth century. The Hetch Hetchy valley lies near Yosemite Park and was one of John Muir’s favorite places to visit. However, in the early 1900’s San Francisco developed plans to dam the valley because they needed water to feed their growing metropolis. In 1908, they were given the necessary permits by the Secretary of the Interior.

The preservationists reacted to this news with shock. Once again, they felt, aesthetic beauty and spirituality were being sacrificed for utilitarian gain. Reacting to the idea of damming the Hetch Hetchy, Muir is described to have reacted as follows.

*“Dam Hetch Hetchy!” he roared. “As well dam for water tanks the people’s cathedrals and churches, for no holier temple has ever been consecrated by the heart of man.” (Quoted from MacDonnell, 1999)*

#### **4.2. Re-creating Eden or Preserving Eden?**

*“To clear, to till, and to transform the vast uninhabited continent which is his domain, the American requires the daily support of an energetic passion; that passion can only be the love of wealth; provided it does not go beyond the bounds assigned to it for public security, it is held in honour.” Alexis de Tocqueville describing the American dream (quoted in Reisner, 1993).*

Looking at the Bible, Genesis 1 tells of how humans were given dominion over nature. They were told to “be fruitful and multiply, and replenish the earth, and subdue it.” On the other hand, in the Genesis 2 version, God first created the plants and herbs, next Adam, and then the Garden of Eden. In this version, humankind was expected to “dress and keep” the Garden,” taking on the role of caretaker rather than master. These two versions of humankind’s relationship with nature are still interwoven in the dialogues about how human society should interact with the natural world around us.<sup>20</sup>

The narrative really begins with the expulsion of Adam and Eve from the Garden. With the gates of Eden barred to them, Adam and Eve were commanded to till the land from which they came; to make their way in the world through their work. Their goal is to rediscover how to be good, and so reclaim their position in the Garden. The question is, how might they do so? To find Eden again, humans have followed several paths, and these different paths are important parts of the cultures of Environmentalism and Western Agriculture.

One predominant narrative that drives Western culture is that humankind’s redemption lies through work. In tracing the cultural roots behind the advent of Capitalism, Weber<sup>21</sup> finds that it

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<sup>20</sup> (Merchant 1995)

<sup>21</sup> (Weber 1958)

is through diligent labour that Protestants believe they can redeem themselves. This narrative holds that the world can be made fruitful again through the continual application of our labour. Thus, a good capitalist applies all her effort towards the increase of capital, which is then used to sponsor future labour.<sup>22</sup> Good is created by increasing production and by asserting more control over the natural world—namely “civilizing the land.”<sup>23</sup> This is accomplished both by making tamed lands more productive and by transforming wilderness areas into human-friendly, productive land. By tilling the land, farmers “direct” the land to produce what is good—namely what is good for humans to prosper. Summarizing, through virtuous and continual labour, human society can create a cycle of transformation that will return humans to Eden by recreating it on Earth.

Others, mainly environmentalists, look to find and preserve Eden. To them, Eden is not something lost nor something to be recreated; instead it is something found away from human civilization. The Environmental movement was created through efforts by people to organize resistance to the development of “wilderness” areas—areas where life was “untouched” by mankind with value beyond the resources it can provide for use.<sup>24</sup> These places were “God’s best gifts” that should be left as spiritual sanctuaries in which people could experience the “hand of God” and “Nature’s love.” In the wilderness, “every crystal, every flower” was a “window opening into heaven, a mirror reflecting the Creator.”<sup>25</sup> In other words, Wilderness is a repository of Good that existed separate from humankind. People could only come to know virtue by visiting and reflecting upon these places of beauty. Thus, to these people, to develop the wilderness was to desecrate Eden—an act of greed and evil.<sup>26</sup>

These first environmentalists, sometimes called preservationists, believed they were fighting an illness in Capitalist America in which Good had become replaced by Utility. As Robert Underwood Johnson stated, “One of the retarding influences of American civilization [is] ... that ‘Good is only good to eat.’”<sup>27</sup> In the search of utility and wealth, America had lost its soul. This loss could be seen by their willingness, even eagerness, to destroy those areas of Nature where God could still be found. While proponents of the reclamation narrative sought to find God by taming the wild, environmentalists saw and still see God and Good in the wilderness.

### **4.3. Big versus small—competing values in the colonization of the West**

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<sup>22</sup> Now, of course, capital gained is also used to accumulate material wealth—houses, cars, and so on. In the original version of Protestant capitalism, this accumulation was seen as a path to temptation. In living modest lives and investing gained capital back into the production cycle, they were to remain untouched by the temptation of riches. While Americans have grown less stringent about the linkage between temptation and consumption as a source of corruption, measuring the amount one works remains a measure of an individual’s worth and dedication, as does the amount of capital she accumulates.

<sup>23</sup> (Merchant 1995)

<sup>24</sup> (Cronon 1995)

<sup>25</sup> (Hundley 1992)

<sup>26</sup> (Dowie 1995) and (Cronon 1995)

<sup>27</sup> Quoted on page 178 of (MacDonnell 1999)

Much of the land in California and the rest of the West has traditionally be contained in large lots. These large lots were necessary before irrigation became so extensive. Without the means to farm more water-intensive crops, most farmers raised cattle, and, with the advent of the railway, wheat. Both of these enterprises could survive and prosper in the dry conditions, provided they had access to enough land.

Lot sizes were also increased because of extensive speculation. Seeing that the possibility for an exodus of people, and there need for water, many business people bought up land and water rights to sell. When the government decided to implement significant water control projects, speculators would quickly seize all the land they could. In California, some landowners owned tracts of land that exceeded 10,000 acres, with a few owning over a million acres.

Yet small farmers seeking to establish the family farm are also an important part of California's history. To make ends meet on their smaller tracts of land, these farmers desired and needed to pursue the intensive cultivation of higher value crops; to do so, they required access to the water supply currently in the hands of a few monopolistic landowners. Large landowners were generally reluctant to grant access to their water, fearing to lose water rights and competitive advantage to smaller, intensive, and potentially lucrative farms.

Yet, the government felt that it was important to encourage the success and viability of small farmers. Small farmers were often seen in the same light as the first colonists—a family seeking to find a plot of land on which they could sustain themselves while living free to explore and bolster their religious and spiritual strength. Furthermore, in the East, social unrest was on the rise due to crowding and the hard life of nascent industrial Capitalism<sup>28</sup>. The answer, the government decided, lay in encouraging families to move West to live again the spiritual life on a small farm.

The government thus tried to encourage small family farms and to rein in the monopolists. For example, in some instances, the government sold federal land at lower prices so that they would be accessible to small consumers. They also set caps on how much land a single landowner could hold. However, these policies were not terribly successful; in fact, they often had the reverse effect! In another attempt in 1902, the State of California passed the Wright Act; similarly, the Federal Government passed the Newlands Act. Both laws sought to establish public bodies that would help small farmers get the access to water that they needed to farm intensively. The Newlands Act also imposed a limit on how much land one could purchase and irrigate. Unfortunately, speculators often found ways around the laws, either by bribing officials or by other means. As such, these policies had little impact on the distribution of land and water rights. Yet, while the large landowners managed to maintain their practices and control over the resources, this conflict did cement their reputation as “greedy monopolists”—a label that still haunts them to this day.<sup>29</sup>

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<sup>28</sup> Including the decreased importance of small farms, increasing pollution and population, and disenfranchised youths who left the farm to work in factories. ((Merchant 1989); (Hundley 1992))

<sup>29</sup> (MacDonnell 1999).

### 4.3.1. Water follows the Plow

One of the great myths that facilitated the movement of people to the West was that once the land was cultivated, precipitation would follow. Apparently, after 1865, there was a long humid cycle that brought an unusual amount of green vegetation to the mid-West, which also corresponded to the immigration of people to this region. Noting the similarity, people, including climatologists proclaimed that “water follows the plow.” For example, Professor Cyrus Thomas, a noted climatologist, declared, “Since the territory [of Colorado] has begun to be settled...there has been a gradual increase in moisture...I therefore give it as my firm conviction that this increase is of a permanent nature, and not periodical, and that it has commenced within eight years past, and it is in some way connected to the settlement of the country, and that as population increases the moisture will increase.” Quoted in Reisner (1993).

## 4.4. Rights and Control

The first major wave of American settlers came to the West seeking gold. These settlers generally staked mining claims along water bodies, as water was essential for gold prospecting at this time.<sup>30</sup> Thus, it became necessary to develop policies governing water use early on. The policy framework chosen was to assign water rights that identified and prioritized the use of water amongst water users. The first policy created was prior-appropriation rights or “first in time, first in rights.”<sup>31</sup> Just as a gold prospector could claim an area to search for gold by being the first person to claim and prospect the plot; so could water users gain rights to water by being the first to use it.<sup>32</sup>

Prior appropriation rights require that the right holder continually use the water; failure to do so can result in the loss of the right. Prior appropriation rights also establish a hierarchy of rights based on the age of the right. When there is not enough water to meet all needs, the more recent rights holder have to restrict their use so that those with rights of greater duration can first meet their needs.

In later years, individual miners were replaced by larger organizations and companies who increased their profits by using more efficient mining techniques—especially hydraulic mining. Hydraulic mining used pumped water to create jets that stripped away massive amounts of soil from nearby hillsides. This mixture of soil-water was then transported over long distances as part of separating the gold. This process had several important effects.

First, mining companies that wished to do hydraulic mining required reliable access to large amounts of water. Many companies gained access to this water through their own water rights, but others purchased it from water sellers—speculators who established water rights and then

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<sup>30</sup> One needs only think of old images in stories and movies of people “panning for gold.”

<sup>31</sup> See, for example, (MacDonnell 1999)

<sup>32</sup> In later years, “use” was changed to “beneficial use.” What counts as beneficial is often hotly contested however.

sold or leased the water rights to others who needed them.<sup>33</sup> Water and water rights were thus established as commodities to be sold and bought. Second, the hydraulic mining process introduced a significant amount of soil into the downstream rivers, which in turn significantly damaged downstream farms and impeded navigation on the major rivers—an act illegal under the regulations of the times. However, it was difficult for those being harmed to stop the mining because of the laissez-faire government; their only recourse was the judicial system. Finally, in perhaps the first federal environmental decision, the U.S. Supreme Court ruled in 1824 that the miners could no longer discharge into the river. This decision resulted in the end of hydraulic mining but the system of prior-appropriation water rights remains strong even today.

In recent years, some environmental groups have undertaken to sought rights for ecosystems and animal species; perhaps the most famous of these are animals rights activists. Proponents of giving rights to nature argue that nature—and the plants and animals that compose it—have worth independent of human use or appreciation. Some argue that animals suffer as we do when their life is disrupted. Others point to the inherent right to existence that all life has. In either case, the idea of nonhuman rights have taken hold in some circles and they do bolster our imagination of nature as a living entity existing independently from humankind, yet equally a part of a greater community that includes nature and humanity.<sup>34</sup>

*“The land ethic simply enlarges the boundaries of the community to include soils, waters plants, and animals, or collectively: the land. ... In short, a land ethic changes the role of Homo Sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.”* Quoted from Leopold (1966).

## 4.5. Nature and Work

As mentioned above, the redemption narrative drives its proponents to find and create morality through hard work and the taming of the wild lands. Working on nature, humans improve the land and themselves. Moreover, because those who work the land also depend on the land for their survival and prosperity, they come to know the land more intimately than others do.

Many environmentalists, on the other hand, tend to know nature through “play”—recreation, spiritual forays, and other non-work ventures into natural settings. Most environmentalists tend to distrust work as a way of knowing and living with nature<sup>35</sup>. They point to what seems to be a long history of abuse and desecration in which immense tracts of wilderness have fallen to the sword of development. What use is working with the land if it produces such ill results? Those environmentalists that do see value in “working the land” usually steer towards “traditional methods” of land development and agriculture. For example, they might prefer to grow crops without plowing, pesticides or machinery. They might use horses and other “natural” forms of force and energy rather than unnatural machinery. Thus, while they come to know the land

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<sup>33</sup> Initially, the ability of some to sell their water was challenged, but a Supreme Court ruling established that water could be sold (see (MacDonnell 1999)).

<sup>34</sup> See for example, (Dorcey 1991) and (Leopold and Schwartz 1970)

<sup>35</sup> (White 1995)

through work, they do not develop an understanding of the relationship of man and nature as mediated by modern technology.

In fact, some argue that it is indeed the relationship of nature, people, and technology that separates the different narratives. Irrigators look to modern technologies to secure their water supply; they are also confident that technology will provide the answers to future problems. Environmentalists, however, see technology as a magnifier of the impact of human effort on nature. Why, they argue, should they believe that technology will solve problems when in many ways technology is the problem?<sup>36</sup>

These different ways of interacting with nature encourage the fundamentally different perspectives that the agriculture and environmental communities have of nature. When it comes to managing water, farmers have more intimate knowledge of how current management actions and systems affect their environment and their productivity. In general, they are most concerned with and aware of the state and evolution of their own local environments. Similarly, the environmentalists tend to perceive how changed water flows and poor water quality affect the natural areas they frequent, whether they be close to their residence or in those “wild” areas where they choose to venture. In essence then, the agricultural and environmental communities know different aspects of a larger story of how man and nature interact.

#### **4.6. Waste or Efficiency?**

Both communities traditionally agree on one thing—water is being wasted. However, they disagree sharply on what “waste” means. In the agricultural communities, water gains value from being used. What is the point of water that flows unused to the sea? Perhaps no example can better capture the agricultural communities’ concept of wasted water than the following story told by Horace Albright about Mulholland, a principal player in obtaining water supply for the growing city of Los Angeles. The story recounts a dialogue between Mulholland and Albright about the Yosemite Park.

*“Well, I tell you. You know this new photographic process they’ve invented. It’s called Pathé. It makes everything seem lifelike. The hues and coloration are magnificent. Well, then, what I would do, if I were custodian of your park, is I’d hire a dozen of the best photographers in the world. I’d build them cabins in the Yosemite Valley and pay them something and give them all the film they wanted. I’d say, ‘This park is yours. It’s yours for one year. I want you to take photographs in every season...’ And then I’d leave them be. And in a year I’d come back, and take their film, and send it out and have it developed and treated by Pathé. And then I would print the pictures in thousands of books and send them to every library. ... I would make sure that every American saw them. And then,” Mulholland said slowly, with what Albright remembered as a vulpine grin, “and then do you know what I would do? I’d go in there and build a dam from one side of that to another and stop the goddamned waste!”<sup>37</sup>*

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<sup>36</sup> (Dorcey 1991)

<sup>37</sup> Quoted from (Reisner 1993).

From the environmental viewpoint, waste comes from the inefficient irrigation practices of many agricultural water users. Much of the water in California is subsidized, they argue, because the government has paid for most of the infrastructure that provides the water to agricultural water districts; furthermore, the government tends to provide the water at a fraction of the cost to water users. While many of these projects were originally formulated so that the benefactors would pay back the costs over time, in fact most benefactors have not contributed to the costs.<sup>38</sup> Given, then, incredibly inexpensive water, the farmers have little incentive to use their water more efficiently—for example by switching to more efficient irrigation systems<sup>39</sup>. Until water prices reflect the actual costs of providing the water and the damage that such provision causes, it will not be cost-effective for farmers to be more efficient. For this and other reasons, environmentalists traditionally advocate for regulation to force irrigators to use more efficient practices.<sup>40</sup>

## **5. BREAKING NEW GROUND**

Agricultural and environmental groups have fundamentally different cultures when it comes to the relation of water and humankind. So how can they move beyond these different cultures to develop policies for managing water to which they can all consent? At present, the answers are still largely unknown. However, some progress has been made using multistakeholder processes that use techniques of mediation and facilitation to help opposing stakeholders with different cultures discuss and come to agreement on appropriate, joint directions for Californian water policy. The most ambitious is the recent effort to create water policy for the Bay-Delta.

### **5.1. CALFED Bay-Delta Program**

Federal and State Agencies have undertaken a momentous effort to move across cultural and political differences in order to develop comprehensive water policy for managing water in the Bay-Delta. Termed “ground zero for California’s legendary water wars” by one observer<sup>41</sup>, the Bay-Delta estuary is an important source of water for California. Resting at the confluence of California’s two largest rivers – the San Joaquin and Sacramento – it provides drinking water for nearly two-thirds of California’s population as well as the irrigation water to grow almost half of the California’s fruits and vegetables. The Bay-Delta provides a rich habitat for a diverse range of fish and wildlife while supporting a wide range of economic and recreation interests. Yet it is also a region that is degrading, suffering the consequences of the current lack of clear water policy. Thus, when policymakers decided to consult and cooperate with interested members of the public, interest was immediate and intense.

To coordinate their efforts and lay the ground for cooperation, Federal and State agencies created the CALFED Bay-Delta Program. Initially, CALFED consisted of the ten state and federal agencies; however, as the program evolved, additional agencies having relevant responsibilities

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<sup>38</sup> (Reisner 1993)

<sup>39</sup> For example, subsurface drip irrigation is markedly more efficient than sprinkler systems, but also more expensive.

<sup>40</sup> (Reisner 1993), (MacDonnell 1999).

<sup>41</sup> Sarah Connick (interview).

joined the program. At present, CALFED includes 18 agencies (see Table 1). Although it was understood that CALFED would undertake its activities under the direction of federal and state agencies, it was agreed that CALFED should be its own entity with an executive director and dedicated staff. This staff was recruited from state and federal agencies, especially from the California Department of Water Resources on whose premises CALFED is housed.

**Table 2: CALFED Agencies (\* indicate original 1994 agencies)**

STATE AGENCIES	FEDERAL AGENCIES
California Resources Agency* - Department of Water Resources* - Department of Fish and Game* - Reclamation Board - Delta Protection Commission	U.S. Department of Interior* - Bureau of Reclamation* - Fish and Wildlife Service* - Bureau of Land Management - U. S. Geological Survey
California Environmental Protection Agency* - State Water Resources Control Board*	U.S. Army Corps of Engineers
California Department of Food and Agriculture	U.S. Environmental Protection Agency*
	U.S. Department of Commerce, National Oceanic and Atmospheric Administration* - National Marine Fisheries Service*
	U.S. Department of Agriculture - Natural Resources Conservation Service - U.S. Forest Service Western Area Power Administration

## 5.2. CALFED’s Mission

The original mission for CALFED was essentially to come up with the plan for protecting and restoring the Bay-Delta ecosystem for the next 30 years. This plan was to include long-term strategies for restoration, water conservation<sup>42</sup>, water storage and conveyance, levee management, and operational actions for the system. CALFED’s current mission is: “1) to restore the ecological health of a fragile and depleted Bay-Delta estuary; 2) improve the water supply reliability of the state’s farms and growing cities that draw water from the Delta and its tributaries, including 7 million acres of the world’s most productive farmland; 3) protect the drinking water quality of the 22 million Californians who rely on the Delta for their supplies; and 4) protect the Delta levees that ensure its integrity as a conveyance and ecosystem”<sup>43</sup>.

## 5.3. A Brief History of the AgWUE Steering Committee

<sup>42</sup> Water conservation was later changed to water use efficiency. This is important as it means moves away from just reducing water use to a more flexible idea of using water more effectively.

<sup>43</sup> CALFED, 2000. *California’s Water Future: A Framework for Action*. Released in June, 2000 and can be downloaded at [http://www.calfed.water.ca.gov/adobe\\_pdf/new\\_final\\_framework.pdf](http://www.calfed.water.ca.gov/adobe_pdf/new_final_framework.pdf)

The CALFED Bay-Delta Program (CALFED) convened a citizen advisory committee (CAC) called the Bay-Delta Advisory Council (BDAC) to provide advice and to give CALFED a chance to test potential stakeholder support for various proposals. While the initial membership was smaller, BDAC expanded over the years when it became apparent that the CALFED initiatives affected the interests of upstream watershed, tribal, and environmental justice interests. At present, BDAC membership includes 35 people<sup>44</sup>. Chartered under the Federal Advisory Committee Act<sup>45</sup>, much of the process, groundrules and decision making power of BDAC was pre-determined. For example, BDAC does not have an active role in nor responsibility for decision-making<sup>46</sup>.

As the program evolved, CALFED realized that they would need additional stakeholder input for several areas of the program. To meet this need, CALFED created in the fall of 1996 five BDAC subcommittees, including the Water Use Efficiency Work Group. Later in the process, additional subcommittees were added when the need for them was identified. Each subcommittee was chaired by a BDAC member and included stakeholders with a particular interest in the topic; in addition, agency liaisons and CALFED staff attended.

The different groups met with varying levels of success. Some, with a more specific focus and, perhaps, less contentious issues to deal with seem to succeed quite well in generating feasible public policy<sup>47</sup>. Others disbanded early without achieving much of their mission. One example of this was the Water Use Efficiency Work Group. After six months, this group reached an impasse in which all policy proposals seem to meet significant resistance. To address this stalemate, it was decided to retire the work group and convene instead the Focus Group. The Focus Group (FG) was comprised of a group of stakeholders carefully chosen by CALFED for their creativity and open-mindedness to tackle a simple, yet crucial problem, essentially “can there be a workable solution for resolving the Agricultural Water Use Efficiency dispute?” The Focus Group was coupled with an expert panel, the Independent Review Panel on Agricultural Water Conservation Potential (Independent Review Panel) because questions were raised by stakeholders about the validity of the science that CALFED was using.

Through the deliberations of the Focus Group and the Independent Review Panel, possible alternatives began to emerge and the possibility of a solution became again more real. At this point, the Focus Group, which was due to disband, instead decided to continue in a new role and under its new guise as the Agricultural Water Use Efficiency (AgWUE) Steering Committee (Steering Committee). Building on the lessons that they had learned and relationships they had built, the members of the Focus Group and CALFED felt that there was real benefit for the Focus Group to continue in this new form. In the end, the Steering Committee remained intact for 2

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<sup>44</sup> For a list of members, see [http://www.calfed.water.ca.gov/bdac/calfed\\_advisor.html](http://www.calfed.water.ca.gov/bdac/calfed_advisor.html)

<sup>45</sup> The Federal Advisory Committee Act (1972).

<sup>46</sup> This role is reflected in the meeting structure. BDAC meets once every one to two months and its meetings are announced in advance and open to the general public. The meetings usually start with presentations by CALFED staff on the progress and direction of the program; occasionally outside experts are also invited to provide information. BDAC members then usually **react** to the information in a discussion.

<sup>47</sup> Sarah Connick (interview).

years beyond the mandate of the Focus Group and it was able to develop policies to which agricultural and environmental stakeholders can consent.

#### **5.4. How Did They Do It?**

The analysis of the success of this process has not been well documented. The mediators of the process have written an academic article that points to several factors that contributed to the Focus Group/Steering Committee's success.<sup>48</sup> First, they point out that the participants were few (12-14) and chosen for their demonstrated command of the issues, their ability to speak about, not for, their communities, and their demonstrated open-mindedness. Not all participants had strong technical expertise, but they knew about California water policy and its attendant issues.

Furthermore, CALFED realized that any open public discussion would be doomed to failure because participants would be under enormous pressure to be "tough and inflexible." Any deviation from established narratives would put the representatives of communities at risk of losing their legitimacy. Thus, the Steering Committee deliberations were non-public and the agricultural and environmental members were told to speak about the views of their communities, not for them. In other words, no organization group was officially represented and the Steering Committee had no power to bind anyone to an agreement. Freed from the responsibility of speaking for and defending the interest and values of their organizations, the members were able to explore new ideas with fewer restrictions.

Yet, the Steering Committee did not ignore their communities. In fact, Steering Committee members were very strategic about keeping their communities informed about the deliberations. While the meetings were non-public, the participants each made significant efforts to vet interesting new directions and proposed solutions with their communities. At times, this was done officially with CALFED staff making formal presentations to interested organizations. At other times, Steering Committee members prepared briefs, held conversations, and otherwise informed members of their communities. Thus, the necessary parts of representation were kept, namely ratification of ideas and solutions, while the limiting factors were reduced.

Another important reason for the successes was some crucial narrative reframings that occurred during the process. The initial problem framing of the Focus Group mission may also be one of the key reasons for its success. Instead of asking the Focus Group to find a solution, CALFED asked them the simple question, can this problem even be solved? By reframing the discussion towards a different and less confrontational question, CALFED created the conditions for the two communities to make a small step towards agreement—the consensus by the participants that a solution was possible.

Another crucial reframing was developed through the Independent Review Panel, a joint fact-finding process. Using a panel of experts vetted by both communities, the process was able to introduce a new scientific framework that altered considerably how the group thought about water use and availability. Without going into the science, the panel was able to change the framework from "how much less water should agriculture use?" to the more pointed question of

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<sup>48</sup> (McCreary, Gamman et al. 2001)

“how much water is required at each point in the watershed, when is it needed and how can we accomplish that?” Thus, instead of focusing on a part of the watershed, the whole watershed was considered. Furthermore, time was disaggregated from “a year” into smaller units that reflected actual variability and allowed more flexible approaches. Thus, this new problem framing revitalized the discussions by making it both a joint problem, rather than agriculture’s problem.

For example, for fish to spawn, the right aquatic conditions must exist when needed. These conditions are not needed throughout the whole year, since fish only spawn during specific periods. The traditional framing of the problem would address this sub-problem by asking, “how much less water should agriculture have to use in order to enable fish spawning?” The new framing would instead ask “how do we create the right conditions for spawning at the right time and who has to adjust their practices in order for those conditions to be achieved at that time?” This question does not target all users but only key ones and it allows for flexible practices according to the season. Moreover, the intentions of the question are changed from “conserving water” to using it more efficiently for all users—human and nonhuman.

Finally, the skillful process management of the professional mediators enabled much of this deliberation.<sup>49</sup> Participants point to their ability to keep the process moving forward at all times and maintained a positive tone for the process. Some participants observed that the mediators set an important example by giving each participant their full respect and attention. The mediators’ ability to use several mediation techniques to keep the participants focused and positive were also very important.

## **5.5. Contingent Success**

Since the announcement of the policy developed through the Steering Committee, the agricultural and environmental communities have, if anything, increased their support for the results of the Steering Committee’s deliberations. While this is a positive sign, several hurdles remain. The Steering Committee was not able to resolve all questions; instead they decided to postpone some discussions for the joint purpose of creating a viable policy within the time limit. They were able to do so because of the trust created during the process. However, the resolution of these issues is a necessary next step to bridging differences between communities.

Furthermore, much of the success of the policy created depends on funding from the State and Federal governments. As of yet, these governments have been slow in allocating the necessary and promised funds. If the funds are not allocated within a reasonable time, then the policy will lose much of its clout and the success of the process reduced accordingly. Yet, even if this happens, the process will still have produced one example of how the parties can find possible joint solutions while improving relations.

## **6. CONCLUSIONS**

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<sup>49</sup> (McCreary, Gamman et al. 2001). I have also received the same observations from my interviews with some of the participants of this process.

Agricultural and environmental communities have different cultures, especially when it comes to discussions about nature, water, and humankind. These differences are rooted in narratives about how man does and should interact with nature and what the outcomes of that relationship with nature should be. These cultural differences lie at the heart of many disputes about how American society should manage its water resources.

These differences have made many policy-making efforts extremely difficult if not impossible. Decisions made by governments are often challenged by one or both communities, often in the courtrooms. Realizing that a new approach is needed, government officials have begun using more multistakeholder deliberative and negotiated processes to search for policies about which interested parties can agree. The most ambitious of these is the CALFED Bay-Delta Program.

Through some mediation techniques, the Focus Group/Steering Committee was able to reframe the problem in a way that was more amenable to both cultures. By finding an overarching narrative that they could agree on, the communities were able to approach the problem using the same “language.” Instead of continuing the same debate about “how important is agriculture/the environment,” they could seek solutions that maximized the efficiency of water use for all beneficiaries—human and nonhuman. By developing a common narrative that respected and bridged their own particular cultural narratives, the Steering Committees were able to explore and create a more robust and viable agricultural water policy for the Bay-Delta.

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