

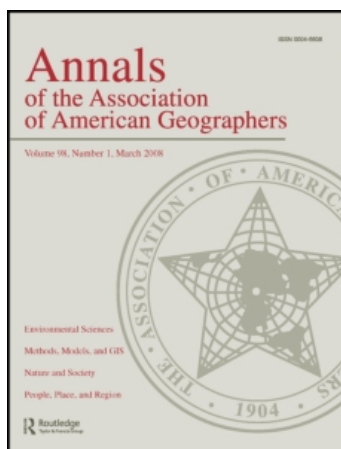
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PRESIDENTIAL ADDRESS

Waterpower: Politics and the Geography of Water Provision

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Access to potable water is frequently said to be the defining world crisis of the twenty-first century. The argument is usually framed in terms of either direct environmental constraints or various totalistic views of how “the political” determines outcomes. There is little or no scope for the agency of practical politics. Both physical and human geographers tend to be dismissive of the possibilities of democratic politics ever resolving “crises” such as those of the geography of water provision, in part because of views of scientific expertise that devalue popular participation in decisions about “technical” matters such as water quality and distribution. Such dismissal also has much to do with a more generalized denigration of politics. Politics (the art of political deliberation, negotiation, and compromise) needs defending against its critics and many of its practitioners. Showing how politics is at work around the world in managing water problems and identifying the challenges that water problems pose for politics provides a retort to those who can only envisage inevitable destruction or a totalistic political panacea as the outcomes of “the crisis of the century.” *Key Words: determinism, political agency, politics, waterpower.*

难以获得饮用水经常被称为二十一世纪的世界性危机。这种说法通常通过下述因素而得以构建，即直接的环境限制，或者是关于“政治”是如何决定结果的各种总体性意见。这种说法几乎没有或根本没有给实际的政治机构留有空间。自然地理学家和人文地理学家往往比较轻视民主政治对于解决类似危机的可能性，比如水供给的地理特性，这种观点部分是因为从科学专家的角度往往会贬低民众参与有关“技术性”问题决策的价值，例如水的质量和分布问题。这种轻视也与更广义的对政治本身的诋毁有很大关系。政治（政治性讨论，协商和妥协的艺术）需要抵御其批评者以及众多的参与者。显示政治在世界各地是如何工作的，比如管理水的问题以及确定水问题对政治的挑战，这种显示对下述人士提供了一个有力的反驳，即那些只把不可避免的破坏或者某种总体性的政治万全之策设想为“本世纪危机”的后果。*关键词：宿命论，政治机关，政治，水力。*

Con frecuencia se escucha la afirmación de que el acceso al agua potable define la crisis mundial del siglo XXI. Usualmente se presenta el argumento, bien en términos de constreñimientos ambientales directos, o en forma de una variedad de enfoques sobre cómo “lo político” determina los resultados. Sobre el particular hay muy poco ámbito, o ninguno, para la operación de políticas prácticas. Tanto los geógrafos físicos como los humanos tienden a ser directos en descartar las posibilidades de políticas democráticas como opción para resolver “crisis” del tipo de la geografía del aprovisionamiento de agua, en parte debido a la apreciación que se tiene de la experticia científica que resta valor a la participación popular en decisiones sobre materias “técnicas,” como las de calidad y distribución del agua. Tal descarte tiene también mucho que ver con una muy generalizada denigración de la política. La política (esto es, el arte de la deliberación, negociación y compromiso políticos) necesita defenderse de sus críticos y de muchos de sus practicantes. El mostrar cómo se desempeña la política alrededor del mundo en el manejo de problemas del agua, y en la identificación de los retos que plantean los problemas del agua a la política, da una respuesta tajante a quienes únicamente columbran destrucción inevitable o una panacea de políticas totalitarias como productos de “la crisis del siglo.” *Palabras clave: determinismo, agencia política, política, energía hidráulica.*

In his dramatic but detailed and informative chronicle of the damming of the Colorado River and the future of water in the American West, James

Lawrence Powell, one of the speakers at the 2009 Association of American Geographers (AAG) presidential plenary in Las Vegas, quoted the advice that Woody

Allen gave to some graduating students: “Graduates, as you embark on your life’s journey, you will come to a fork in the road. The way to the left leads to inevitable destruction. The one to the right leads to despair and misery. Choose wisely” (Powell 2008, 4). Powell sees these two dire options as what the future holds for the dams on the Colorado River and, more broadly, for the sustainability of water provision in the U.S. West. Powell’s joke is a pretty good summary of how the global problem of water provision is seen by many commentators, however. Not only is the overall prognosis of the water problem overwhelmingly deterministic and negative—there is no way out beyond accepting our fate—but the conception of politics implicitly adopted is similarly deterministic: Whatever is decided is the direct result of incipient environmental collapse, a conspiracy of economic interests, or a zero-sum view of the political in which there are always clear winners and losers, and the winners invariably take all.

In many accounts, water will likely be the defining world crisis of the twenty-first century (e.g., Chartres and Varma 2010). My main purpose today at this venue in the U.S. capital is to make two general points relative to access to water by using examples from such places as California and the larger region served by the Colorado River, the American Great Lakes region, the Middle East, China, and the Himalaya region: first, that the water problem is predominantly a political one in which democratic politics can in fact work to achieve outcomes other than, as Woody Allen put it, a choice between destruction and despair; and second, that we have trouble recognizing this dilemma because we have views about politics, and not just in relation to water provision, that either subordinate it to various natural or economic forces or trivialize it in a populist vein as corrupt, venal, and compromised. The word *compromise* is seen in a particularly negative light. “All or nothing” is the leitmotif of most of what goes for what politics should be. The possibilities of actual political processes, formal and informal, excite limited interest. Self-defined radicals and conservatives alike passively wait for their various “end times.” Too often the attitude is this: “If I don’t get everything, then I’ll take nothing.” In a field long seduced by determinisms of various sorts, politics offers the possibility of thinking and acting in such a way that it can actually change how the world works.

By analogy to the case of water, the Copenhagen climate summit of December 2009 provides an instructive example of how addressing politics as a process can lead to a better understanding of how the world came to the present impasse and of how it is possible to move beyond

it. Widely reported in the media as a “failure,” because there was no final binding legal agreement or treaty among all parties, and insufficient money was pledged by rich governments to entice poorer ones into committing to various emission reduction goals, the process illustrates instead that politics is the solution because the overall problem is political rather than natural or economic. Reducing emissions to manage climate change must reflect the geopolitics of global industrialization, but it must also involve the interests and identities at stake in any sort of global resolution. In other words, the politics of climate change is not simply about the estimates of emissions and their impact or that winners and losers are preordained. Neither is it about some simple technical fix such as taxing carbon. It is about trying to manage multiple and evolving interests and identities in a pluralistic world in which no one interest or identity is necessarily privileged a priori.

As clumsy as the United Nations (UN)-based process obviously was, all manner of interests and identities were represented, even if some nongovernmental organizations (NGOs) and indigenous groups rightly saw themselves as sidelined. After all, the UN is still an organization of states, not a global social forum. Perhaps other forums for dealing with the politics of climate change are needed. Nevertheless, the Copenhagen discussions were not a complete bust. First of all, the final outcome of the Copenhagen Summit recognized the extent to which, assuming that human-induced global warming is in fact well under way, there is still reasonable disagreement about its speed and geographical impacts. Reflecting this disagreement, the United States and the biggest developing countries acknowledged that they all must be involved in any sort of solution. In addition, a deal was struck on deforestation, and serious money was committed to encouraging the widespread adoption of sustainable technologies. Understanding the politics involved in a process such as this is a vital part of seeing how global climate change is interpreted differently by different parties and what can be done collectively to address it. The full range of interests and identities at stake is not simply made up of “science” and its uncertainties (e.g., Parkinson 2010; Schiermeier 2010).

Putting Politics into the Geography of Water Provision

Attention to politics provides a way of mediating between the arguments and the evidence about

the physical geography of water, on the one hand, and the workings of socioeconomic and administrative institutions that manage and provide human access to that water on the other. The point is not to reject any of these research activities but to suggest a relationship among them that challenges the conventional deterministic premises. The approach I am proposing here transgresses the boundaries typically imposed around the two positions of physical and human geography, given that “politics” is frequently put into a box separate from all other considerations. This separating out of politics reflects both the view of science as necessarily untainted by politics and the view of politics as something necessarily artful and therefore disdainful.

The first was problematic long before Thomas Kuhn (1996) pointed out how scientific theories and protocols reflect all sorts of social and political influences as well as tentative objective truths. The problem is the certitude and hubris of an abstract “science” that claims to transcend such influences rather than the skeptical imagination of practicing scientists. From the metaphors used to describe observations about human behavior to the agenda-setting activities of governments, science is permeated by assumptions with political roots. One good example is the wholesale import into a popular strand of evolutionary biology from liberal political economy of the metaphor of an organism’s or a gene’s “calculus” of costs and benefits (Harman 2010). Now-discredited ideas about multiple separate biological races with their obvious political origins and consequences are another. Of course, this doesn’t mean that science is all made up or simply socially constructed, only that access to the world as such is invariably mediated by all manner of social and political influences, including theories imported from other fields (Longino 2001). Moreover, uncertainty in the face of unpredictability is such a perennial feature of both natural and human worlds that whatever goes for the conventional wisdom at any particular moment in time is always subject to later revision or rejection. As Tony Judt (2009, 96) observed with respect to some of the political uses to which scientific certitude was put in the last century, “If we have learned nothing else from the twentieth century, we should at least have grasped that the more perfect the answer, the more terrifying the consequences. Imperfect improvements upon unsatisfactory circumstances are the best that we can hope for, and probably all we should seek.” All-or-nothing policies based on scientific certitude often lead to a vale of tears when we fail to note the necessary tentativeness of scientific conclusions in water research or in any other area

We live in an era when, inside and outside of academia, democratic politics is seen in a dim light, but if the claim to certitude that afflicts some claims to the mantle of science is part of the reason for systematically ignoring politics—we know what the problem is and if you do what we say it will be solved—the more pernicious is the widespread denigration of politics itself. Once terms such as public scrutiny, active participation, deliberation, and accountability had an array of largely positive connotations, but politics has now become synonymous with duplicity, inefficiency, surveillance, and corruption. I can’t possibly cover all the reasons for this transformation. Increased knowledge about the wheeling and dealing aspects of politics and its framing in muck-raking terms is certainly part of it (Hay 2007), but broader influences—such as the view that all politics is “fixed” to favor some classes and groups, that markets invariably work better than political institutions, and that political attitudes and interests are simply reflections of structural forces such as global north–south divisions—are also important. From a resurgent communitarianism, in which everyone is supposed to agree about most everything, on one side, to that economism that reads politics simply as deriving from structural economic interests, and the worship of a science beyond scrutiny, on others, the “democratic individualism” of politics is seen as inherently problematic. It either interferes in the rational management of society or is the source of social conflict and the inability to solve public problems (see Callon, Lascoumes, and Barthe 2009; Rancière 2009). To an array of commentators, the fact that politics has evolved and expanded over centuries, particularly as a result of efforts to enlarge popular participation associated with the term *democracy*, and provides tools for resolving conflicts that otherwise remain intractable and can lead to violent confrontation no longer seems very important. Yet, as Bernard Crick (1993, 141) has argued in its defense, “Politics is not just a necessary evil; it is a realistic good.”

Representing the World Geography of Water Provision

The geography of water provision is frequently represented through a bifocal lens from the distance and then close up. The distant view is of a world as a whole in which fresh water availability is mapped against water consumption. The close-up view is of regional and local variation within countries with respect to water

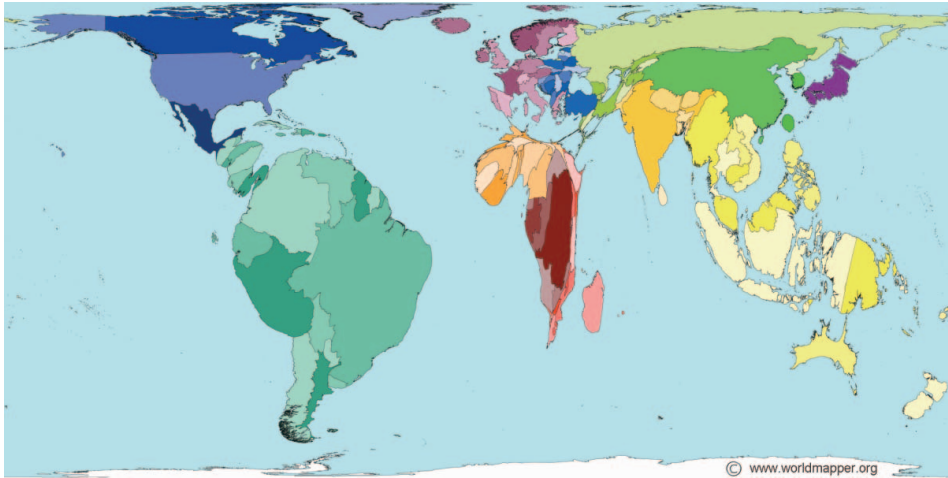


Figure 1. World water resources. The size of each territory indicates the annual volume of naturally occurring fresh water available for human use, 2003. *Source:* Worldmapper. © Copyright SASI Group (University of Sheffield).

sources relative to consumption. In each case, water, which is ironically the most fluid of substances, is fixed in place. Cartographically, the distant view of water is well illustrated in Dorling, Newman, and Barford's (2008) *The Atlas of the Real World*, specifically Maps 46 and 48 (Figures 1 and 2). The first of these shows water resources across the world political map to demonstrate the annual volume of naturally occurring fresh water available for human use by national territory. Not surprisingly, those territories with the highest rainfall appear the largest on the map. Their water resources are the most readily replenished on a regular basis.

The second map shows water use. Here the size of each national territory is proportional to its total annual water consumption. The three largest countries by population size—China, India, and the United States—use the largest amounts. In relative terms, however, water use per person in the United States is about triple that in either China or India. Recall from the previous

map that in Central Africa, a part of the world with relatively good water resources, consumption is only about 2 percent of that of the average American. The per capita differences are largely a function of relative population sizes, differences in capacity to tap groundwater and distribute water to consumers, and overall rate of use relative to availability. The typical generalizations drawn from comparing these maps are that the world's population is not distributed to match the world's water resources, that there are dramatic differences in ability to exploit available water resources, and, thus, that there is a significant human water deficit on a world scale.

The picture of water “haves” and “have-nots” is also usually regarded as characteristic of other geographical scales. Within the territorial borders of the United States, for example, water resources have increasingly gone to the parts of the country with growing populations and water deficits. So, even as overall water

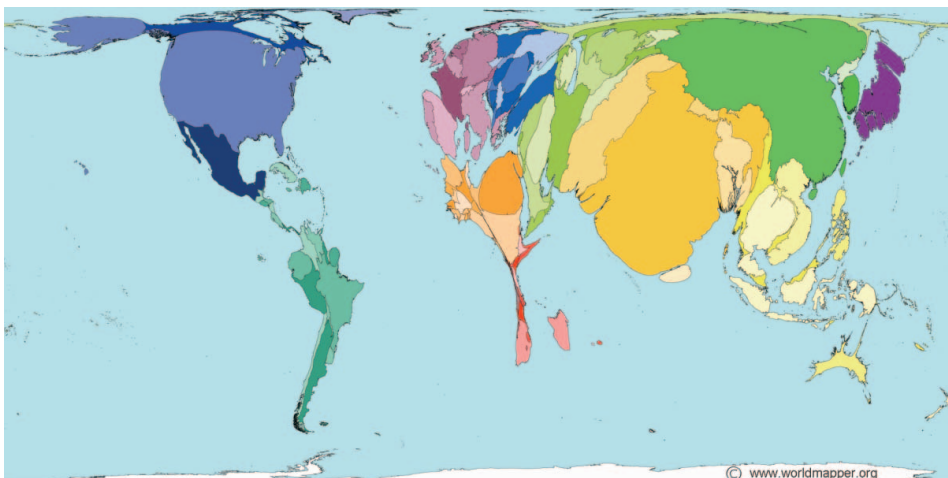


Figure 2. World water use. The size of each territory is proportional to its total annual water use, 2003. *Source:* Worldmapper. © Copyright SASI Group (University of Sheffield).

use in the United States declined between 1980 and 2000 (mainly because of diminished manufacturing industry), water use spiked in the South and Southwest, mainly through tapping local groundwater, but also by importing water. Just as on the global scale, with water-rich and water-poor regions, nationally water is increasingly central and critical to the geographical distribution of the costs and benefits of economic and population growth. As some regions gain, others are seen as losing. If to some water-rich regions, “it’s our water,” to other regions that water is increasingly in play by means of massive projects planned to reallocate water over vast distances. Books with titles like *Unquenchable: America’s Water Crisis and What to Do About It* (Glennon 2009), *When the Rivers Run Dry* (Pearce 2006), and *The Great Lakes Water Wars* (Annin 2006) suggest that conflict over access to fresh water can no longer be deferred, for as the readily accessible sources are used and degraded, conflicts will sharpen and become violent. Climate change promises to make current redistributive arrangements, such as the Colorado River Compact, increasingly irrelevant to water provision in the American West as mountain snowpack declines.

According to all these accounts, then, water will be the defining crisis of the twenty-first century, not because of the problematic geography of water provision alone but especially because of its terrifying intractability. The crisis motif, rather than examining the political and social production of water provision, emphasizes the physical side of access and imagines imminent collapse (Linton 2010). This apocalyptic perspective is redolent of the early Cold War view in America that the United States and the Soviet Union would be unlikely ever to negotiate successfully about, for example, nuclear weapons. We now know this scenario turned out to be false (Giddens 2009). This is just one example of a significant precedent behind political resolution of what now might appear to be intractable.

In the dualist perspective, therefore, the geography of water provision seems increasingly intractable. Both globally and nationally, patterns of resource availability and exploitation no longer match. Only through some process of radically more efficient management—for example, pricing water to reflect its scarcity or reversing population movement to water deficit regions—can the problem possibly be resolved. In this perspective, water is tied irrevocably to place. From the first, the need to move it elsewhere is seen as the source of the crisis. Yet, water is not a simple “possession” of the places where it exists or flows. Arguably, precipitation, the ultimate source of all fresh water, is a global public good. How

to distribute it can be decided politically, through negotiation and trade-offs, yet typically this is not how it has been seen. Water is itself often given power rather than the people (and their institutions and struggles) that presumably control its provision. How has water acquired this autonomous “power”?

Water Power: Environmentally Determinist Water Stories

Perhaps the classic story empowering water is that of Karl Wittfogel in his *Oriental Despotism* (1957), which sees the weighty but mobile character of water as mandating centralized or despotic control over waterworks and leading to the associated hydraulic and stationary character of so-called Oriental societies. This logic continues to inspire much general writing of an environmentally determinist character about how the rise and fall of civilizations is all about which one controls the water (e.g., Solomon 2010). More specifically, many of the stories about understanding the geography of water provision tend to give power to water itself in one of three different ways so that not only practical politics but also any abstract conception of the political as guiding human action is eclipsed. In the first kind of narrative, water gains power as a policy instrument in a geographical development strategy that represents water as a *fixed local resource*. The presumption here is that locally available water is a lever used by a government or other agency as an instrument of localized power. Rather like oil, water is a geographically specific “advantage” that naturally accrues to some places but not to others. From this perspective, and usually unlike oil, water is defined as an intrinsic feature of fixed ecosystems. To Annin (2006), for example, the Great Lakes are an aquatic bounty bequeathed to the surrounding area by the retreating glaciers; in contrast, he thinks of the Aral Sea in Central Asia as a stark reminder of what can happen when such a bounty is abused for the benefit of those beyond its immediate shores.

The second story assumes that water is an *independent force* in geopolitical conflict. Conflicting state claims over water sources take shape as simply yet another emerging genre of resource-based conflict, in which extended drought or economic development in some countries will inevitably lead to efforts at hijacking water from elsewhere. In a recent account of such a scenario, Kenneth Pomeranz (2009) argued that the Great Himalayan Watershed between India and China (and Southeast Asia) seems set to become an emerging

conflict zone because of the incompatibility between ambitious national economic growth goals, on the one hand, and inadequate local water supplies on the other. This scenario becomes all too plausible when one reads newspaper reports from India about suicides by drought-affected farmers or about massive water shortages in northern China, a region that grows three fifths of the entire country's crops and houses two fifths of its population but receives only one fifth as much rain as the rest of the country. The implicit message of the story is that conditions such as these lead inevitably to a geopolitical denouement as water scarcity forces the hand of the various geopolitical actors.

The third story that is woven is of water as a part of the larger *drama of economic and urban growth versus nature*, with water as an instrumental ally of elites versus its putative natural state of being. In this construction, powerful local interests, such as the booster/growth coalitions of Los Angeles or Las Vegas, for example, have diverted water from far away to build unnatural and unsustainable desert cities. Popularized in the film *Chinatown*, the history of Los Angeles is reduced to a simple fable about the local elite gouging water from distant valleys to fuel the development of the city. Much of the extensive dystopian literature on Los Angeles tends to see the harvesting of water as a violation of nature. More substantively, however, as William Kahrl (1982) showed in his fascinating history of the conflict over Los Angeles's water supply in the Owens Valley, "panic" over the possibility of water shortfalls has been a discursive strategy inherited from William Mulholland, one of the three founders of the L.A. Owens Valley Aqueduct, as a way of mobilizing "water" as the Achilles heel of proposals to move Los Angeles politics into non-water-intensive conceptions of its future. Unfortunately, relating the simple but dramatic image of water as the very foundation of the city undermines the possibility of exploring the historical grounding of water politics. Water politics rests in the complex intersection of institutional, economic, and ideological conditions at national, state, and local levels that have actually made the flow of water possible.

In a desert, of course, water can be imagined metaphorically as speaking, but to give water in these narratives an autonomous power that obscures the human actors mediating its impact is an example of a category mistake: endowing a substance in itself with either an intentionality or a causality of which it is incapable. Across all three stories, water is accorded an independent causal power that eliminates politics in any sense

of deliberation, choice, decision making, negotiation, and accountability.

Romancing the Political in Political Geography

How then does "the political" figure in contemporary political geography as it could be applied to water provision? Even if we avoid empowering water per se, what repertoire of understandings of the political might be available for deployment? Typically, unfortunately, they all tend to posit panaceas: abstract conceptions of the character of the political. By my definition, however, politics is the practical process of working and compromising across competing and antagonistic positions, not endorsing panaceas. I would like to postulate that perhaps six different ways of defining or confining the political currently predominate. In all of these, whatever their other merits, politics is diminished so as to identify an essential political that eliminates serious consideration of practical politics. One is that of the Platonic or scientist-observer who has the requisite expertise and knows exactly what needs to be done. As I have already claimed, the messiness of politics contrasts with the seeming certainty of scientific knowledge, which usually comes across as a type of bureaucratic managerialism. Much of what goes for conventional geopolitical analysis takes this approach, as does much of so-called policy analysis.

A second romance views politics as an inefficient historic alternative to the rationality of markets. From this perspective, water, for example, should be commoditized and not regarded as a public good. The so-called rational choice approach, popular in political geography in the 1970s and still dominant in political science as a whole, focuses on how individual actors have no or little incentive to restrict consumption of public goods and instead an incentive to avoid paying if at all possible (e.g., Sen 1977; Taylor 2006). The third, often tagged as radical, sees politics as a structurally determined process benefiting only those who can "pay to play." To some in this camp, only by "being against" and trying to disrupt regular politics is there the possibility of any sort of popular progress. Otherwise, we must just all wait for some sort of cataclysm to finally sort things out. In the interim, radical critique substitutes for any interest in practical politics per se. The fourth, a frequent element in populist worldviews, sees politics in terms of conspiracies whereby formal politics in particular is simply a mask for conspiratorial interests such as government officials, arms manufacturers, or cabals of one sort or

another. A fifth sees the political arising as a conflict of friends and enemies between whom the possibility of compromise is impossible. Historically associated with the political theology of extreme nationalists, this position has become more widely accepted, particularly by those who see the world irremediably divided between irreconcilable and warring civilizations and cultural orders. Finally, increasingly influential are those idealist views that interpret politics as deriving directly from ethics. This is not simply saying that political action (and studying political action) should be based on values such as justice, liberty, or equality. Certainly, you can argue that politics should be more about such goals. It is much more that the political becomes entirely the search for a historically, and geographically, invariant abstract justice. Anything else is “impure” and deficient. Practical politics is thereby dissolved.

In this setting I cannot possibly offer an adequate critique of each of these positions. My main point here is only to suggest that as typically expressed, these positions all displace practical politics in the hunt for an overarching abstract principle of the political. As a result, they all tend to pitch conflicts and disputes in terms of (1) known and fixed preferences, interests, or identities; (2) totally oppositional and warring individuals or groups; and (3) zero-sum outcomes. As Clive Barnett (2008, 1637) said about some of these approaches, they “share a rather precious disdain for ordinary politics, which is interpreted as the scene of the forgetting or diminution of genuine political energy . . . [and which] . . . is often taken to invalidate any and all concern with the sites and procedures of ordinary democratic politics, such as elections, parties, or parliamentary procedures.” They also fail to deal adequately with the difference between putatively democratic and authoritarian politics, presuming either the equivalent victory of bureaucracy in both cases or the lack of any real distinction between them in other respects (see, e.g., Dixit 2010). The indeterminate nature of practical politics means that it is without a transcendental guarantee to produce preferred outcomes (Revault d’Allons 2010). In other words, the abstract perspectives all manage to put the political beyond the reach of practical democratic politics.

Practical Politics of Water Provision

How Water Politics Works

In short, I am arguing that politics is *not* about the application of some idealized theory as often claimed in

political philosophy but rather a practical activity. For instance, in almost any society there is the question, as Raymond Geuss (2008, 25) put it, of “Who <does> what to whom for whose benefit?” This draws attention to the fact that politics is always about actual people who could do or who are doing things that affect other people. Obviously, some people have greater capacity to do things than do others. Political institutions mobilize bias in favor of those who have experience in using them. They also favor those with greater lobbying capacity and seeming ability to produce presently favored political–economic effects. Consider the ways in which the financial sector was favored in the United States and Britain from the 1980s until the onset of the global financial crisis in 2007 (Harvey 2010). Some political institutions, such as the U.S. Senate, for example, are inherently passive by design and hostile to popular initiatives (Agnew 2005). Relevant knowledge is not equally available. Many people remain radically uninformed about crucial matters and rely almost exclusively on commentators and various authorities (e.g., Collins and Evans 2007). Some institutions within national states (and some national states) are obviously more powerful than others. Bureaucracies have the capacity to sideline or limit political participation because of their control over relevant information. Of course, part of practical politics also involves conflict over commitments to this or that political theory, however inchoately thought and expressed.

This focus leads to a second important feature of practical politics: making choices between different courses of action at a particular time, such as preferring policy A to policy B. Choices are made even in the absence of much participation. If you want to make or influence them, you must participate politically in some way, shape, or form, by voting, attending meetings, demonstrating, rioting, or striking (Geuss 2008). Deliberation and participation are the ways in which voices are heard. As these are social acts, a single voice is heard only if it is raised in the appropriate venue at the right time. Finally, politics invariably involves a social milieu in which certain courses of action are seen as legitimate and others are not. These are what Geuss (2008, 36) called “warrants” for action that might or might not be widely shared and that can change over time. Politics is never simply about individuals following separate courses but about social influences affecting choices and involving the relative mobilization of different groups. Much of the modern history of politics has been about the extension of participatory warrants beyond elite groups as the result of popular struggles

over rights and control of the public sphere (Calhoun 2010). Although there may be barriers to collective political engagement, these need not prove disabling (e.g., Abizadeh 2002; Neblo et al. 2010).

Taken together, these features define a view of politics as a craft or skill involving “power, its acquisition, distribution, and use” (Geuss 2008, 96). In this construction, people only contingently apply ethical principles in different contextual situations. They are thus open to compromise, even if ambivalently, as long as such compromises are judged as reasonably acceptable (Margalit 2010). From this perspective, politics does not involve the blind application of normative rules that people always obey. It is always more centrally about pragmatic rules that are not so much about “whether a particular line of conduct is just or unjust, but about whether or not it will be effective” (Bailey 2001, 6). Much modern literature in political science on non-zero-sum games points to how cooperation and negotiation evolve even in the absence of formal communication (Axelrod 1984; Wright 2000). With communication these are even more readily facilitated. As recent experimental research using stylized models suggests, “Agents who evolve in most computational experiments are not blindly self-seeking but conditionally cooperative” (Poteete, Janssen, and Ostrom 2010, 192). Cooperation and negotiation engender the possibility of compromise.

It would be naïve to pretend that politics, whether state oriented or not, formal or informal, is and always is going to be equally central to everyone’s lives and that all are equally influential in it. People are entirely capable of being “good citizens” but often they are not. Other social roles (parent, bread winner, consumer, etc.) might seem more urgent. But even when people make little effort to inform themselves and then act consequentially, they can still be competent to make decisions that reflect a wider consensus (e.g., Mackie 2003; Landemore and Elster 2010). People also often judge quite rightly that political institutions are not open to them. Typically, the ways people make sense of their everyday lives discourage them from either fully participating politically or challenging the biases they perceive as built into institutions; however, what Gramsci (1957) called “contradictory consciousness” sometimes enables people to notice as well as not notice the impacts of politics on them and hence the possibility that they can act to change them. Even in a country with a clearly authoritarian government, such as contemporary China, there are possibilities for politics that need emphasizing (e.g., Mertha 2008).

Some of the “lack” of interest in political participation in more auspicious circumstances is undoubtedly due to the absence of a language that connects personal lives to the public sphere of politics (Eliasoph 1998). Indeed, much contemporary political language mimics that of marketing campaigns, TV and novelistic conspiracy theories, wild-eyed religious ontologies about Satanic pacts and divine retribution, celebrity gossip mongering, and a personalizing of politics by narcissistic bloviators who never meet an *ad hominem* claim against anyone believing in the possible efficacy of government that they would hesitate to expound (e.g., Knight 2002; Salmon 2007; Frank 2009). Some of it, however, is also due to a lack of overlap between the spaces of everyday life and those of political life, both formal and informal (Sewell 2001). There is a potential mismatch between how politics is organized and how people live their lives (see, e.g., Barnett and Low 2004b). Much of the production of political apathy, though, is owed to what seems to be the increasingly “managed” and performative character of politics. According to Wolin (2008, 136), such management signifies “the expansion of private (i.e. mainly corporate) power and the selective abandonment of governmental responsibility for the well-being of the citizenry.” In other words, the political content of government is reduced in favor of privatized administration. Wolin provides a notorious George W. Bush quotation to secure his point that politics can be window dressing that serves antipolitical purposes: “We support the election process, we support democracy, but that doesn’t mean we have to support governments that get elected as a result of democracy” (137).

Water politics illustrates the various attributes of the practical conception of politics I have just sketched. Let me first take three distinctive examples at different geographical scales and then describe some of the challenges that face democratic politics as a *modus operandi* for addressing the problem of water power. The first example, of interstate conflicts over access to river water, is provided by an analysis of the major political features of the Transboundary Freshwater Dispute Database of around 450 treaties compiled by Aaron Wolf and his collaborators (Wolf 1999, 2000; Wolf, Stahl, and Macomber 2003; Delli Priscoli and Wolf 2010). Countering essentialized views of water conflicts that see them as necessarily escalating into full-blown warfare, Wolf (1998, 255) cannot find one example in looking at cases from 4,000 years of “a war fought over water.” There have certainly been many conflicts, but politics, not war, has been the solution. In an extrapolation of the lessons learned from the negotiations over these treaties

to ethno-territorial conflicts, Cohen and Frank (2009) identified four characteristics of the riparian politics examined by Wolf that have been crucial to negotiated outcomes. One is the fact that water lends itself to the idea that all sides have a need for it because of its centrality to all life rather than simply that each side sees itself as having a singular right to all the water provided by a river flowing across or on the edge of its territory. Another is that water can be shared, using temporal criteria such as periods of privileged access to river flow, that can then further diminish the zero-sum quality of the dispute. Third, all sides share a mutual interest in maintaining the multiple uses and overall quality of the water supply. Thus, power generation, domestic water use, and irrigation use can be negotiated in terms of mutual benefit and sequence of use. Often, parties can have different rankings of interest that might be best served by negotiating rather than through unilateral action. Finally, it is important to separate out the pragmatic and concrete focus on the water issues from broader ideological and territorial claims. The linguistic and symbolic cast of most water treaties is to see water as a resource all parties need to varying degrees and must be shared in light of local requirements and relative availability rather than solely in terms of wider nationalist or corporate goals.

A second example at a different geographical scale is provided by Mullin's (2009) fascinating recent study of the public economy of water provision in the United States through a focus on the increased role of special districts. She shows, in particular, that politics has replaced the previous overriding emphasis on technological fixes to match household water supply and demand. This process has not happened suddenly but steadily since the 1950s. Water provision has become an inherent element in the changing dynamics of the overall politics of economic growth. The decentralization of U.S. water supply management is a response to both the local politics of growth and the fact that "Population growth and redistribution have left water systems throughout the country struggling to sate their customers' thirst" (Mullin 2009, 10). On the basis of a major empirical analysis of the workings of local water districts around the United States, she argued, "Communities are beginning to develop strategies for managing existing resources more effectively as it becomes more difficult to build their way out of water shortages" (Mullin 2009, 12). The whole political process involved in adopting this approach to water management, however, has been fraught from the outset. Major difficulties include competition with other users (agriculture,

electricity generation, etc.), deciding what each district owes other communities reliant on the same surface or ground water sources, and resolving the various interests (water managers, environmentalists, consumers, etc.) who bring different agendas to the business of all local water districts. The opacity as opposed to transparency with which some of the special districts operate is crucial to the degree of bias built into decision making that favors some groups or places rather than others (e.g., Jepson 2010; also see McCulloch 2006, for a similar argument about the politics of reservoir construction in northeast England).

Finally, by way of example for a more intermediate scale, in the state of California, notorious these days for its dysfunctional state government, the state legislature has actually managed to produce legislation reorienting the ways in which water flows in California, with some degree of agreement among most parties. It was a difficult task (Boxall 2009; Steinhauer 2009). Realizing two-thirds majorities in both houses of the state legislature is notoriously difficult. Last-minute votes were rounded up, as usual, by providing earmarks that benefit individual legislators and their electoral districts. Although the earmarks led to some condemnation of the bill from "political purists," the alternative would have been no bill passage whatsoever after years of failed attempts at confronting the state's growing water problems. Although the bill is the first real attempt at upgrading California's water system since the 1960s, it does nothing to address the broader dependency of Southern California on water from elsewhere in the American West (Hundley 2009). Among a wide range of measures, the bill promises to accomplish the following: California will join other Western states in monitoring overall ground water elevations; it will reduce overall urban per capita water usage by a fifth by 2020; and, most important, although without as high a priority to conservation as local politicians in its vicinity would have liked, it proposes funding (via a bond issue) of a new management system for the Sacramento Delta. This system is the source of a considerable amount of the within-state water that sustains both agriculture in the Central Valley and the urban areas of Southern California. All sides, northerners and southerners, Central Valley Republicans and coastal Democrats, environmentalists and farmers, gave ground to pass the legislation. The bond issue to fund many of the proposed changes remains controversial and, subject to popular referendum, it could still fail (Skelton 2009; Hiltzik 2010). Then everyone will have to go back to the drawing board.

In short, politics, in California as elsewhere, is a messy business. The pressure of events has undoubtedly contributed to a political climate conducive to new initiatives. Water usage has been a critical issue in California for years, but the prospects of the possible collapse of the Delta ecosystem, three years of drought, and a federal court order to curtail pumping from the Delta to preserve a threatened species of fish (which in turn led to a vast reduction in planted areas in the Central Valley and unemployment among farm workers) helped to produce a peculiar coalition of interests broadly in favor of the new bill.

Challenges in the Politics of Water

These examples all suggest how politics is absolutely integral to the contemporary geography of water provision. What I have not spelled out are some of the emerging challenges to the geographical and institutional framing of the politics of water. I can only briefly describe the most compelling elements that are beginning to be addressed by geographers and others. Perhaps the most obvious is the fact that water provision is an example of the more general class of collective action problems that have typically been thought of in entirely territorial terms. Crucially, however, if the institutional domains within which most politics today operates remain largely territorial by design, many of the dimensions of such problems are increasingly transnational or networked (Cerny 1995; Swyngedouw 2004; Brenner 2009). Partly this transnational reach reflects the fact that transnational actors, particularly large firms, have interests that lead them to intervene outside their states of origin but, more important, they and other actors create pressures for common or interchangeable infrastructure across locations including that relating to water provision, thus changing the geographical scope for political action beyond the confines of the national state. Although the collective-action challenge can undoubtedly be exaggerated, whether argued in utilitarian (Cerny 1995), liberal cosmopolitan, or radical biopolitical terms (Chandler 2009), there is evidence that the spaces of engagement surrounding particular environmental issues, such as waste management and water provision, are changing with supranational tiers of government (and NGO networks). These tiers often empower lower levels over and against central governments (e.g., Bulkeley 2005; Birkenholtz 2009) but sometimes prove incapable of matching the legal and political resources of big business (e.g., Whiteley and Masayeva 1998). Struggles to enlarge the participatory

possibilities of groups hitherto excluded from discussion and decision making about water provision need to be seen less in technocratic and more in political and ecological terms (e.g., Beck 1997; Ekers and Loftus 2008).

Another area of challenge concerns the precise mechanisms whereby the legitimacy of certain modes of cooperation in managing water provision is realized. From one viewpoint, cooperation to manage water provision is a simple rational choice problem that can only be resolved by pricing water so as to make people reveal their preferences and force collaboration. As many have pointed out, though, privatization of common resources reduces access to those who cannot pay the price, water has long had cultural meanings way beyond its character as a resource, and socially cooperative solutions are often more efficient than market ones (Tarot 2007; Heller 2008; Linton 2010; Schneier-Madanes 2010). From another perspective, as in Hardin's (1968) 1960s tough-guy intellectual "The Tragedy of the Commons," only sanctions applied by some external power will suffice. Yet, as Ostrom (1998, 12) has pointed out in an influential argument, real social cooperation and thus successful management crucially depend on the experience of face-to-face communication and, ipso facto, "the trust that individuals have in others, the investment others make in trustworthy reputations, and the probability that participants will use reciprocity norms." Rather than seeing this behavioral nexus as sanctioning a single set of institutional arrangements, Ostrom looks to a range of institutional possibilities as long as we all acknowledge that "It is ordinary persons and citizens who craft and sustain the workability of the institutions of everyday life" (18). Critical to this task will be defining the appropriate communities in which social rules for cooperation over any given issue can be expected to prevail. These need not be communities of propinquity but they certainly need to involve a high degree of face-to-face communication to fit the requirements laid out by Ostrom and others (see, e.g., Meinzen-Dick 2007; Harrington, Curtis, and Black 2008; Rand et al. 2009). Recent empirical studies that focus on the role of local community in the politics of water include MacKillop and Boudreau's (2008) examination of how in Los Angeles the water infrastructure has both reflected and directed a politics of fragmented communities between which social trust has been largely absent, Wang et al.'s (2009) examination of the roles of governments and farmers in the "water crisis" in northern China, and Perreault's (2008) focus on how "customary practices" governing water allocation motivated large protests against the commodification of irrigation water

in Cochabamba, Bolivia, in 2000 and laid the groundwork for subsequent political action.

A further challenge involves incorporating the hierarchy of interstate relations into consideration of the geopolitics of water. Conventional international relations theories, as Furlong (2006) has pointed out, are typically not very useful in examining water conflicts because they presume either an actual or a normative equality in power between states (but also see Warner and Zetoun 2008). Indeed, some argue that the typical assumption of a strict match between state territory and sovereignty has become grossly misleading in understanding the origins and course of many real-world conflicts (e.g., Agnew 2009; Luoma-Aho 2009). Even though riparian disputes between neighboring states have often generated agreements and treaties, as noted previously, there should not be a presumption of equality between them in the capacity to affect outcomes. An emerging perspective on “hydro-hegemony” argues that much of what often goes for “agreement” is in fact the outcome of clear power differentials and that water is also subject to disputation because of the ways it is embedded in international food and agricultural trade as well as in direct conflicts over access to water sources (Allan 2001; Selby 2003; Warner and Zetoun 2008). Studies such as those of Mumme (2008) on U.S.–Mexico cross-border water management, Feitelson and Fischhendler (2009) on the relations between Israel and its neighbors on water issues, Harris and Alatout (2010) on the role of water in the performance of nation-state building in Turkey and Israel, and Alam, Dione, and Jeffrey (2009) on sovereignty and conflict over the Senegal River in West Africa suggest the importance of rethinking how we might approach the geopolitics of water provision by explicitly incorporating more realistic conceptions of sovereignty.

A challenge that pervades the entire study and practice of water politics is how to consider the role of expert knowledge about water provision. Although “science” rarely seems to resolve policy debates (Keller 2009), claims to expert knowledge permeate disputes over many environmental issues such as climate change and water provision. Of course, “The problem with experts is that they do not know what they do not know” (Taleb 2010, 147). But the belief in the “objective” and determinant character of scientific knowledge (particularly consensus views) is frequently used as a rhetorical resource to justify this or that position. Yet, there has been limited analysis of the ways in which scientific claims actually enter into policy making about water provision (see Holifield 2009). More particularly,

the role of individual experts in particular disputes has not been subject to much examination, and, as Budds (2009, 420) noted, “little attention has been paid to the production of hydrological data, their use in policy, and their role in changing waterscapes.” It is illusory, however, to think that experts are free of political viewpoints, tendencies to groupthink, and other flaws. Economist Robert J. Shiller recently said that he kept quiet in committee meetings at the New York Fed regarding his growing misgivings about an emerging U.S. housing finance bubble because he was afraid that other economists would ostracize him for questioning orthodox opinion (McClay 2009). Nevertheless, scientific expertise matters, not least because some have access to it, whereas others do not (Whatmore 2009), and the fatalism that its claims about incipient collapse or intractability sometimes engender might work against either seeing or stimulating popular political responses (Crist 2007; Woodson 2010).

Finally, the entire discussion about water politics (and practical water politics itself) is pervaded by a language that frames issues in ways that are often not explicitly identified. Language is not a nonneutral medium that reflects reality as a simple-minded empiricism might have it. It actively frames how we see and listen to the world. In particular, language always has political uses (Kroskrity 2000). For example, water provision is frequently explored using terms such as *profligacy* and *scarcity* (e.g., Rees 1982; Rijsberman 2006). This framing emphasizes water’s physical as opposed to political valuation. I have noted previously how water itself is empowered when its physical association with some places is given priority over others in tales about its environmental significance. Basic concepts in water management, such as the “hydrological cycle” and “river-basin planning” (Molle 2009; Linton 2010), play crucial roles in defining the basic parameters around which political disputes are played out. The discussion about social trust and norms as necessary to adequate participatory politics is also often expressed in the language of “community,” one that deserves close scrutiny, not least because of its very own often reactionary political connotations (Baker and Bartelson 2009).

Conclusion

If one contribution of this presentation is intended to help in what has been called the “re-naturing of political geography” (Cox, Low, and Robinson 2008, 183–262), by focusing on a question of common interest to both physical and human geographers and of widely accepted

contemporary global significance, a second is to question the overwhelming tendency either to reinstitute an environmental determinism or to establish a political “theoreticism” (Barnett and Low 2004a, 3) based on an abstract or structural conception of “the political” as the best choices for understanding the geography of water provision. In their place I have made a case for a practical conception of politics as both a focus for analyzing the actual ways in which water provision is subject to dispute and as a normative commitment to actively shaping the world through popular participation. We have politics available to us and we need to invigorate it. Recent history reminds us that awaiting an eschatological showdown in which every dilemma we have ever faced will suddenly be resolved without organized political mediation will likely disappoint. In his marvelously discerning book about the virtues of practical politics, *In Defence of Politics*, Crick (1993, 13) quoted Boris Pasternak’s great novel, *Doctor Zhivago*, to this effect:

There are limits to everything. In all this time something definite should have been achieved. But it all turns out that those who inspired the [Russian] revolution . . . aren’t happy with anything that’s on less than a world scale. For them, transitional periods, worlds in the making, are an end in themselves. . . . And do you know why these never-ending preparations are so futile? It’s because these men haven’t any real capacities, they are incompetent. Man is born to live not to prepare for life.

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