water resources sustainably and equitably in the face of growing water scarcities and environmental degradation. If polycentric or distributed, multilevel governance systems are preferable to the centralized command-and-control systems that have long dominated government thinking around the world (Bache and Flinders 2004; de Loë et al. 2009; Hooghe and Marks 2003; Wagner and White 2009), then support for the emergence and strengthening of such systems should be an important research goal. This model of governance is being championed by scholars working in many fields, notably by those interested in socioecological resilience and the behavior of complex adaptive systems (Folke et al. 2005; Holling 1973; Pahl-Wostl et al. 2007; Schlüter and Pahl-Wostl 2007), environmental governance (de Loë et al. 2009; Duit and Galaz 2008; Lemos and Agrawal 2006), and common-property theory, as noted above (Armitage 2008; Berkes 2008; Kerr 2007; Lebel et al. 2008).

Mapping the actor networks that populate these governance systems can provide an effective starting point for identifying the problem-solving potential of existing systems in contexts where the most important improvement might involve the creation of more inclusive local institutions, bridging institutions at the regional level, strategies for more effective social learning among actors at different levels, and recognition by all actors of the critical necessity of a coordinated approach.

Conclusion: Understanding Agency in a Fractal Universe

Water governance everywhere tends to encompass a messy clustering of institutions, economic interests, histories, cultures, and ethnicities. Innovation, both planned and unplanned, occurs daily within these governance networks. Designing research projects that can help us map these processes of innovation, which include acts of imagination, could contribute to the building of a powerful public anthropology research agenda.

Water management in the Okanagan Valley has historically been bound up with the economic development of the region, first as an orchard oasis surrounding valley-bottom lakes and more recently as a site for recreational and resort tourism, a construction intimately linked to global flows of capital, people, and imagination. These global flows and the fractal nature of the world they engender (Appadurai 1996:46) seriously limit the likelihood that we can account for the full range of factors at play here or use multivariate factor analysis to guide institutional innovation. A more selective analysis of "actors," however, as defined by actor-network theory, offers some promising opportunities for anthropologists who seek to work in collaboration with water management institutions.

Appadurai (1996) has argued that "the imagination is now central to all forms of agency" (31), and as a corollary I would argue that it has always played a central role in our relation to water. Water managers in the Okanagan today, whether they draw their water from a single upland creek, a lake in

the valley bottom, or a groundwater source, are increasingly imagining their work as part of a watershed-wide management effort and are busy constructing the network of relationships that will be necessary to realize that goal. Returning once more to Taylor's (2004) definition of a social imaginary as "that common understanding that makes possible common practices and a widely shared sense of legitimacy" (23), I propose that "imagining" water as a commons can help us build the types of institutional networks we need to manage water wisely, equitably, and sustainably.

Acknowledgments

Comments

Erling Berge
Center for Land Tenure Studies, Norwegian University of Life Sciences, P.O. Box 5003, NO-1432 Aas, Norway (erling.berge@erlingberge.no). 11 IV 12

Wagner raises several interesting points in his article. A key point is the growth in the commons imaginary. It became impressed upon me at a meeting in Berlin in the fall of 2010. There were few traditional commons scholars. Listening to both public presentations and small-group conversations gave pause for thought. The impression I took home was that for the majority of participants the commons represented a new ideology with some of the important desirable features of socialism and few of the negative consequences associated with it. The president of the International Association for the Study of the Commons was one of the keynote speakers and tried to introduce conceptual distinctions like those Wagner discusses. But the academic approach seemed rather uninteresting.

Reading Wagner's article with this in mind, the question becomes, should the academic study of commons embrace an all-encompassing ideological or even political concept of the commons? My initial attitude was scepticism, and Wagner did not persuade me otherwise.

We should of course study the phenomenon "commons-as-social-imaginary." Understanding how people think and why they think the way they do is fundamental to designing resource governance systems. But the ideology I listened to in Berlin and the commons-as-social-imaginary that Wagner reports on do not have the conceptual tools to understand the dynamics of institutional systems larger than a village community. There are such phenomena as "the tragedy of the open access resource," and there are predatory actors that

will look for ways of exploiting an institutional structure and thereby create social traps. If one organizes exploitation of "resources that are (or could be) held or used in common" without considering whether it, for example, is mainly a renewable common-pool good or a nonrenewable public good, the results are unpredictable, and the beneficiaries of the resource may have to reinvent the commons theory all over. Without understanding that resources have different characteristics (degree of excludability in access, degree of rivalry in consumption) that interact with rights and duties of the commoners and likewise that technology used in appropriation will interact both with resource characteristics and with rights and duties, the next generation of commoners will struggle with what to do when resources become scarce, when external agencies intervene to "assist" in the protection of a dwindling resource, or when market forces reach into the community and create new dynamic processes.

The lack of conceptual clarity in current theory is not a good reason to go to an even more embracing concept of commons-as-social-imaginary. It may well be that the "traditional" idea of a commons as an institution for exploiting a common-pool resource falls apart as we go deeper into the exercise of conceptual clarification and broadens the scope to cover more types of resources. The reasonable response to this is to say that it is no longer commons as such we study but property-rights institutions. Our research problem still is to understand the interplay between belief in rights and duties among beneficiaries and the dynamic this creates in specific resource complexes as defined by the characteristics of the resource and the characteristics of the appropriation technology. And the interplay between resource characteristics, appropriation technology, and beliefs about reasonable and just distribution of benefits are well illustrated by the water of the Okanagan Valley.

When water is abundant, it usually is open access resource. But in most cases communities will have to create waterworks to transport the needed quantities from its abundant source to the single consumer. Thus, a community may charge a flat fee or a general tax on each consumer no matter how much water is used. The water is abundant. It is enough for all. But the waterwork costs. The payment is for the technology used, not for the water.

But waterworks like this are also known as a natural monopoly. This raises particular problems of governance. Handing monopolies to private profit-making companies seldom works well. Decentralized local governance is what one usually finds. Even where water is abundant, it is a key resource for people's livelihoods; people worry about its supply and will not easily accept unfair restrictions on its supply. From Wagner's description of the Okanagan Valley, there seems to be a situation where water goes from abundant to scarce. What happens in such cases? From what Wagner reports, it seems that the people of the Okanagan Valley, by trial and error, find ways of organizing the water supply, both taking care of their beliefs in just supply and avoiding the pitfalls that natural

monopolies and scarcities may present. With a large number of actors thinking about the same problems, trial and error may be a viable way of solving them. But with a few guidelines from what we like to call commons theory, it might have been done much faster.

Rita Brara
Delhi School of Economics, University of Delhi, Delhi 110007, India (ritabrara@yahoo.com). 21 IV 12

The author puts across the view that water is believed to be a "common good" and a "collective resource" among the inhabitants of Okanagan now, even though how water is owned, distributed, and administered there does not accord with academic conceptions of "common-property" or "common-pool" resources. And so he settles on the concept of the "social imaginary" in order to apprehend the residents' emergent concern with water as an eminently collective thing.

Before making the concept of the social imaginary serviceable for this context, Wagner adapts it by bringing in specifying terms and dropping other facets from view. The social imaginary is altered to become the "commons" imaginary of the article's title. What is gained through this substitution is a spotlight on the commons as the object of the imaginary. This emphasis allows for a consideration, for instance, of the symbols and enactments of commonage, etched in the guiding principles of the Okanagan Water Stewardship Council. The imaginary is certainly a dimension of agency, as Wagner (and Appadurai [1996]) reminds us. What is lost in this accent, on the other hand, is the focus on the "social." The author returns to the notion of water as a social imaginary in the course of the text but concentrates on its "imaginary" component.

Ironically, as imaginaries both the social and the commons are capable of appearing as many or one. Since the conception of water either as a commons or as a social imaginary can express unitary and divided existence, the construction may valuably be furnished with social frames at each level of its appearance. The author suggests that the current allusion to water as a collective resource among residents of European descent has surfaced precisely when local concerns about anticipated water scarcity and deteriorating quality are being reported from this arid region. Perhaps we need a clearer idea of the social groups, publics, or collectives that are being gathered and eclipsed by concatenating imaginaries.

The emergent imaginary of water as a commons, the author notes, contrasts with the modernist Euro-American imaginaries that emphasize individualism (Taylor 2004). The concern for water as commons departs from the state licensing of individual and private leases to European settlers. The less heard and proclaimed water imaginaries of the indigenous Syilx in this enclave are not the focus of this article, although it is likely that these harbor a mix of common and uncommon features.

Yet how the Syilx conceive of the commons might well be