

Local Knowledge and Memory in Biodiversity Conservation

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Abstract

For the past two decades, biodiversity conservation has been an area of concerted action and spirited debate. Given the centrality of biodiversity to the earth's life support system, its increasing vulnerability is being addressed in international conservation as well as in research by anthropologists and other social scientists on the cultural, economic, political, and legal aspects of human engagement with biological resources. The concepts of biodiversity as a social construct and historical discourse, of local knowledge as loaded representation and invented tradition, and of cultural memory as selective reconstruction and collective political consciousness have also been the foci of recent critical reflection.

If we can live in memory, we would not have to consecrate sites of memory in its name.
Pierre Nora (1997 [1984–1992])

INTRODUCTION

Local knowledge and cultural memory are crucial for the conservation of biodiversity because both serve as repositories of alternative choices that keep cultural and biological diversity flourishing. As scholarly foci, both have undergone similar transitions from obscurity, to prominence, to some form of crisis. This review stresses the continuity and authenticity of local knowledge and memory despite, or because of, their fluidity, contingency, situatedness, and resilience. It points to some directions for restoration of diversity that is rooted in place.

Although the evolution of our species has been driven primarily by human curiosity, appreciation, and exploitation of the variability of plants and animals, the term biodiversity is of recent coinage. First used in 1986 when the National Forum on BioDiversity was organized under the auspices of the National Academy of Sciences and the Smithsonian Institution in Washington, D.C., it had captured public imagination and attracted enough attention worldwide by 1992 to be a rallying point at the Rio Earth Summit (Wilson 1988, 1997). Biodiversity is “the variety of life forms, the ecological roles they perform, and the genetic diversity they contain” (Wilcox 1984, p. 71). It has a wide range of direct uses for food, medicine, ritual, construction, and commerce (Patrick 1997) and performs critical environmental services such as maintenance of nutrient and hydrologic cycles, regulation of air quality and water purity, preservation of habitat, and reservoir of evolutionary change (Hawkes 1991, Chapin et al. 2000). Because “the natural wealth of our planet is being lost at an estimated rate of 5% per decade” (Raven & McNeely 1998, p. 13), there is growing concern among scientists and policymakers over an impending crisis of genetic erosion and extinction. This crisis is driven by growth

in population and rates of consumption, which in turn drives habitat destruction, introduction of exotic species, and overharvesting of the earth’s resources (Myers 1996, Lovejoy 1997). The dominance of economic considerations over ethical-ecological ones only exacerbates these environmental and cultural vulnerabilities (Norgaard 1988, Ehrlich 2002).

By the mid-1990s, the twin ideas of biodiversity and biodiversity conservation became the subject of impassioned, albeit at times tangential, critiques aimed mainly at biodiversity’s correspondence to some real entity or phenomenon, or—more to the point—the lack thereof. Is biodiversity a thing that exists in nature or just a conceptual and opportunistic sleight-of-hand to serve some hidden agenda? For anthropologists, a closely related question was, Is this thing that scientists and policy makers are preoccupied with recognized by local people (as in, Aha! Group So-and-So does not have a term for “biodiversity”!). Energetically questioned, too, was the purported urgency of stemming biodiversity loss. Because evolution is an ongoing process with species lost and species gained all the time, is biodiversity conservation simply an alarmist call to create mass hysteria or a charismatic lure to generate funding or sell books? Perhaps because of its bumper sticker aplomb, “erosion is real, extinction is permanent” did not particularly sit well with post-structuralist thinking, which pointed out that deeper understanding of the problem requires theorizing beyond the obvious and the absolute to penetrate created realities and demand for solutions. Some scholars argued further that biodiversity is a social/political construct (Takacs 1996, Ribiero 1997) and a “historically produced discourse” (Escobar 1998, p. 54). Indeed, in the hands of these critical scholars, biodiversity and its conservation became something good to think rather than something good to do.

A review of anthropology and the conservation of biodiversity emphasized the increasing contribution of anthropologists to the understanding of human impact on biodiversity

(Orlove & Brush 1996). Underlining human cognition, decision making, and behavior, the authors surveyed anthropological perspectives on biodiversity under four themes: ethnobiology of agricultural diversity, cultural ecology of plant genetic resources, participatory conservation, and politics of genetic resources. Aside from this review, several books and edited volumes have been published on the cultural, economic, political, and legal dimensions of biodiversity conservation in the past decade (Zimmerer 1996, 2003; Collins & Qualset 1999; Nazarea 1998, 2005; Brush 2000, 2004; Dutfield 2000, 2004; Cleveland & Soleri 2002). Interest in exploring the complex web of interactions among culture, society, and biodiversity can be expected to grow with increasing recognition of the need for complementing formal or institutional approaches like *ex situ* conservation in gene banks with more informal or local initiatives like *in situ* conservation in homegardens. It will also intensify with the demand for intersectoral negotiations on access and benefits in relation to plant genetic resources and associated local knowledge.

In light of these developments, this review's objective is to examine anthropological investment on the subject of biodiversity conservation and loss while recognizing the questioning that has been going on since the concept gained some degree of prominence in environmental conservation. I also take into account local knowledge and memory and examine how they reinforce cultural and biological diversity. Local knowledge and memory have followed a similar course of ascendancy, crisis, and renaissance as has the notion of biodiversity. The deconstruction of these concepts has provoked serious reexamination, which continues to lead us to deeper insights. But it has also provoked doubt and sown confusion, leading to a palpable malaise in both theory and practice. Recent developments in anthropological thought, particularly in the areas of sensory memory or sensuous scholarship (Seremetakis 1994, Stoller 1997, Sutton 2001), marginality and mime-

sis (Taussig 1993, Tsing 1993, Nazarea 2005), and landscape or place (Basso 1996, Stewart 1996, Gold & Gujar 2002) offer a way out of misplaced essentialism, which demands strict adherence to what does or does not count as biodiversity, knowledge, and memory. This emerging body of research and scholarship enjoins us to explore different avenues of engagement with ecology and conservation or to return to comforting old haunts of deeply sited ethnography and thick description.

CONSERVING BIODIVERSITY OR IMAGINING BIODIVERSITY?

Whether the problem of biodiversity loss was cast in a straight and narrow economic mode or in a more encompassing biocentric mode, the result was to galvanize the scientific and policy community into action. International organizing and advocacy made a strong case for the urgency of the problem. One watershed document, the Convention on Biological Diversity (CBD), was signed in the 1992 Rio Earth Summit. The CBD defined biodiversity as "the variability among living organisms from all sources and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems" (UNEP 1994, p. 4). It recognized national sovereignty over plant genetic resources and bound signatory countries to "regulate and manage biological resources important for the conservation of biological diversity" and "respect, preserve, and maintain knowledge, innovations, and practices of indigenous and local communities embodying traditional lifestyles relevant to the sustainable use and conservation of biological diversity" (UNEP 1994, pp. 8–9). There are still unresolved issues associated with rights and responsibilities, but the CBD has made it difficult to ignore the enormous challenge of biodiversity conservation and the crucial role of local knowledge and local custodians in maintaining it.

Since the first call to arms in the 1980s, biological and social scientists have been

CBD: Convention on Biological Diversity

analyzing causes and trends and fashioning solutions (Altieri & Merrick 1987, Brush 1991, Soule 1993, Beattie & Ehrlich 2001). Some of the measures that have been put in place are *ex situ* and *in situ* gene banks, buffer zones and protected areas, and biological corridors (Plucknett et al. 1987, Cohen et al. 1991, Maxted et al. 1997). Repatriation of germplasm collected from centers of diversity and conserved in gene banks to communities from which they originated but from which they have since been lost is another promising mechanism being explored. In Cusco, Peru, efforts are underway to return to Quechua farmers hundreds of potato landraces from the International Potato Center. Reintegrating these native potatoes into Quechua farming systems is complemented by initiatives to document customary laws and revive culinary traditions in the Andes (**Figure 1**). Repatriation and *in situ* conservation are parts of an ongoing paradigm shift in biodiversity conservation toward less-centralized and more on-the-ground efforts that acknowledge the contribution of indigenous populations, women, and elderly farmers (Wilkes 1991, Soleri & Smith 1999, Jarvis & Hodgkin 2000). Complementation of scientific and cultural approaches to conservation, inclusion of neglected or underutilized crops in conservation mandates, and integration of conventional functions of gene banks with new ones as dictated by discoveries and political situations have likewise been stressed (Pimbert 1994, Hammer 2003).

In a more critical vein, the problem has been recast in the constructivist sense as the specter of biodiversity being an environmental workhorse under threat and in its conservation as a nascent social movement with broader political ends. From this perspective, the “idea” of biodiversity and the call for its conservation are seen as means to renegotiate the dominant discourse on nature and culture—one that reinforces the interconnectivity between identity and ethnicity, territoriality, autonomy, and natural resource claims (Takacs 1996, Escobar 1998, Hayden 2003).

These claims and counterclaims travel across various locations and conversations and in no time assume a life of their own (certainly a language of their own) not unlike the constructs they critique. Still, it is heartening to note that while the concept of biodiversity is being problematized and its attendant issues debated on the big stage of science, technology, and society, while biologists and anthropologists ponder deeply and non-governmental organizations organize zealously, local farmers and gardeners go about their daily round—exchanging, renewing, and connecting through seeds and memories—surrounding themselves with familiarity and comfort and defying the somber politics of loss.

In biodiversity conservation, resilience can be found in diverse genetic compositions internal and external to disturbed ecosystems. Of prime importance here are biological legacies and reservoirs that are redundant and self-renewing, a point to which I return later. But it is fostered as well in small, reverberating acts of human defiance to the homogenizing forces that erode identity, agency, and diversity (Richards 1986, 1996; Nabhan 1989; Zimmerer 1996; Nazarea 1998, 2005). While intellectual and policy debates may stress loss, surrender, and abandonment associated with sweeping habitat fragmentation and agricultural development—an emptying not only of forests and fields but also of reserves of local knowledge and memory—it is important to acknowledge a powerful counter in marginal fields and uncaptured spirits. For the most part, this counter is lodged not in rhetoric and text but in the senses and the flesh—in the dance, pungency, and grittiness of everyday life. Sensuous recollection in marginal niches and sovereign spaces that people carve out of uniformity and predictability constantly replenishes what modernity drains. One example is women’s intimate relationship to their seeds in Cotacachi, Ecuador, where, according to Rosa Ramos (**Figure 2**), seeds are gathered in the aprons of their skirts and transported in the folds of their clothes, to be

hidden, displayed, and/or shared as they see fit. In Paucartamba, Peru, where women control seed storage, they closely observe and sort maize landraces on the basis of use, planting, and ripening and keep men from drawing any consumption-seed ears out of storage areas (Zimmerer 1996).

INDIGENOUS KNOWLEDGE AND ITS TRANSFORMATIONS

Anthropology's engagement with environmental conservation has been rooted in local or indigenous knowledge. In many respects, local knowledge has always been at the core of anthropology, but it ascended to prominence in development anthropology in the early 1980s. Three intellectual waves precipitated this ascent. The first we can call the "ethnoscience wave." The concentration on understanding of local understanding had its beginnings in the mid-1950s and early 1960s (Conklin 1954, 1961; Goode-nough 1957; Frake 1962), but it crested in the 1970s and 1980s (Berlin et al. 1974; Hunn 1977, 1982; Ford 1978; Posey 1984; Atran 1985; Berlin 1992; Ellen 1993). Based primarily on cognitive/linguistic principles, ethnoscience systematized data collection and analysis, effectively eticizing the emic. Because of its promise of methodological rigor and theoretical significance, supporters dubbed it as the "new ethnography." However, its detractors found dubious the idea of cognitively based behavior and referred to it more as "science of trivia" or rules for the "anemic" and "emetic" (Harris 1974). The debate also raged among ethnoscientists themselves, between the structural/intellectualist camp (represented by Brent Berlin and Scott Atran) and the utilitarian/adaptationist camp (represented by Eugene Hunn and Roy Ellen). Questions of correspondence between ethno-biological categories and Linnean taxonomies continue to animate these exchanges, but some form of synthesis has been achieved in other areas. Among other things, ethnobiology and ethnoecology provided a framework

for linking categories with action plans and, in effect, environmental perception with resource management practices (see Hunn 1989 and Nazarea 1999 for further discussion). Research in this direction shed light on "classifications as situationally adapted and dynamic devices of particular importance to their users, reflecting an interaction . . . between culture, psychology, and discontinuities in the natural world" (Ellen 1993, p. 3).

By stressing the adaptive nature of classificatory systems, ethnoscience caused a radical reorientation in viewing the relationship between humans and their habitats. Following on its wings, the appropriate technology wave utilized methods and findings originating from more esoteric pursuits focused on figuring out "how the natives think" and applied these to agricultural development and environmental conservation. That local people who have lived in a particular environment and dealt with its constraints over time have acquired sophisticated knowledge that needs to be considered to make development and conservation projects more contextually sensitive and appropriate was practically intuitive, but it took awhile for it to become influential. Also known in the literature as indigenous knowledge (IK)—or traditional environmental knowledge (TEK) when more specifically applied to beliefs and practices in relation to nature—local knowledge was celebrated in a revalorization of the small, the beautiful, and the brown. Efforts by anthropologists in the academic and development arenas successfully demonstrated how anthropology can provide a major contribution in directing development toward a more sustainable course by allowing local perspectives to shape its priorities (Rhoades 1982, Ashby 1985, Warren 1989, Bentley & Andrew 1991, Rhoades & Bebbington 1995). Indigenous or local knowledge and technologies were vigorously documented and promoted and became information currency in the international agricultural research centers and the World Bank. While this was going on, an underlying theme, local knowledge as subject matter, developed

IK: indigenous knowledge

TEK: traditional environmental knowledge

from anthropology of development (Dove 1986, DeWalt 1994, Nazarea-Sandoval 1995, Sillitoe 1996). Generated in the academe and frequently in the context of interdisciplinary research, these works compared local knowledge with Western science, examined the equivalences and particularities, and made recommendations for mutually beneficial integration or mainstreaming.

In the 1990s, a postmodern critical wave questioned what it deemed to be a static, overly romanticized image of local knowledge (Brosius 1999, Li 1999, Ellen & Harris 2000, Parkes 2000). Local knowledge came to be regarded as practical and partial, even contingent, and attempts to document and bank it were viewed as misguided at best and suspect at worst (Escobar 1998, Agrawal 2002). Arguably, most of the caveats raised in these critiques were valid; to abstract local knowledge from its context and to “refunctionalize” it to Western ideas of conservation could be a disservice not only to local knowledge but also to conservation and science. However, the postmodern wave glossed over the original intention of documenting local knowledge, which was to foreground the cultural dimension that development and conservation programs often overlooked and to make sure that there is a library of previously unwritten beliefs and practices in case there was ever any need to revive, disperse, or retool this valuable pool of information (Knight 1980, Brokensha et al. 1982, Oldfield & Alcorn 1987, Nazarea 1998). The critics also forgot to mention that most of these efforts were intended to be ethnographically grounded and participatory, with local perspectives checking the excesses of decontextualization and “scientisation.” At its extreme, critical scholarship interrogated the very existence of local knowledge, arguing that local discourse could be simply a reflection of global rhetoric and agenda: generalized, embellished, framed. It was not that the love affair with local knowledge in anthropology and development ended, it simply “grew up” and culminated in a doubt-ridden marriage.

One way to look at the transformations in IK and its discontents is in terms of generation one and generation two IK (or TEK) studies. First-generation IK studies focused on content, comparing and contrasting local knowledge with scientific knowledge and legitimizing it in terms of Western standards (see, for example, Warren et al. 1995). Rigorous testing and verification of the scientific basis of soil classification and enhancement, water conservation and distribution, crop preferences and cultivation, pest identification and management, and other domains of indigenous knowledge subjected local beliefs and practices to the burden of legitimacy. From this standpoint, IK was regarded as a bundle of instrumentalities for “complementation” and “integration.” This was true not only in the development arena where IK promised to redeem top-down strategies that violated and further diminished would-be beneficiaries, but also in academic research. Numerous publications on the significance and relevance of IK appeared in the *Journal of Economic Botany*, *Journal of Ethnobiology*, *Human Ecology*, *Human Organization*, and *Agriculture and Human Values* during this period. Ethnoscience approaches became the cornerstone for understanding and explaining local knowledge, particularly of the natural world. Views of local knowledge as distributed and situated challenged the heretofore dominant belief in invariant, acultural systems of encoding such knowledge.

Second-generation IK studies focused on process and transformation, noting that local knowledge is not just intrinsically dynamic and situated but is often contingent on external opportunities and constraints (see, for example, Ellen et al. 2000). The emphasis on understanding local knowledge in the context in which it evolved freed it from the demands of comparison and verification and highlighted the agency of local people. However, although it freed IK from the burden of legitimacy, it imposed a burden of a different sort: authenticity. With utmost vigilance, we now dissect local knowledge to check if it is

reified or commodified and imagined or invented. Thus, this reservoir of strength and resilience called local knowledge that anthropologists endeavored, with considerable success, to bring to the attention of planners, policy makers, and scholars in other disciplines is often lost in a conceptual quagmire that submerges scientific measures and ethnographic insights under cross-cutting ripples of political discourse. Although agency still echoes somewhere in the background, a disquieting aspect of the more immediate intellectual cosmivision has local people swimming in swift and overwhelming currents of power—hapless, witless victims with neither knowledge nor memory. As I see it, the danger in conceptually stripping local knowledge of its adaptiveness and reducing it to little more than political currency and intellectual fodder to be complicated ad infinitum is that we can lose sight of both the human actors and the environment and ultimately negate the agency we have taken pains to foreground.

LOCAL ETHNOECOLOGIES AND GLOBAL CONSERVATION

With regards to biodiversity conservation, we as anthropologists find ourselves contending not only with our ambivalence about local knowledge but also with inherent tensions between local fit and global standards, between diversity and design. The basic problem in trying to reconcile local knowledge with global science is one of incommensurability (Fairhead & Leach 1996, Espeland and Stevens 1998). Local knowledge is experiential and embodied in everyday practice. It is not logically formulated apart from what makes sense from living day to day in one's environment; nor is it inscribed as a set of processes or rules. To treat it solely as information to be tested, or text to be deconstructed, is to ignore the sensory embodiment of local knowledge as well as the attendant emotion and memory that is its power. In short, local knowledge is cosmos more than corpus, praxis and pulse more than precision and

plan. Global science and other essentialisms—including, paradoxically, the critical kind—disempower place and agency in its treatment of local knowledge.

The literature makes promising attempts to reinsert an appreciation of knowing that is acquired in place. This kind of deep, affective knowledge cannot be subject to the same standard or design as global science. Geertz (1983) put it succinctly, “No one lives in the world in general” and leaves no doubt about the significance of dwelling not in a generalized space but rather in a specific place, “local knowledge . . . presents locally to locals a local frame of mind” (p. 12). In arguing why place conceptually precedes space, Casey (1996) noted that, “Local knowledge is at one with lived experience . . . To live is to live locally, and to know first of all, the places one is in” (p. 18). According to Casey, this sense of place “imbues a coherence at the primary level, one supplied by the horizons and depth of experience.” People have to trust this coherence and integrity or they cannot function. They construct and defend memory and identity because without this internal coherence, all faith, hope, agency, and action are impossible. The fact that these are always in the process of construction and repair does not make them any less authentic; one can argue that the emotional investment involved makes them even more so.

The pivotal significance of context and coherence is central to phenomenology, sociology of knowledge, and ethnoecology. Beyond the purely cognitive, or the purely rational, a “feeling” for one's surroundings comes from an intensive apprenticeship in its idiosyncracies and demands and endows one with a habit of mind and a bodily orientation that is honed in place. Merleau-Ponty's “presences” (1962), Bourdieu's “dispositions in positions” and “habitus” (1980, 1987), Ellen's “prehensions” and “affordances” (1993), and Ingold's “dwelling” and “enskillment” (1996, 2000) underline subconscious or preattentive frameworks that emanate from one's locality or sense of place. These predispositions

inform practice; they also suggest perceived latitudes and boundaries of decision making and behavior.

Orientation and navigation in space suggest not only movement but also maneuvering and play. In *Mimesis and Alterity*, Taussig (1993) argues that “this medley of the senses bleeding into each other’s zone of expectations . . . recalls mimesis, the magical power of replication . . . wherein the representation shares in or takes power from the represented” (p. 57). We must keep in mind the magic of this maneuverability to appreciate the situated and dynamic nature of local knowledge. For instance, the Wamira of Papua New Guinea believed in the multiple powers of Tauribariba, “a small stone, no bigger than a person’s outstretched hand” that formed part of a large circle of stones on the seaside hamlet of Irene (Kahn 1996, p. 180). To the local people, Tauribariba recalled their past, established their rights to the land, anchored their taro, and assured them that their gardens would yield abundant food. As he took care of things, they would say, “he walked the night.” To the missionaries, however, Tauribariba was nothing more than a striped rock resembling a chocolate cake. In 1936, when the cathedral was completed, they decided to cement Tauribariba to the pulpit wall to signify the transference of Wamirans’ “worship of stone” to worship of God. As Tauribariba was being consecrated to the church, Wamirans remembered that “he walked the night” and stole him back. Using the stone that “walked the night” as a metaphor for local knowledge, we can ask, to what extent are its attributed powers “real,” or is this question even relevant? Can it be reduced in a colonial encounter to a mere instrumentality; and, if it can, for how long? What purpose does it serve to consecrate it to a higher knowing and fix its character once and for all, especially if it can at any moment be prired free and stolen back?

To argue that knowledge has to be just so for it to qualify as local or indigenous and that anything deviating from this standard of authenticity is not to be taken seriously is like

cementing Tauribariba, the stone that walks, to a church wall. Likewise, to insist on systematic and rational design as a requisite for conservation is to declare all institutional initiatives as legitimate conservation and to denigrate all informal efforts as haphazard sustainability or conservation by default. Although Smith & Wishney’s (2000) theory of conservation specifies that “to qualify as conservation, any action or practice must not only prevent or mitigate resource overharvesting or environmental damage, it must be designed to do so” (p. 493), in Cotacachi, Ecuador, men and women “know” their crops by remembering. They also “walk their seeds,” displaying and exchanging them along the way to enrich and revitalize their germplasm. For Andean farmers, biodiversity conservation is what they do (or, with great sadness, fail to do) as they cultivate their fields and cook their meals. Thus, according to Pedro Lima, a 45-year-old farmer (Nazarea 2005),

[w]hen I was a child, we used to grow everything we ate. My favorite food was quinoa and corn soup. We ate chuchuca, barley, wheat, morocho (a kind of corn), corn gruel with brown sugar, and salty corn gruel . . . To make a favorite salty dish, we used yellow and white carrots, potatoes, and wild potatoes that we gathered in the mountain. It was small and not bitter and harvested the same time as corn . . . I would like to have mashua (an Andean tuber) again, I like it because it is sweet. When one is tired, it is nice to have something sweet. The oca (another Andean tuber) is like that, although when the harvest is coming to an end, it must be cooked with salt . . . Yesterday’s foods also had less spices. We used lard, salt, onions, cabbage, aliyuyo, and rabano (wild herbs) from the stream. (p. 131)

MEMORY AND COUNTERMEMORY

Like local knowledge, memory has risen from obscurity to a legitimate scholarly focus and

then assailed by some form of crisis. With respect to the former, the burden of legitimacy debunked as folk anything that failed to meet scientific verification, and subsequently, the burden of authenticity dismissed as false anything that was contaminated with outside influences or motivations. With respect to the latter, doubts about continuity, reliability, and authenticity—at times lumped together as the “afterwardness” of memory (Laplanche 1992; Radstone 2000)—brought into question the genuineness and accuracy of memory. Lately, both have undergone some form of renaissance. Rigney (2005) noted that we need to look at cultural memory as “working memory,” one that is “constructed and reconstructed in public acts of remembrance and evolves according to distinctly cultural mechanisms” (p. 11). What is important to remember, particularly in relation to biodiversity conservation, is that memory in use (no less than knowledge in use) metamorphoses constantly and is thus never rigid, uncontaminated, or strictly “authentic.” Cultural memory embedded in food and place enables small-scale farmers and gardeners to resist the vortex of agricultural commercialization and monoculture by continuing to nurture a wide variety of species and varieties in their home gardens and their fields, sustained by sensory recollections regarding the plants’ aesthetic appeal, culinary qualities, ritual significance, and connection to the past (Nazarea 1998, Villadolid & Apffel-Marglin 2001, Oakley & Momsen 2005).

The resurgence of interest in memory is fueled by the desire to recover personal narratives that have been fragmented or erased and to understand better how the past is recalled or reconstructed. This is especially so with regard to periods of colonization and genocide as well as specific events such as the Holocaust and the two world wars, which do not completely yield to historical analysis (Zerubavel 1995, Assman 1997, Uehling 2004). Memory is not history; to expect it to possess the same virtues is to underrate seriously its potential to deliver more insights but of a different kind.

Some scholars have even argued that the concept of memory stands in opposition to, and tension with, the concept of history: “History seemed to claim Truth and to vouch for an ‘objective’ reality that would correct memory’s seemingly subjective, unreliable stance in a world of objects” (Weissberg 1999, p. 11). But a new scholarly interest predicated on longing to recall if not to relive the past took root, ironically, in history itself with the publication of Nora’s *Les Lieux de Memoire* (1984–1992). Nora mourned the loss of what he called “*milleux de memoire*” or the milieu of memory represented by rural life before the advent of modernity. He noted that “the real environments of memory are gone” but that present-day memory “crystallizes and secretes itself in the *lieux de memoire*, or sites of memory” and lamented that “modern day memory is archival memory” (p. 7).

From interest in philosophy on the phenomenology of remembering and forgetting, to the preoccupation in psychoanalysis with seduction, trauma, and fantasy, to anthropology’s fascination with identity politics in relation to transnationalism and postcolonial memories, and finally to history’s own inspired quest for “history from below” and “history of everyday life,” the study of memory became a consuming “past-time” (Tonkin 1992, Sutton 1998, Harkin 2003, Gordillo 2004, Moran 2004). But as memory’s stock rose, its nature and function became even more enigmatic. As Boutin et al. (2005) observed,

[i]t has become increasingly clear that the construction of memory is imbricated in a complex network of social, psychological, political and cultural practices spanning a wide range of scholarly disciplines. We cannot understand how collective memories gain currency or, a contrario, slip into oblivion, without understanding the dynamics of power within the societies in which they circulate. Equally important is an understanding of the cultural forms in which memories are inscribed. (p. 5)

Pre-dating Nora, Maurice Halbwachs was interested in how memory is generated and sustained within groups such as those based on kinship, religion, and class. In *La Memoire Collective* (1950) he emphasized that memory is social, collective, and “lived.” For Halbwachs, “people acquire or construct memory not as isolated individuals but as members of society” so much so that the analytical distinction between individual memory and social memory is meaningless. For social or collective memory to cohere, communication between individuals belonging to the same social group and transmission across generations are crucial. Connerton, writing *How Societies Remember* (1989), sought an explanation for how this communication of social memories works and suggested that, “if we are to say that a social group, whose duration exceeds that of the lifespan of any single individual, is able to ‘remember’ in common, it is not sufficient that the various members who compose that group at any given time should be able to retain the mental representation relating to the past of that group. It is necessary also that the older members of that group should not neglect to transmit these representations to the younger members of the group” (p. 38). The key, according to Connerton, is in commemorative ceremonies that are performative, enacted in ritual and incorporated in the body as a form of “habit memory.”

Although memory was conceptualized by Halbwachs as “collective,” and by Connerton as “performative,” the concern eventually shifted to the construction of cultural memory. Following a shift in emphasis from the social group to its mode of production, “a social constructivist model of memory evolved taking, as its starting point, the idea that memories of a shared past are collectively constructed and reconstructed in the present rather than resurrected from the past” (Rigney 2005, p. 14). Cultural memory is vital for people underserved by history, referred to by Wolf (1982) in relation to Western Europe as “people without history.” Borne of unofficial accounts of people who are persecuted, con-

verted, displaced, and in other ways marginalized, it is essentially counter-hegemonic and subversive, thus constituting a counter-memory (Boddy 1989, Lipsitz 1991). Selective and embellished to secure the present and engineer the future, cultural memory forms an alternative consciousness and identity. Thus, according to Zerubavel (1995), “The master commemorative narrative represents the political elites’ construction of the past which serves its special interests and promotes its political agenda. Counter-memory challenges this hegemony by offering a different commemorative narrative representing the views of marginalized individuals or groups within society” (pp. 10–11).

If repressive hegemony imparts wounds, counter-memory assuages the pain and can lead to recovery by foregrounding healing narratives, performances, and practices. Seduction and trauma in relation to memory is more frequently addressed in terms of experiences of sexual abuse and repression of sexual fantasies that lead to later neuroses (Freud & Breuer 1974 [1893–1895], Freud 1976 [1900]) and hardly in terms of larger seductive and cataclysmic events such as those that concern us here. Nevertheless, it is a viable framework from which to view political upheavals and global climate changes that threaten whole landscapes rich in biodiversity as well as the initially hypnotic but ultimately disorienting effects of development and commercialization (Steinberg & Taylor 2003, McDowell 2004, Cruikshank 2005). With respect to plant genetic erosion, trauma can come from vigorous extension of modern varieties and technological packages to the extent that all choices in crops, their cultivation, and their preparation are “disappeared” (Fowler & Mooney 1990, Shiva 1993, Dove 1999). These trends, along with the ubiquity and glamour of Western-style, store-bought consumables, banish attachment to origin and anticipation of seasons, thereby precipitating an “epoch of tastelessness” (Seremetakis 1994). The centrality of rape as metaphor for ill-conceived development projects, for politically uninformed (or

politically motivated) plant breeding and introduction, and for unethical bioprospecting and biopiracy can hardly be called inappropriate. As Connerton (1989) pointed out,

[a]ll totalitarianisms behave in this way: the mental enslavement of the subjects of a totalitarian regime begins when their memories are taken away. When a large power wants to deprive a small country of its national consciousness, it uses the method of organized forgetting . . . What is horrifying about a totalitarian regime is not only the violation of human dignity but the fear that there may remain nobody who could ever again bear witness to the past." (pp. 12–14)

Research into cultural memory is usually approached through the analysis of texts, events, and rituals where memories of the dominated sediment. In reflections on post-colonial memories and identity politics, there is a gradient from countermemories inscribed in subversive discourse to those incorporated in performative ceremonies. To give just a few examples, in *Fragmented Memories*, Saika (2004) examined "buranjis" or chronicles of glorious exploits written on the bark of aloe wood to unearth a distinctive Assamese identity in the context of contemporary India; in *The Politics of Memory*, Rappaport (1998) highlighted native historian's oral accounts of changes in the Colombian Andes as opposed to official historical accounts; in *Embodying Colonial Memories*, Stoller (1995) considered Songhay spirit possession and broader social relations as a sensual reconciliation of history, and in *The Weight of the Past*, Lambek (2002) focused on Sakalava spirit mediums who "bear" the past through ritual performances that give body and voice to the ancestors. Stoller (1994) argues that there is a significant difference between the merely discursive and the performative because ". . . embodiment is not primarily textual; rather, the sentient body is culturally consumed by a world filled with forces, smells, textures, sights, sounds and tastes, all of which trigger cultural memory" (p. 636).

Texts, events, and rituals encode memory and powerfully evoke marginality and resistance, but they require a stage and a group of experts, minimally setting up a distinction between messenger and audience. More important in relation to biodiversity are memories of places and food, of trails followed, gardens tended, and meals savored in solitude or in the company of one's folks. These sensory memories constitute "a vast social unconscious of sensory-emotive experience that potentially offers up hidden and now inadmissible counter-narratives of once-valued lifeworlds" (Seremetakis 1994, p. 10). Like fairy tales, they help visualize and congeal a "wish landscape" (Bloch 1988) over a constraining one thereby enlivening alternatives—including an odd array of plants and other living things—that may have been buried or purged. Subsistence farmers, indigenous peoples, heirloom seedsavers, and women home gardeners nurture memory in private, more sovereign places such as sacred groves, tangled plots, and steaming kitchens. In these interior landscapes, cultural memory is not simply articulated or performed; it is materialized in "old timey" or archaic plants that persist, in seeds and stories that travel, in recipes that recall intimacies and comforts of the past and reinvigorate the present.

In secret recesses close to the heart, strength and hope emanate from invisible depths of connection to the past. Thus, the Kalymnians in Greece insist that their guests partake of grilled octopus and roasted goat "to remember Kalymnos by" (Sutton 2001), and Sardinians in Orgosolo consume and serve only bread baked, and meat roasted, in wood-fired rustic ovens and refuse to pay attention to any political talk that is not "cooked," meaning simmered in the intimacy of local social relations (Heatherington 2001). As for immigrants, Malaysians of Peranakan descent in Australia gather the ingredients for *satay babi* (skewered pork) in the ethnic market and prepare the dish the traditional way as a "means of 'regaining touch' through sensory relocation" (Choo 2004), and Vietnamese in

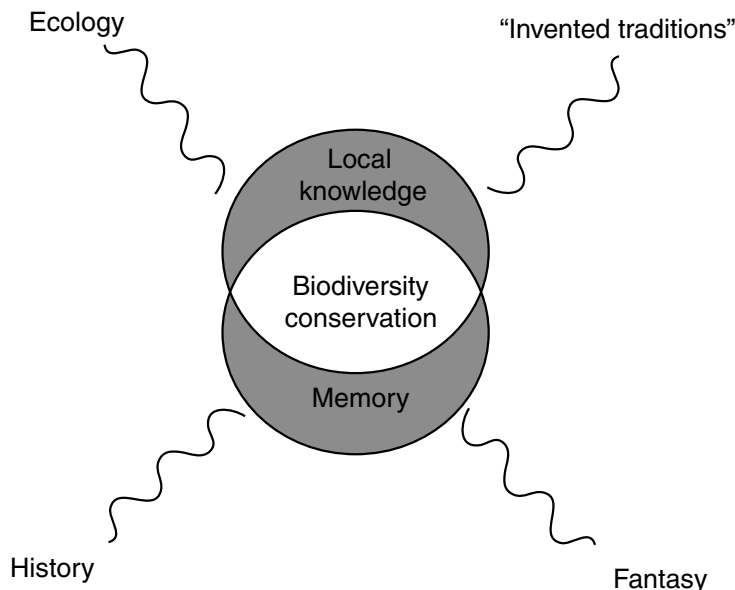


Figure 3

Recreating the milieu of biodiversity.

Exterior landscape

the United States layer sweet potatoes, lemon grass, bitter melon, and banana plants in furrows and trellises in their yards and stir herb-flavored *pho* (noodle soup) in their kitchens to summon an “out of place sense of place” (Nazarea 2005). In a book eventually published by her daughter under the title, *In Memory’s Kitchen*, a starving Jewish artist gathered recipes of rich cakes and savory dumplings from other women in the German concentration camp of Theresienstadt to send to her daughter beyond the prison walls and across life and death with the injunction, “Let fantasy run free” (de Silva 1996). What is special and promising about sensory memories in connection with biodiversity conservation is that it is difficult to tell if we are dealing with sites of memory or with the milieu of memory itself, one that allows for both recollection and experience. Definitely, it is not “archival memory,” and it challenges rather than surrenders to the purposeful straightening and organized forgetting imposed by modernity and other totalitarianisms (Figure 3). It seems possible that comfort food and familiar places

Interior landscape

enwrap people with warmth, flavors, and aromas that make the milieu itself transcendent and tangible.

CONSERVATION AS MEMORY WORK

In the field of environmental conservation and landscape restoration, ecologists have come to the conclusion that the ability of ecosystems to rebuild after large-scale natural and human-induced disturbances is dependent on “ecological memory.” According to Bengtsson and her coworkers (2003), ecological memory is the network of species, their dynamic interactions, and the combination of structures that make reorganization possible. They further pointed out that there are two principal components of ecological memory: one internal or within-patch and the other external or outside reserves. The former consists of “biological legacies” that serve as foci for regeneration and growth, whereas the latter consists of resources outside the disturbed area such as ecological fallows and dynamic reserves in

the surrounding landscape. Hence, “for a nature reserve to function in the longer term, there has to be a buffer to disturbance in the landscape that conserves the capacity to reorganize and recover from perturbations. There has to be ecological resilience” (2003, p. 390).

In cultural terms, “living” or “working” memory is the equivalent of within-patch legacies on which reconstruction can be based. But just as important are external reserves of memory from dynamic repositories outside the traumatized sphere. Therefore, reconstruction for biodiversity conservation should not only recover internal “pockets of memory” (Nazarea 1998) but also draw on archived memory, to the extent of copying and recycling from other communities. Memory work or active “re-membrance” is called for because of the gravity of historical events that bring about repression or loss of memory (Haug 2000, Radstone 2000). Colonialism, for instance, can pose such a disorienting dialectic between European and indigenous consciousness that the only recourse for dealing with postcolonial trauma is to artfully hybridize or purposely forget (Comaroff & Comaroff 1997, Abercombie 1998, Cole 2001). Restorative memory work should facilitate not only transmission from one generation to another but also jump across memory gaps where transmission has failed or was thwarted. Boutin et al. (2005) referred to these gaps as “cognitive and ethical void(s) arising

from irreparable loss” and pointed to the need to “mobilize an imaginary relation to the past for fundamentally different conceptions of the present” (p. 8). Repair and circulation of cultural memory to underwrite conservation of biological and cultural diversity can start with local historians and bards who are “relentless recorders” of an alternative past (Connerton 1989) or with ordinary men and women who hold on to their cherished seeds and commensal rituals and pass these along to their children. The goal of memory work in this case is to summon aesthetics, emotion, and imagination to inspire a swell of pride and a sense of possibility that can effectively counter “monocultures of the mind” or hegemonic knowledge structures that destroy diversity by dismissing local alternatives from consideration (Shiva 1993). In this manner, communities can fan memory’s own diaspora to engage the silence and counter the trauma of the displaced, the disinherited, and “the disappeared” (Figure 4).

In *Defacement*, Taussig (1999, p. 78) referred to Pitt-Rivers’ (1971) characterization of the north (typified by the British) as honest, industrious, and repressed and the south (typified by the Andalusians, or the people of the Sierra) as “anything but,” as “the mischief of distinction.” This form of mischief can put up insidious dichotomies and arbitrary standards of purity and authenticity that diminish local knowledge and memory and their potential

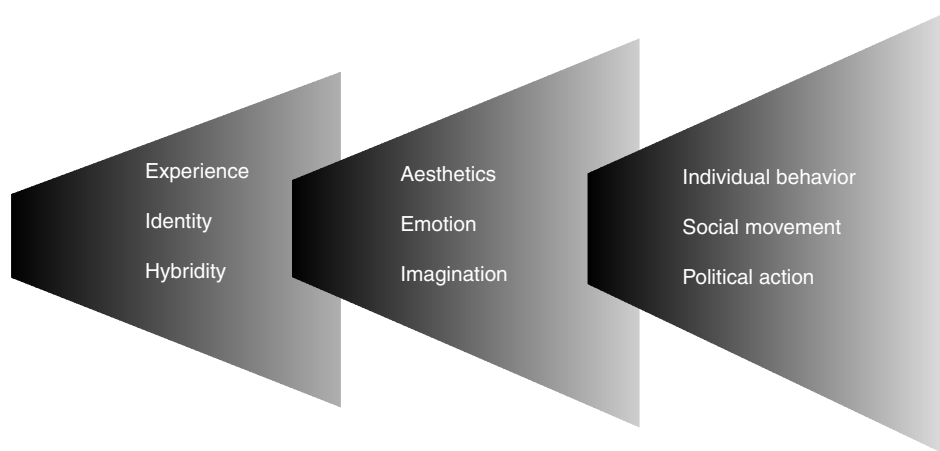


Figure 4
Interlinked concepts
in memory work

contribution to biodiversity conservation, and environmental conservation in general. Mischievous polarization is “anything but” helpful in revitalizing the agency and resistance as well as the memory and resilience needed for countering the erosion of biodiversity. It is incongruous that while today essentialism is deemed highly objectionable in most areas of concern for anthropologists, it is demanded in others, and although dynamism and situatedness are lauded in most cases, continuity of transformed or transferred forms is rarely accepted. Trauma, repression, and silence are very real consequences of encounters characterized by significant power differentials,

be these sexual, economic, or technological in nature. Reinscription and reembodiment countering loss of cultural memory and biological diversity can come in the form of “concrete utopias” (Bloch 1988) where interior landscapes are mapped onto exterior landscapes through objects and stories that stimulate sensory recall and affective engagement. This cross-mapping will have to tolerate a certain degree of ambiguity and fantasy, of borrowing and bricolage. Where communities have suffered from the loss of variability, a contagion of emotion can conceivably bring about restorative social movements of a subdued but no less powerful kind.

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Figure 1

V. Nazarea with members of culinary revival group in Cusco, Peru.



Figure 2
Mother, daughter, tubers, and seeds in Cotacachi, Ecuador.



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