of change is one of a marginal change—like a differential equation of what is happening—then we can, or rather we must, bring a battery of those persons' presumptions and schemas for interpreting the apparent results of action to bear on what new knowledge may ensue. Raw nature obtains very limited access and at best only a small voice through this tight grid of human constructions.

But perhaps some persons are as literal-minded as the old ethnographers were and use conventional representations to think in unconventional contexts. Baktaman cultivators sometimes wonder, as I found them doing, whether, given that the taro can smell, it can also hear. (It probably cannot see, because it is beneath the ground.) Smell also plays a certain role in their ritual: they blow wild ginger in contexts that I never felt I understood. Perhaps odor serves as a model, an image, for action at a distance—a problem I once heard them spontaneously address in wondering how it was that the ancestral skull in the temple could effect growth in the taro of distant gardens. Change in every tradition of knowledge surely arises from within it, through idle speculation, and by transposing models and mixing metaphors, as well as from the external feedbacks from the world that are interpreted in experience. Such speculation must press on the boundaries of conventional knowledge. Can we discover and describe the specific form of the reality checks that such speculation runs into? Surely, the very fact that change in traditions of knowledge is demonstrably path-dependent shows us that these human constructions are not subject to any massively external test of nature and that we need a much less simplistic way to model the interpenetration of a corpus of knowledge and its set of applications to action on the world.

To unravel more of the processes and dynamics of the human varieties in knowledge, it seems that we have an unending program of discovery and analysis ahead of us.

Comments

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Barth has managed a significant conceptual achievement in proposing to develop a comparative ethnographic analysis on "how bodies of knowledge are produced in persons and populations, in the context of the social relations that they sustain." In this proposal he identifies three interconnected faces of knowledge: a substantive corpus of assertions, a range of media of representation, and social organization. This schematic framework offers new insights on the interpersonal and cognitive foundations of cultural meanings.

Many social psychologists have sought to identify the interpersonal factors that determine knowledge distribution, forms of coherence in shared knowledge, and the trajectory of change in cultural meanings. I agree with Barth that meaning construction, transmission, and application in daily social transactions are symbolic actions that take place among socially situated persons with particular communicative intentions. In psychology, the preferred subject of theoretical discourse is mental process. Robert Krauss and I have articulated the social cognitive processes that mediate the development of shared meanings. Our claims (1998:53) are as follows:

Using language to represent a state of affairs can evoke or create an internal representation that differs from the internal representations of the same state of affairs evoked or created by other means of encoding. The internal representations evoked or created by language use can affect a language user's subsequent cognitions. The form that a linguistic representation takes will be affected by the contexts of language use, including the ground rules and assumptions that govern usage; audience design; and the immediate, ongoing, and emerging properties of the communication situation. Through communication, the private cognitions of individuals can be made public and directed toward a shared representation of the referent.

These claims link the use of language in communication to the emergence of socially shared cognitions, which are core elements of cultural meaning systems. As Langacker (1967) argues, when a thought is translated into a speech the speaker must cast it in a form that is appropriate for linguistic operations and pertinent to the communication function. Thus, interpersonal communication is the primary process by which private thoughts are socialized. Audience design in communication provides a good illustration of how a private idea is transformed into a shared representation. Typically, a communicative message is addressed to an actual or potential audience and has been formulated to be understandable by that audience. Regardless of whether the audience consists of some specific other person, a specifiable collection of individuals (students in an introductory anthropology lecture), or a category of individuals (readers of CURRENT ANTHROPOLOGY), in formulating communicative messages a speaker must take the addressee's knowledge, beliefs, and motives into account. Speakers describing the Star Ferry Terminal in Hong Kong refer to it differently depending on the listener's apparent familiarity with Hong Kong. Thus, inevitably the speaker will modify the communicative message in the direction of the assumed knowledge of the listener. Moreover, the verbal representation of the referent in the communicative message could overshadow the speaker's original mental representation of the referent. Verbal overshadowing is particularly important for internalization of shared representations because it enables shared representations established in communication to replace private representations.

As Barth mentions, people sharing a cultural context are positioned in a common social organization and participate in similar social practices. Because communicative acts are goal-directed behaviors, culturally salient perlocutionary intentions (intentions to bring about some particular consequence by an act of speaking) may also constrain the pattern of language use within a cultural group, evoking similar linguistic representations and giving rise to shared meanings.

In short, there are different metaphors and modes of discourse in anthropology and social psychology for describing the "processes and dynamics of the human varieties in knowledge." An interdisciplinary perspective might offer a more complete picture with different layers of detail and generality. One facet of Barth's conceptual accomplishment is that he offers a concrete analytic framework for establishing common ground for the two disciplines to communicate their insights on how cultural meanings develop and change in interpersonal transactions.

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While he is still best known for his early work on political leadership and ethnic identity, Fredrik Barth has now devoted the majority of his long career to the anthropology of knowledge. We can detect the beginnings of this project as early as 1966, when he wrote, "The problem as I see it is to understand how any degree of systematization and consistency is established and maintained between the different values that coexist in a culture" (1966:12). Rejecting structuralist and functionalist accounts that attribute cultural integration merely to logical or psychological consistency, Barth set out to investigate the *creation* of consistency through personal transactions and other social processes. He took as his inspiration a statement by Boas, originally published in 1896: "If anthropology desires to establish the laws governing the growth of culture it must not confine itself to comparing the results of growth alone, but whenever such is feasible it must compare the *processes* of growth" (Boas 1940:280, emphasis added; cf. Barth 1966: 22).

Comparing processes of cultural growth is exactly what Barth has done in New Guinea and Bali (not to mention the several other societies in which he has conducted fieldwork over the past 35 years). The resulting monographs (Barth 1975, 1987, 1993) and articles (e.g., 1989, 1990, 1992) constitute an exemplary body of work, perhaps the single most important model for empirical research within the emerging neo-Boasian paradigm (e.g., Rodseth 1998, Bunzl 1999, Lewis 2001). Here I would like to focus on the Boasian metaphor of "growth" as a way of analyzing both the scope and the limits of Barth's anthropology of knowledge.

The concept of growth is deeply ambiguous. It collapses together the notion of *development*, such as the growth of trees or children, and the notion of *spread*, such as the growth of an epidemic or a religious tradition. Both kinds of phenomena may be described as "growth," but the first kind implies gradual change within a bounded and persisting system (like a human body), while the second implies more or less faithful *replication* within an ever-shifting social network. When Barth investigates the growth of knowledge, which kind of growth does he have in mind?

Taken by itself, his Mintz Lecture might lead one to think that Barth is mainly interested in the first sense of growth, that is, development within a system—the system of knowledge, in this case, found within a given society. Indeed, for present purposes, he deliberately omits the many "exogenous factors" that he knows must impinge upon the "systemic local processes" that he is attempting to model. Such strategic simplification is a necessary step—if not a necessary evil—in all model building, and there is little doubt that Barth gains insights into endogenous processes by temporarily ignoring exogenous ones. In particular, he is able to shed considerable light on the issues of (1) how knowledge in the Ok region has *changed* and *diversified*, given the supreme value that the Baktaman place on cultural continuity, and (2) what makes Balinese knowledge *persist* and *cohere* over such a wide area when there is no churchlike authority to curb "erratic local innovation." Both change and persistence are seen here as endogenously determined processes, as in the growth of a tree or a child.

Yet a careful reading of Barth's other works, especially *Cosmologies in the Making* (1987) and "The Guru and the Conjurer" (1990), makes it clear that he is intensely interested in cultural growth as a *distributed* process—a matter of knowledge spreading from individual to individual within a social network and perhaps spilling from one network to another through the activities of "gurus" and other long-distance travelers. To balance our image of Barth's approach, it is worth remembering his emphasis in an earlier context on the way knowledge often slips the grid of existing institutions: "I wish to grasp general features of the management and transmission of knowledge, and the resulting informational economy of communities and regions, not the structure of particular instituted relations" (1990:648). A related aspect of Barth's approach is his emphasis on the factors that make some forms of knowledge more "portable" or more "catching" than others (see also Sperber 1996). In the Mintz Lecture we see how a corpus of knowledge is dependent on endogenous media and social organization; what we do not see in any detail is how a given idea or assertion *escapes* that corpus of knowledge and spreads *beyond* its original medium and social milieu. The limitation of this approach has been identified by Barth himself (1990:641), and the question he posed in that earlier context is especially fitting for an occasion honoring Sidney Mintz: "How might we do better, and start building a social anthropology which could inform regional and historical syntheses, and thereby achieve the dynamic