Title
Culture, Cultural Models, and the Division of Labor

Permalink
https://escholarship.org/uc/item/57q335z4

Author
Kronenfeld, David B

Publication Date
2005-05-23

Cultural Models for Action: Systems of Distributed Knowledge in a Non-Monolithic Universe

Presentation for 3rd Lake Arrowhead Conference on Human Complex Systems

19 May 2005

David B. Kronenfeld
Department of Anthropology
University of California at Riverside
Riverside CA 92521
david.kronenfeld@ucr.edu

Culture can be--and has been--seen by anthropologists and others in a variety of ways. It represents a kind of emergent system, and many have concentrated on the properties of one or another specific emergent system--or on properties general to all such systems. Others have concentrated on the knowledge--social, environmental, or whatever embodied in such systems. And some, fewer I think, have concentrated on some of the ways in which the system emerges from what individuals experience and do.

My concern here is close to the last of my list, but includes no particular claims about the actual or specific psychological (or logical systemic) processes by which the system emerges. Instead, I want to suggest some constraints on one variant of what emerges--and some apparent consequences of those constraints. In particular, I've been trying lately to think about likely design constraints on Cultural Models, one of the kinds of subsystems that seem to make up culture.

Culture in this conception is intrinsically social, and thus contrasts with individual knowledge. Culture is a property of communities rather than of individuals. Thus, for me, culture is a kind of "collective representation"-- using Durkheim's term here for something systematic that is represented in the minds of members of a community-- and contrasts with "individual representations"--the unique understandings and knowledge that we each have and that structure our mental and behavioral existence. Just by way of having a clear way to talk about these things--not because there is anything either magical or conventional in the labels, I am using "cultural model" to refer to one

kind of collective representations (having to do with action)--made up of some mixture of overlapping shared and interlocking distributed knowledge--and "schema" to refer to the individual cognitive structures that embody our individual knowledge and drive our behavior. I don't think it is particularly relevant here, but should anyone care, my understanding of schemas derives pretty much from Piaget.

The thing about culture is not just that it is shared but that there is a presupposition among members of any given cultural community that relevant cultural knowledge is dependably shared by members of that community. The idea of distribution means that not everything in a given cultural system is shared by all members of the relevant community, but that there exists a kind of intellectual division of labor--where individuals each have special individual knowledge which enables each to make special individual contributions to common enterprises, but where enough (including basic conceptual structures) is shared to enable these individuals to coordinate their separate contributions and make sure all are addressing the collective goal in the manner that they intend (whether that be cooperation, competition, or some version of paying no attention).

But we all each belong to a variety of subcultural communities within the wider culture, and many of us participate at one time or another in cultures quite different from ones we participate in at other times--a situation which, relative to languages, is called "code switching". This means that no specific culture is ever constitutive of anyone's (our !) inner beings, and no member of any cultural community can be considered more "real" than any others   But, we, as native members of cultural communities, think and act as if culture is "objectively" out there and held by dependably and definitively by members of the relevant community. We, as natives, each think and act as if cultures have true or real members, but each know that we ourselves are NOT in that set; the culture, however,--each culture--is made up totally and only of people like us.   (In this regard culture is like language.)

Cultural knowledge is and has to be systemic--productive in a generative manner. That is, it is not something that we memorize, but rather knowledge that we constantly and creatively apply to ever changing specific cases or variants of general situations.

Specific cultural knowledge in general is learned (vs. being innately present) but not explicitly or formally taught, which means that it has to be easy to learn, given the ways in which we normally learn stuff. (The learning here is mostly Piaget's "sensory-motor" stage of knowledge in action--vs. his "concrete operational" stage where we

raise our knowledge to consciousness and learn how to describe its concrete system, and vs. his "formal operational stage" where we can frame general, abstract generalizations or propositions about relevant systems.)   (Presumably the ways in which we pull information out of the world of our experience are adapted to the kind of knowledge we use and to the ways we organize and apply that knowledge--and vice versa.) The ways in which our knowledge expands, fills in, and adapts as we go through life mean that our knowledge structures have to be flexible and adaptable--presumably, in part, via making use of hierarchical structuring (as in taxonomies) wherein a given category can later be subdivided into some set of more specific categories ("horse" into "stallion" vs. "mare", "cow" into "cow" vs. "bull") and in part via making use of "fillers" (like "dummy" variables) wherein a content-less component can later be replaced.by one with some content--and that one in turn later by something more elaborated. (The question of the degree to which our knowledge of some activity is "complete" vs. merely adequate to elicit from the social and natural environment whatever else is needed is raised here. How much reliance on what kinds of context is built into what kinds of cultural knowledge structures ?)

As learners we act as if there is an objective culture out there, and we read members of communities we interact with or observe as being representative of their communities' cultures, and we home our learning in on what seems to go with each community. We act as if each community embodies some Platonic cultural essence when we try to learn--much in the way that we intuit the abstract nature of true circles from our experience with the many imperfect ones that we encounter even as we discard all of the irrelevant features (such as size, color, location, etc.) of these experienced circles--and in much the same way that we each anew constitute the grammar of our native language from the wildly skewed and degenerate sample of speech acts that we experience as young children.

Take "culture", following one (though certainly not the only) traditional anthropological approach, as the knowledge it takes to behave appropriately in a given community. This knowledge can be of several sorts. 1) One sort is people's knowledge of the systematic relationships of categories within a given domain to one another. We might speak of this sort of knowledge as "**cultural conceptual systems**", and examples might include kinship terminologies, ethnobotanical classifications, systems of disease categories, soil types, makes and models of cars, and so forth.

2) We have the general organizational principles that members of a community bring to their analysis or

understanding of some novel problem or condition. We might speak of this knowledge as "**cultural modes of thought**", and examples might include Gregory Bateson's examples of Iatmul *eidos*, Schank and Abelson's "plans", Bennardo's approach to Tongan "radiality", and Shore's idea of "foundational schemas".

3) We have the specific knowledge that members of a community have about normal, expected, or interpretable behavior in some known situation--whether used as a basis for constructing ones own behavior or for interpreting the behavior of others. Such "**cultural models of action**" (or, for short, cultural models or CMs) link values, goals, motives, emotional states, and knowledge (of things and processes, classifications, social relations, etc.), as relevant, together in a conventional representation of behavior. Relevant examples of the approach include Schank and Abelson's restaurant scripts, Frake's "Structural Description of Subanun Religious Behavior", and some parts of B. N. Colby's analysis of Ixil Maya diviners.

Some cultural systems, like language, seem to have a complicated enough, elaborated enough, and regular enough set of entities and relations among the entities to lead to a fairly complex and regular structure (even if organized around some relatively small set of regular and simple operations) that holds pretty consistently across subcultural differences. Kinship terminologies and ethnobiological classifications (under our "cultural conceptual systems" head) come immediately to mind, but also perhaps some games and rituals within our "cultural models of action" can usefully be seen this way--such as informal pick-up basketball.

But many other cultural systems seem much simpler in formal structure, but instead exhibit a different kind of complexity--via the variety of inputs and contingent judgments they embody. Cultural models seem mostly to fall in this latter category. The ways in which their inputs get joined, the representations they get formed into, and the conditions that get joined to actions in them seem often to vary significantly from one community to another-- and maybe even to distinguish one community or kind of community from another.

I want now to concentrate on cultural models of action that embody the kind of contingency and variety just noted. I want to emphasize that I do not consider such models to be the whole of culture--or, even, as indicated earlier, the whole world of cultural structures of collective cognition. I do want to suggest, though, that something like what I am discussing has to be one essential component of culture. I want to detail a bunch of propositions (a mix of assumptions, thoughts, and observations) that I think have to apply to whatever form such models take--in

addition to what I have said above about cultural cognition in general. I do much more tentatively have some suggestions to offer about the actual form and shape of such models--but these suggestions will come later, and are indeed only tentative !

My first assumption is that cultural models (CMs) model specific cultural content (sort of maybe like what Schank and Abelson were going after with their old restaurant simulation) in areas that are regular (but not automatic or cut-and-dried) and that involve choices where the choices involve meaningful interpretative differences.

My second is that actual action is individual, and driven by individual cognition ("schemas" ?), and that individuals then draw on CMs in deciding how to act and/or how to interpret the actions of others--where the set of CMs that an individual is aware of constitutes a kind of reference library. Individuals instantiate one by adapting its generic attributes (default parameters, if you will) to the situation at hand. This instantiation is still only an interpretative/action frame in the mind--and individuals can switch back and forth--from moment to moment, a la gestalt psychology--between different instantiated CMs that are mutually contradictory--the kind of plasticity (and maybe superficiality) implicit in the old saw, "When in Rome act as a Roman". The different CMs can represent either alternative interpretative scenarios or different cultural or sub-cultural constructs, or different values or goals, or so forth.

In this view the CMs are NOT deeply internalized and do NOT become part of the actor/interpreter's "self", and the switching among them is on the order of the kind of "code switching" that linguists observe when people switch from one language or dialect to another

This view implies several kinds of interesting questions for research and reflection regarding the specific nature of CMs:

1) What actual form do CMs take, given that they have to be productive systems with some sort of generative capacity (vs. any kind of simple memorization),

2) how do individuals refer to CMs and link them into their individual schemas,

3) how do individuals actually learn CMs--since these are rarely formally defined or isolated, but more often seem generally implicit and subconsciously held, even if occasionally raised to consciousness especially in situations of contrast or conflict,

4) how are old CMs are adapted to changing circumstances and new CMs created.

5) what roles and perspectives (as well as other presuppositions) are built into one or another CM, and how do these presuppositions affect choices among alternative CMs in different situations ?

Another set of interesting questions concerns the formal differences between individual and collective cognitive structures (individual and collective "representations" by at least one reading of Durkheim's conceptual framework)--given the ways in which the latter are learned (inferred from experienced regularities of behavior and interpretation in different communities--but from experience which is way too thin for any actual logical induction). That is, CMs can provide action implications (of some situation, goal, etc.) , but only individual schemas actually generate action.

CMs have to be in some sense "generic" and "abstract"--leaving out all "extraneous" detail that characterizes any actual experienced event. To this end I've found it useful to distinguish the CM itself from its "instantiation" (the substitution of the concrete parameter values of a particular application situation for the default parameter values built into the CM itself--where "parameter values" refer to intrinsically relevant information, and where the result of "instantiation" is still a cognitive construct) and from its "realization" (a term borrowed from Trubetzkoy's analysis of phonology)--the actual behavioral implementation of the CM, which then includes all the incidental (often simply accidenta)linformation that is included in the event.

In a given experiential situation, several alternative CMs may each be instantiated--with the person involved then picking the one which--for instance--produces the "best" outcome. At any given moment--cf. the gestalt idea--any given person will only see one instantiated CM as being realized in a given situation, BUT different participants or observers may see different CMs as being instantiated--as long as each is more or less consistent with what is experienced--, and the same person may even flip back and forth between alternatives (e.g. the young lady who is the object of the young man's attentions, may go back and forth between "he loves me, this is

'true love'." and "he's a player, and only trying to get me into bed.").

Finally, there are the implications of the fact that cultural situations grade into one another, as also do the communities in which culture is held. We can (in the context of Schank and Abelson's study, say) construct a taxonomy of restaurant types, but in our actual experience the extended versions of the types that we experience grade into one another (even if not always in a strictly "continuous" fashion). Similarly, we can construct some variety of intersecting taxonomies to account for the interrelations that exist among the various cultural and subcultural communities to which we each belong, and/but these two can be experienced as a kind of grading. I'm not sure how specifically I want to mean "grading", and I am not talking "fuzzy sets" as an analytic approach, but am trying to convey the variability and fluidity of our cultural/cultural-community associations when looked at in detail. My point is that it seems unlikely that we come up with completely autonomous CM sets for each specific cultural community that we experience (participates in, observe, hear about, ...). Instead, I infer, we have to have some way of coding generalities that obtain across sets of communities, while learning/storing the details on which the included communities differ. But since the communities we experience represent some variety of cross-cutting oppositions and hierarchies, our (native performer) task (in keeping track of these commonalities and distinctions while also pulling out coherent CMs that we can turn to for guidelines for generating or interpreting behavior in actual concrete situations) seems interestingly complex. This is the problem that I want to focus on in the remainder of this presentation.

The problem concerns how people in cross-cutting communities (culture bearing groups) keep in mind and keep track of the inter-related sets of cultural models that are linked to cross-cutting communities and that apply to inter-grading situations. Thought of this way, it does seem to go Einstein's "hitting a moving target from a moving platform" one or two better.

The problem is sort of shown by my illustration in figure 1. (The figure was originally constructed for a paper/presenttion on ethnicity, but applies equally well to my present discussion.)

FIGURE 1 GOES HERE

I would like to approach the problem, as before, via a list of propositions that seem to me likely to obtain.

a) Entities or activities are always, each, parts of a variety of hierarchies: Restaurants exist in a kind of taxonomy of basic types; but cross-cutting those types is information about ethnicity and region that is often also hierarchically organized, and there exist social class/wealth/expense levels as well; and so forth. These hierarchies often seem expandable. They also are grouped into cross-cutting categories based on organization form, types of employees, modes of behavior,ambience, kind of decor, etc. etc.   Many other activities, such as, say, how to play baseball participate in comparable hierarchies and cross-cutting classifications.

b) At any given level of contrast we have a bunch of entities or activities that contrast with one another. Often there is room for adding in new items of contrast--such as new kids of restaurants (such as Sushi bars) or new kinds of social slices (Yuppies, then Dinks, and now whatever)

c) The communities within which views of these entities or activities are held, also exhibit the same kinds of variability--both regarding their variety of inclusion relations and their variety of contrast relations.   And the understandings that members of each of these communities have of the entities or activities under consideration show some variation from one group to another.

d) Individuals can move back and forth ("code switch") among some number of these communities--and thus can each both, if at different times, "hold" the structures of different, contrasting communities in mind and recognize communal differences in relevant understandings.

e) It seems both wildly inefficient and thus wildly unlikely for any person to hold independent cognitive knowledge structures of each variant kind of every given entity or activity for each community in which the individual participates or with which the individual interacts. It seems much more likely that at each level and re each comparison the common elements are recognized and made use of and the cognitive detail specific to the

particular entity/activity and community is only that which distinguishes contrasting ones from one another and subordinate categories from superordinate ones.

Thus, in most (all ?) cases the locally specific information will be fragmentary--only, in effect, modifications of some slightly more general inclusive knowledge; BUT that more general inclusive knowledge will itself only be a similar fragment of something further up the line..

f) Marked vs. unmarked oppositions--the linguistic and anthropological equivalent of more specified options vs. default options in computer programming--will be common in such nests of knowledge structures-- maybe even universal.

h) The integration of the fragments is governed by the need for a coherent story line in the case of scenarios and for a coherent, meaningful picture (even if of something "unreal") in the case of scenes.   And the contents and organization of the story line or picture are constrained by the function which the cultural model is seen to be addressing.   That is, there must be some substantial coherence of content.

i) The nature (shape, contents, boundaries, ...) of the fragments is governed by their role in the scenario or picture. Thus there would seem to be some sort of functionally driven grammatical-like constraints on the shape and contents of cultural models. This represents a need for some coherence of form.

j) Given inclusion relations, the specific CM fragment associated with the lower level (more specified) item (e.g. fast food restaurant vs. restaurant) will be specifically whatever detail distinguishes it from the default version of the less specified one.

Similarly, in a contrast situation (eg, ethnic vs.general American), the CM fragment associated with a given item will be specifically what distinguishes it from the contrasting item--unless one is unmarked and the other marked, in which case the situation will be the inclusion one.

Any complete cultural model--i.e. whole scene or scenario--for some given item/situation/action then will wind up being a mosaic of fragments defined by all of the various categories in which it is included and fragments

attributed to it via all of its contrast relations. It follows that, in turn, the fragments associated with the higher level

(more inclusive) categories will themselves be a collection defined at each level by operative contrasts.

As I said earlier, I do have some thoughts about the actual shape and form of cultural models. These

thoughts grow out of a variety of exploratory ethnographic work on domains as diverse as kinship, restaurants,

ranching and rangeland, and love courtship and marriage. But the thoughts are neither well-worked-out nor

anything I'd be willing to bet the farm on.

It seems to me, at least now, that the best way to think about the shape or form of CMs is as some sorts of

scenes, scenarios, or story lines. Our normal mode of memory is, I gather, episodic (rather than "semantic", which

would be of abstract relations and categories)--it involves a sequence of actions with goals, motives, etc. built in--a

kind of dramatic structure. My sense is that these CM structures are not bare-bones abstractions, but are filled-on

instances--though, with null, generic, or unmarked detail; that is, they are visualizable. The added detail that defines

subtypes gets included via the specification of marked variants (within the marking hierarchy). Other relevant detail

comes in through the process of instantiation, while other irrelevant detail belongs to the actual realization. Some

features of a CM are essential--changing any of them moves the story to a different CM (or a non-CM). Some

features of a CM are important (even essential) in the sense of shaping how the CM is applied and used, but

variable--changing them affects how the CM story plays out and maybe distinguishing one subtype from another

(for instance, the particular mix of tables, booths, and counter in a restaurant may exemplify such a variable), but

does not make it a different CM. These features are what I call "variables" within the CM. Some features (in the

filled out story) may be only there by way of completing a filled out and familiar scene but may be totally irrelevant

to application of the CM (e.g., any restaurant will have glasses, and any picturing of a restaurant will include

glasses, and any pictured glasses will have to have a particular shape--even for a kind or restaurant where the shape

of the glasses is totally immaterial).

The application of a given CM to a particular actual situation seems to me not to be a matter of fitting some

"all and only" definition, but instead a matter of assessing what CM(s) the situation is most relevantly like. This is

by way of saying that I think the prototype-extension format (that I described in my book on semantics) applies not

narrowly to words but more broadly to all of our normal conceptual categories.

Figure 1--Cultural Models of Action
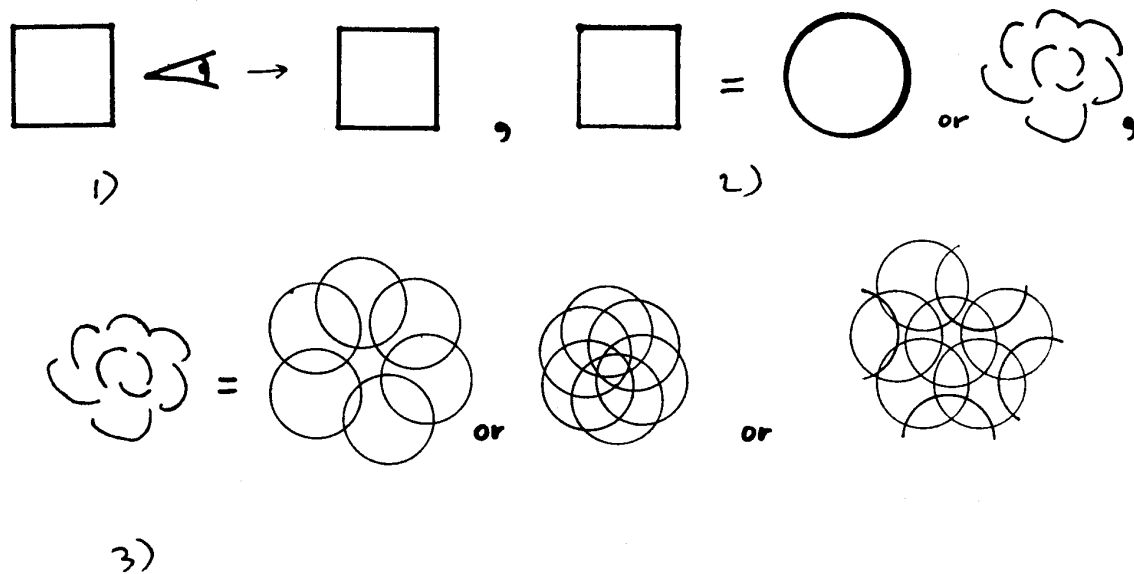
Regarding Venn Diagrams and Society

The squares represent society.
The circles represent the communities in which inhere collective representations.
Encompassed within the squares, circles, and squiggles, but otherwise unshown, are people.

1) The first diagram suggests that society is what constitutes--and analyzes--society. Or,

      Society's Truths are Socially Constructed

2) The second diagram queries whether society is to be understood a unitary **THING** or as some amalgam of thingS--the limiting case of which is a mere **STATISTICAL FUZZ**.

3) The third diagram queries the nature or structured-ness of the amalgam: a **CHAIN** of family resemblances, variation around some shared **CORE**, or a **MUSH** of varied overlaps.

For the sake of argument, let us assume that linguistic concepts (Saussurean Signifieds)-- including ethnic labels--are defined within circles, and let us assume that some circles represent ethnic groups. Let us note that any given ethnic label will be defined within many circles, while only one circle (or only a few) will represent that ethnic group.

My suggestion is that this is perhaps the frame within which ethnicity is to be understood.