Reflections on the Nature of Cultural Distributions and the Units of Culture Problem

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Does culture have clearly identifiable, distributionally stable parts sufficient to justify the particulate mode of understanding? Is culture composed of elemental units, or is it merely convenient to think this way? And, if culture does not consist of discrete parts, then what? This article suggests that the quest for natural "units of culture" is pretty much a doomed undertaking. There will be no periodic chart for culture grounded in stable, essential properties whether at the level of culture traits and complexes or at the cognitive level of ideas and schemas. On the other hand, various methods of data elicitation can produce replicable and superficially discrete results, which gives some hope for the possibility of a methodological particulatism.

For the next several pages, I want to share some thoughts about how culture is distributed through space and time. I'll be reflecting on the work of anthropologists from early decades of this cen-

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tury but who I think were on to something very fundamental and important.

The phenomenon I have been trying to understand for 25 years may be generalized as *cultural partibility*, and there are two main ways of construing this *units of culture* issue: (a) Human culture is distributed in cultures (*whole-cultures* are the units), and (b) human culture is distributed in trait-complexes (*trait-complexes* are the units). The initial impression in either construal is that human culture is distributed in rather neat and tidy packages. Cultures sound like well-bounded entities. So do traits. But I shall argue these impressions are false and misleading. Neither cultures nor traits are well-bounded, well-defined units of culture—they are distributionally unstable, and consequently, their identification as units involves rather arbitrary judgments. In short, Lowie (1936) had it right more than 50 years ago when he wrote, "There is only one cultural reality that is not artificial, to wit: the culture of all humanity at all periods and in all places" (p. 305).

In proceeding, I quickly review problems associated with the notion that whole-cultures are well-defined entities, then concentrate on difficulties inherent in the trait-complex mode of thinking. Finally, I opine concerning the possibility of a methodological *particulate-ism* although human culture itself is not really particulate.

PART I: THE FUZZINESS OF CULTURES

How many cultures are there? This familiar rephrasing of Galton's question concisely cuts to the heart of the matter, for if cultures are well-bounded entities, then they must at least be countable.

There seem to be two general ways of thinking about an answer. If we think cultures are definable by the contents of socially transmitted traditions, then we might proceed one way. On the other hand, if we think cultures are definable by their social system vehicles of transmission, then we would proceed a little differently. Let me outline an answer strategy from each of these viewpoints separately.

CULTURES ARE DEFINABLE BY THEIR DISTINCTIVE CONTENTS

The first step would be to come up with an initial list of candidate cultures. And because the strategy is to winnow out false candidates, we should start with very many whole-cultures, namely, any proposed culture whose contents can be specified should be included.

Second, we would devise a checklist of cultural features and their possible values and using this list, construct an overall cultural similarity index scaled 0 to 1. Constructing such a composite index would, of course, be fraught with problems. We would have to (a) integrate items measured on different scales (nominal, ordinal, and interval), (b) decide whether some items should be weighted more than others, and (c) determine a finite list of cultural features to include as items. (This raises the issue of how many culture traits there are—the devilish issue discussed in Part II.)

Presuming we resolve the formidable problems of index construction, we would still have to determine threshold values that if met or exceeded would justify collapsing two candidate cultures into one. What value should this be? I have no idea—.99, .90, or .75—but we would have to pick some value.

Pairwise comparisons among the initial candidate cultures in terms of our overall cultural similarity index would take the form of a matrix. Initially, the matrix would be large, but whenever comparisons achieve our threshold value, the matrix would be trimmed down by iterative collapsing of pairs until all the similarity values in the matrix remain below whatever threshold we have chosen. The number of rows/columns left after this winnowing procedure would be our answer to the original question.

CULTURES ARE DEFINABLE BY THEIR SOCIAL SYSTEM VEHICLE OF TRANSMISSION

The premise here is that there are as many cultures as there are social systems. And for social systems to be more than metaphors, they must have detectable boundaries. The issue, then, in Campbell's (1958) phrasing, is how to assess "the status of aggregates of persons as social entities." Campbell's in-principle plan for identifying the boundaries of social entities called for the following five quantitative indices, each measuring a different property in terms

of which a given aggregation might qualify for the status of a social entity (social system):

a. *common fate*: the degree to which individuals presumed to be in the same social entity are copresent in space and time more among themselves than they are with individuals not in the presumed social entity;
b. *similarity*: the degree to which individuals, two at a time, resemble one another on a multitude of cultured characteristics (this is very similar to the first viewpoint, only the units are persons rather than candidate cultures);
c. *proximity*: the degree to which individuals are in contemporaneous spatial contiguity;
d. *reflection or resistance to intrusion of external energy, matter, or diagnostic probes*: the relative permeability of the presumed social entity to nonmembers or to the ideas and practices of nonmembers and so on; and
e. *internal diffusion, transfer, communication*: the relative rates at which matter, energy, or information passes within the presumed social entity compared to rates between presumed entities.

For each index, persons are the rows/columns in a matrix, and social entitativity is very much a matter of degree. If the values in the matrix fall into noticeably different ranges, then each block of values signals a relatively strong social entity, and the number of such blocks is the number of discerned social entities. On the other hand, if the values form smooth, almost continuous gradients, then there is relatively weak social entitativity.

Note that Campbell's (1958) indices of social entitativity would detect ethnic boundaries even where the groups' lifeways appear very similar to an outsider, such as Nuer and Dinka. If Nuer and Dinka feel they are different, this should show up at least on the reflection to intrusion measures. Hence, I do not think we need to consider subjectively felt ethnic identities as a separate way of answering how many cultures there are. It is a special case of Campbell's more general approach.

THE NONDENUMERABILITY OF CULTURES

Without a clear separation between the notion of cultures and the notion of social system vehicles of transmission, the issues of culture sharing[1] and the distributive locus of culture[2] become

central theoretical questions. I have tried to avoid these familiar quagmires by distinguishing the two viewpoints at the onset and developing an answer strategy for each separately. Nonetheless, whichever route we take, we come to the same conclusion: Cultures are very fuzzy things whose purported existence rests on arbitrary qualitative and quantitative judgments. Under such circumstances, the notion of counting cultures makes about as much sense as galvanized asparagus. Lowie was right: There is only one cultural reality that is not artificial.

PART II: THE FUZZINESS OF CULTURE TRAITS

What is culture composed of? What are its parts? During the later part of the 19th century and the first few decades of the 20th century, most anthropologists thought the best answer to these questions was *culture traits*. There was considerable disagreement, however, concerning the criteria by which such traits should be defined and for what purposes.

GERMAN VERSUS AMERICAN CULTURE HISTORICAL SCHOOLS

Both the German and American ethnologists of the era were interested in unraveling historical relationships among nonliterate peoples. The German historical school theorized there were just a few culture-centers (*Kulturkreise*) or places where genuinely distinctive lifeways had originated, and they referred to each center's distinctive cultural developments as a culture complex (*Kulturkomplex*). Once these centers of origin and their identifying culture complexes had been determined, the present distribution of culture around the world was to be explained in terms of varying combinations and overlays of cultural strata through diffusion from the *Kreise*.[3] For example, the Moiety complex in Oceania (one of six strata defined for the area by Graebner, 1911) is defined by such diverse elements as yam cultivation, plank boats, gable roofs, fire-saw rather than fire-drill, and heavy war clubs (Lowie, 1937).

With respect to the actual determination of cultural traits—a necessary initial procedure before plotting distributions—the Germans used only the criterion of form and firmly rejected a trait's psychological associations as relevant to its definition. For

example, the definition of *bow* as a culture trait would be specified only with respect to morphological characteristics, and the more detailed the formal definition of the trait, the better, such as distinguishing the self bow, composite bow, and sinew-backed bow. On the other hand, they would not care whether the bow was used for hunting or warfare, whether its use was limited to adult men or considered a toy for children, whether bows were made by individuals for private use or produced by specialized craftsmen. Thus, if it were found that many highly detailed and logically unrelated traits co-occurred in diverse locations, then the case for historical relations among the locales would be strong, and the region that best exemplified the whole package (the *Kulturkomplex*) would be identified as the culture-center (the *Kulturkreis*). These principles of ethnological analysis were published by Fritz Graebner, a leading figure of the *Kulturkreislehre*, in 1911, and Franz Boas reviewed Graebner's book (which was never translated into English) the same year.

As early as 1896, Boas (1896/1966b) had begun publishing views of culture and culture change that separated his own historical method from what he called the *comparative method* as practiced by both diffusionists and parallel evolutionists. His review of Graebner crystallized the differences between German and American historical anthropology. A key contrast was Boas's belief that similar results could be reached through different histories or causal sequences (Boas, 1938, 1911/1965, 1932/1966a, 1896/1966b, 1920/1966c). That is, Boas's framework for explaining cultural similarities allowed for *convergent evolution*[4] as well as historical transmission and parallel evolution. But, to make room for convergent forces to produce similar culture traits, Boas emphasized the relevance of the psychological dimensions of a trait (its contextual meaning, purpose, and functions), precisely those aspects that Graebner (1911) rejected as irrelevant to historical analysis.

> The theory of convergence claims that similar ways *may* (not *must*) be found. This would be a truism, if there existed only one way of solving the problem. . . . Nobody claims that convergence means an absolute identity of phenomena derived from heterogeneous sources; but we think we have ample proof to show that the most diverse ethnic phenomena, when subject to similar psychical conditions, or when referring to similar activities, will give similar results (not equal results) which we group naturally under the same category when viewed not from an historical standpoint, but from that of

> psychology, technology or other similar standpoint. . . . The concepts of comparability and homogeneity, as I understand them, have to deal not only with historical relationships, but to a much higher degree with psychological similarity, for only as elements of the mental make-up of society do ideas or actions become potent and determining elements of further development. (Boas 1911/1966d, pp. 299-300)

Boas's review prompted Lowie (1912) and then Goldenweiser (1913) to enter the fracas, both siding with Boas's view concerning convergent forces in culture history and, hence, arguing that purely formal characteristics are insufficient to properly define culture traits. This emphasis on the psychological dimensions of culture traits culminated in Linton's (1936) distinctions among four aspects of a culture trait: form, function, use, and meaning.

IN WHAT SENSE ARE CULTURE TRAITS UNITS?

For my purposes, it is time to draw some lessons from the Graebner versus Boas debate. First, if we take Graebner's side and confine ourselves to purely formal characteristics when defining a culture trait, the definition we devise cannot help but be rather arbitrary. Think back to the bow example. Why should we distinguish the self bow from the composite and sinew-backed bows? If we think specificity is our guiding light, then note that the English longbow and the short bow of the Comanche are equally self bows. But, the English longbow was made of yew and D-shaped in cross section with waxed hemp or flax string, whereas the Comanche short bow was made of Osage orangewood taken from the heart of the tree, highly polished, and rectangular in cross-section with sinew string.[5] And of course, close examination of a collection of English bows (all five of them) and Comanche bows would reveal formal variations at ever finer levels of detail.

How specific are our definitions of traits to be? There is no nonarbitrary answer to this question. And on purely logical grounds, definitions of culture traits become only more arbitrary and murky if we expand relevant criteria to include meaning, use, and function as well as form (four dimensions of variability rather than just one).

By expanding the number of relevant criteria, however, some Boasians felt we might actually reduce definitional arbitrariness. If subjective manifestations of a trait are relevant to its definition,

then we might anchor our definition by stipulating that the natives recognize our proposed trait as a single entity. But here we run into the variable participation of individuals in their culture. Which native or natives? For example,

> the average Comanche certainly thought of the bow as a single entity, a thing which he could use in certain ways. A professional bow-maker, on the other hand, was fully conscious of all the items which went to make up the bow since he had to assemble them into a useful whole. To the average man the bow was a trait, to the specialist a trait-complex. (Linton, 1936, p. 399)

Today, we might get around this sort of intracultural variability using some operationalization of consensus analysis (Romney, Weller, & Batchelder, 1986) to identify the typical Comanche's sense of trait entitativity, but we would still have to deal with what is commonly called *cross-cultural variation* in the manifestations of a trait. For example,

> actual studies of diffused complexes show that form may persist with only slight modifications in the face of wide differences in other qualities. Thus the Sun Dance, which occurred in the cultures of a whole series of Plains tribes, varied much more in meaning, use, and function than it did in its form. Although there were marked similarities of procedure wherever the dance occurred, it might be given for quite different purposes. (Linton, 1936, p. 405)

The critical question is why Linton (1936) thought these similar-but-different ceremonies performed among Plains tribes are merely variations or versions of the so-called same thing, in this case, the Sun Dance. If we cling to the criterion of native endorsement, then all the tribes would have to agree, more or less (by simple majority? two thirds?), that their various so-called Sun Dance ceremonies are essentially alike. Failing that, it is only selected aspects of the ceremonies' forms that underlie Linton's assessment, but as already discussed, even formal similarities are a matter of judgment and degree.

Indeed, if one reads carefully a sample of these early distribution studies, there is a typical four-step progression going something like this:

Step 1. The author names the cultural "entity" that he or she intends to study, for example, aboriginal maize culture (Wissler, 1916), the concept of the guardian spirit in North America (Benedict, 1923), bear ceremonialism in the Northern hemisphere (Hallowell, 1926), the cattle complex in East Africa (Herskovits, 1926), or double burial (Gatewood, 1986). Although this act of naming sounds trivial, I think this is quite significant because it is the name that remains constant and thereby sustains an illusion of stability and entitativity.

Step 2. The author rapidly proceeds to an initial definition of the named trait-complex, a list of its salient features by which instances will be recognized when encountered.

Step 3. The bulk of the work then consists of discussing and evaluating accounts of behaviors and beliefs from local cultures that seem relevant to the initial definition of the trait-complex. Invariably, each local manifestation differs in some ways from the others, and these "variations" are duly noted.

Step 4. The author concludes by mapping the distribution of the named trait-complex, perhaps infers something about the directions and chronologies of diffusion, and waffles about the amazing variety of manifestations that undermine simple definitions of the trait-complex, often ending with a revised definition.

Although I enjoy and appreciate these works very much, from my reading, there is one inescapable conclusion. Generally, culture traits are distributionally unstable, specifically, for any such unit of culture, variability is the norm rather than the exception. And, this is true even for traits that involve largely utilitarian[6] behaviors and practices, such as maize cultivation. Only by rather arbitrary definitional abstraction can the variations in local manifestations be glossed over and the essential similarity affirmed.

If we shift gears and consider the psychological manifestations of culture within the long-term memory of individuals, we find similar instabilities. Reflecting on my own stream of consciousness, I find that my thoughts, images, and feelings neither occur all at once nor do they randomly intermix with one another; rather, they clump and flow together in innumerable but usually familiar ways. That is to say, introspection reveals a nonhomogeneous but also a nonatomistic mental make-up. My conscious experience is partible but not rigidly so—it consists of distinguishable aspects or currents or flows, but these subjective sensations are not reliably distinct from one another. Although most of my mental life seems

quite familiar to me, I cannot say for certain whether I have thought the same thought or felt the same feeling twice.

Thus, although radically different in method, both distributional studies of overt culture and introspection come to similar conclusions. The units of culture are fluid and complexly congealing, not well bounded and stable.

THE NATURE OF CULTURAL CONTENT

In summary, as we trace the spatial and temporal distributions of culture traits and trait-complexes, whether among local groups or within ourselves, we observe complexly variable pseudoentities. Let me summarize these under the following three points:

1. Culture traits are distributionally unstable. Traits are clumpings of culture content, not well-bounded entities. They are polythetic in Needham's (1975) sense—they are n-dimensionally variable, permitting a variation approaching continuous gradation of similarity and difference in their distributions (Gatewood, 1978).
2. Culture traits are seldom reliably replicated.[7] Whereas all cultural phenomena are learned, all learning is fallible. Thus, variability exists not only with respect to the overt expressions of culture but also with respect to the underlying and internalized knowledge. Furthermore, patterns of similarity among individuals concerning what they have learned do not necessarily identify the knowledge required to replicate their way of life. For example, a random sample of Americans would show that most people are familiar with scissors and how to use them, but they would be unable to make scissors themselves. Indeed, the knowledge required to actually make scissors is distributed among several specialist groups (miners, metallurgists, toolmakers, etc.). Shared, consensual knowledge is a proper subset of the knowledge required to reproduce the culture.
3. There is no atomic level for culture, no periodic chart of mutually exclusive entities with stable properties from which cultural compounds are formed. A trait refers to no precise level of cultural stuff. The trait concept functions like an adjustable cookie cutter, creating artificial boundaries around pliant content. Virtually any clumping of culture can be regarded as a trait, from whole subsistence efforts to decorative elements on a moccasin. The usefulness of the concept is that it functions as a placeholder in the analyst's thinking, signifying the "lowest level of cultural content" that the analyst cares to consider at a given time for a given purpose (Gatewood, 1978, p. 312; Kluckhohn, 1953). Indeed, we humans

routinely create such ad hoc, temporary, task-relevant categorizations, for example, the phenomenon of *chunking* in short-term memory tasks (see D'Andrade, 1995; Kronenfeld, 1996). But, the myriad information-processing units we generate each day are quite unstable and certainly do not partition culture in the way the periodic chart partitions matter.

CONCLUSION

Now, suppose the traits Mendel studied in his garden peas had exhibited similar multifaceted variability and instability. Would he ever have proposed his particulate theory of inheritance? I think not, and for good reason. The plausibility of proposing that discrete genes were the units of inheritance rested on the existence of clearly distinguishable, countable phenotypic traits. In biology, there are abundant examples of discrete variability in phenotypic traits (as well as more continuously variable traits, which can be understood as polygenic traits). By contrast, very few, if any, culture traits exhibit discrete variability in their expressions. Hence, unlike Mendel, we have no legitimate basis for theorizing that cultural transmission is intrinsically particulate.

Is all lost? No, but perhaps it is about time we anthropologists think deeply about the nature of culture while looking to fields other than chemistry, genetics, and linguistics for inspiration. Culture rests on patterned flows of activation in our neurological substrates. Perhaps, then, the findings and models from neuroscience would be a good place to start if we seriously wish to address the units of culture problem. In the meantime, I have no quarrel with those who, in the interest of measurement reliability, continue studying culture as if it were particulate. Much headway can and has been made in this fashion. But such work should be construed as methodological particulate-ism, not a revelation of the true nature of our beast.

Notes

1. Culture is shared. By whom? To what degree? Everywhere, there is variable participation of individuals in their socially transmitted traditions. Attempts to reconcile the idea that culture is shared with the facts of intracultural variation have a long history. A very incomplete list might

include Durkheim's (1897/1933) distinction between collective conscience and collective representations; Linton's (1936) universals, specialties, alternatives, and idiosyncrasies; Wallace's (1961) idea of end-linkage; Roberts's (1964) metaphor of an information economy and D'Andrade's (1981) information pool; Boster's (1985, 1987) and Romney, Weller, and Batchelder's (1986) focus on patterning of similarities; Gatewood's (1983, 1994, 1996) knowing of/knowing about/knowing how gradients and negotiations of ignorance via a common core of collective representations; and so on.

All culture is learned, but by individuals one at a time, and no one learns everything. Some aspects of culture are widely learned; other aspects are learned rarely. Furthermore, learning is fallible because it is an active, creative process. In short, people do not learn the same things, but then they do not learn completely different things either. With respect to enumerating cultures, the key question is: When does intracultural variation become between-culture variation?

2. This problem emerges as soon as one contemplates how superorganic culture resides in and among living people (Spiro, 1951). What is the distributional locus of culture? What is the culture-bearing unit (Schwartz, 1978)? Societies, villages, neighborhoods, families, individuals, and social networks of interacting individuals have all been proposed as the vehicles of culture (see Barnes's [1971] critique of Murdock). Individuals have the most easily established entitativity, but because groups of individuals are necessary to replicate their distributed culture, social networks (of what scale?) are probably the best answer, although networks are seldom sharply bounded.

3. My summary of the objectives, principles, and methods of the *Kulturkreislehre* come principally from their critics, such as Kluckhohn (1936) and Lowie (1937).

4. Ehrenreich (1903) appears to have introduced the idea of convergent cultural evolution, at least his article stimulated Graebner, Boas, Lowie, and Goldenweiser. Radin (1933), however, attributed the idea to someone else.

5. Description of the English longbow comes from Kaiser (1980). Description of the Comanche short bow comes from Linton (1936).

6. Several of these early authors suggested that logical or functional relations rooted in survival needs may underlie the coherence and relative stability of utilitarian traits and trait-complexes, for example, Wissler (1916, 1923) and Goldenweiser (1913, 1937). Kroeber (1948) called these kinds of culture patterns *systemic patterns* to distinguish them from whole-culture patterns, the universal pattern, and stylistic patterns. Their notion of functional or systemic patterns foreshadowed modern conceptions of *memes*, for which some selective process must act to define the units (Wilkins, 1998).

7. With the advent of mass-produced brand-name goods, quality control experts have achieved high degrees of reliable replication. For example, despite widely varying local water supplies, Coca-Cola tastes pretty much the same all over the world. Thus, if we regard Coca-Cola as an isolated culture trait, its formal properties exhibit an amazing homogeneity across its temporal and spatial distribution, contrary to my generalization about culture traits.

On the other hand, the meaning and use of Coke have not been constant through time and space. Originally, Coke was associated with home-remedy health care, then gradually became a purely recreational beverage, and more recently a symbol of cultural imperialism as well as antihealthy lifestyle. Also, Coke is but one of many soft drinks to emerge in American culture over the past century. More specifically, Coke is only one of several dozen carbonated water with syrup and sugar flavoring soft drinks. So, if we regard soft drinks as the culture trait, then we would observe extreme heterogeneity.

As the apparent homogeneity of brand-name products is relatively recent in human history, as tremendous social effort is required (legal as well as technical) to ensure their reliable replications, as such products still evidence changes in their cultural meanings/functions/uses, and as such products almost always have similar but diverse rival products, I stand by my generalization concerning the highly variable nature of culture traits.

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