

THAT A CULTURE AND A SOCIAL ORGANIZATION
MUTUALLY SHAPE EACH OTHER THROUGH A PROCESS
OF CONTINUING EVOLUTION'

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Radcliff-Brown drew the analogy between a society and an organism in 1909 (1922; vii). In this paper, I'm going to re-draw the analogy in the light of knowledge about organisms that has come to us since then. I'll try to use the re-drawn analogy to show, first, how a culture builds and shapes a society or other social organization and, second, how a social organization shapes the culture that builds it. Besides doing a sort of pseudo-exegesis of Radcliffe-Brown, I'm going to quote a couple of lines from Carl Sandburg. But I'll begin with a riddle:

Why don't I use a recipe to make a cake?

The answer is, Because the recipe uses me to make the cake. I, a living organism, am the instrument of a set of instructions. If you are doubtful of that, ask yourself, Do the instructions do what I say, or do I do what the instructions say? (In a sense, of course, the riddle is an over-statement. The recipe-instructions cooperate with other instructions, already stored in my nervous system, to make the cake.)

Radcliffe-Brown (1922; 229) states the society-organism analogy thus:

Every custom and belief of a primitive society plays some determinate part in the social life of the community, just as every organ of a living body plays some part in the general life of the organism. The mass of institutions, customs and beliefs forms a single whole or system that determines the life of the society ..

This paper was delivered to the plenary symposium, "Generative Models in Social Organization," of the 53rd Annual Meeting of the Central States Anthropological Society, in Chicago, March 29, 1974; and to the annual meeting of the Animal Behavior Society, in Urbana, May 26, 1974. It is an attempt to summarize very briefly, part of the results of five years' work in the area of cultural ecology, ethology, and evolution. These results include a theoretical paper on instructions and natural selection (Cloak, 1973); a draft of an article on some implications of the theory for philosophy of science, including a sketch

of the material nature of instructions (Cloak, mss.); and a general article, soon to be published in *Human Ecology*, introducing the theory, showing its relation to existing social and behavioral studies, and suggesting new research directions (Cloak, 1975, in press).

Now, since customs and beliefs play their determinate parts by directing the behavior of individuals, I'm going to view them as cultural *instructions*, stored in individual nervous systems. A culture, then, is a huge "recipe" of millions of instructions for building the various social groups and institutions which compose a society. If a society is an analogue of an organism, the social groups and institutions are analogues of the organs. So I'm saying that we must distinguish between the instructions, which build and operate the social organs, and the organs themselves.

Modern molecular biology has revealed that genetic instructions, genes, using enzymes and cells as their instruments, build and operate an organism including its various organs. So a genome, like a culture, is a huge recipe of millions of instructions, in this case stored in individual cells, for building organisms. So far, so good. But, to make the analogy better, let us distinguish between "small organs" -- molecules, organelles, and cells -- and "large organs" -- muscles, liver heart, etc. The genes build and operate all of these, using the "small organs" as tools and materials for building and operating the "large organs." Constant gene activity is essential for their continued existence. If the genes stop working the parts -- the small organs -- immediately begin to come apart and disperse; the large organs, and organism, decay. Individual human beings are the "small organs" of society, the analogues of cells. They are built by genetic instructions, but operated (as when making a cake) by cultural instructions. Groups and institutions are the "large organs" -- the 'muscles' -- of society, built and operated by cultural instructions; some cultural instructions bring individuals together, and keep them together in groups, other cultural instructions direct the group's activities. If those former instructions stop working the people separate and disperse; the group decays. Societies, like organisms are kept together only by constant activity of instructions. Some people have criticized Radcliffe-Brown's idea on the ground that a society is not mortal, as is an organism. But Carl Sandburg, who understood a lot about how societies are built and operated, puts it this way:

Every day the people of the city haul it away, take it apart, and put it together again. (The People, Yes, Ch. 59)

Just as organisms are cyclically mortal -- the genes that hold their cells together stop working periodically, and each organism dies; so societies are cyclically mortal -- the cultural instructions that hold the people together stop working periodically, and each day's

C-1

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society dies --the instructions are kept in nervous systems overnight, and in a sense are immortal, just as genes are. Another society comes alive in the morning and replaces the one that died. Radcliffe-Brown was correct when he concluded the above passage, "...and the life of a society is not less real, or less subject to natural laws, than the life of an organism." (1922:229-230).

I think the analogical model now allows for social change. (Radcliffe-Brown thought otherwise, and said so explicitly) If today's society should happen to leave behind a cultural set of instructions a little different from the one which built it, tomorrow's society will be a little different from today's; one or more of its many groups may be different, or some relationship between groups may be different. So if we can account for a change in composition of a subset of instructions, we have accounted for a change in the social organization the subset constructs.

The cake the recipe used me to make is "good". Because he "likes" it, a guest asks for the recipe. The recipe uses me again, this time to copy itself onto a piece of paper. The instructions have replicated themselves into a new place. The cake they made has helped make a *place* for them, and they have replicated themselves into that place. Even after the cake is gone, the instructions remain. Even if my copy is lost or destroyed, another copy exists. More cakes of the same form can be made.

An organ of a living body helps make a place for instructions, and the genetic instructions which made it and operate it replicate themselves into that place. Eventually, invariably, the organism dies; it is mortal. The genes remain; like the cake instructions, they are immortal because they can replicate themselves. By self-replication, the frequency of that subset of genes may increase, in which case the frequency of organs of the specific form it makes will increase. Or the frequency of the subset may decrease, perhaps going to zero, in other words extinction. Increase or decrease or staying the same will depend upon the efficacy of that form of organ in making places for instructions.

while the society lives through the day its organs -- its social structures and groups and institutions -- help make places for instructions, and the cultural instructions which made them and operate them replicate themselves into those places. Children copy older children's social behaviors; young men program themselves with older men's instructions through latent observational learning; mothers correct their daughter's stances and gaits. Though the society is even more mortal than the people, the cultural instructions, like all self-replicating instructions, are immortal. At the end of the day the score can be totted

up for each sub-set of cultural instructions: Are there as many, or more, or fewer of that sub-set? The answer depends upon the efficacy of groups of each form in making places for instructions. Upon the answer depends the number of groups of each form that will be made the next day.

To summarize: Radcliffe-Brown's analogy, brought up to date, helps us to understand how a culture, a recipe of millions of cultural instructions, shapes a social organization -- anything from the patterned behavior of a pair of individuals to a whole society. It also lets us see a mechanism for change in culture and society. Now I'm going to press the analogy to try to show how social organizations, the organs of society, shape the culture which shapes them.

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The idea I have about the shaping of culture by social organizations is fundamentally very simple; but it is very hard to spell out the particulars without developing a whole technical language (Cloak, 1973). The idea is that social organizations, the "organs" of society, are literally part of the *environment* of cultural instructions, and in many cases an overwhelmingly important part of the environment, just as organs and organisms, built by sets of genes, are often an overwhelmingly important part of the environment of genes. Once a social organization exists, then, it is a "factor to be reckoned with" in the further evolution of the culture.

I want to show, first, how I think environment-in-general shapes a culture. Then I'll try to illustrate how a social organization, as environment, does the same.

Let us be fanciful, and imagine we are hearing a spokesman for a sub-set of instructions, stored in the brain of the young son of Toma, the Nyae-Nyae Kung Bushman headman. The following narrative is derived from *The Hunters* (Marshall, 1956) with considerable liberties taken in both fact and interpretation. The spokesman is reminiscing about how the sub-set of instructions got there:

"A few weeks ago, we were stored in the brains of Toma, Kao, Twi, and Gao, among many other places around Nyae-Nyae. One day we brought those four men together in a hunting party and directed the party out of camp. The party lost a kudu but got a giraffe. It brought back the meat and a lot of current data on the status of the territory. Everybody in camp was impressed by the meat, and Toma and the others told the story of the hunt very well, so the boy, here, programmed us right in. (Of course, many of us were already here, and we still won't be a complete sub-set until the boy comes of age and gets more experience but we're right on schedule.) And that giraffe protein really made a difference in koo's milk supply; it may have saved the baby's

life. Someday that baby may bear a son, and we'll probably get to replicate ourselves into his brain, too.

"But think what our instrument, the hunting party, had to do environment-wise to make a place for us here. It had to cooperate closely with other !Kung social instruments -- the family, the camp, the band, the trancedances. (Gao's a shaman, you know; good thing he had his knowledge with him to encourage the others when things got rough.) Our hunting party had to compete with hunting parties made by sub-sets composed slightly differently from us. Kao almost went off with another party, and if he had that party might have gotten meat and our party might not and then that party's sub-set would be here in the kid's head instead of us; but speaking through Toma, we talked Kao out of it. As it was, without Kao the other party didn't even go out, so we won that little competition hands down. We're here, and those other instructions are nowhere; they're probably heading for extinction.

"Of course the main thing our party had to contend with was the "out-side" environment. It had to be able to survive in the Kalahari for a couple of weeks; it had to be able to locate, stalk, shoot, pursue, track, fix, and kill certain kinds of large ungulates; it had to be able to chase off lions, hyenas, and jackals -- remember what happened to the kudu. I suppose the main function of hunting parties, by which they make places for instructions, is getting meat for the camp. A couple of years ago we had some meat-competition from a sub-set that diffused in from another band of the !Kung to the north. We picked up a couple of good instructions from that set, but when it organized its own hunt parties down here they never got any meat. I think the game must be more plentiful up there or behave a little different. So that sub-set never really got established around here; we're still the most prevalent hunting-party-making sub-set and our frequency is stable or even increasing. So you'll find that most Nyae-Nyae !Kung hunting parties are the kind we make -- four guys, walking single file, good shots good stalkers, good trackers but they try to outsmart the animal rather than follow it everywhere -- you know the whole bit if you saw the movie. (We really could use some good giraffe-killing instructions, though.)

"Getting prestige is another function of a hunting party, of course, but the hunting parties we make go for prestige mainly by catching meat first and bragging

about it later. So our evolutionary history has been pretty well tied to the "out-side" environment; our hunting groups, competing with other similar instruments to make places for instructions, have been designed accordingly."

* * *

To illustrate how a social organization, as part of the environment, shapes a culture, let us try a more formal analysis of a different example. All over aboriginal Australia, the social organizations included an institution of "gerontocracy-polygyny", apparently built by a sub-set of instructions that was remarkably uniform over the whole continent (Rose in Lee and De Vore, 1968; 205). The sub-set makes household-groups consisting of a middle-aged male and several adult females of varying ages and their children. The male has exclusive sexual access to these females, at least in theory. Furthermore, the women provide the household, including the male, with the bulk of its diet, and they cooperate with each other in child-rearing. Now, it's easy to see that the group of females has a subsistence-economic function related to the "outside" environment. That group makes places for instructions by gathering foodstuffs and otherwise maintaining organisms in which instructions are, and will be, stored. It's harder to understand the "old man's" function. Some of the participants in the symposium on Man the Hunter suggested that his behavior is useful in organizing the women's work (Rose, Bicchieri in Lee and De Vore, 1968; 209-10). But besides the obvious question of whether the women's groups require a non-working male organizer in order to perform their "out-side" function, there is also the question, raised at the symposium, of how he is able to organize their work (or anything else). The answer offered is that he has political power. Why has he got political power? Because he controls this group of women! So the argument is a tight circle (Bulmer in Lee and De Vore, 1968; 210).

Let's tentatively conclude that gerontocracy-polygyny in Australia has only a weak function relative to the "outside" environment. This conclusion is supported by Rose's observation that the institution doesn't vary, although the "outside" environment of Australia varies greatly (Lee and De Vore, 1968; 206). I propose that the prevalence of gerontocracy-polygyny is the result of a sort of enduring "founder-effect": The sub-set that makes it got in on the ground floor. Since that sub-set made the gerontocrats *in fact* organize the women in a certain way and get power, it managed to propagate itself all over Australia and endure for probably thousands of years. (That it is actually a very "brittle" institution is strongly suggested by Sharp's classic study of the introduction of a few western artifacts to the Vir Yoront: Sharp, 1952).

Because it was there, the institution was a salient part of the environment which helped determine whether other, or what forms of other, institutions and groups would be able to make places for instructions. So we see the institution of marriage modified to include niece-exchange (Hiatt in Lee and De Vore, 1968: 165-175) or daughter-bestowal (Hart and Pilling: 1960), we see initiation customs shaped to exclude the young men from the main life of the camp for an extraordinarily long time (Rose in Lee and De Vore, 1968: 207), and we see young men hunting on behalf of established men in order to get a wife. Each of these institutions of Australian society has been domesticated by the gerontocracy-polygyny institution; that is, only those forms of each which help make places for gerontocracy-polygyny instructions can help make places for their own instructions. For the same reason, the whole elaborate mythology and ceremonial structure functions to maintain things, including gerontocracy-polygyny, as they are, in two ways: First, the content of the myths and rituals is a mnemonic, for the performers and the spectators, that everything is now, and ever shall and should be, as it was in the Beginning. Second, the means of their transmission ensures that only men who have been thoroughly programmed with gerontocracy-polygyny instructions ever get any power (Elkin, 1964; 164-166).

So the gerontocracy-polygyny institution serves as an environment in which only instructions which build other institutions that support gerontocracy-polygyny instructions can find places into which to replicate themselves. It's as if every day a sub-set of instructions uses the aborigines to set up gerontocracypolygyny first thing in the morning. Throughout the day, variants of other institutions compete among themselves to see which cooperates best with gerontocracy-polygyny; those that cooperate best get to help make places for their instructions, and the gerontocracy-polygyny instructions, to stay in over night. First thing next morning, gerontocracy-polygyny is set up again, at least as powerful as, if not more powerful than, it was the day before.

To conclude, then, I've tried to suggest in broad outline a set of mechanisms by which a culture builds and operates social organizations whose function is to provide for the maintenance and propagation of the culture; and by which the social organizations, in turn, control the composition of the culture in such a way as to increase their capability of performing that function. Whether the result is continuity or change, the process is one of continuing evolution.

Attempts to understand this process in greater detail can lead us to do a lot of interesting research because, to repeat and complete the quotation from Carl Sandburg:

*Every day the people of the city haul it away, take it apart, and put it together again.
The how and the why of the people so doing is the saga not yet written.*

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