Is cultural group selection enough?

doi:10.1017/S0140525X15000205, e48

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Abstract: Richerson et al. propose cultural group selection (CGS) as the basis for understanding the evolution of cultural systems. Their proposal does not take into account the nature of cultural idea systems as being constituted at an organizational, rather than an individual level. The sealing partners of the Netsilik Inuit exemplify the problem with their account.

Though recognizing that cultural group selection (CGS) "is not a complete theory of the evolution of cultural variation" (sect. 2.1, para. 5), Richerson et al. consider CGS to be a major player and list four of its prerequisites. All of these are accepted by most anthropologists and sociologists because cultural systems, including norms and institutions, are extended across generations through enculturation, and culture has long been considered to constitute an "extrasomatic adaptation" (White 1959, p. 9), with functional differences the basis for the outcome of competition between groups (see, e.g., Evans-Pritchard's [1940] account of the conflict between the Nuer and the Dinka).

Similarly, the authors' "necessary but not sufficient test of the CGS hypothesis," namely, that "social systems of human societies follow a phylogenetic pattern" (sect. 3.2, para. 1) is easily passed by cultural and social systems. For example, the historical pattern for the appearance and spread of kinship terminologies as part of the colonization of the Pacific Oceanic Islands, first by Melanesians and then by Polynesians, can be presented as a phylogeny organized around structural differences in the terminologies (Read 2013; see Fig. 1 here). However, these differences do not emerge from changes at the behavioral level assumed by their model of cultural evolution, but are organizational changes. Kinship terminologies, with their algebraic-like structure (Leaf & Read 2012; Read 1984; 2012; Read et al. 2014) are symbolic, computational systems with an underlying, generative logic and no more emergent from behavior than is arithmetic (*contra*

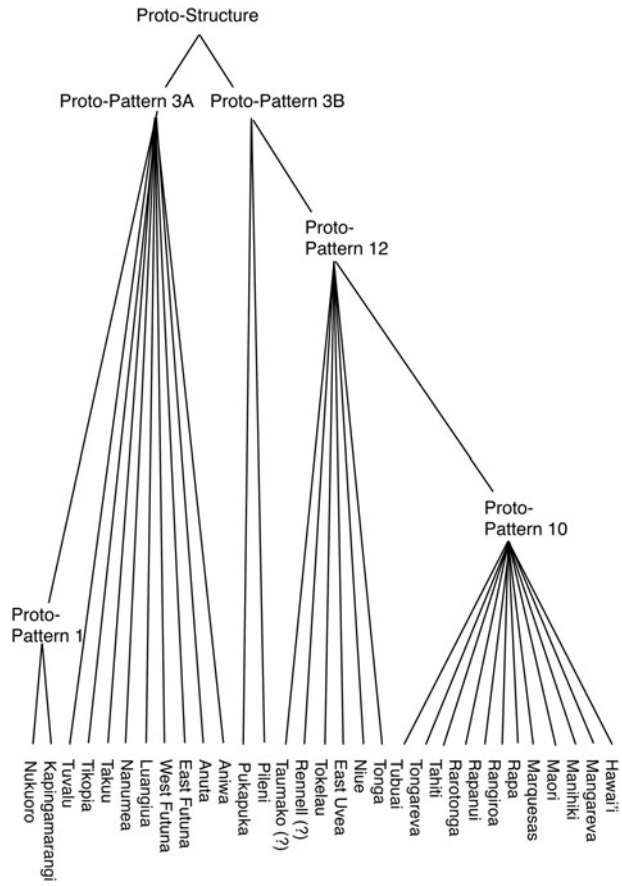

Figure 1 (Read). Phylogeny for Polynesian societies based on the reconstructed sequence of changes in the structural patterns for the sibling kin terms from a sample of the Polynesian kinship terminologies. The specific patterns, based on attributes associated with the sibling kin terms, are discussed in Read (2013). The left-to-right positions of the branch points in the phylogeny correspond to the relative time-sequence of the colonization of the islands corresponding to the societies listed on the right side of the figure (see Figure 7 in Read [2013] for a map showing the colonization sequence). (Reproduced from Read 2013, Figure 9, with permission of the publisher.)

Smaldino 2014) – hence, their evolutionary change is at the global level of organization and not the population level of individual traits (see Lane et al. 2009).

CGS shares with biological group selection the same problem of porous boundaries. If homogenization of between-group traits occurs on a time scale shorter than that needed for the consequences of between-group competition to materialize, then group competition will be obviated. Biological group competition "solves" the porous boundary problem through coupling selection for traits that maintain non-porous boundaries with biological group competition. In extreme form, this leads to the formation of biological species. The functional equivalent for CGS would be a group-level, cultural system with boundaries resistant to the introduction of competing cultural traits.

Consider the cultural adaptation of the Netsilik Inuit of Hudson Bay to Arctic conditions (Balikci 1970). Their adaptation included a culturally prescribed system of sealing partners central to procuring and sharing seal meat in the winter months. The system of sealing partners was but one of several functionally integrated cultural idea systems (see Leaf & Read 2012) that regulated, among other things, female infanticide, post-marital residence, and preferential cousin marriage. Jointly, these idea systems framed the behavioral patterns and modes of social organization

necessary for the survival of the Netsilik Inuit under Arctic conditions (Balikci 1970; Read 2005).

The Netsilik adaptation centered on three resources: (1) salmon, (2) caribou, and (3) seals. Seals were obtained in the winter months when a seal surfaced in one of the breathing holes it had to keep open in the pack ice in order to breathe. Because there was no way to know which breathing hole a seal would use, the Netsilik increased substantially their odds of obtaining a seal by stationing about 20 hunters at different breathing holes. Each hunter had 12 sealing partners in the camp, with each partner corresponding to a part of the seal, plus one part of the seal for the hunter and one for his children. When a seal was killed, the hunter's wife distributed the parts of the seal to the wives of the partners in accordance with the part of the seal represented by a partner. The partners were determined at birth by the boy's mother from among distant (cultural) kin – with kin being those recognized by reference through one of their kin terms, such as in the English expression, "he is my uncle."

The system of sealing partners expresses the cultural meaning of being a seal hunter and makes the actions of others, as hunters, predictable, hence forming the basis for cooperation among the sealing partners. In this sense their cultural idea system was a social contract to which the Netsilik adhered. The social contract specified that a seal, through the act of the hunter, became collectively owned by the hunter and his partners, and only they had rights to the seal. Collective ownership was enacted by distribution of the seal meat, based on another cultural idea system that defined a man as the procurer of resources and his wife as manager of the resources he procured (Read 2005).

Accordingly, the seal was butchered by the hunter's wife and distributed to the wives of the sealing partners. The system of sealing partners was, in effect, the antithesis of sharing through the individual traits of altruism and cooperation since individual benefits arose through collective ownership and rules of sharing expressed through the social contract. From an evolutionary perspective, "it is possible to have a stable social contract for food sharing" even if "the food is implicitly owned by every individual who goes hunting" (Taylor 2014, p. 71).

In their social contract, the Netsilik did not trust a hunter to be altruistic or to voluntarily cooperate, and they instead created an organizational system that depended on neither of these. Cheating, in the sense of opting out of acting in accordance with being a sealing partner, was not a viable option in a context in which individual hunters would likely not survive without averaging hunting risks over a pool of hunters. Consequently, the conceptual boundary for the organization of sealing partners was impervious, given the technologies available to them, to any competing, individual strategy. Cultural idea systems like this operate and evolve at an organizational, rather than an individual, level with the consequence that "human sociocultural organizations … [have] representations, rules, relationships, management processes and function associated with these organizations, which are different from, and have vastly more transformative and generative capability than, those at the individual level" (Lane et al. 2009, p. 35).