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Individual-level Psychology and Group-level Traits

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Psychological research on social influence illuminates many mechanisms through which role differentiation and collaborative interdependence may affect cultural evolution. We focus here on psychological processes that produce specific patterns of asymmetric influence, which in turn can have predictable consequences for the emergence and transmission of group-level traits.

[Commentary on Smaldino]

Smaldino makes a compelling case that role differentiation, collaborative interdependence, and emergent group-level traits play an important role in cultural evolution. Smaldino offers preliminary speculations about processes through which group-level traits might emerge, but a lot remains to be specified. What specific role differentiations have implications for the emergence of important group-level traits? What specific proximal mechanisms might account for the emergence of these group-level traits and for their change over time? How might these processes be affected by specific circumstances? Answers to these questions require input from the sciences that focus on proximal mechanisms.

It may be especially useful to draw upon insights from the psychological sciences – especially research that explores the many ways that individuals influence each other during interpersonal interactions. Particularly relevant are lines of research documenting specific ways that influence outcomes differ depending on the social context – including the roles occupied by the individuals involved (Cialdini & Goldstein 2004; Hogg 2010; Wood 2000).

It is easy to overlook this literature when addressing questions about long-term cultural outcomes, because psychological inquiry focuses on the immediate actions and outcomes of individuals and rarely considers their population-level consequences. But there are exceptions to this disciplinary restraint (Resnick et al. 1991; Schaller & Crandall 2003).

Consider, for example, research on dynamic social impact theory (DSIT; Harton & Bullock 2007). Drawing upon a few basic principles of social geography, social interaction, and social influence, DSIT shows how mutual influence that occurs during dyadic interactions has, over time, inevitable consequences for population-level outcomes. These emergent outcomes include changes in the popularity of beliefs and behaviors and changes in the extent to which these beliefs and behaviors correlate and cluster. Furthermore, DSIT shows how the psychology of social influence can create and sustain patterns of diversity within a cultural population. Diversity – of beliefs, behaviors, aptitudes, etc. – is an outcome of particular relevance here. As

Smaldino observes, diversity sets the stage for collaboration, which can then give rise to new group-level traits. Second, because diversity is the fuel that fires the engine of evolution, it has implications for cultural evolution more generally.

One important reason why the psychology of social influence produces predictable population-level consequences is because, within any social interaction, influence is rarely symmetrical. Some individuals are more influential; some individuals are more influence-able. DSIT typically treats these influence asymmetries as random variation. But they are not just random. The psychological literature documents specific kinds of role differentiations that have specific implications for patterns of asymmetric influence; this, in turn, can have predictable long-term consequences for cultural diversity and other group-level traits.

Leadership roles are one obvious example. Smaldino speculates that leadership, and its consequences, is one likely means through which group-level traits emerge. There is an extensive empirical literature on the psychology of leadership and followership and implications for group outcomes (Van Vugt et al. 2008). By applying insights from this literature, it will be possible to predict group-level traits with greater precision.

Other forms of asymmetric influence arise from a variety of other social distinctions – some obvious and some not – that connote differences in power, dominance, expertise, or prestige. These differences have consequences for individual-level cognition and additional consequences for social influence (Cheng et al. 2013; Fiske 2010; Galinsky et al. 2008). Because of these asymmetrical influence implications, there will be further consequences for the emergence and transmission of group-level traits.

It may also be productive to explore the implications of sex differences. The male/female distinction is perhaps the most fundamental form of collaborative interdependence within the human species (in the sense that men and women collaborate interdependently to produce offspring). The mating game is a dynamically unfolding process in which individuals' thoughts and actions are influenced by the presumed thoughts and actions of other men and women in the immediate vicinity. But men and women do not influence each other in exactly the same way; their influence is predictably asymmetrical. The implication, explored in research on "dynamical evolutionary psychology," is that the specific distributions of men and women within a population, and the specific characteristics of those men and women (e.g., the extent to which they are available or unavailable as mates), can affect the emergent properties of the entire population (Kenrick et al. 2003). The implications of sex differences for group-level traits are not limited to the domain of mating behavior. The male/female distinction has profound implications for division of labor and distribution of knowledge across a wide range of behavioral domains (Fried 1967; Wood & Eagly 2010). Research that systematically integrates the psychological literatures on sex differences (Geary 2010) and social interaction with Smaldino's perspective on group-level traits is likely to reveal additional novel implications for cultural evolution.

The psychological processes that govern social interaction and social influence – and lead to emergent group-level traits – are themselves moderated by additional features of local ecologies. For example: the prevalence of infectious diseases in the local ecology appears to have many relevant implications. Among other outcomes, the sociological and psychological bases of

asymmetric influence – rigid status hierarchies, authoritarian attitudes, etc. – are more evident under circumstances of higher disease prevalence (Murray et al. 2011; 2013). The implication is that when diseases pose less of a threat, a more diverse set of beliefs and behaviors are likely to be expressed and maintained within a population. So, by carefully considering the specific psychological processes that govern the emergence of group-level traits, we may also be able to more fully identify connections between ecological circumstances and cultural evolution.

The take-home message is this: to realize the vast potential of the perspective outlined by Smaldino, it will be helpful to draw more fully on the vast psychological literature on social influence. As a happy corollary, this kind of conceptual integration will benefit the psychological literature too