



## A group selection perspective on economic behavior, institutions and organizations

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### ABSTRACT

This article examines the role of group dynamics and interactions in explaining economic behavior and the evolution of institutions. Our starting point is the large literature on group selection in the biological, behavioral and social sciences. We present a range of interpretations of group selection, describe a complete set of group selection mechanisms, and discuss the empirical and experimental evidence for group selection. Unique features of cultural group selection are investigated, and opportunities for applying the latter to various areas of economic theory and economic policy are identified.

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## 1. Introduction

Dominant theories in economics, including behavioral economics, are based upon self-referential individual behavior and neglect the role of groups. As a result, such theories have an upward causation perspective. Here it is argued that inclusion of group level phenomena in economic analysis is relevant because the presence of groups can change the behavior of individuals as well as the interactions among them, and in turn may affect the economic system as a whole. The combination of individuals and groups means that upward and downward causation operate simultaneously.<sup>2</sup>

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<sup>2</sup> A group is a stable set of individuals having a closer connection (communication, cooperation, sharing, helping) with each other than with non-members. The group often is clearly demarcated from non-members in space, a network or time. A group can be defined as having characteristics that emerge from the interactions between individuals. Indicators of this can be average behavior, variance of behavior, group size, communication networks, group norms and rules (or more complex institutions), cooperation, internal labor division and other aspects of group organization. Firms can be considered as groups, but are in economics usually treated as analogous to individuals, certainly when described as part of a larger system (such as in a general equilibrium system).

Our starting point is group selection theory in biology. It addresses the emergence, growth and selection of groups, including mergers, takeovers and conflicts between groups. It offers arguably the best available framework for thinking about group dynamics and the interface between individuals and groups. Various behavioral and social sciences have drawn upon the large and growing literature on group selection, which has given rise to the distinction between genetic and cultural group selection. This paper examines the application of group selection theory to economic behavior and institutions. Combining individual and group levels (or more precisely within-group and between-group processes) in a single analysis results in a multilevel approach, which is more complex than a system limited to upward causation of processes at the individual level. This additional complexity may partly explain why notions of multilevel and group selection have been surrounded by considerable debate.

Group processes often involve other-regarding decision-making, such as imitation, concern for relative position, and social rewards and punishment. Related theories of bounded rationality can be considered as complementary to theories of group processes. Recent theoretical and experimental findings indeed suggest that groups, norms and social context are essential to explanations of individual choice (Akerlof, 2007; Fehr and Fischbacher, 2002). However, the dynamics of, and interaction between, multiple groups is rarely considered in theoretical explanations of these empirical studies.

Including groups and their evolutionary dynamics in models of economic behavior and systems may enhance the study of a number of topics relevant to economics in four different ways. First, inclusion of groups can clarify the impact they have on cooperation, the structure of institutions, and conflicts over economic distribution. Second, it can help to design adequate institutions or public regulations for dealing with collective action dilemmas. Indeed, standard public policy solutions to common dilemma type problems are based on models assuming purely self-regarding preferences. Such policies may fail to address real world situations characterized by group norms influencing individual preferences and interactions (Bowles, 2008). Third, combining group and individual levels of description allows for the analysis of countervailing forces of within- and between-group processes. Finally, group evolution illuminates the complex organizational structure of human economies, involving nested structures, conflict between groups, and the coevolution of different sets of groups and individuals (Hannan and Freeman, 1977, 1989; Potts, 2000).

The combination of evolution and groups means a focus on ultimate, as opposed to proximate, explanations. This is increasingly accepted as the most suitable way to understand the fundamental nature, history and dynamics of complex systems. Of course, one can simplify and assume away dynamics or just pose mechanistic dynamics (i.e. absence of populations, diversity, innovation and selection) in any particular analysis, but only an encompassing evolutionary framework is able to clarify the margin of error and the conditional range of explanation resulting from such a simplification.

An important basis for thinking about groups is the recently revived debate on group selection in biology and the behavioral and social sciences (Bergstrom, 2002; Boyd and Richerson, 1990; Field, 2001; Henrich, 2004; Sober and Wilson, 1998; Wilson and Hölldobler, 2005; Wilson and Wilson, 2007; van Veelen and Hopfensitz, 2007). Despite continuing disputes, the extensive literature on group selection is now an integral part of the large body of evolutionary thinking.<sup>3</sup> It makes a subtle distinction between genetic and cultural group selection. This reflects the fact that biological organisms (including humans) make use of all kinds of ‘learning mechanisms’, which can be broadly classified into genetic transmission and cultural transmission (with epi-genetic and phenotypic plasticity effects as either sub-categories of these or additional categories). Gintis (2007, p. 5) refers to this as gene-culture coevolution.

Group selection has received little attention in economics. Rudiments of cultural group selection arguments were implicit in Hayek (1976 and later work). He argued that customs, morals, laws and other cultural artifacts are subject to group selection, generally surviving and replicated if they benefit survival and expansion of the human groups carrying them.<sup>4</sup> Others have used the term group selection but with a very loose interpretation that does not always clearly separate between sociobiology-based kin selection and group selection applied to non-kin groups (e.g., Samuelson, 1993). They nevertheless seem to support the view that multilevel phenomena deserve more attention in economics, which is consistent with, though not identical to, the vision presented by Potts (2000), who regards economic systems as complex “hyperstructures” or nested sets of connections among components.

Parsimonious modeling, characteristic of both theoretical economics and theoretical biology, runs into problems when groups and resulting multilevel phenomena are added to the picture. Simple models are unable to adequately address group-related phenomena like synergetic interactions among individuals, relative welfare and status seeking, clustering of individuals due to spatial isolation, multilevel selection, and the combination of upward and downward causation (van den Bergh and Gowdy, 2003). Not surprisingly, one can find many different approaches to model group selection (Garcia and van den Bergh, 2007). It is likely that some of the results obtained with formal models in the 1960s and 1970s are not as general as once thought, because of the limitations of these models. Indeed, at the time, numerical analysis with complex, multilevel and spatial models was limited if not impossible.

In addition to evolutionary theories of group formation and selection, there exist a number of less well-defined theories about groups (e.g., Forsyth, 2006). These involve concepts like networks and hierarchies, and employ proximate explanations based on psychological, sociological, and economic reasoning. In addition, there are experimental studies which examine the effects of groups (see Section 4). In mainstream economics fundamental change at the level of groups or institutions is

<sup>3</sup> It is surprising therefore that in a review of the biological basis of economic behavior Robson (2001, 2002) did not even mention group selection.

<sup>4</sup> For a critical perspective on Hayek’s view see Steele (1987).

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