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## Cultural Group Selection Plays an Essential Role in Explaining Human Cooperation: A Sketch of the Evidence

Abstract: Human cooperation is highly unusual. We live in large groups composed mostly of non-relatives. Evolutionists have proposed a number of explanations for this pattern, including cultural group selection and extensions of more general processes such as reciprocity, kin selection, and multi-level selection acting on genes. Evolutionary processes are consilient; they affect several different empirical domains, for example patterns of behavior and the proximal drivers of that behavior. I will sketch the evidence from five domains that bear on the explanatory adequacy of cultural group selection and competing hypotheses to explain human cooperation. Does cultural transmission constitute an inheritance system that can evolve in a Darwinian fashion? Are the norms that underpin institutions among the cultural traits so transmitted? Do we observe sufficient variation at the level of groups of considerable size for group selection to be a plausible process? Do human groups compete, and does success and failure in competition depend upon cultural variation? Do we observe adaptations for cooperation in humans that most plausibly arose by cultural group selection? If the answer to one of these questions is "no", then we must look to other hypotheses. We present evidence, including quantitative evidence, that the answer to all the questions is "yes" and argue that we must take the cultural group selection hypothesis seriously. If culturally transmitted systems of rules (institutions) that limit individual deviance organize cooperation in human societies, then it is not clear that any extant alternative to cultural group selection can be a complete explanation.