

# The Evolutionary Foundations of Sectarianism

## Paper Summary

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The tendency of humans to cooperate for reasons other than self-interest has long intrigued social scientists, leading to the development of a substantial body of literature. However, this question has a complement that has received little to no attention in this literature: What is the motivation for individuals to resist cooperation even in cases that are beneficial at the individual and group level?

In this paper, I study the principal drivers for sectarianism and the dynamics that undermine cooperation by building on existing approaches in multi-level selection and tools from evolutionary game theory and agent-based modeling. As much as these models provide a rationale for the co-evolution of cooperative behavior and institutions, and the internalization of other-regarding norms, such dynamics are also key to explaining the human tendency for racism, hostility, and religious bigotry. The model illustrates a co-evolution of sectarian identities and conflicts, mainly driven by peer-pressure, belonging, and previous experiences. Theoretical results are supported by empirical evidence from Lebanon.

# 1 Introduction

The foundations of the evolution of cooperation is one of most intriguing topics today. Cooperation beyond kin or reciprocal altruism seems counter-intuitive from a strict evolutionary and self-regarding perspective. The evolutionary basis for sectarianism, the anti-thesis to cooperation, presents an even greater puzzle. Although sectarianism might seem to protect a group against detrimental external influences, it reduces opportunities for mutually advantageous exchanges and increases the risk of contests and wars, rendering sectarianism harmful both at the group and individual levels. Sectarianism is not limited to religious compartmentalization and hatred of other religious sects, but includes discrimination and eschewing beneficial interactions for reasons of different political or territorial affiliations, identity, and class. Sectarianism obstructs the Smithian invisible hand and turns the argument for pro-social behavior on its head. Instead of individuals cooperating for no apparent self-interest, sectarianism implies avoidance of cooperation in mutually beneficial cases. Understanding the roots of sectarianism is therefore deeply entangled with findings regarding the evolution of cooperation. The paper thereby tackles a principal theme in economics. Sectarianism remains a critically relevant subject of study, as the phenomenon is a key influence throughout the human history of intra-group conflict, and still plays a pivotal role in individual and group decision-making.

# 2 Literature and Methods

Studying sectarianism is a natural extension of the study of cooperation. Existing models of cooperation are therefore fertile ground for developing analytical models of sectarianism. Sociobiology studies the evolution of social behavior within species via natural selection, and offers a plethora of models. Similarly, models of social systems replace fitness-based replication by (biased) cultural transmission (Boy & Richerson, 1988, 2005). Identity is another essential constituent of sectarianism. Identity economics (see Akerlof & Kranton, 2010), in addition to social identity theory (Goffman, 1959), forms a theoretical basis for studying the connections

between group identification (e.g., perceived in-group similarity and out-group dissimilarity) and the internalization of ideals and norms (Akerlof & Kranton, 2002; Bernheim, 1994). Identity influences preferences and decisions, determines power relations and social interactions, and creates a sense of belonging. It explains characteristics of sectarianism, such as status effects (Veblen, 1899/2009) and public actions (Granovetter 1978), retaliation against norm violators (Fehr & Gächter, 2000), as well as ostracism of outsiders, and favoritism of insiders. Identity (formation) simultaneously feeds on and causes sectarian conflict. The co-evolutionary process of identity formation and endogenous parochialist preferences is determined by selection processes occurring both between and within groups. The recursive dynamics and complexity of the multi-level selection processes render a closed-form analytical solution infeasible. The paper therefore relies on an agent-based model which comprises elements of Choi & Bowles (2007) and Axtell et al. (2000).

### **3 Assumptions**

Individuals are members of a group / sect and members of different sects interact on the basis of a Nash demand game. In addition, each individual is either coercive or indulgent. Coercive types try to enforce their demands with the support of other coercive members in their group in the case in which demands exceed the available amount, but also face a cost while doing so. In addition, each member keeps track of his previous interactions with each group / sect. Based on his past history with members of a sect, each player chooses a best response when matched with a player of this sect. Furthermore, the cost of enforcement depends on the accumulated past payoffs. Behavior is passed on by social learning and more successful types of behavior are more likely to be replicated by group members.

## 4 Results

Best responses to a given history of interaction with a sect are defined by the unit simplex in Figure 1. A best response to a history of past play with a sect in the red area is high (i.e., demand a high share), in the blue area is low and in the yellow area is medium. After an initial period, groups are homogeneous in types, but not the population as a whole. A majority of groups are indulgent. Members of the coercive groups demand high more frequently and perform better. Results are robust to changes in the way in which past interactions are memorized and the type of social learning / replication. However, if memory is self-referential, coercive groups are universally sectarian, whereas indulgent groups primarily cooperate (example in Figure 2). Sectarian conflict is moderate. If memory is reflectively self-referential or other-referential, coercive groups illustrate a sophisticated pattern of discriminatory sectarianism (example in Figure 3). If standard replication on the basis of random pairing and pairwise comparison is substituted by other versions of social learning that benefit the replication of the fittest group member, sectarian behavior of coercive groups is more pronounced and sectarian conflict is increased while efficiency is decreased.

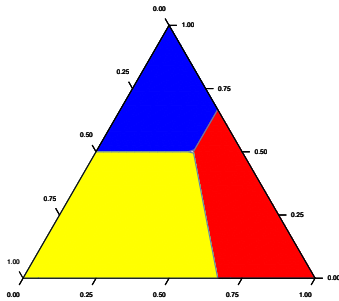


Figure 1: Best response past play simplex

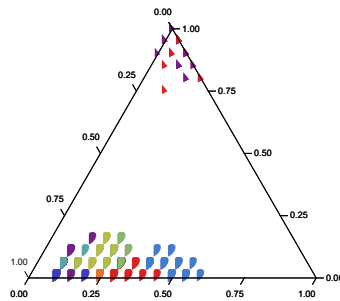


Figure 2: Self-referential memory

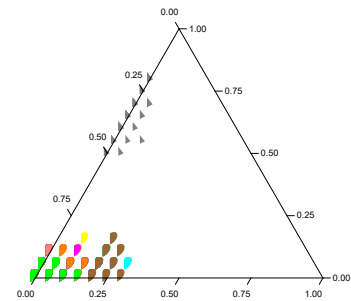


Figure 3: Other-referential memory

## 5 Discussion

The model replicates and explains the type of "discriminatory" sectarianism found in countries like Lebanon with shifting historical sectarian cleavages and alliances as an evolving property. Sectarianism is driven by a generic discriminatory variable of group adherence that encompasses the multi-dimensionality of sectarianism, which is not strictly religious, but also economic, political, ethnic, and geographic in nature. In addition, the model replicates the scale-free property of sectarianism, as well as reproduces the prevalent situation in which few dominant sectarian groups (like Maronites and Shia) subordinate a broader mass of less sectarian groups. Since sectarian conflict evolves endogenously, the model further illustrates the conditions under which strong degrees of sectarianism can be maintained at low levels of sectarian conflict and high degrees of coordination. It further shows how a system of intra-sectarian sponsoring can affect social stability and efficiency.

## 6 Conclusion

In the narrow context of studies on social preferences and identity, this paper contributes to our understanding of cooperation by aiming its analysis in a direction opposite to most preexisting literature. It studies the necessary evolutionary conditions leading to preferences that impair collaboration and coordination between individuals. This paper thereby also contributes to the broader research on development by examining the phenomenon of sectarianism.

## 7 References

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