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Second-order ethnic diversity: The spatial pattern of diversity, competition and cooperation in Africa

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ABSTRACT

Ethnic diversity has been linked to important social outcomes such as economic underperformance and civil war, yet its study is still hampered by conceptual difficulties and imprecise measurement. In this paper, a modified understanding of ethnic diversity is developed. Ethnic diversity is disaggregated into two components—first- and second-order ethnic diversity—which have opposing consequences for collective outcomes. While first-order ethnic diversity—the diversity of a local community—is theorized to undermine cooperation, second-order ethnic diversity—the ethnic diversity of the *hinterland* of a community—is theorized to induce ethnic competition, thereby reinforcing cooperation. Relating data from over 100,000 individuals interviewed at 2,942 locations in 33 African countries to novel subnational indicators of first- and second-order ethno-linguistic diversity, the theory is tested and its basic tenets confirmed. In a next step, I show that it is indeed ethnic competition that accounts for the positive association between second-order diversity and increased cooperation: second-order ethnic diversity is a much better predictor of cooperation in regions where contemporary or historical factors have exacerbated interethnic tensions. The paper sheds new light on the debate on the consequences of ethnic diversity for cooperation and contributes to our understanding of the origins of the global 'geography of social capital'.

Introduction

Ethnic diversity has been linked to a wide range of—mostly negative—outcomes, from economic underperformance to patronage politics and civil war (Arriola, 2009; Easterly & Levine, 1997; Sambanis, 2001), and more generally is seen as undermining cooperation and the provision of public goods (Alesina, Baqir, & Easterly, 1999; Habyarimana, Humphreys, Posner, & Weinstein, 2009). While clearly of great importance, the study of the consequences of ethnic diversity is still hampered by conceptual difficulties and imprecise measurement, however. This paper develops a revised understanding of the concept, distinguishing between local, first-order ethnic diversity and second-order ethnic diversity, the diversity of the *hinterland*. First-order ethnic diversity is the diversity of a local community—how many different groups live together and interact in one place. Through various mechanisms, first-order or local ethnic diversity *undermines* community cooperation (Habyarimana et al., 2009). Second-order ethnic diversity is the ethnic diversity of the *hinterland*—how many different groups settle in the surroundings of a given community. In sharp contrast to first-order ethnic diversity, second-order ethnic diversity can *strengthen* community cooperation. This is because second-order diversity induces ethnic competition. Ethnic competition, in turn, has been linked to increased levels of mobilization and cooperation in historical and contemporary cases (Enos, 2016; Olzak, 1992), and is deemed particularly important in the African context (Bates, 1983). The distinction between first- and second-order ethnic diversity thus helps to make sense of the persistent contradictions that have riddled the scholarship on diversity, cooperation and public goods provision. It can also help us to shed light on the intriguing differences in the supply of social capital between and within different regions of the world.

The theory is tested by relating data on social and political engagement from over 100,000 individuals interviewed at 2,942 locations in 33 countries in Africa to novel subnational indicators of first- and second-order ethnic diversity. In line with previous research, I show that first-order ethnic diversity consistently has a negative impact on cooperation. Effect sizes are substantial and comparable to those found by other scholars (Miguel & Gugerty,

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2005). Moving from full homogeneity to full heterogeneity is associated with a 14% drop in cooperation levels. At the same time, local cooperation rises as second-order ethnic diversity increases. Moving from ethnically homogenous surroundings to fully heterogenous surroundings is associated with a 28% upsurge in cooperative behavior. At the aggregate level, the cooperation-inducing effect of second-order ethnic diversity thus overcompensates the negative effects of first-order ethnic diversity, leading to an overall positive relationship between ethnic diversity and cooperation on the African continent. These findings are robust to an extensive set of controls and fixed effects, and an instrumental variable strategy suggests causality.

In a second step, I present evidence showing that it is indeed ethnic competition that accounts for the positive association between second-order ethnic diversity and increased cooperation. Second-order ethnic diversity goes along with higher levels of cooperation where contemporary geographic and political factors identified to raise levels of interethnic competition are present: in urbanised areas, where ethnic and administrative boundaries coincide and where government is dominated by a single group (and thus faces many challengers). Since these factors may suffer from endogeneity bias, in a further step I turn to history to identify factors that are linked to competition but are also plausibly orthogonal to cooperation dynamics. I present three tests. First, inspired by research on the political salience of externally determined borders, I demonstrate that ethnic diversity that is attributable to ethnic groups being separated by colonial borders has a weaker effect on cooperation than 'genuine' ethnic diversity. Second, I examine the legacy of the *trans*-Atlantic slave trade—one of the main causes of intergroup conflict during 400 years of Africa's more recent history—on cooperation (Nunn & Wantchekon, 2011). I show that the link between second-order ethnic diversity and cooperation is stronger in regions historically more severely affected by the slave trade, despite the fact that the overall effect of the legacy of the slave trade is to undermine contemporary trust and cooperation. Finally, I show that second-order ethnic diversity has a stronger effect on cooperation where states had in the past found it hard to establish control, and where societies relied more on indigenous slavery. In tropical Africa, both phenomena are linked to the presence of the tsetse fly, which weakens or kills domesticated animals such as horses and oxen used for transport and the projection of power (Alsan, 2015; Herbst, 2000). I demonstrate that the relationship between second-order diversity and cooperation is stronger in regions hospitable for the tsetse fly.

The paper contributes to two bodies of literature. For one, I add to the literature on ethnic diversity and interethnic relations, directing attention to the effects of ethnic competition, an aspect often overlooked. For another, the paper contributes to an emerging literature that attempts to explain why certain regions tend to be more cooperative than others—the 'geography of social capital'—adding ethnic conflict and competition to the list of explanatory factors.

Diverging effects of ethnic diversity and the geography of social capital

Even a cursory review of studies on ethnic diversity and cooperation from Africa demonstrates that the field is still riddled with contradictions. A range of studies shows that regions that are ethnically heterogenous are economically and politically held back, and have a poor record in the provision and maintenance of collectively owned goods (Arriola, 2009; Easterly & Levine, 1997; Miguel & Gugerty, 2005). Other studies estimate the effect of ethnic diversity as precisely zero (Glennerster, Miguel, & Rothenberg, 2013), however, or even present evidence for a *positive* relationship between ethnic diversity and respondents' willingness to contribute to public goods (Schündeln, 2013). Comprehensive reviews of the literature are inconclusive, too. Overall, only about one-third to one-half of studies are found to demonstrate a negative relationship between ethnic diversity and measures of social cohesion, trust and cooperation (Schaeffer, 2014; Van der Meer & Tolsma, 2014).

In trying to account for the contradicting findings, scholars have pointed out that different studies use different levels of aggregation to assess levels of ethnic diversity—and often with vastly different results. One of the mentioned reviews shows that only ethnic diversity measured at the regional or sub-regional level—but not at the national level—is found by a majority of studies to reduce levels of trust and cooperation (Schaeffer, 2014). While authors have linked this finding to the 'modifiable areal unit problem' widely discussed in geography (Holt, Steel, Tranmer, & Wrigley, 1996; Openshaw & Taylor, 1979)—that the same spatial phenomenon measured at different scales of measurement does not necessarily have the same effect at all scales—it remains unclear *why* ethnic diversity should negatively impact on cooperation in some cases and not in others. The solution proposed in this paper is that ethnic diversity can have two internally consistent effects: ethnic diversity on the local level consistently works to undermine community cooperation, while ethnic diversity in surrounding areas consistently induces cooperation within groups. The net effects of ethnic diversity then depends on which partial effect dominates or whether the two effects cancel each other out.

Several theories account for why first-order or local ethnic diversity, i.e. the number and distribution of different ethnic groups that mix at one place—should undermine cooperation. A first strand of research suggests that people feel intimidated by the presence of ethnic others, they 'hunker down' and are less socially active (Putnam, 2007). Others draw on insights from the extensive research programme on the evolution of cooperation (Axelrod & Hamilton, 1981; Nowak, 2006). Multiethnic neighborhoods go along with fractured, less integrated social networks since friendship and acquaintances tend to be formed along ethnic lines (McPherson, Smith-Lovin, & Cook, 2001). In such multiethnic neighborhoods, the probability of future contact with any inhabitant is thus reduced, making cooperation motivated by future consequences of present behavior less likely than in ethnically homogenous neighborhoods. The lack of traceability through networks also complicates the use of social sanctions to enforce cooperation (Habyarimana et al., 2009). Other scholars have pointed out that ethnic diversity may go along with different groups having conflicting preferences, making it harder to cooperate in the pursuit of common goals (Kimenyi, 2006). Finally, there is some evidence that cooperation is inhibited by a lack of shared cultural 'tools' (Habyarimana et al., 2009). When lacking a common language, for instance, individuals will find it difficult to organize and act collectively.

Theories as to why second-order ethnic diversity—the extent to which the *hinterland* of a community's place of settlement is populated by members of other ethnic groups—should increase cooperation, on the other hand, usually invoke ethnic competition and threat. The idea is that by increasing—or historically having increased—the level of interethnic threat and competition, the presence of other groups nearby can induce local cooperation. This conjecture has been widely discussed in 20th-century sociology and anthropology, and the effects of outgroup presence and competition on ingroup cooperation have triggered a rich research programme in psychology and economics (Abbink, Brandts, Herrmann, & Orzen, 2010; Tajfel, 1982). In politics, a similar concept to that of outgroup competition has been explored under the heading of 'racial threat'. In a classic account, race relations were shown to