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Multilingualism and public goods provision: An experiment in two languages in Uganda

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ABSTRACT

Multilingualism is the global norm, but the implications of this for cooperation and public goods provision have not been studied before. We test whether the language in which a public goods game is played affects subjects' contributions amongst a bilingual population in eastern Uganda, finding that subjects contribute 30% more on average in the national language. This treatment effect is solely driven by those most associated with the local Gisu identity, for whom contributions are 43–74% higher in the national language. This difference fits with Gisu culture's high value on self-reliance and low value on reciprocity and cooperation, due to a violent history of intense competition over land. Language is thus shown to affect cooperation, but only for individuals who both have different latent norms and for whom language activates these norms.
NB: The experimental script, data and code are available at https://paulclist.github.io

1. Introduction

Most of the world's population is multilingual. Amongst the 200 or so countries in the world, there are 7105 known living languages in current use (Lewis et al., 2013). Most readers of this article will live in countries with a clear and unambiguous 'national de facto language' which are populated by monolinguals. From a global perspective however, multilingualism is more common (Crystal, 1997). Romaine (2001, p.385) states that "Bilingualism and multilingualism are a normal and unremarkable necessity of everyday life for the majority of the world's population." Indeed, in developing countries, 'societal multilingualism', where multiple languages co-exist within a given society, is particularly prevalent. Romaine (2001, p.517) gives a telling picture of daily life:

> "The average educated person in Hyderabad may use Telegu at home, Sanskrit at the temple, English at the university, Urdu in business, etc… In societies such as these, multilingualism is not an incidental feature of language use, but a central factor and an organising force in everyday life."

One would expect multilingualism to affect important economic interactions. People's willingness to cooperate and contribute to public goods, in particular, could be affected by the language in which they are appealed to. From psycholinguistics we know that the language spoken by a person frames the way in which she perceives and conceptualises the world: a multilingual person thus potentially has multiple frames at her disposal, each of which remains latent until appealed to by the language that activates it (Hong et al., 2000; Luna et al., 2008). If these frames of reference differ in terms of the value placed on cooperation and public spiritedness, then whether one or the other language is used for appeals to cooperate or contribute to a public good would matter for public goods provision and cooperation.

While the concepts of identity and frames have recently become established in economics, any link between these and different languages has largely been neglected.[1] Our innovation is to treat language

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[1] More generally, languages are rarely studied by economists. Recent exceptions include a high profile statistical relationship between certain linguistic features and savings behaviour (Chen, 2013), the findings that in their *weaker* language bilinguals are less prone to cognitive biases (Keysar et al., 2012; Costa et al., 2014a) and more likely to make utilitarian moral judgements (Costa et al., 2014b), and the effect of language in strengthening identity (Aspachs-Bracons et al., 2008; Clots-Figueras and Masella, 2013). Within the experimental economics literature, language has been mentioned mainly as a factor to be controlled for (Roth et al., 1991) or seen as a proxy for ethnicity (Habyarimana et al., 2009), rather than worthy of study in its own right. Desmet et al. (2012, p.337) argue that linguistic distinctions are more objective than ethnic boundaries ("it is easier to judge whether two populations speak different languages than to decide whether two populations belong to different ethnicities, a more amorphous concept…") and thus more amenable to study. In our study, language is not a signal of the ethnicity of one's partner and so any treatment differences are due to a subject's own response to the language.

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as a cue for one of a potential variety of frames, or identities, and investigate whether cooperation is affected accordingly. Specifically, we investigate multilingualism and multiple identities by conducting a linear one-shot public goods game (PGG) in two languages amongst a bilingual population. Both languages are used locally, with around 90% of the local population understanding both languages, and neither has a stronger claim to being the dominant language in public settings. In effect two lingua francas are found in the study area: Luganda and Lugisu.[2] We thus study whether cooperation is affected by language use in a setting in which balanced bilingualism is the norm.[3] In the area of eastern Uganda that we selected, the two languages are interchangeable for public purposes, so the language of the experimental script appeals to a particular identity without revealing the experiment's aims.

We find a strong treatment effect such that subjects in the Luganda treatment contribute 30% more to the public good. Moreover, this treatment difference is driven by subjects which are *most* associated with the local Gisu identity, but this can't be interpreted strictly according to ethnic groups. Whilst for others there is no treatment difference, those most associated with Gisu culture make different choices in the different languages, exposing different sets of norms and the ability of language to activate these. These results provide strong evidence that where those norms and languages are closely connected, individuals that have different latent norms may respond differently when appealed to in different languages. They may also help explain common findings of low provision of public goods in societies with high social divisions, described as "one of the most powerful hypotheses in political economy" (Banerjee et al., 2005, p.639).

The main contribution of our paper is in highlighting the role that language plays in mediating cooperation, by activating different norms. The diverse societies in today's world plagued by the absence of cooperation and willingness to contribute to public goods are, of course, usually multilingual societies. Our findings suggest to us that the role of language in these phenomena, through activating one of a variety of identities, including sectarian ones, is an important new area of study. In addition, we see our findings as contributing to two major literature.

The first is research in economics on identities, recently summarised by Hoff and Stiglitz (2016). Akerlof and Kranton (2000) formally introduced 'a person's sense of self' into economic analysis, where identities impose costs of deviation from category norms. The presence and size of these dis-utilities are determined by the salience of a category in a given situation, and the strength of identification with a category. A body of experimental literature has since provided empirical support.[4] This research makes use of priming, temporarily making a certain social category salient, which has a much longer history in psychology.

Experimental research on identity faces the challenge of priming appropriately. To bring an identity to the fore, what is a good priming technology? The method chosen is typically to administer a questionnaire on a pertinent topic shortly before some experimental decision. A common concern regarding the validity of this method is that experimenter demand effects may be driving the results (Zizzo, 2010).[5] Sometimes it is possible to rely on subtle cultural cues. Hoff and Pandey (2006, 2014) obtain their treatment effect by calling out (for all subjects in a session to hear) the names of subjects (young boys), as well as the names of their father, paternal grandfather, village and caste. This is seemingly innocuous but highlights the boys' social identity.

The psychological literature provides a different priming technology: using different languages to prime different identities. This has rarely been adopted in the economics literature, with three exceptions (Lambarraa and Riener, 2015; Espinosa et al., 2015; Li, 2010) discussed in section 5. In contexts where multiple languages are commonly spoken, different aspects of subjects' identities are primed in a way that is more normal than filling in a questionnaire.[6] If people have multiple identities, and they behave according to the one that is 'primed', then behaviour should be affected by the cues present in the social context. Our contribution to research on identities in economics is to treat language as a cue for one of a potential variety of identities, and investigate whether cooperation is affected accordingly.

The second major literature we contribute to is experimental research that uses public goods games (PGGs) to understand differences in cooperation and public goods provision between societies and groups within societies.[7] Two strands of the previous literature are relevant here. First, natural (externally relevant) groups have been used to examine whether contributions are affected by information regarding whether one's partner shares a given group membership. The information has included village of residence (Etang et al., 2011), tribe (Bernhard et al., 2006), ethnicity (Habyarimana et al., 2009) and nationality (Finocchiaro Castro, 2008). Results show higher cooperation, trust and norm enforcement amongst one's own group. Second, a separate strand has compared contribution rates between different societies, since Roth et al.'s (1991) seminal work showed significant differences between subjects in four countries. More recent cross-country comparisons have shown that cross-society differences are correlated with characteristics such as their market integration or the strength of the rule of law, using comparisons between up to 16 societies (Henrich et al., 2001; Herrmann et al., 2008).

The are two fundamental differences between our paper and the PGG literature. First, the two strands of literature discussed above are interactions or comparisons between distinct societies or groups within a society. In our experiment, all subjects are sampled from the same single society, and all potentially belong to two groups: all have access to the same two distinct frames provided by their balanced bilingualism. The language of the experiment thus subtly makes salient one of two potential group memberships among all subjects in a session; this is new in the literature. We next investigate whether interactions in the group thus activated are affected by such priming. Our results provide support for the Hypothesis that an individual's multiple group memberships (identities) have specific norms associated with them.[8]

Second, we study whether the effects of language on behaviour, through making a particular identity salient and thereby activating group-specific norms, are heterogeneous. Our subjects are all similar

[2] Luganda is a 'national language' and Lugisu is the language of the people (the Gisu) that historically dominate Bugisu, in eastern Uganda. The sub-county of Nakaloke, our study area, is found in Bugisu and ethnically highly diverse, resulting from large inflows of migrants in the early twentieth century.

[3] Balanced bilingualism is a term from linguistics that means equal proficiency in two languages.

[4] Benjamin et al. (2010) present a set of experiments in which priming ethnicity causes Asian-American subjects to make more patient decisions relative to a neutral prime, with the opposite effect for black subjects. Hoff and Pandey (2006, 2014) show that performance is affected by the salience of caste for lower-caste students in India, again using a neutral prime as a control. Benjamin et al. (2013) prime religious identity and find a range of different effects in the domains of cooperation, risk and reciprocity. Others compare subjects primed in different ways. LeBoeuf et al. (2010) present evidence in which the salience of different social identities (e.g. student, socialite, family member) affect stated preferences for related goods. Cadsby et al. (2013) show that for women (but not men), priming a business identity relative to a family/gender identity increases the likelihood with which they choose a competition over a piece rate pay structure. Looking at cooperation, Chen et al. (2014) study prisoner's dilemma and minimum effort games where either a fragmenting (ethnic) or common (university) identity is primed. As predicted, the fragmenting identity leads to less socially efficient outcomes.

[5] Benjamin et al. (2010) try to assuage such fears by administering a questionnaire, asking subjects to guess the topic of the experiment. Although useful, this does not seem fully satisfactory, as the second set of questions could also be prone to experimenter demand effects and would only detect conscious biases.

[6] More generally, language has value as an alternative priming technology; it would be troubling if priming only worked if questionnaires were used.

[7] PGGs have been played extensively; for reviews see Zelmer's (2003) meta analysis, Cardenas and Carpenter's (2008) review of evidence from developing countries and Levitt and List's (2007) critique of the method.

[8] Akerlof and Kranton (2000, p.731) describe this case, where different identity-based pay-offs become salient in different situations, which may result from group-specific norms.