Pre-Analysis Plan

Does Cross-Cutting Interaction Reduce Support for Sectarian Politics? Evidence from a Discussion Experiment in Lebanon

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Abstract

For countries in which ethnic politics prevail, is it possible to reduce the predominance of the ethnic cleavage and increase support for multi-ethnic, programmatic politics? This study builds on research on the role of cross-cutting cleavages and inter-group contact to examine how cross-cutting social interaction—specifically interaction that cuts across ethnic and class lines—affects social identity and political preferences. We organized 120 discussion groups in Beirut, Lebanon and randomly assigned 720 lower and upper income Sunni, Shia, and Christian participants to one of four discussion types: (i) homogeneous class and confession; (ii) homogeneous class, mixed confession; (iii) homogeneous confession, mixed class; or (iv) mixed class and confession. We examine how discussing key economic and political issues with individuals from similar or different identity groups shapes social identity, cooperation, and ultimately support for sectarian versus programmatic politics. This project was implemented in 2016 in the context of historic protests in Lebanon that created a window of opportunity for public discussion on the future of the dominance of sectarian politics in the country.

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1 Introduction

Ethnic or sectarian politics dominate in many countries. In countries such as Lebanon and Iraq, sectarian politics is institutionalized in the political system. In other countries, the dominance of ethnic politics emerges through the dynamics of political party competition (Chandra, 2004; Huber, forthcoming). Regardless, ethnic politics is associated with a host of undesirable development outcomes, including under-provision of public goods, clientelism, weak accountability, and civil conflict (Alesina, Baqir and Easterly, 1999; Habyarimana et al., 2009; Pande, 2011). This raises the important question: What factors can reduce the predominance of ethnic politics and increase support for programmatic politics? Researchers to date have suggested several possibilities, including economic growth; party and leader incentives (Posner, 2004; Huber, forthcoming); improving the information environment on candidate performance (Banerjee et al., 2012; Adida et al., 2016); and elevating national over ethnic identity (Robinson, 2013).

This study takes another approach in examining the role of social interaction—specifically interaction that cuts across ethnic and class lines—in understanding social identity and support for ethnic politics. Social interaction is of central importance to understanding political phenomena as it is "the primary mechanism linking social group membership and individual political behavior" (Horan (1971) quoted in Mutz, 2002a, 839). Moreover, research from social psychology and political science on cross-cutting cleavages and on inter-group contact suggests that social interaction that cuts across ethnic and class lines could increase the salience of economic interest, affecting social identity and ultimately support for the ethnic status quo.

The challenge with studying the effects of cross-cutting social interaction is that individuals typically select into their real-world interactions. It is highly plausible that individuals who are more tolerant have more heterogeneous social networks and are more likely to oppose ethnic (sectarian) politics.[1] We therefore test this hypothesis by conducting a discussion experiment with 720 lower and upper income Sunni, Shia, and Christians in Beirut, Lebanon. Participants were recruited and randomly assigned to one of four experimental conditions: (i) discussion in homogeneous groups (the control group); (ii) discussion in mixed sectarian but homogeneous class groups; (iii) discussion in homogeneous sectarian but mixed class groups; and (iv) discussion in mixed sectarian and class groups. A total of 120 one-time discussion groups were organized in all (30 of each type). This enables us to examine the effect of different types of cross-cutting social interaction on a range of outcomes associated with the perpetuation of ethnic politics, including self-identification, the perceived closeness of different social groups, cooperation, sectarian favoritism, and ultimately support for programmatic policies and modes of action.

The discussions themselves were highly structured and focused on participants' hopes and concerns with respect to the economic and sectarian political situation in the country. While sectarianism has long defined the political way of life in Lebanon, there is also a salient but subordinate cross-cutting economic cleavage (Corstange, 2013). Moreover, this experiment was conducted in

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[1]Given our empirical context in Lebanon, we use the terms 'ethnic' and 'sectarian' interchangeably.

the spring of 2016 in the wake of months of rare and massive cross-sectarian protests that arose in response to inept government management of trash collection. The protests and subsequent municipal elections created a window of opportunity for public reflection on the future of sectarian politics in Lebanon. The discussions were organized by the non-partisan Lebanese Center for Policy Studies (LCPS), which sought to facilitate interaction among ordinary citizens on these key issues.

This document serves as the pre-analysis plan for this study.[2] It reflects the fact that this study is exploratory in many ways. While previous studies have shown that cross-cutting cleavages reduce ethnic divisions (Dunning and Harrison, 2010; Gubler and Selway, 2012), few studies have examined if a subordinate cross-cutting cleavage can be brought to the fore through social interaction. There are also studies on the effects of inter-group contact and discussion on bias and prejudice (Paluck, 2010; Scacco and Warren, 2016), but these do not explicitly examine cross-cutting social interaction. Previous research on cross-cutting social networks have found that they are associated with both tolerance (Mutz, 2002b) and with cross-pressure (Mutz, 2002a), but these studies did not explore the implications for identity politics and were based on observational data. Our goal is to combine insights from the existing theoretical and empirical research to examine cross-cutting social interaction using real-world cleavages, discussion, and political outcomes.

2 The case for cross-cutting social interaction

How does cross-cutting social interaction—particularly interaction that cuts across economic and sectarian lines—affect support for sectarian versus programmatic politics? It is widely appreciated that individuals naturally form social groups, which can lead to bias, inter-group competition, and conflict (Crisp and Hewstone, 2007). Social categorization—whether on the basis of ethnicity, religion, class, sex, etc.—defines an 'in-group' and an 'out-group'. This process accentuates similarities among in-group members and differences with the out-group, resulting in favoritism for the former and bias and antagonism towards the latter (Brewer, 2000). Consequently, altering how individuals categorize themselves and others could be essential to mitigating the negative effects of group relations.

Importantly, it has also long been argued that societies that have cross-cutting (rather than reinforcing) cleavages have lower levels of divisiveness (Deschamps and Doise, 1978; Lipset and Rokkan, 1967). While there are clearly many potential cross-cutting cleavages, the class cleavage is arguably the most important for understanding potential support for programmatic politics. Importantly, even in societies dominated by ethnic cleavages, there is often a cross-cutting economic cleavage—what Horowitz (2000) seminally refers to as 'unranked' societies. As Dunning and Harrison (2010, 21) note: "When individuals who are members of the same group or social category on one dimension of interest or identity, such as ethnicity, are members of different groups on another dimension, such as social class, their competing interests on the second dimension may undercut their primary allegiance to interests arising on the first dimension." The notion that cross-cutting

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[2]The pre-analysis plan was prepared using data from the screening and pre-treatment surveys.

cleavages can reduce bias and discrimination along one dimension is also supported by research in social psychology on crossed-categorization (for a review see Brewer, 2000).

Yet, there are many reasons that cross-cutting group identities do not influence inter-group bias or discrimination based on the dominant identity (Brewer, 2000). For one, social networks tend to be relatively homogeneous so that individuals do not often come into (meaningful) contact with people from different ethnic or class groups. It could also be the case that, even for people with heterogeneous social groups, ethnic identity remains more salient than economic identity such that cross-cutting cleavages are ignored. This suggests that cross-cutting social interaction that makes both ethnic and economic identity salient could have an effect on social identity and support for ethnic politics.

While there are different ways to get individuals to "confront the fact that their different ingroup-outgroup categories have overlapping memberships" (Brewer, 2000, 174), social interaction is a potentially powerful tool.[3] This is consistent with a large literature on inter-group contact that has examined how social interaction can alter outcomes like bias, prejudice, and discrimination by facilitating learning, reducing anxiety, and fostering empathy and perspective-taking (Pettigrew and Tropp, 2011). While much of the literature has focused on *positive* social interaction, there is also a growing appreciation that some social contact can be negative (Pettigrew and Tropp, 2011). This is particularly important in our context where it is possible that cross-cutting social interaction between individuals from the same ethnic group but different economic classes could actually increase antagonism.

The challenge with investigating the effects of cross-cutting social exposure arises from the fact that individuals typically select into their social networks such that those in more heterogeneous networks are also those who are already more tolerant and willing to support cross-sectarian objectives (Mutz, 2002a,b). Our main goal is therefore to provide a causal test of the following hypothesis:

> **H1:** Social interaction that cuts across ethnic (sectarian) and class cleavages will weaken individual tendencies towards ethnic politics and strengthen tendencies towards programmatic politics.

By 'tendencies' we refer to a range of individual-level outcomes that we expect are associated with support for ethnic versus programmatic politics. These include: how individuals perceive their social identities and group relations; their willingness to cooperate with individuals from same or different class or ethnic backgrounds; and ultimately their support for sectarian and programmatic policies and political action (see Section 6).

Our main hypothesis is based on the assumption that social interaction in homogeneous groups reinforces ethnic and (possibly) class identities (Roccas and Amit, 2011). It remains to be seen, however, how the *type* of cross-cutting interaction might affect these outcomes. We explore the

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[3]In a related study, Paler, Atallah and Marshall (2016) examine the effect of providing economic information on similar outcomes.

effects of three forms of cross-cutting interaction. First, we consider the effect of interaction between individuals from different ethnic but similar economic backgrounds. Most akin to a classic inter-group contact scenario, we aim to see if this form of interaction facilitates social learning, anxiety reduction, and empathy across sectarian lines, thereby reducing sectarian tendencies and increasing support for programmatic politics. Second, we consider interaction between individuals from the same ethnic group but with different class backgrounds. The goal here is to see if such interaction brings out a divergence of preferences within ethnic groups in a way that reduces support for ethnic politics and increases support for programmatic politics, especially among those in the lower class. In other words, this form of interaction allows us to examine a possibly *negative* contact situation in which confessional relations are worsened by increasing the salience of a cross-cutting class cleavage.[4] Finally, for completeness, we consider the effects of interaction that is cross-cutting on both class and ethnic dimensions. Such interactions could lead to very different outcomes depending on whether individuals ally on the basis of sect or class, there is polarization and discord, or individuals unite on a common super-ordinate (e.g. Lebanese) identity. In considering these different types of social interaction we can shed light on how to structure cross-cutting interaction to undermine tendencies towards ethnic politics.

In addition to exploring the effects of cross-cutting social interaction on these outcomes, we will also explore mechanisms. The literature highlights three mechanisms by which inter-group contact can reduce bias or related outcomes: social learning, anxiety reduction, and empathy and perspective-taking (Pettigrew and Tropp, 2011; Mendelberg, 2002). It is important to note that we expect these mechanisms to work differently for different types of social interaction. For instance, whereas we might expect mixed sect, same class interaction to be positive overall and to result in social learning, reduced anxiety, and empathy, the same will not necessarily hold true for same sect, mixed class interaction. Here our goal is to understand whether negative contact resulted, for instance, in lower income individuals having less empathy with the economic preferences of the rich. This underscores the importance of flexibly considering the mechanisms and also heterogeneity not only in outcomes but in mechanisms as well.

Finally, there is an important challenge to our main hypothesis that stems from a large literature on cross pressure (Mutz, 2002*a*). According to this literature, it could be the case that individuals exposed to conflicting social influences are more likely to become ambivalent about their identity and political preferences. Insofar as cross-cutting social interaction increases the salience of economic identity in a way that challenges sectarian attachments, we might actually observe a null or even adverse effect of cross-cutting interaction on support for programmatic policies and political action. We therefore also plan to test the extent to which cross-cutting social interaction induces cross-pressure. There are a number of additional possible explanations for null, adverse, or unexpected results. We return to a full discussion of these challenges and how we aim to address them in Section 5 after fixing ideas by describing the context and experiment.

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[4]Effects might go in opposite directions for poor and rich—the discussion, for instance, could anger the poor but facilitate perspective-taking by the rich, resulting in more acceptance of the preferences of low-income individuals. See the discussion on heterogeneous effects in Section 5.

3 Lebanon Context

Lebanon presents an important and timely context for exploring the effects of cross-cutting social interaction on individual-level tendencies towards ethnic (sectarian) politics versus programmatic politics. Sectarianism has long defined the political way of life in Lebanon.[5] It first became institutionalized in the political system during the French mandate period. The Constitution of 1926 created a parliamentary system with proportional representation along sectarian lines and Article 95 established the sharing of state offices. Following independence in 1943, Christian Maronites and Sunni Muslims struck a National Pact that further enshrined the notion of power-sharing among confessions. The office of the President was reserved for a Christian while the office of Prime Minister was reserved for a Sunni (later it was agreed that the position of Speaker would go to a Shia Muslim). While the proportions afforded to different sects have changed over time, Lebanon has never abandoned the principle of sectarian quotas for representation.

The renegotiation of influence for various sects has been the result of major pressures on the division of power in Lebanon. At the time of independence, Christians were the largest group and also were the most privileged, followed by Sunnis. Shia constituted a much smaller and more economically disadvantaged group. Since then, the size of the Maronite population has declined while the Shia population share has increased dramatically. These shifting demographics have contributed to conflict among the groups—erupting into civil war from 1975-1990—which occurred as domestic and regional pressures led to the erosion of the national pact and the taking up of arms of Lebanon's different sectarian groups. The Taif Agreement of 1989 brought an end to Lebanon's civil war and split representation equally between Christian and Muslim populations. This is the balance that remains to this day despite the relative increase in the size of the Muslim population.

The institutionalization of politics along sectarian lines is also reflected in the organization of Lebanon's political parties. In the pre-civil war era a number of parties espoused multi-sectarian messages focused on socialism, Arab nationalism, and an end to Lebanon's sectarian power-sharing. Yet, conservative elites sought to bolster their authority by providing sectarian alternatives to left-wing parties (Corstange, 2013, 908). Today, most parties in Lebanon are essentially single-sect catch-alls that aggregate co-sectarians who otherwise differ substantially on non-identity dimensions such as the rich and poor (Corstange, 2013, 898). One important byproduct of the sectarian orientation of political parties in Lebanon is that they rely on clientelism and the direct distribution of social or welfare goods to maintain political support. Cammett (2014) argues that there is variation in whether parties take an inclusive or exclusive approach to the distribution of goods based on the political mobilization strategy of the party and the extent to which it faces competition from other sectarian parties. While social spending in Lebanon thus can cross sectarian lines,

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[5]Lebanon has 18 officially recognized sects, including 12 Christian sects, four Muslim sects, Druze and Jewish populations. The most recent demographic study conducted in 2011 by Statistics Lebanon, a Beirut-based research firm, indicated that 27 percent of the population are Sunni Muslim, 27 percent Shia Muslim, 21 percent Maronite Christian, 8 percent Greek Orthodox, 5 percent Druze, and 4 percent Greek Catholic, with the remaining 7 percent belonging to smaller Christian denominations `http://www.globalsecurity.org/military/world/lebanon/religious-sects.htm`.

it still results in a suboptimal allocation of resources from the perspective of balanced national development. In a geographic analysis of social spending in Lebanon from the 1990s to the present, Salti and Chaaban (2010) find that the sectarian logic of spending in Lebanon has resulted in an allocation of resources that maintains a sectarian balance of spending regardless of development objectives or economic need.

While the sectarian cleavage dominates in Lebanon, the economic cleavage indeed cuts across sectarian lines (Corstange, 2013). While the Christian population was also more economically advantaged prior to the civil war, in recent decades both the Sunni and Shia populations have enjoyed improvements in economic welfare such that all sectarian groups now have a mix of rich and poor. Yet, in a study of support for voting rights for the illiterate, Corstange (2013) finds that public positions on illiterate voting rights are typically cast along sectarian lines, despite the fact that the poor—regardless of sect—are privately more supportive of illiterate voting. These results indicate that private preferences are often in line with socio-economic status or class, but these preferences do not get expressed in a political system where sectarianism prevails because sectarian identity provides a powerful means by which to stigmatize people who 'desert' their sect and give primacy to their material interests. The overall implication is that people care about their economic interests but sectarianism—including the fear of sanctioning by one's own sectarian group for defection—is hegemonic.

While sectarianism is thus deeply entrenched in Lebanon, there are nonetheless signs of demand for an alternative. In 2011, in the wake of the Arab Spring, there were massive street protests demanding an end to sectarianism in Lebanon.[6] Additionally, in recent years there have been some promising examples of multi-sectarian political organization, as was the case for a 2013 public sector strike organized by the Lebanese Trade Union Coordination Committee (TUCC) over issues surrounding a pay raise. Most recently in 2015, Beirut witnessed a massive multi-sectarian political movement that arose in response to the government's failure to manage trash collection.[7] For months protesters came from all confessions and a variety of economic backgrounds to begin a national movement—later dubbed the 'You Stink' movement. The 'You Stink' movement was groundbreaking in its focus specifically on the economic and social concerns of Lebanese citizens. Moreover, the ability of movement organizers to link these concerns to the sectarian-based system of political patronage underscored the need for a cross-sectarian solution.

The impact of the trash crisis was arguably also felt in the recent Beirut Municipal Elections, where the newly-formed secular political party *Beirut Madinati* took an astounding percentage of the votes. The party's principal organizers include members who participated in the You Stink protests and wanted to seek a longer-term, political solution to the social, economic, and political problems highlighted by the trash crisis.[8] Despite final election results that showed a victory for the sectarian political party alliance led by 'Future Movement' Sunni leader, Saad al-Hariri, Beirut Madinati's ability to capture 40 percent of the vote (including a significant percentage of the votes

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[6] http://www.jadaliyya.com/pages/index/1008/what-is-political-sectarianism.
[7] See http://www.aljazeera.com/news/2015/07/lebanon-capital-drowning-ocean-trash-150726083036505.html.
[8] See http://www.economist.com/news/middle-east-and-africa/21698599-established-leaders-are-jolted-party-protest-bei

in Hariri's own neighborhood) demonstrates that support for the sectarian-based political system may be weakening under mounting pressure for a new brand of secular, issue-based politics. All in all, the 2015 political movements illustrate the deep undercurrent of public frustration with the sectarian system. Importantly, similar protests have also challenged sectarianism in Iraq in 2015.[9]

In light of these recent political changes, the Lebanese Center for Policy Studies (our partner in this project) sought to organize discussions to bring Lebanese together to discuss their preferences regarding the future of the sectarian political system in Lebanon and how to increase support for programmatic politics. This raised important questions about *who* should participate in these discussions and how the composition of the discussions might affect the nature of the discussions and the conclusions that participants' reach. This provided an opportunity to examine how cross-cutting social interaction affects identity and ultimately support for sectarian versus programmatic politics.

4 Experimental Design

To examine the effect of cross-cutting social interaction along sectarian and class dimensions we organized a series of 120 discussion groups in the Beirut and Mount Lebanon areas in the spring of 2016. Each group discussion varied in its sectarian and class diversity but all consisted of six individuals. Following a 2x2 factorial design (see Figure 1), individuals with different confessional and class profiles were randomly assigned to participate in one of four discussion group types: (1) homogeneous confession and class, (2) mixed confession, homogeneous class, (3) homogeneous confession, mixed class, and (4) mixed confession and class. Our goal is to investigate how cross-cutting interaction affects a range of outcomes associated with social identity and support for sectarian versus programmatic politics. In this section we describe recruitment, randomization, and the discussion content.

4.1 Recruitment and randomization

The 120 discussion groups were organized in five sets of 24 discussion sessions (6 sessions x 4 group types).[10] In confessionally homogeneous groups all participants were either Christian, Sunni, or Shia. In mixed confession groups, two participants were Christian, two were Sunni, and two were Shia. In homogeneous class groups, all six participants were either lower or upper income. In mixed class groups, three participants were lower income and three were upper income. Table 1 shows how class and confession combine for each of the 24 discussions in a set.

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[9]http://www.commondreams.org/views/2015/09/10/massive-protest-wave-iraq-challenges-sectarianism
[10]A set of discussions was completed every 2-3 weeks between February and April 2016.

	Same sectarian group	Mixed sectarian group
Same economic class	No. of groups: 30 No. of participants = 180 No. of participants per group: 6 Backups per group: 3 Sect: 6 Sunni or 6 Christian or 6 Shia Econ: All lower income OR all upper income	No. of groups: 30 No. of participants = 180 No. of participants per group: 6 Backups per group: 4 Sect: 2 Sunni, 2 Christian, and 2 Shia Econ: All lower income OR all upper income
Mixed economic class	No. of groups: 30 No. of participants = 180 No. of participants per group: 6 Backups per group: 3 Sect: 6 Sunni or 6 Christian or 6 Shia Econ: 3 lower income and 3 upper income	No. of groups: 30 No. of participants = 180 No. of participants per group: 6 Backups per group: 6 Sect: 2 Sunni, 2 Christian, and 2 Shia Econ: One of each is low income, one of each is high income

Figure 1: The 2x2 factorial design

Table 1: Individual profiles by group type

| **Group type 1: Same sect, same class** | | | | | | **Group type 2: Mixed sect, same class** | | | | | |
1	2	3	4	5	6	7	8	9	10	11	12
P. Sunni	P. Shia	P. Christ.	R. Sunni	R. Shia	R. Christ.	P. Sunni	P. Sunni	P. Sunni	R. Sunni	R. Sunni	R. Sunni
P. Sunni	P. Shia	P. Christ.	R. Sunni	R. Shia	R. Christ.	P. Sunni	P. Sunni	P. Sunni	R. Sunni	R. Sunni	R. Sunni
P. Sunni	P. Shia	P. Christ.	R. Sunni	R. Shia	R. Christ.	P. Shia	P. Shia	P. Shia	R. Shia	R. Shia	R. Shia
P. Sunni	P. Shia	P. Christ.	R. Sunni	R. Shia	R. Christ.	P. Shia	P. Shia	P. Shia	R. Shia	R. Shia	R. Shia
P. Sunni	P. Shia	P. Christ.	R. Sunni	R. Shia	R. Christ.	P. Christ.	P. Christ.	P. Christ.	R. Christ.	R. Christ.	R. Christ.
P. Sunni	P. Shia	P. Christ.	R. Sunni	R. Shia	R. Christ.	P. Christ.	P. Christ.	P. Christ.	R. Christ.	R. Christ.	R. Christ.

| **Group type 3: Same sect, mixed class** | | | | | | **Group type 4: Mixed sect, mixed class** | | | | | |
13	14	15	16	17	18	19	20	21	22	23	24
P. Sunni	P. Sunni	P. Shia	P. Shia	P. Christ.	P. Christ.	P. Sunni	P. Sunni	P. Sunni	P. Sunni	P. Sunni	P. Sunni
P. Sunni	P. Sunni	P. Shia	P. Shia	P. Christ.	P. Christ.	R. Sunni	R. Sunni	R. Sunni	R. Sunni	R. Sunni	R. Sunni
P. Sunni	P. Sunni	P. Shia	P. Shia	P. Christ.	P. Christ.	P. Shia	P. Shia	P. Shia	P. Shia	P. Shia	P. Shia
R. Sunni	R. Sunni	R. Shia	R. Shia	R. Christ.	R. Christ.	R. Shia	R. Shia	R. Shia	R. Shia	R. Shia	R. Shia
R. Sunni	R. Sunni	R. Shia	R. Shia	R. Christ.	R. Christ.	P. Christ.	P. Christ.	P. Christ.	P. Christ.	P. Christ.	P. Christ.
R. Sunni	R. Sunni	R. Shia	R. Shia	R. Christ.	R. Christ.	R. Christ.	R. Christ.	R. Christ.	R. Christ.	R. Christ.	R. Christ.

Summary statistics based on imputed data and survey weights.

For each set, a professional firm recruited 240 participants, comprising 40 individuals from each of the six profiles (poor and rich Sunni, poor and rich Shia, and poor and rich Christian). These 40 individuals included the 24 of each profile that would participate in the discussions plus 16 backups in the event of attrition.[11] This yielded an anticipated total sample size of 720 individuals (plus 480 backups). To minimize the interference of other possible cleavages, all session participants were of the same sex.[12]

To identify eligible participants, recruiters first conducted a screening questionnaire with each potential participant. The screening survey included basic demographic questions as well as questions on economic and sectarian status. To determine whether a potential participant was rich or poor, eight questions about economic status were asked on the screening survey and these were used to create an index.[13]

Once the eligibility and profile of each potential participant was confirmed by the firm, participants were randomly assigned to discussion group type. We block randomized the 40 individuals of each profile in each set. Additionally, to minimize the possibility that individuals with the same profile in the same recruiter network would know each other and end up in the same discussion session, we further blocked on recruiter and participant neighborhood where possible.[14]

Once participants were assigned to their treatment group types, the firm arranged the time and location of each discussion session (again taking precautions to make sure that individuals who possibly knew each other did not attend the same discussion). Upon arrival at their scheduled discussion session, participants were checked in by the firm staff to confirm their identity and profiles and informed consent was administered. Participants were not designated as 'main' or 'backup' in advance and in the event that more than the requisite number of individuals with the same profile arrived at a session and consented to participate, those who were asked to stay were randomly selected.

There were only a small number of instances in which discussions proceeded with fewer than six

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[11]We anticipated needing an additional person for every two people of a particular profile per session.

[12]We completed two sets (48 groups) with women and three sets (72 groups) with men. We also originally tried to have sessions separated by age but this proved too challenging for recruitment.

[13]The screening survey recorded answers about income, assets, leisure travel and dining, and electricity usage. Responses for each question were recoded into three categories where one equaled poor, two equaled middle class, and three equaled rich. These scores were summed across the eight questions such that individuals with scores of 8-13 were considered lower income, individuals with scores of 19-24 were considered upper income and individuals with scores of 14-18 were middle income and were excluded from eligibility.

[14]Specifically, we created strata formed by set, profile, recruiter, and respondent neighborhood and randomly assigned individuals using proportional probability assignment in all strata with ≥ 3 people. We used proportional probability assignment because of the unequal number of backups for each group type. For those not assigned in this first round, we created larger strata by dropping the neighborhood requirement and again randomly assigned individuals to treatment using proportional probability assignment for strata with ≥ 3 people. Note that this approach assumes that individuals in the same recruiter network are more likely to know each other than individuals in the same neighborhood. In implementing this, we started with the biggest strata and progressed to the smallest strata, halting the assignment procedure when only one slot remained in one (or more) of the four treatment types. At that point we pooled all remaining participants into one large strata and randomly assigned them based on the final targets needed for each group type. In the analysis, we weight each participant by the inverse of their probability of treatment assignment within strata to account for the differential assignment probabilities. We also aggregate strata with only three people into larger strata and use strata fixed effects to analyze the results.

individuals or with individuals with different demographic profiles than anticipated. Specifically, there were seven instances in which groups proceeded with five rather than six individuals, either because an insufficient number showed up or because a participant left before the discussion was concluded.[15] The effects of the imbalance are plausibly the greatest for the groups that are not homogeneous. We will check the robustness of results to controlling for the number of individuals in the groups and for dropping the groups with five individuals. There were also seven instances in which individuals presented different confessional information on the screening and pre-treatment survey. Since this could also have affected the group dynamics, we will also check the robustness of results to the exclusion of these groups. Finally, we checked to make sure that we did not accidentally have individuals who knew each other in the same discussion session. While 41 individuals in 26 sessions reported that they knew at least one person in their discussion group prior to the session, upon further investigation with the organizers we learned that these were mostly cases in which individuals had been transported together or met casually just before the session.

4.2   Discussion content

To investigate the effects of cross-cutting interaction, individuals participated in a 90 minute session that used the recent garbage crisis as an opportunity to discuss participants' hopes and concerns regarding economic conditions and the future of the sectarian system in Lebanon. We used a discussion treatment for several reasons. First, discussion, defined broadly as any "exchange of views between individuals or among a group of people" (Paluck, 2010, 2), is a fundamental form of political and civic engagement. Discussion can be a source of new information and social learning; it can encourage perspective-taking and empathy; require individuals to improve their understanding of their own beliefs and preferences; and increase awareness and tolerance of opposing views (Mendelberg, 2002). It was also particularly relevant to our partner organization, which sought to organize discussions that would encourage ordinary citizens to exchange perspectives on the future of sectarianism in Lebanon in light of the garbage crisis. Second, while much of the literature on inter-group contact has employed cooperative tasks, testing our hypotheses required a flexible treatment that could allow both similarities and differences to emerge.

Discussion nevertheless has a number of potential pitfalls as a form of social interaction (Paluck, 2010). Scholars have noted that discussions can induce conformity with the majority opinion (Farrar et al., 2009); cause group polarization (Sunstein and Hastie, 2008); reinforce biases when there are majority-minority status dynamics (Mendelberg, 2002); and encourage focus on common knowledge so as to prevent social learning (Mendelberg, 2002; Sunstein and Hastie, 2008). We take steps in the design and implementation of the discussions to mitigate some of these contingencies as well as to study them where substantively relevant (see Section 5).

Essential to the experiment was for participants to know what type of group they were in. At the start of the discussion, the moderator set the stage using the following script:

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[15]This affected three same/same groups, 2 mixed sect/same class groups, 1 same sect/mixed class group, and 1 mixed/mixed group.

We are meeting today to discuss the recent developments in the country, mainly the protests that recently began in Lebanon. Many persons consider that these protests may present an important moment to reflect about the future of this country regardless of their outcome.

We have invited you here today to engage in a discussion with members from [SAME/ DIFFERENT] sectarian groups and [SAME/DIFFERENT] economic classes so that you can share with each other your thoughts and feelings about your economic and political hopes and concerns. Some of what we discuss today could be sensitive and at times people might disagree—that is ok. We just ask that you engage with one another with honesty and respect so that we can all learn more about how people who we do not know personally are thinking and feeling on the issues that we all face.

The moderator thus provided information during the introductory remarks about whether the discussion participants were from similar or different economic or sectarian backgrounds. Participants were also asked to introduce themselves and offer basic personal information (e.g. on their jobs or neighborhoods) that would have further illuminated their profiles.

Participants were then led in a moderated, structured discussion (see Table 2).[16] The structure was the same regardless of the group type. The discussion started off by talking about reactions to the protests and then transitioned into discussing people's economic hopes and concerns as well as their political hopes and concerns, especially with respect the role of sectarianism in politics in Lebanon. The session also included a discussion about how participants want economic and sectarian considerations to affect future allocations of revenue from oil and gas and what kinds of changes, if any, they would like to see to the current confessional system. Overall, some of these topics—particularly sectarianism—are sensitive to discuss openly in Lebanon and the format and content of the session was piloted extensively before implementation. We also followed existing best practices on inter-group contact and on how to foster dialogue (see for instance Herzig and Chasin (2006)). In order to facilitate a frank and open conversation, participants were encouraged to draw on stories from their personal experience to illustrate their points. We also used hypothetical scenarios to get participants to think about their views on sensitive subjects.

5 Challenges

There are a number of potential challenges to a meaningful test of the central hypothesis. We discuss these here and our strategies for addressing them.

5.1 Convergence/divergence on economic preferences

Cross-cutting discussion could change attitudes towards sectarian politics through social learning if participants learn about similarities in economic preferences across sectarian groups and class

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[16]For complete details on the format, see the Lebanon Discussion Guide available from the authors.

Table 2: **Discussion Format**

1. Introduction (5 minutes)

2. Reactions to the protests (10 minutes)

3. Economic hopes and concerns (20 minutes)

4. Sectarian politics hopes and concerns (20 minutes)

5. Application to future oil and gas revenue (10 minutes)

6. Should the confessional system be reformed? (10 minutes)

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differences within their own ethnic groups. This mechanism presumes that such similarities and differences in preferences exist, although this is something that is still being debated empirically (Habyarimana et al., 2009; Lieberman and McClendon, 2012). Corstange (2013) shows that, in the Lebanon context, economic conditions are a stronger predictor of true (private) preferences for some policies (support for illiterate voting rights) than confession.

We also can use data from our pre-treatment survey as well as from a national survey of 2,496 individuals to validate this assumption. First, as in Corstange (2013) we find in the national survey that the economic cleavage is indeed cross-cutting in the broader population (see Figure 2). Second, using data from our pre-treatment survey we can show that there is overlap in policy preferences by class and across confessional groups. Figure 3 provides some evidence of this: We see that both rich and poor care about the increase in prices (labeled 1 on the x-axis) but that this is a bigger issue for the poor. Interestingly, just glancing at the data it seems that the rich are more likely to be concerned with sectarianism than the poor (labeled 18 on the x-axis) while there is also interesting variation in concerns about a civil war (labeled 22 on the x-axis). All in all, this data suggests that the potential for learning about similarities and differences in economic preferences across and within confessional groups exists.

5.2 Discussion dynamics

A second challenge pertains to the group dynamics aspect of discussion. We took care to ensure the discussions were of high quality, meaning that they facilitated an open, honest, and egalitarian exchange of ideas without requiring that participants come to a consensus on the topics at hand. This is consistent with a large literature on inter-group contact and political discussion, which has elucidated a number of conditions that are required for optimal social interaction. In his seminal contribution, Allport (1954) argued that inter-group contact would only reduce bias under optimal conditions (equal status between groups, cooperative activity toward common goals, personalized acquaintance, support for the contact by authorities and local norms). Similarly, democratic theorists emphasize that discussion must meet certain requirements in order to have positive democratic effects, including that they must be "empathic, egalitarian, open-minded, and

reason-centered" (Mendelberg, 2002, 153).

Yet, recent research has suggested that meeting all of Allport's conditions is not necessary for effective inter-group contact (Pettigrew and Tropp, 2008; Pettigrew et al., 2011; Dovidio, Gaertner and Kawakami, 2003). Moreover, as Mutz (2002b, 111) notes, meeting such conditions in the context of political discussion is often not feasible: "If one limits the political communication phenomena worthy of study to those conversations that meet the necessary and sufficient conditions invoked by democratic theorists, then one is left with a near-empty set of social interactions to study." We collect information in the post-treatment and moderator surveys (described below) to provide insights into the extent to which participants felt that the discussions were of high-quality and conducive to a meaningful exchange of ideas. Our data shows that nearly all participants reported that the discussion was a very positive (64 percent) or somewhat positive (34 percent) experience.

Of course, even discussions that are implemented well can result in escalated conflict, for instance by polarizing opinion (Paluck, 2010). Polarization—in which individuals adopt more extreme attitudes than they enter with—is especially likely to occur in contexts in which social categorization is salient and (some) participants have a shared identity (Sunstein and Hastie, 2008). This was precisely the situation induced by our treatments. We consider polarization a potentially important mediating variable that we want to study. For instance, it is possible that participants in the same confession/mixed class group learn about the divergence of economic preferences, which in turn polarizes opinion along class lines, leading to reduced support for sectarian politics. We can investigate these dynamics using the post-treatment and moderator surveys. The pre-treatment data shows that about 50 percent of participants felt that there was a lot of agreement on economic and confessional issues, while the remaining 50 percent felt that there was a little agreement or no agreement. With the outcome data we will be able to investigate whether the treatments affected the perceived degree of group polarization.

Importantly, the flip side of polarization is conformity, where individuals in the group adopt the views of the majority. This is particularly an issue when opinion conformity occurs not because of genuine learning but rather because of a desire for social acceptance (Farrar et al., 2009). If this were the case, individuals would tend to agree in the discussion itself but the post-treatment data collection exercises would exhibit no meaningful opinion change. We might expect conformity to be especially likely in the homogeneous confession groups. All in all, group dynamics can be important mediators in the relationship between cross-cutting social interaction and support for ethnic versus programmatic politics and we will investigate these as mechanisms.

5.3   Conditional effects

It could also be the case that treatment effects are highly contingent on individual-level characteristics. Our discussion in Section 2 suggests the importance of considering how the effects of cross-cutting interaction might be conditioned on class, confession, or the factors that make individuals more or less likely to be cross-pressured.

First, there is growing awareness that group status can moderate the effects of contact, although

there remain few empirical studies of this (Pettigrew and Tropp, 2011, chpt. 9). Members of minority status groups might be more likely to fear becoming targets of prejudice and discrimination, be less satisfied with efforts to achieve inter-group inequality, and be less inclined to perceive equal status during contact. As a result, "long-standing histories of devaluation could well inhibit the degree to which inter-group contact can promote positive inter-group attitudes among members of minority status groups" (Pettigrew and Tropp, 2011, 132). In the Lebanon context, while relations among sectarian groups have equalized in recent years (Corstange, 2013) and while the discussions were designed to ensure equality in the discussion context itself, it is possible that Shia (an historically lower status group) perceived the experience differently than Christians (an historically higher status group). Additionally, poor individuals might be more likely to perceive themselves as lower status than upper income individuals. Overall, this suggests that the social interaction experience could be highly contingent on the intersection of class and confession at the individual level. Given that we blocked treatment assignment on these profiles, we will investigate heterogeneous treatment effects by class, confession, and the intersection of the two.

Additionally, given that cross-cutting social interaction could make individuals more cross-pressured and therefore more ambivalent towards programmatic politics, we want to examine if the effects of the treatment vary by those who are more or less likely to be cross-pressured. These could be individuals who are more conflict averse (Mutz, 2002a) or who have a stronger sectarian identity attachment and thus are more likely to feel the pressure of conflicting social influences. Finally, we will consider the extent to which individuals' existing social networks are heterogeneous or homogeneous. Data from the pre-treatment survey (described in Section 6) suggests variation in the extent to which individuals' networks are homogeneous (see Figure 4). We expect that cross-cutting interaction will have a bigger effect on those with more homogeneous networks because there is more potential for social learning, although these individuals could also be more likely to feel cross-pressured as a result of the treatments.

We also will investigate whether the effects of cross-cutting social interaction vary by key demographic factors, namely age and gender. Older people tend to be more prejudiced than the young (Pettigrew and Tropp, 2011, 148). This could especially be the case for older generations of Lebanese who survived the country's 15 year civil war (1975-1990). We might therefore expect the predicted effects of cross-cutting interaction will be greater for those who are younger. With respect to gender, on one hand there is evidence that gender is a weak predictor of bias and prejudice (Pettigrew and Tropp, 2011, 148). Other studies suggest, however, that women have stronger preferences than men for programmatic politics and public goods (Wantchekon, 2003). We therefore might expect the treatments to have a bigger effect on reducing support for sectarianism and increasing support for programmatic politics among women.

5.4 One-time Discussion

Another possible concern with the study design is that one-time discussion is insufficient to result in meaningful changes. The choice to do one-off discussions was driven primarily by capacity and

resource constraints. While tests of crossed-categorization in the lab also tend to employ shorter interactions (for instance, Marcus-Newhall et al., 1993), as do some experiments on discussion (Farrar et al., 2009), research on inter-group contact and dialogues tends to take place over time (Paluck, 2010; Scacco and Warren, 2016). The fact that these are one-time 90 minute discussions certainly will make it more difficult for the hypothesized effects to emerge, but there are so few studies of this variety that it was not possible to know *ex ante* whether there would be no effect.

6 Outcomes, data and measurement

This study employs multiple types of data collected both before and after the discussion itself. Specifically, we use data from: (i) a pre-treatment self-administered survey, (ii) a post-treatment self-administered survey, (iii) a public goods game, (iv) a map exercise, (v) a petition, and (vi) a moderator survey. The format of the entire discussion session with data collection is summarized in Table 3. Appendix 8 contains a complete list of all concepts, data sources and measures that will be used in the analysis. In this section we describe the outcomes and measures, additional data sources, and our data preparation.

Table 3: **Outline for Data Collection**

- Participant check-in and consent

- Pre-treatment self-administered survey

- Introduction to the discussion (group type is revealed)

- Public goods game, part I

- Discussion

- Map exercise

- Public goods game, part II

- Post-treatment survey and petition decision

6.1 Outcomes

The outcomes described in this section are also summarized in Panel A of Appendix 8. Appendix 8 also lists the predictions for the different forms of cross-cutting social interaction (vis-a-vis the control group) in Columns B-D. Note that whereas the predictions are clearer for group 2 (mixed confession, same class) and group 3 (same confession, mixed class), we do not specify a prediction for group 4 (mixed class and confession) because of the range of different possible outcomes.

We note that we opted not to include direct measures of prejudice and bias on the post-treatment survey because our piloting revealed that participants were very reluctant to answer such questions

on the self-administered survey. Our outcome measures capture closely related concepts, however.

6.1.1 Self-categorization and Group Relations

The first proximate outcome that we will look at pertains to whether cross-cutting social interaction affects how individuals categorize themselves in terms of their sectarian and class identities. We will examine whether cross-cutting social interaction has the potential to weaken self-categorization on the basis of ethnicity and increase categorization on the basis of economic class. Additionally, we will assess how cross-cutting interaction affects *group distance*, or the perceived closeness of an in-group and an out-group, what Pettigrew and Tropp (2011, 93) refer to as restructuring inter-group relations. We are particularly interested in the effects of cross-cutting discussion on the perceived closeness between sectarian in-groups and out-groups that share an economic class as well as between co-sectarians of different classes. We measure self-categorization and group relations in the post-treatment survey using pictorial spatial measures developed in Schubert and Otten (2002).

We note that responses to these questions will likely be conditional on the participants' own confession and class. We therefore anticipate that heterogeneous effects analysis will be very important for understanding these variables. We also anticipate recoding them to capture whether they refer to double in-groups, double out-groups, and partial in-groups and to analyze the results on that basis.

6.1.2 Cooperation

One of our main outcomes of interest is the effect of cross-cutting social interaction on cooperation as this is closely related to the willingness to engage in collective action. To measure willingness to cooperate, participants played two rounds of a public goods game—once after the introductory remarks and again during post-treatment data collection. The public goods game is designed to test the belief that when goods are non-excludable (meaning everyone can benefit from them regardless of whether they contribute to their production) goods will be under-provided because of the free-rider problem. Findings show that individuals tend to make group contributions in public goods games despite facing individual incentives to free ride, leading to a surplus of explanations for seemingly 'pro-social' results. Group cohesion and willingness to cooperate are predominant explanations for the pro-social outcomes observed in public goods games. Such outcomes are particularly relevant to our inquiry here because they capture how group composition affects beliefs about cooperation. The key feature in our public goods game is that participants do not learn the results from the first round before playing again. This allows us to obtain pre- and post- measures of group cooperation while preventing learning effects and the round one results influencing the discussion.[17]

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[17]It has been shown in iterated games that people tend to be more cooperative in early stages than they would be otherwise due to shadow of the future (Axelrod, 1981, 1984). Furthermore, declines in contribution amount across multiple rounds tend to be due to learning with regard to payoffs (Burton-Chellew, Nax and West, 2015) so we have strong reasons not to reveal the results after the first round if we want the decision made in the second round to be purely a function of the dialogue in between (and not a function of learning about payoffs or other players' strategies).

The public goods game was implemented by an assistant (not the moderator), who completed several examples and practice activities with the participants. In both rounds of the game, participants played with 10,000 LL that they had earned for completing the baseline survey.[18] Participants were allowed to contribute any amount in 1,000 LL increments to the group pot. The amount contributed to the group pot was multiplied by 1.5 and divided among all six participants, regardless of whether they had contributed.[19] All decisions were kept confidential.

At the end of the discussion, participants were given an opportunity to revise their initial contribution if they so desired but were not required to do so. Participants were not allowed to view their first round decision when making their second round decision.[20] After the second round was completed, the assistant moderator tossed a coin in front of the group to determine which round would be paid out (Baltussen et al., 2012). We will use the public goods game to investigate how group composition affects willingness to cooperate at baseline and then whether there are any changes following the discussion. We also collected data on whether individuals are conditional or unconditional cooperators. We can see if the treatments affected individual cooperator 'type' and (if not) how the effects of the treatment on cooperation vary for conditional cooperators.

6.1.3 Ethnic Favoritism

We ultimately want to understand how cross-cutting social interaction affects support for sectarian versus programmatic politics. One way that we measure this is through a map exercise that aims to understand how participants weigh sectarian versus economic considerations in making allocation decisions. It provides a way of measuring sectarian group favoritism.

The map exercise draws on the fact that there was recently a major discovery of oil and gas off the coast of Lebanon, which has raised important distributional questions that have essentially paralyzed politicians' efforts to move forward with the development of the sector.[21] Many are concerned that any future revenue will be allocated on a confessional basis in proportion to confession size rather than on the basis of economic need or policy priorities.

Additional evidence underscores why it is important not to reveal the results of round one when we care about using multiple rounds as pre/post measures (Bayer, Renner and Sausgruber, 2010; Fehr and Schmidt, 1999).

[18]We framed the decision in terms of earned income and the possibility of a gain or loss from a reference point of 10,000 because research from behavioral economics shows that these decisions are taken more seriously by participants (Graves, 2010).

[19]Studies of iterated games have shown that in large groups (40 people), a multiplication factor of 1.3 yielded an average level of initial contribution to the pot of around 50 percent while a very low multiplication factor of 1.03 resulted in almost no one contributing to the public pot (Isaac, Walker and Williams, 1994).

[20]A wealth of literature on the "Monty Hall" problem summarizes why people are reluctant to change any initial decision in a later round of a game, where explanations include: (1) endowment effect (Kahneman, Knetsch and Thaler, 1990); (2) status quo bias (Samuelson and Zeckhauser, 1988); and (3) errors of omission vs. errors of commission effect (Gilovich, Medvec and Chen, 1995). There is plenty of experimental evidence to support these findings (Kaivanto, Kroll and Zabinski, 2014; Morone and Fiore, 2008). We also wanted to avoid the possibility that people would defend their first round choice by sticking to it for fear of being proven wrong or having to admit that they were wrong the first time or feeling stupid for making a wrong first choice.

[21]In 2010, geologic studies revealed major reserves of oil and gas in the Levantine basin, with estimated reserves including approximately 122 trillion cubic feet of natural gas and 1.7 billion barrels of oil. These estimates are cited in a report on oil and gas in Lebanon published by the Market and Economic Research Division of BankMed (2014), drawing on publicly available data.

To better understand the effect of cross-cutting social interaction on sectarian versus income-based allocation of resources, we asked all respondents to (confidentially) contribute to the public debate by sharing with policy-makers how they would like this revenue to be allocated at the district level. All participants were given a map of Lebanon with districts labeled by majority confession and level of economic development.[22] Participants were then asked to allocate the revenue out of 100 percent as they saw fit. We will use this data to study the effects of cross-cutting interaction on the shares allocated to co-sectarian versus non co-sectarian districts. It will be especially important to look at heterogeneous effects of the treatments by sectarian subgroup, however, since there is an association between district poverty and sect. For instance, majority Shia sects are also more likely to be poor and majority Christian sects are more likely to be rich. If we find that cross-cutting social interaction increases allocations to co-sectarian districts among Shia then this could reflect increased concern for economic well-being rather than ethnic favoritism. We will investigate the results to clarify the interpretation.

6.1.4   Support for cross-sectarian policies and political action

Finally, we measure reduced support for sectarian politics and increased support for programmatic politics through a post-treatment survey and by giving participants an opportunity to sign a petition. On the post-treatment survey, participants are asked to indicate their support for different sectarian and programmatic policies. They are also asked to state their willingness to take various forms of sectarian or cross-sectarian political action in the future. The petition, however, is meant to provide a behavioral measure of willingness to take political action to support a cross-sectarian agenda. The content of the petition was consistent with the goals of the You Stink movement, critiquing the status quo, calling for reforms to the sectarian division of power, demanding a reduction in the role of sectarian parties, and demanding the allocation of state resources on the basis of economic disparity rather than confessional size.

All participants were informed that the petitions would be collected and presented to party leaders, members of parliament, and other key confessional leaders. We show in a related study that individuals are about 20 percentage points less likely to complete the petition when they have to sign their name than when they can sign anonymously, which suggests that individuals perceive a potential social cost to signing. Participants in the discussion were *not* allowed to submit the petition anonymously. In order for the petition to be valid, participants had to provide their name as well as their age, confession, and electoral district. To reduce social desirability bias vis-a-vis the moderators, participants made their decisions in private. They were given a blank petition inside an envelope and were asked to make their decision out of sight. All respondents were asked to seal the petition—whether completed or not—inside the envelope and return it with their self-administered survey.

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[22]Level of development ranged from 1 'rich and well-developed' to 5 'very under-developed'.

6.2   Mechanisms, Alternate Outcomes, Quality

Appendix 8, Panels B and C, specify the concept and measures that will be used to test the learning, anxiety, and empathy mechanisms described in Section 2. We also use the post-treatment survey and a moderator survey—a short survey completed by the moderator and assistant moderator after each discussion—to examine the extent to which the discussions were polarizing or induced opinion conformity.

Additionally, as discussed in Section 2, there are two possible alternate outcomes that merit investigation. The first is cross-pressure: cross-cutting social interaction could result in more ambivalence on economic and confessional issues rather than more support for programmatic politics. We will investigate this using specific questions in the post-treatment survey. We will also look at item non-response to the questions in the post-treatment survey listed in Column G in the event that being cross-pressured manifests itself as a higher proportion of 'refused' and 'I don't know' responses. Additionally, it is possible that cross-cutting social interaction has an effect on Lebanese identity rather than confession or class identity and we will investigate this possibility using a question from the post-treatment survey.

Finally, we also use the post-treatment and moderator surveys to check for polarization or opinion conformity as well as the overall quality of the discussion experience. Panel F of Appendix 8 shows the variables from the post-treatment and moderator surveys that we will use to assess the overall quality of the group discussion and aspects of group dynamics discussed in Section 5.2. While data from the moderator survey will be treated with caution as it is impressionistic, we believe it will help to shed some light on what the discussions were like at the group level.

6.3   Heterogeneous Effects, Controls, and Balance

We use a screening survey and self-administered pre-treatment survey to provide data for heterogeneous effects, controls, and balance-checking. The screening survey was completed by recruiters during the initial determination of eligibility. It primarily includes information on demographics, economic status, and confessional status. The pre-treatment survey also contains basic demographic questions, repeated select screening questions, and includes questions on identity, social networks, previous political engagement, and economic concerns.

For the reasons described in Section 5.3, we expect the effects of the treatments on all outcomes and mechanisms could be highly conditional on characteristics of the participants. We therefore plan to investigate how the treatment effects vary for each of the conditions specified in Panel D of Appendix 8, including class, confession, class*confession, network homogeneity, conflict aversion, strength of sectarian identity attachment, and demographic characteristics like gender and age. Panel E of Appendix 8 lists the additional variables from the pre-treatment survey that we can use as controls (see Section 7).

6.4   Data preparation

We will take the following steps in preparing the data for analysis:

- **Imputation:** We will first perform ten rounds of missing data imputation using multivariate imputation via chained equations (MICE), implemented using Stata's ice command for chained imputations. We will use all covariates and outcomes described above in the imputationWe will also retain an unimputed version of the dataset that we will use to examine the effects of the treatments on cross-pressure. Specifically, for those variables listed in Column G of Appendix 8 we will examine the effects of the treatment on the probability of refusing to respond or reporting 'I don't know' for a question.

- **Cleaning and coding:** We will recode each variable for directionality consistent with the hypotheses in Columns B-D of Appendix 8. We will keep outcome variables in their original type for the main analysis, although we will also create binary versions of discrete and continuous variables by dichotomizing above or below the median so as to obtain a roughly balanced number of observations in both values of the binary variable.

- **Indices:** For items that were intended to measure the same construct, we will check correlations and create indices using appropriate variables. Our main indices will be constructed using inverse covariance weighting as in Anderson (2008). We also create an equally weighted mean effects index for comparability. For ease of analysis, we will also create binary versions of the continuous indices by dichotomizing at the median. We will primarily use the binary versions for the heterogeneous effects analysis. For index variables we do not plan to analyze the components separately except for the outcome variables and unless noted in column J of Appendix 8. All anticipated indices and their component variables are listed in Column I of Appendix 8.

- **Controls:** For the estimation that involves controls (see Section 7 we will include all variables or indices listed in Panels D and E of Appendix 8. For control variables that measure the same construct we will again create indices using inverse covariance weighting. This yields a total of 15 controls. Additionally we retain as an optional control a dummy for the district in which the participant is registered to vote. We will also use the control variables for checking balance.

7   Estimation

Our main interest is in estimating differences in outcomes for group 2 (mixed sect, same class) versus the control (same sect, same class) and for group 3 (same sect, mixed class) versus the control. Additionally, while we do not have predictions for group 4 (mixed sect, mixed class) we want to investigate the extent to which outcomes are similar or different to those in group 2 or group 3. We will estimate outcomes using a regression of the following form:

$$Y_{ij} = \alpha + \beta_1 T1_i + \beta_2 T2_i + \beta_3 T1_i * T2_i + X_i'\gamma + \mu_s + \epsilon_{ij} \tag{1}$$

Where Y_{ij} is the outcome for individual i in discussion session j. $T1_i$ is the treatment indicator for whether an individual is in a mixed confessional group and $T2_i$ is the treatment indicator for whether an individual is in a mixed class group. Then the key coefficients of interest are β_1, which gives us the effect of being in a mixed confession, same class group (vis-a-vis the control), and β_2 which provides the effect of being in a same confession, mixed class group. β_3 is the coefficient on the interaction of the two treatments. While our main interest is in β_1 and β_2, we will also estimate the average treatment effects of the mixed class $\beta_2 + \beta_3$ and confession $\beta_1 + \beta_3$ treatments. In this equation $X_i'\gamma$ is a vector of individual-level controls included to improve efficiency, μ_s is blocking strata fixed effects and ϵ_{ij} is the error term. Standard errors will be clustered at the level of the session. We will also include weights to account for the unequal probabilities of treatment assignment in all analysis.

We will also estimate whether the effects of the treatments vary for different subgroups, following the discussion of our planned analysis of heterogeneous effects in (**?**). We will first do this by partitioning the data by subgroup and re-estimating Equation 3; although this reduces statistical power, the insights are easy to interpret. This partitioning will be especially useful in trying to understand how the effects of the treatments vary by individual class*confession. We will perform formal tests of differences by subgroup by interacting the subgroup variable with the two treatments and including all constituent terms in the triple interaction. Let Z_i be refers to a covariate not included in the vector of covariates X', then formally:

$$Y_{ij} = \alpha + \beta_1 T1_i + \beta_2 T2_i + \beta_3 T1_i * T2_i + \beta_4 Z_i + \beta_5 Z_i * T1_i + \beta_6 Z_i * T2_i + \beta_7 Z_i * T1_i * T2_i + X_i'\gamma + \mu_s + \epsilon_{ij} \tag{2}$$

We also anticipate wanting to focus in on the comparisons between group 2 and group 1 and between group 3 and group 1 to the extent that the results from group 4 show no clear pattern. In this case we will restrict the data to the appropriate treatment and control groups and estimate an equation of the following form where $T \in \{T1, T2\}$:

$$Y_{ij} = \alpha + \beta_1 T_i + X_i'\gamma + \mu_s + \epsilon_{ij} \tag{3}$$

7.1 Robustness

We will also check the robustness of our main results to the exclusion of controls, the inclusion of moderator fixed effects, and to dropping the groups with fewer than six discussion participants or with incorrect sectarian balance (see the discussion in Section 4.1). We will also estimate results using the strategy proposed in Lin (2013), which recommends interacting control variables and fixed effects with the treatment indicators to improve precision and reduce small-sample bias.

7.2 Multiple inference correction

To account for the fact that we will be looking at several outcomes and performing heterogeneous effects analysis, we will do multiple inference correction using a false discovery rate (FDR) correction to control the Type-1 error rate, as in Anderson (2008). We will control the FDR at level 0.05. We will also use the practices recommended in Esarey and Sumner (2016) on how to correctly use FDR in the context of models with interactions.

8 Matching for a Pure Control

With this experimental design we do not have a pure control group to estimate the effects of participating in a discussion in general. We did, however, run a national survey of 2,496 individuals at approximately the same time as the discussion experiments and for which there are comparable questions.[23] We can therefore match discussion participants to survey respondents—for instance using entropy matching (Hainmueller, 2012) or genetic matching (Diamond and Sekhon, 2013)—to create an appropriate counter-factual group. The variables available for matching are pre-specified in Column I of Appendix 8. We can examine the overall effect of being in a discussion (or a specific discussion treatment) on outcomes such as: willingness to sign the petition, willingness to discuss issues in sectarian or multi-sectarian settings, and allocations in the map exercise. Candidate outcome variables are also pre-specified in Columns I of Appendix 8, although again we will have to be sensitive to slight variations in the way the questions were asked across the different instruments.



[23]See Paler, Atallah and Marshall (2016).

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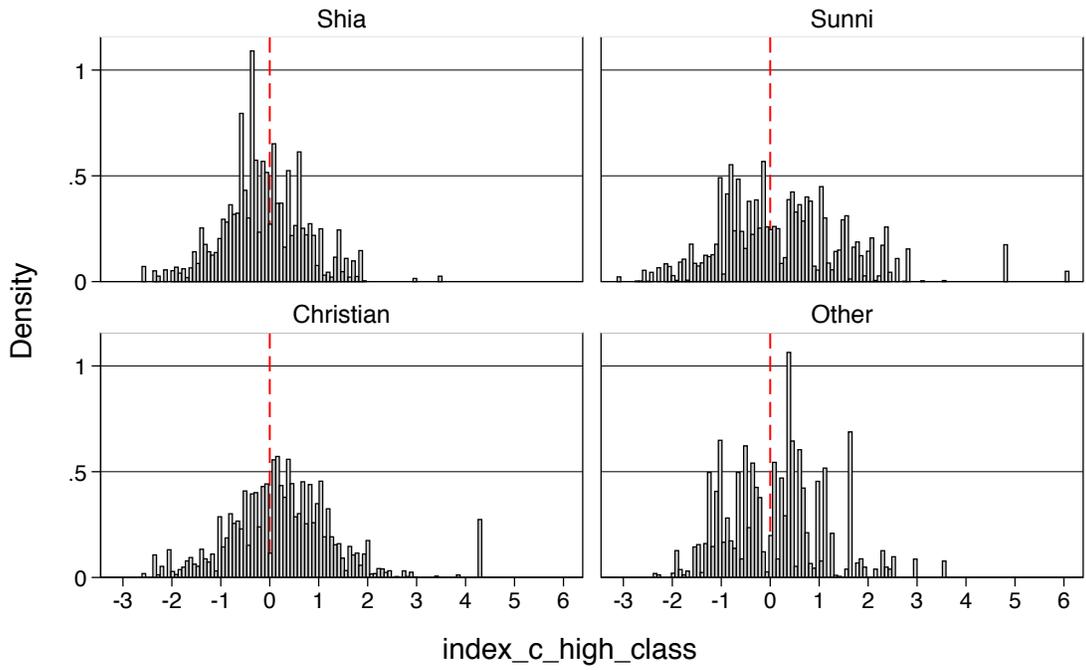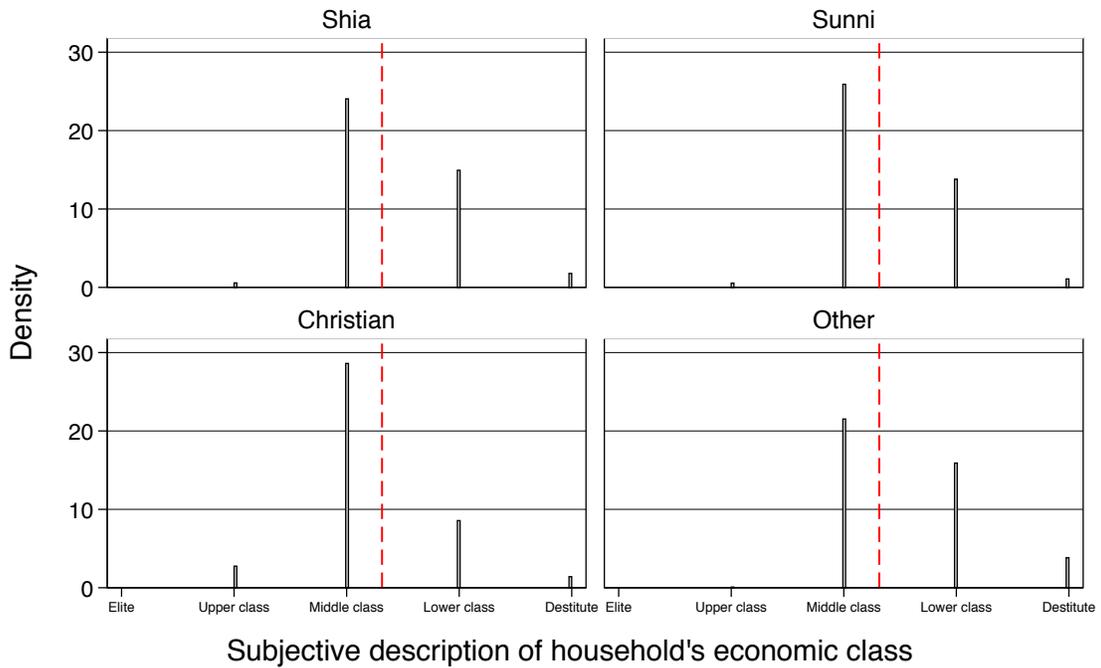
Figure 2: Economic status by confession. Top figure shows the distribution of the wealth index, created using self-reported data on assets, income, profession, and perceived class, by confession. Bottom figure shows distribution of perceived economic class, by confession.
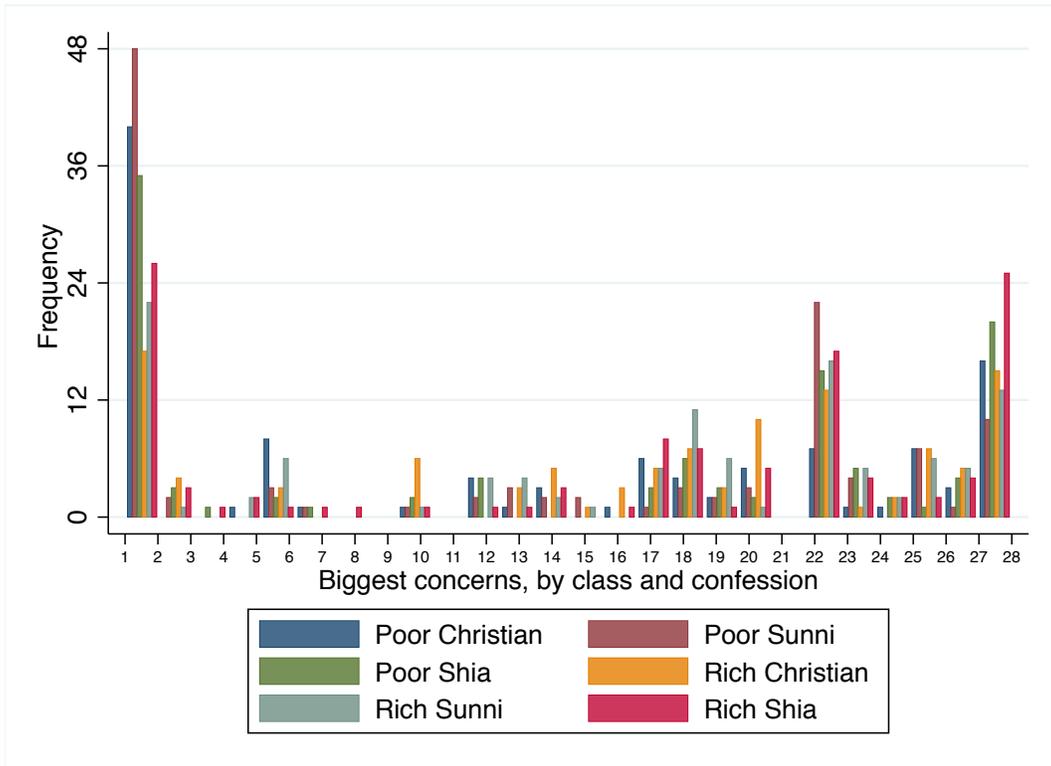
Figure 3: First biggest concern, by class and confession. Numbers correspond to list of issues in q15 on the pre-treatment survey.
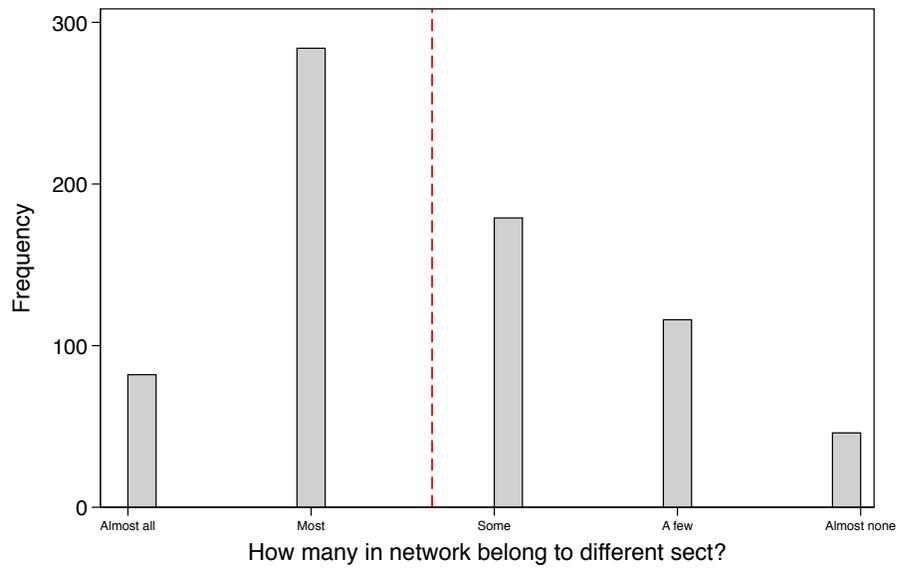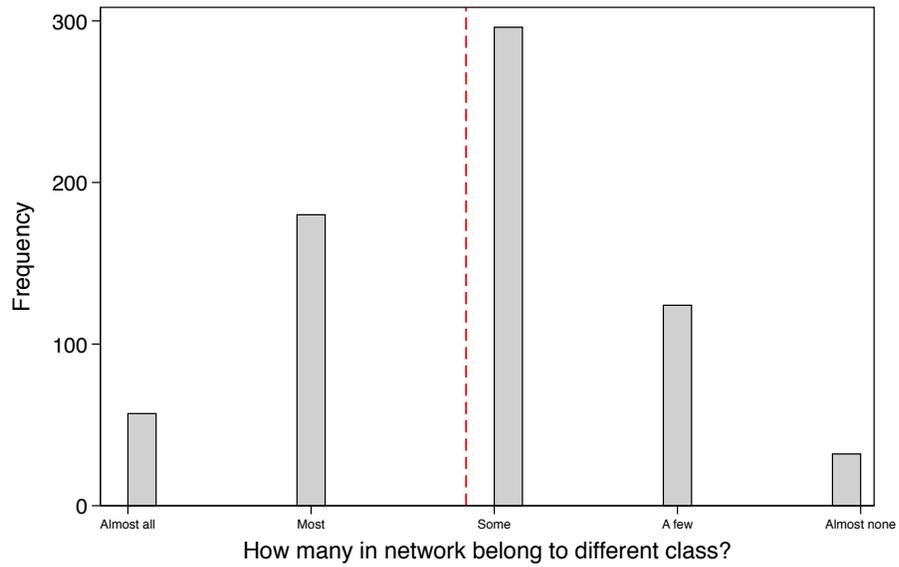
Figure 4: Homogeneity of social networks (red line shows the mean).

Appendix A

HYP (vs. G1) G2	G3	CONCEPT	SOURCE	Q NUM	INDEX	MATCHING**	NOTES
PANEL A: OUTCOMES							
+	+	Closeness to same class/same sect	Post survey	post_q8		q83	
+	+	Closeness to same class/other sect	Post survey	post_q8		q83	
-	-	Closeness to other class/same sect	Post survey	post_q8		q83	
-	-	Closeness to other class/other sect	Post survey	post_q8		q83	
+	+	Group dist rich/poor same sect	Post survey	post_q9		q84	
-	-	Group dist rich diff sect	Post survey	post_q9		q84	
-	-	Group dist poor diff sect	Post survey	post_q9		q84	
+	-	Cooperation	PGG	practice grid q1			Unconditional cooperator
+	-	Cooperation	PGG	practice grid q2			Conditional cooperator
+	-	Cooperation	PGG	amount contributed round 1			Pre
+	-	Cooperation	PGG	amount contributed round 2			Post
+	-	Cooperation	PGG	Pr(changing allocation)			
+	-	Cooperation	PGG	diff btwn round 2-round 1			Post-Pre (main)
+	-	Cooperation	PGG	total group contrib round 1			Group-level outcome
+	-	Cooperation	PGG	total group contrib round 2			Group-level outcome
+	-	Cooperation	PGG	diff btwn round 2-round 1			Group-level outcome
+	?	Resource allocation	Map exercise (allocations)	Allocation to non co-sectarian districts		q57	Main, other breakdowns possible
+	+	Support for multi-sectarian policies	Post survey	post_q11, post_q12			
+	+	Support for multi-sectarian political action	Post survey, petition	post_q13 b, d, g; pet_sign_final	index_y_cross_sect_act	q91 b, pet_sign_final	Analyze index components separately
-	-	Support for sectarian political action	Post survey	post_q13 a, e, f	index_y_sect_act	q91a	Analyze index components separately
PANEL B: ALTERNATIVE OUTCOMES							
?	?	Cross-pressure	Post survey, petition	post_q11, post_q12, post_q13, pet_sign_final, post_q10 a-c	index_y_cross_press	q90	Also look at non-response for q11, q12
?	?	Strength of Lebanese identity	Post-treatment survey	q14		q60	
PANEL C: MECHANISMS							
+	+	Learning	Post survey	post_q1 g, post_q2, post_q3, post_q4, post_q5	index_y_learn		
-	+	Anxiety	Post survey	post_q1 j			
+	-	Empathy	Post survey	**post q1 h, i**	index_y_empathy		
?	?	Polarization/conformity	Post treatment, mod survey	post_q2, post_q4, ms_q29, ms_q33, ms_q37	index_y_agree		Two questions are shared with index_y_learn
PANEL D: CONDITIONAL EFFECTS (AND CONTROLS)							
NA	NA	Confession	Screening, pre-treat survey	pre_q3, screen_q8		q33	Also confession*class
NA	NA	Class	Screening, pre-treat survey	screen q9-q16, pre_q8, pre_q9	index_c_high_class	q61-q72	Two indices (screening, inverse covariance weighted)
NA	NA	Network homogeneity	pre-treat survey	**pre_q5, pre_q10**	soc_homog	q43, q44	Also analyze index components separately
NA	NA	Conflict averse	pre-treat survey	pre_q13			
NA	NA	Sectarian identity	pre-treat survey	**pre_q6, pre_q11 a-b,** pre_q4, pre_q12, pre_q14	index_c_sect_attach	q35, q36, q46, q59, q87	Analyze index components separately; separate indices for identity, material benefits
NA	NA	Gender	Screening, pre-treat survey	pre_q1, screen_q1		female	
NA	NA	Age	Screening, pre-treat survey	pre_q2, screen_q2		q28	
PANEL E: MORE CONTROLS							
NA	NA	Education	Screening	screen_q4		q31	
NA	NA	Marital status	Screening	screen_q3			
NA	NA	Employment status	Screening	screen_q6			
NA	NA	Professional activity	Screening	screen_q7			
NA	NA	Prior political activitism	pre-treat survey	**pre_q7 a-d**	index_c_pol_active	q41 b, c, d	
NA	NA	Strong economic identity	pre-treat survey	pre_q14		Q46 e, f	
NA	NA	Strong Lebanese identity	pre-treat survey	pre_q14		Q46 g, Q60	
NA	NA	Electoral district	Screening	screen_q5			Optional control variable, categorical
PANEL F: GROUP DYNAMICS							
NA	NA	Overall discussion experience	Post survey	post_q1 a-f, post_q2, post_q4, post_q7			These get at the overall quality of the experience
NA	NA	Group dynamics	Mod survey	mod_q11-mod_q21			Individual outcomes
NA	NA	Spontaneity of contributions	Mod survey	mod_q22			Group outcomes
+	+	Alliances on econ grounds	Mod survey	mod_q23			Group outcomes
-	-	Alliances on confessional grounds	Mod survey	mod_q25			Group outcomes
+	+	Allied on econ more than sect	Mod survey	mod_q27			Group outcomes
-	-	Support for confessional system	Mod survey	mod_q35			Group outcomes
NA	NA	Peronal experiences	Mod survey	mod_q40			Group outcomes
NA	NA	Overall quality	Mod survey	mod_q41			Group outcomes