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Refugee Networks, Cooperation, and Resource Access

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Without formal avenues for claims-making or political participation, refugees must find their own means of securing services from state and non-state providers. This article asks why some refugee communities are more effective than others in mitigating community problems. I present a framework for understanding how refugees' social networks shape the constraints and capabilities for collective action. I analyze a field experiment where I organized community meetings with Syrian refugees in Lebanon and Jordan, randomly assigning the recruitment method for meetings to introduce exogenous variation in network structure. During meetings, participants were tasked with resolving collective action problems. I examine the dynamics of subsequent group discussion. Results show that although densely networked refugee groups exhibit more cooperation, they suffer from a resource diversity disadvantage. Group diversity facilitates access to resources that may help refugee communities confront community problems. The novel experimental design allows for separately identifying group-level and individual-level mechanisms.

INTRODUCTION

The global refugee population exceeds 30 million individuals, and despite their diverse backgrounds and living situations, widespread commonalities exist in the intersecting forms of legal, social, economic, and physical precarity that many face in host countries. Over 80% of refugees reside in developing countries and more than three quarters live outside refugee camps run by the United Nations.[1] Many find themselves in settings characterized by limited state capacity and service access. Another widespread regularity for many refugees is a lack of political rights in host countries. Without conventional or formal means of claims-making and political participation, it is not obvious how refugees can take action to mitigate the challenges they face.

I propose that people living as refugees often need to find novel and creative strategies for collective action and resource access in order to mitigate community problems and secure services from state and non-state providers. Cooperation can increase the chances that refugees successfully address challenges they face, ranging from accessing humanitarian aid and other material resources, to securing legal documents and rights, to promoting local public order and safety. However, for refugees to work together, they need to not only overcome the free-rider problem inherent to collective action, but also to identify and mobilize scarce resources. These prerequisites for effective action pose distinctive challenges during displacement. War and migration transform social networks and the resources to which networks facilitate access (Harpviken 2009; Wood 2008). Despite the relevance of these issues, we know little about how refugees facing hardship and resource constraints cooperate to confront collective challenges.[2] To address this puzzle, this article asks why some refugee communities are more effective than others in mitigating community problems.

This article draws on three disparate literatures on cooperation, social networks, and resource mobilization to theorize the drivers of collective action capacity in refugee communities. Research in political science and economics proposes that more densely networked groups have an informational advantage in identifying and sanctioning uncooperative behavior, which can facilitate community governance, collective action, and public goods provision (Fearon and Laitin 1996; Habyarimana et al. 2009; Miguel and Gugerty 2005). However, a contrasting line of work in network science argues that greater network density may leave groups at a disadvantage in finding effective solutions to collective problems if they possess less diverse information and skills (Blau and Schwartz 1984; Granovetter 1973; Page 2007). In sociology, resource mobilization theory provides complementary lessons, exploring how groups with serious objective deprivations rely on external resources to achieve collective goals (McCarthy and Zald 1977; Morris 1986). The latter two bodies of research imply that the availability of and constraints on information and resources are critical determinants of cooperation. This is important because creative problem solving and access to resources may be critical

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[1] Sources: United Nations Refugee Agency (UNHCR). Population globally and in developing countries: https://tinyurl.com/unhcr-stats-june2023. Camps: https://tinyurl.com/unhcr-camps-2021.

[2] But, see Parkinson (2013), Parkinson and Behrouzan (2015), Hajj (2016), Khoury (2017), and Cammett and Sasmaz (2021).

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inputs for refugee communities to solve public goods problems, even in the presence of strong trust and reciprocity that would otherwise facilitate collective action.

Using original data from Syrian refugee communities in Lebanon and Jordan, this article studies the role of social network structure in explaining why some groups of refugees are more effective than others at mitigating community problems. I organized 56 moderated community meetings to elicit and observe dialogue around community problem solving, recruiting participants from UN Refugee Agency (UNHCR) registration records. The experimental element of the study involved varying the recruitment methods for the community meetings in order to create groups with different social network structures. I randomly assigned each community meeting to be recruited through either referral sampling or random sampling. In parallel, I also randomly assigned a subset of individual participants to be placed in one group type or another. This two-level experiment separately identifies (i) the effects on groups of manipulating group composition through varying recruitment methods and (ii) the effects on individuals of being assigned to a community meeting with one's own dense social network. The two-level experiment provides leverage for studying the mechanisms of social network effects, which is valuable given the likely endogeneity in the formation of refugees' networks.

The experiment compares refugees' cooperative dynamics in community meetings between two distinct types of groups. Referral recruitment creates groups that are likely to have dense networks of trust, reciprocity, and monitoring. These groups approximate densely connected refugee communities, composed of people who migrated together or self-selected into communities in order to live with friends and family. I refer to this type of group as "networked." Second, random sampling creates groups with the potential for diverse connections and information (Granovetter 1973; Page 2007). These groups approximate refugee communities brought together by the turbulent circumstances of forced migration into diverse communities not built on the dense networks of trust and reciprocity that characterize preexisting social groups. I refer to these groups as "randomly sampled" or "unnetworked."

Once community meetings were recruited and convened, participants were invited to carry out moderated group discussions on a number of community problems. Outcomes in the organized meetings include metrics of cooperation and resource diversity coded from discussion about the problems. First, I examine the number of comments where participants actively discussed responses to the public goods problems with other participants. *Dialogue* is coded as comments that meet two conditions: (1) relevance, meaning they discussed responses to the community problem, and (2) reciprocity, meaning they either responded to a previous comment or prompted a direct response from another participant. This metric is used to study the level of cooperative effort that people put into community problem solving. Second, I examine the number of comments where a speaker said that Syrians could access a resource (in the resource mobilization theory sense of the term) to mitigate the community problem being discussed. Such statements reveal that the speaker both knows about the existence of the resource and its usefulness, and believes that Syrians can access and mobilize the resource. I also collected data on group network structure and individual covariates in a questionnaire that participants completed when the community meeting concluded.

I designed the community meetings to closely parallel the group deliberation and collective problem solving that I regularly observed in refugee communities during qualitative fieldwork. The experiment in moderated community meetings aims to strike a balance between experimental control and realism, and has important strengths for studying the deliberative process of community problem solving. The setting allows the researcher to control the network structure of participants and provides an ideal setting for studying group deliberation (see, e.g., Cyr 2017, on focus groups). The setting brings together real groups of Syrians engaging in deliberative responses to realistic social problems. The method of eliciting outcomes allows us to study how discussion emerges without imposing the rigid structure common in many lab settings. In humanitarian contexts, such discussions also offer advantages over alternative research methods like surveys and lab games, which face particular concerns about ethics and data quality with refugee populations (Parkinson 2022).

In the article's first main result, the social network experiment shows that dense refugee networks increase group engagement in response to collective problems. Results suggest that this may be driven by both structural characteristics of the groups (i.e., group composition) and individuals' incentives to contribute more when working with a networked group. Second, results indicate that networked groups have a resource diversity *disadvantage*, which is important as it may reduce refugees' ability to find effective solutions to community problems. The experiment reveals that the resource diversity disadvantage of networked groups is likely driven by structural features of the groups, whereby the types of people in densely networked groups tend to have access to less diverse resources. Together these findings offer evidence about the structural- and individual-level mechanisms linking refugees' social networks and community cooperation. They show that network structures that increase engagement in collective problem solving have a cost in terms of resource diversity. This may be a critical binding constraint on cooperation in groups that lack resources necessary to solve problems, as is the case in many refugee communities around the world.

This article contributes to three distinct research agendas. First, I contribute to an emerging line of political science research on the logic of order in refugee communities (Cammett and Sasmaz 2021; Hajj

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2016; Parkinson 2013). I push this literature in a new direction by developing and testing a framework for understanding critical constraints and capabilities that determine refugee communities' collective action capacity, filling a gap in current theory. Recent work on the related topic of politics in informal settings focuses on the electoral logic of service provision to citizens and voters (Auerbach 2017; Holland 2017). Refugees, however, face a distinct logic of access to services and resources. They must seek out different potential service providers than citizens, and are not voters in the countries where they live.

The second contribution is to political science research on cooperation, offering a corrective to the dominant focus on peer-sanctioning (Habyarimana et al. 2009; Larson 2017; Miguel and Gugerty 2005; but see, Cruz, Labonne, and Querubin 2020). Drawing on work on social networks and diversity (e.g., Page 2007) and resource mobilization theory (e.g., McCarthy and Zald 1977), I explore and test the complementary role of diverse information and resources. This contributes to a line of recent work showing that, under certain conditions, heterogeneous groups may enjoy advantages that overpower the "diversity penalty" for public goods (Charnysh 2019; Tajima, Samphantharak, and Ostwald 2018). This article argues that groups without resources to mitigate problems face a barrier to cooperation more fundamental than the threat of free riding. The experimental results show that densely networked groups may suffer more acutely from this problem than less dense groups, and two-level randomization allows for disentangling the structural and behavioral mechanisms behind networked groups' resource disadvantage.

Methodologically, the article offers a new experimental approach for studying network effects. The differences in the findings at the group level and individual level highlight that researchers studying group structures must be cautious in both observational and experimental studies where outcomes are defined at the group level. Without a deliberate design for learning about network effects, such as the one presented in this article, it will often be difficult or impossible for researchers to identify whether mechanisms operate at the individual level or group (structural) level. Whether a researcher is comparing refugee camps, ethnic groups, or nations, people who compose densely connected groups differ in many ways from the general population. This inferential problem is an important challenge for political science research explored in recent work (see, e.g., Christia, Knox, and Al-Rikabi 2017; Cruz, Labonne, and Querubin 2020; Kustov and Pardelli 2018; Larson 2017; Larson and Lewis 2017).

Last, the article has implications for policy and program design surrounding refugee migration. Despite the importance of understanding how to respond to refugee crises, evidence on the internal determinants of refugee community well-being is limited. Existing research on the effectiveness of policies in refugee settings focuses almost exclusively on the effects of aid programs designed and run by outsiders, leaving knowledge on the topic fundamentally constrained by the lack of theory and empirics about the inner workings of refugee communities. This gap is concerning. Humanitarian and development interventions are often suboptimal, ineffective, and at worst harmful when designed by those who do not understand the societies and communities they aim to assist (Easterly 2006).

THEORETICAL FRAMEWORK: REFUGEE NETWORKS AND COMMUNITY COOPERATION

The Advantages of Networked Groups: Information Flow and Peer Sanctioning

How should we understand variation in the ability of refugee communities to mitigate collective problems? The robust literature on collective action serves as a natural starting point for considering the dynamics of cooperation in refugee communities. The predominant explanation in political science and economics for cooperation is that high-density networks facilitate information flow and in-group sanctioning (Fearon and Laitin 1996; Habyarimana et al. 2009; Miguel and Gugerty 2005). *Density* refers to the share of people in a group who are connected in a social network, which in this context refers to community members who know and interact with each other.[3] Because social ties transmit information, greater group density provides more opportunities for people to share and receive information, which in turn increases the likelihood that group members who do not contribute to mitigating collective problems can be identified and sanctioned. In a refugee community, sanctioning may take the form of ostracism and harassment, ejection from beneficial gossip networks or mutual aid associations, exclusion from employment opportunities or humanitarian aid, being pressured or forced to leave a neighborhood or camp, or interpersonal violence.

In refugee communities characterized by sparse networks, people may have fewer incentives to contribute to solving community problems, devoting less effort to the public sphere. In contrast, as the density of a community increases, we may witness higher levels of engagement toward mitigating collective problems. This leads to my first hypothesis, that we will witness more community engagement with collective problems in more densely networked groups:

> *H1: Group-Level Network Effect on Engagement*
> Networked groups of refugees will exhibit higher group engagement in community problem solving than unnetworked groups.

[3] In formal terms, we can conceive of group density as the ratio of realized ties to possible ties in a group, which would equal 1 if everyone knows everyone else in a group, and equal 0.5 if half of the possible dyadic relationships in a group are realized.

The Benefits of Diversity: Refugees' Information Diversity and Resource Access

During the turbulent circumstances of forced displacement, some people find themselves in communities composed of people unlike themselves: people from different cities and towns, ethnic or religious groups, and social and economic strata. *Refugee community diversity* refers to variation in the characteristics and types of refugees living in a neighborhood or camp. I treat diversity as a multidimensional feature of a group, allowing for general usage that applies even to contexts that lack a single dominant social cleavage.[4]

Much of the work in political science and economics exploring the relationship between networks and cooperation fails to consider a wealth of theory and evidence showing that diversity can support cooperation.[5] Network theory suggests that group density may be correlated negatively with a group's repertoire of information and resources. Granovetter (1973) argues that bridging ties between distant parts of a network tend to link diverse individuals, spreading information that recipients could not otherwise access. Blau and Schwartz (1984) write that densely networked groups can be so clustered as to prevent meaningful contact outside the group, thereby stymieing the flow of resources and information. Other work explores the role of diversity in facilitating problem-solving. Page (2007) argues that diverse teams have an advantage in solving complex problems because they possess a wider range of information, skills, and heuristics.[6] Social psychology experiments find that new viewpoints improve problem solving (Nemeth 1986) and ethnic diversity can lead to higher creativity (McLeod, Lobel, and Cox 1996).

Related predictions flow from resource mobilization theory, which asserts that groups striving for social change need to marshal external resources and aggregate them for collective purposes, subject to the structural constraints groups face (McCarthy and Zald 1977). Groups with serious objective deprivations need to rely more heavily on external resources to realize their preferences for social change (McCarthy and Zald 1977; Morris 1986). In refugee communities, resources valuable for mitigating community problems can include information, human capital, material goods, and political connections. Although refugee communities will possess resources internally, problem solving will often rely on identifying and leveraging connections to external actors including the host community, NGOs, and government officials.

These literatures all lead to the prediction that diversity can facilitate cooperation by increasing the effectiveness of group responses. In refugee communities, where groups often do not possess the internal resources to mitigate their own problems, access to a broader range of creative ideas, information, and external resources can be essential for problem solving. Refugees from a range of socioeconomic backgrounds, from distant hometowns, with distinct social ties and professional experiences, may bring diverse knowledge and heuristics to their community. To consider a stylized example, imagine two refugee camps, one where most residents work on the same nearby farm and another where residents work in a range of professions and jobs in the surrounding area. The residents of the latter camp will likely have a broader network of social connections and more varied problem-solving heuristics, which may prove useful in the search for responses to community problems. This leads to the second hypothesis that networked groups of refugees will possess less information about diverse resources in response to community problems.

> *H2: Group-Level Network Effect on Unique Resources*
> Networked groups of refugees will have access to fewer unique resources that they can use in response to community problems.

Why Are Refugee Networks Beneficial for Cooperation?

Reconciling the literatures on networked groups and diversity is complicated by the fact that when we observe or create a networked group, group outcomes may be shaped by both how the network setting impacts individual behavior and by baseline predispositions of its members toward cooperative behavior. In order to differentiate these mechanisms, I use the term *group-level network effects* to refer to how group outcomes are affected by structural changes in the composition of groups. If group-level effects fully explain differences across groups, we would expect to see a given person behave similarly in different group settings. In contrast, *individual-level network effects* may also drive differences in group outcomes. This refers to how a given person's behavior is affected by different network contexts. If people behave differently depending on whom they are interacting with, then differences between refugee communities are likely not only driven by characteristics of the community members.

Although Hypotheses 1 and 2 offer an understanding of group-level differences in refugee community cooperation, they do not speak to whether the differences are driven by features of groups and their members (i.e., group-level network effects) or by interactions between people in groups (i.e., individual-level network effects). If the causal processes above linking information flow to peer-sanctioning in densely networked groups are accurate, we should not only see differences between groups (H1), we should also see evidence that individuals are more likely to cooperate when interacting with their dense social network. This leads to the third hypothesis, that interacting with a densely networked group causes people to behave

[4] This contrasts with research on ethnic diversity, which operationalizes diversity with respect to a single ascriptive characteristic that in some contexts defines a salient in-group/out-group division.
[5] But see, Laitin and Jeon (2015), Tajima, Samphantharak, and Ostwald (2018), and Charnysh (2019).
[6] Page conceives of *heuristics* as mental rules or algorithms that people use for constructing solutions to problems.

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more cooperatively, and group-level differences are not driven only by networked groups including more cooperative individuals.

H3: Individual-Level Network Effect on Engagement
When an individual refugee interacts with their networked group, they will exhibit greater engagement in community problem solving.

Hypothesis 2 predicts that diverse refugee communities will possess a resource diversity advantage over densely networked communities. But do these people simply possess diverse resources because they are an inherently diverse group (i.e., as a result of group composition)? Alternatively, interacting with a diverse group may cause people to draw on a wider range of resources than they would otherwise. Exposure to different perspectives and ideas may prompt people to engage in more creative problem solving, or may lead them to see the possibility or value of unexpected strategies and resources to mitigate community problems. In this way, interacting with a diverse group may prompt people to draw on different heuristics in their responses to challenges, leading them to think of and turn to a more diverse range of resources (see, e.g., Page 2007). If the relationship between group diversity and resource diversity operates at the individual level, we would expect people to draw on a different set of resources depending on the group they are interacting with. This means that individuals in diverse groups are not simply bringing more diverse information with them to the group. Additionally, interacting with a diverse group causes people to change their behavior, drawing on a wider range of resources than they would in a densely networked group. This leads to the following prediction.

H4: Individual-Level Network Effect on Unique Resources
When an individual refugee interacts with their networked group, they will contribute fewer unique resources to community problem solving.

STUDY CONTEXT: THE SYRIAN REFUGEE CRISIS AND COMMUNITY COOPERATION

The Syrian conflict sparked an enormous refugee crisis, with millions of people fleeing to Lebanon, Jordan, Turkey, Iraq, Egypt, and beyond. According to U.N. registration numbers, which will provide a conservative estimate of displacement, by 2016, at least four million Syrians had fled to neighboring countries and at least eight million had been internally displaced. As of mid-2016, when data for this article were collected, approximately one million Syrians lived in Lebanon alongside 4.5 million native residents. Roughly 630,000 Syrians lived in Jordan, where the citizen population numbered 6.6 million in 2015.[7]

In Jordan and Lebanon in 2016, most Syrians lived in urban and peri-urban settings, with 20% of those in Jordan living in camps and 15% in Lebanon in camps. In Jordan, UNHCR formally ran four camps ranging from a few thousand to roughly seventy thousand residents. In contrast, no central authority managed Lebanon's many small camps and official refugee camps were not established in the country.

In the early years of the refugee crisis, it was fairly simple for Syrians to enter and reside in Lebanon or Jordan. As the conflict continued, however, legal restrictions on entry, residency, and work increased, severely limiting Syrians' ability to enter the countries, and forcing the majority of those residing there into legal and financial precarity. Lebanon and Jordan deny Syrians a general right to work and constrain their movement. For most refugees, any interaction with state authorities, such as police or government bureaucracy, can carry significant risk. Such risks are mediated, though not necessarily lessened, by socioeconomic factors like education, wealth, and social class (see, e.g., Pearlman 2020). For many Syrians, in ways shaped by socioeconomic status, their mobility in Lebanon and Jordan is highly constrained due to the risk of abuse, arrest, and deportation while passing through checkpoints, which can be a threat even for short-distance travel in some parts of each country. Concerns about checkpoints have important consequences: constraints on safe movement negatively impact people's ability to work, visit family, go to hospitals to receive healthcare, or travel to urban centers to renew documents.

During more than a year of qualitative fieldwork in Syrian communities in Lebanon, I observed community cooperation and resource access to be central determinants of Syrians' well-being. Although Syrians cannot change the fundamental causes of their problems, they leverage connections and resources in response strategies to meet daily needs and ease their difficulties (what many Syrians referred to as "making do," *zabat al-hal*). The inchoate dynamic nature of refugee communities magnifies the importance of information about social, economic, and bureaucratic processes that many stable communities can take for granted. People continually search for information about safe travel routes, reliable employers, the current state of work-permit laws, and services available from NGOs and international organizations.

My fieldwork further revealed the collective and deliberative nature of these efforts to search for solutions to problems. Syrians meet with friends, neighbors, and acquaintances to discuss how to solve problems, build potentially helpful relationships, and explore where to find useful information. Sometimes communal meetings take place in a private space like an apartment or tent, sometimes with a community leader like a shawish, or in community meeting spaces like schools, shops, NGOs, or mosques, or sometimes simply on the street. These meetings often serve the purposes of brainstorming and informational exchange,

[7] Source for Syrian populations: https://tinyurl.com/unhcr-syria-2019. Source for Jordanian population: https://tinyurl.com/jordan-census-2015.

dynamics that I aim to recreate and examine in the community meetings in this study.

RESEARCH DESIGN: SOCIAL-NETWORK EXPERIMENT[8]

In order to study how social network structure affects refugee community deliberation and problem solving, I organized 56 community meetings with Syrian refugees across 14 cities, towns, and refugee camps in Lebanon and Jordan. The moderated community meetings were designed to elicit and observe dialogue around community problem solving. The community meetings allow us to study how different social network structures affect community deliberation, how refugees confront problems, participants' level of engagement (and conversely, shirking), and the resources that people contribute in the meetings.

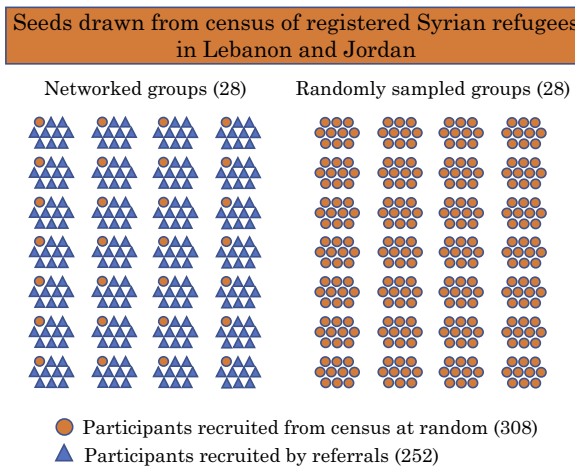
Studying the effects of group structure on cooperation is complicated by two factors. The first identification challenge in studying refugees' social networks is linked to how people form network ties. There may be endogeneity in the formation of refugee networks whereby people's unobserved characteristics are correlated with those of others in their network—the classic "reflection problem" identified by Manski (1993). As a consequence, an observed correlation between group structure and outcomes could be caused by characteristics of group members rather than their interactions. In addition to this first problem of unobservable selection, network settings give rise to a second identification challenge. Most social network features are inherently endogenous, in the sense that naturalistic variation in one dimension, even random variation, causes variation in other features as well.

To overcome these challenges, I employ a novel two-level experiment that identifies social network effects at both the group level and the individual level. The group-level experiment manipulates structural features of groups (i.e., their composition) by randomly varying the recruitment methods used to form groups. The individual-level experiment randomly assigns a subset of individual participants to one group type of another, thereby identifying the effect on individual behavior of being placed in different group settings. The individual-level experiment is valuable because experimentally manipulating network structure at the group-level is impossible without introducing indirect compositional effects (so that randomly selected people are by design systematically different from those recruited using referrals).

I implemented the experiment during recruitment of participants for the community meetings, which involved two levels of random assignment. The experimental procedures began with 56 individuals randomly sampled from the UN Refugee Agency registration records, who each served as the first participant for one of 56 community meetings. I randomly assigned half of the individuals to a group composed of their close network, recruited through referral sampling. I assigned the other half to a group composed of other refugees randomly sampled from the U.N. records in the same town.[9] As a result of randomly assigning (randomly sampled) individuals to participate in one type of group or another, the individual-level comparison is clearly defined. At the group level, I formed networked (treated) groups through referral recruitment, where each group is a randomly sampled network neighborhood from the census.[10] I compare these groups to control groups composed of randomly sampled individuals, thereby defining the group-level comparison. Figure 1 presents a visual intuition for group formation and assignment of units to groups.

Referral recruitment creates networked groups that are likely to have dense ties of trust, reciprocity, and monitoring. Random sampling from a large census[11] creates groups with the potential for bridging ties (Granovetter 1973) and diverse connections and

FIGURE 1. Research Design Intuition



Note: Randomly sampled groups include participants drawn at random from the census while networked groups include a single participant randomly sampled from the census (a 'seed') and nine participants recruited from the seed's social network.
The group-level experiment compares full groups across the two arms. The individual-level experiment compares randomly sampled individuals (orange circles) across the two arms.

[8] A formal presentation of the empirical strategy is included in Section 2 of the Supplementary Material.

[9] To establish that both potential outcomes are defined for all units in the study, all participants in the study—both referral recruited and randomly recruited—needed to refer three close ties, although referrals were only contacted for people in the networked groups.

[10] Network neighborhood recruitment took place as follows. A single person was randomly sampled from the census, who then referred three close friends outside their family and household, who each in turn referred two or three friends outside their family and household.

[11] Census populations in each research site ranged from a few hundred eligible participants per gender to tens of thousands of eligible participants per gender in the cities.

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information (Page 2007). Randomly assigning groups to be recruited through one method or the other allows for identifying the effect of group structure on group outcomes. In the experiment's second level, randomly assigning individuals to groups allows for identification of the effect of network structure on individual behavior, removing the confounding that comes from selection into groups and shedding light on the mechanisms linking network structure and cooperative behavior. This comparison excludes referral recruited individuals (blue triangles in Figure 1), and compares individuals in randomly sampled groups (orange circles in randomly sampled groups) to the randomly sampled participants who served as seeds for referral recruitment (orange circles in referral recruited groups).

To consider the group-level experiment, imagine an analogy to studying recruitment methods for sports teams. At the group level, the coach of a given team might be interested in knowing about the effect on team performance of recruiting a full team through one method or another—such as recruiting players who have played together before versus recruiting ones who have not. Group-level randomization allows me to compare networked groups to randomly sampled groups, estimating the counterfactual comparison of groups being formed through one decision rule or another. I refer to the difference in group outcomes when a group is formed through referral sampling compared to being formed through random sampling from the community as the *group-level network effect*, defined formally below in the Estimation section and in Section 2 of the Supplementary Material.

Second, if we consider the individual-level experiment through the sports analogy, we might be interested in the effect on one player's performance of being assigned to one team or another. For instance, how well does a given player perform when playing with others she has experience being on a team with compared to playing with new teammates? Individual-level randomization allows us to identify the effect on an individual of interacting with their own network versus interacting with a group of randomly sampled community members, which I refer to as the *individual-level network effect*, also defined formally below and in Section 2 of the Supplementary Material.[12]

Network Recruitment and Group Structural Characteristics

In conventional experiments, covariates of the units are defined pre-treatment and are not impacted by treatment. This is true in this experiment for the covariates of randomly sampled individuals in the individual-level experiment. However, a unique feature of this two-level experiment is that group-level experimental variation in the recruitment method affects group composition. This is precisely the goal of the group-level experiment: to randomly vary how a group is recruited and thereby form groups with different types of people, with different types of connections to each other. The article's group-level experiment provides the opportunity to learn about the policy question of how forming groups through one means or another affects outcomes. In contrast, the article's individual-level experiment aims to compare the behavior of the same people counterfactually under different circumstances, comparing only randomly sampled individuals across experimental conditions. This means that in the individual-level experiment, covariates are defined and fixed before treatment assignment.

Public Goods Vignettes

To study how participants engage in community problem solving, a trained moderator presented audio vignettes in each meeting describing problems that are common in refugee communities. The scenarios capture common collective problems that Syrian refugees face in Lebanon and Jordan pertaining to issues of public safety, freedom of movement, resource distribution, and the ability to earn a basic livelihood.

I developed the content of the vignettes based on more than a year of qualitative fieldwork in Syrian communities in Lebanon and in conjunction with Syrian, Lebanese, and Jordanian NGO staffers who work with Syrian refugees. I wrote the scripts in Arabic and hired Syrian voice actors to record them. The full text of the vignettes is available in Section 12 of the Supplementary Material. Also, the reader will find a video presenting the Arabic-language audio of the vignettes with English-language subtitles at the link in the footnote.[13]

This article focuses on analysis of responses after the pre-recorded vignettes were played, constituting a structured portion of the community meetings intended for quantitative analysis. Presentation and discussion of the vignettes lasted about 20 minutes on average. The entire community meetings lasted about 1 hour and 45 minutes on average. The moderator played the audio vignettes about an hour into the meetings in order to give groups a "warm-up" period before measuring the key outcomes.

To attain evidentiary validity, vignettes should resonate with participants, which may not happen if vignettes are designed based on misguided *a priori* conceptions of what community problems Syrians face. Drawing on my fieldwork and stakeholder engagement mentioned above, I sought to achieve three goals in designing audio vignette content. First, I aimed to maximize the realism and salience of scenarios. Second, I designed audio vignettes to describe problems that were sufficiently general that they would resonate with Syrians living in urban, peri-urban, and camp settings in

[12] A related but distinct way to conceive of two-level social network effects is *contextual effects* and *compositional effects* (e.g., Abascal and Baldassarri 2015; Maxwell 2019; Pardelli and Kustov 2022). The group-level effect can be seen as a bundle of the contextual effect and compositional effect, and the individual-level effect is equivalent to the contextual effect.

[13] https://tinyurl.com/vignettes-audio.

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both Lebanon and Jordan. Third, I made content sufficiently specific to prompt meaningful discussion.

The discussion transcripts demonstrate that the vignettes resonated in a vast majority of groups. In the majority of discussions (79.2%), there was at least one explicit comment about the vignette's relevance (e.g., "This type of thing happens in our community"), and in only a small share of the discussions (10%) did anyone say anything about its irrelevance (e.g., "This type of thing does *not* happen in our community").

After playing each vignette, the moderator opened discussion to participants. Moderators did little to shape participants' responses to audio vignettes. To help preserve excludability, moderators were not told about the intention of recruiting networked and randomly sampled groups, and were not told about hypotheses under investigation.[14] Presentation of the vignettes was not heavily structured and participants were not prompted to respond in any particular way or even respond at all. I trained moderators to do very little to guide discussion after playing each audio file. At most, if participants asked what they were supposed to do after the audio file was played, the moderators were trained to say something minimal like, "What would you do?" or "Can you do anything in this situation?" but explain no more and never express expectations that people work together.

Data

Data include metrics of deliberation and cooperation and resource diversity in the community meetings, capturing how participants responded to vignettes about community problems. I also have data on group network structure and participant covariates from a questionnaire that participants completed when the community meetings concluded.

Two experienced moderators led 56 community meetings, comprising 491 individuals. The mean group size was 8.8 participants, ranging from 6 to 10 people. Attendance rates were balanced across treatment and control arms. Meetings were either all-male or all-female, with no mixed-gender meetings. All data collection was conducted in Levantine Arabic (the regional dialect), and all documents read to or distributed to participants were in formal Arabic (the standard written language). I monitored all aspects of the study including recruitment, data collection, and transcription. Recruiters read all people contacted a consent script and moderators read another consent script to participants before group discussion began. I discuss more details of study conduct and quality checks in Sections 1 and 5 of the Supplementary Material.

The community meetings took place in Lebanon in May and June 2016 and in Jordan in June and July 2016. Due to delays with obtaining permits for research in Za`atari camp, I ran the community meetings there in September 2016. I conducted pilot meetings in Lebanon in May 2016 to improve the public goods vignettes, discussion guide, and framing of the study. I present additional information in Section 1 of the Supplementary Material about site selection, blocking, assignment of moderators to meetings, recruitment procedures, and participant descriptives.

Recognizing the vulnerability of the participant population, I aimed to minimize the potential for harm at all stages of research from conceptualization, to recruitment and data collection, to data storage and analysis, and to dissemination. I developed steps for participant protection in conjunction with Syrian, Lebanese, and Jordanian NGOs who work with Syrian refugees. Ethical considerations are discussed in detail in Section 1.10 of the Supplementary Material.

Estimation

I present difference-in-means estimates for metrics of group deliberation in response to the public goods vignettes.[15] The 56 community meetings comprised a total of 491 individuals.[16] Two hundred and fifty-eight of these participants were randomly sampled, and therefore individual-level treatment assignment is exchangeable for these participants.

Randomly sampled individuals are indexed by $i = 1, \ldots, N$ (for individual-level analyses, excluding referral-recruited participants), and community meetings are indexed by $j = 1, \ldots, K$ (for group-level analyses). I denote an outcome of interest as Y_i at the individual level, and as G_j at the group level. Z_i denotes whether an individual was assigned to a referral recruited networked group ($Z_i = 1$) or a randomly sampled group ($Z_i = 0$). T_j denotes whether a group was recruited through referral sampling ($T_j = 1$) or random sampling ($T_j = 0$).

First, I estimate the causal effect of a community meeting being recruited through referral sampling or through random sampling, which I call the *group-level network effect.* I present differences at the group level between networked groups and randomly sampled groups, calculated as

$$\mathrm{E}[G_j|T_j = 1] - \mathrm{E}[G_j|T_j = 0]. \quad (1)$$

Second, I estimate the causal effect of an individual being placed in a networked group or a randomly sampled group, which I call the *individual-level network effect.* I present differences at the level of individual randomly sampled participants between seeds assigned to networked groups and people in randomly sampled groups, calculated as

$$\mathrm{E}[Y_i|Z_i = 1] - \mathrm{E}[Y_i|Z_i = 0]. \quad (2)$$

[14] Moderators knew that the groups were either people who mostly knew each other or mostly did not know each other, which was necessary for practical reasons of getting participants into the right room.

[15] The experiment was not preregistered, though analysis (difference in means between experimental arms) follows in a straightforward manner from the design of the experiment.

[16] Target attendance was 10 participants in 56 meetings. Approximately 13% of this 560-person target were no shows, resulting in a total of 491 individual participants.

Randomization Check

I check randomization by testing for the observable similarity of randomly sampled participants across the two group conditions (i.e., just the orange circles in Figure 1). This compares people randomly assigned to networked groups and those in randomly sampled groups. This excludes people in the networked groups who were recruited through referrals. All participants in the unnetworked groups were randomly sampled from the census, meaning they are interchangeable with seeds, thereby increasing the power of the randomization check. As expected under random assignment, questionnaire data show that participants' pre-treatment covariates are balanced across the two experimental conditions. I discuss the randomization check in detail in Section 3 of the Supplementary Material.

Manipulation Check

Supporting the validity of the experiment, manipulation checks show clear evidence that experimental variation in group formation affected structural characteristics as intended.[17] I present the formalization of the manipulation checks and detailed results in Section 4 of the Supplementary Material. First, I test whether networked groups had higher group density, defined as the percentage of realized ties relative to possible ties in a group. For example, if everyone knows everyone else in a group, the density is 1. If half of the possible dyadic relationships in a group are realized, the density of the group is 0.5. As shown in Section 4.1 of the Supplementary Material, across multiple metrics of participant connections, the density of networked groups was much higher than that of randomly sampled groups. The density of pre-existing ties within the networked groups was 0.64, compared to 0.11 in the unnetworked groups, corresponding to more than a 50-percentage-point increase in density. In nominal terms, the average participant in networked groups knew 5.49 other participants, and in unnetworked groups, the average participant knew 0.8 other participants.

Next, I present manipulation checks for diversity.[18] In these tests, I use a standard metric of diversity, the product of the shares of units of each "type" within each group, in terms of covariates.[19] As shown in Section 4.2 of the Supplementary Material, results support the expectation from a long line of research that randomly sampled groups will be more diverse (see, e.g., McPherson, Smith-Lovin, and Cook 2001). The metrics provide clear evidence that assignment to the networked group condition decreases covariate diversity in both the group-level and individual-level experiments.

Coding and Tagging

In order to analyze discussion transcripts, I developed a coding guide with three researchers who were not otherwise involved in the project. We each read a random sample of transcripts and then collaborated to compose a coding guide capturing salient discussion dynamics. I then coded transcripts according to the guide and made no modifications to the guide after I began coding. Coding was not automated or predictive; I read and hand-coded transcripts using the qualitative data analysis software Dedoose, which then output the coded transcripts in spreadsheet form suitable for statistical analysis. The outside researchers and I were blind to treatment status during codebook development and tagging.[20]

Outcomes

Outcomes include metrics of cooperation and resource diversity. To test hypotheses about the group-level network effect on collaboration (H1) and the individual-level network effect on collaboration (H3), I examine the number of comments where participants actively discussed responses to the public goods problems with other participants. Dialogue is coded as comments that met two conditions: (1) relevance, meaning they discussed responses to the community problem and (2) reciprocity, meaning they either responded to a previous comment or prompted a direct response from another participant.

To test for a network effect on comments about resource access at the group level (H2) and the individual level (H4), I draw on the concept of *resources* from resource mobilization theory (e.g., McCarthy and Zald 1977). A comment was tagged as referring to a "resource" if a participant stated that Syrians could access the resource to mitigate the public goods problems in the vignettes. This means that the speaker both knows about the existence of the resource and its usefulness, and believes that Syrians can access and mobilize the resource. I test for results across all resources that were discussed in any group. The resources discussed included Syrian leaders, brokers between the Syrian and the host community, traditional dispute resolution involving sheikhs (*sulha*), the host community, NGOs, the government, and the police.

I measure the *volume of unique information about resources* that groups discuss in responses to community problems, as defined in Equation 3:

$$V_j = \sum_{k=1}^{\ell} \mathbb{1}(r_{jk} \geq 1), \tag{3}$$

[17] This aligns with existing evidence on the characteristics of referral-recruited samples from Syrian refugee populations (Khoury 2020).

[18] A great deal of research on diversity focuses on ethnic diversity. This article does not manipulate ethnicity. Covariates used to measure diversity include age, household size, arrival year in Lebanon, and ever-married status, although groups likely varied in many unobserved characteristics as well. This is discussed in detail in Section 4.2 of the Supplementary Material.

[19] This metric is known as the Herfindahl index or Herfindahl–Hirschman index (HHI) in economics and the Simpson Diversity Index in ecology.

[20] Coding and tagging are discussed in greater detail in Section 1.11 of the Supplementary Material.

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where V_j denotes the volume of unique information that group j discussed in response to community problems. V_j is a function of the resources discussed r, indexed by $k = 1, \ldots, \ell$, and $\mathbb{1}$ is the indicator function. In other words, Equation 3 calculates the number of unique actors mentioned as resources in each community meeting.

At the individual level, unique information is defined with respect to each participant i, shown in Equation 4:

$$v_i = \sum_{k=1}^{\ell} \mathbb{1}(r_{ik} \geq 1). \quad (4)$$

RESULTS

First, to test for group-level network effects (Hypotheses 1 and 2), I compare discussion in community meetings that were randomly assigned to be networked groups to those recruited through random sampling. Second, to test for individual-level network effects (Hypotheses 3 and 4), I compare individuals randomly assigned to a community meeting with their network to those assigned to a randomly sampled group. I present results at the group level and individual participant level.[21]

Group-Level Network Effects: Group Structure and Cooperation

H1 – Group-Level Network Effect on Engagement

In Table 1, the unit of analysis is the community meeting. The outcome for the dialogue column is a continuous measure of the number of reciprocal comments between participants (excluding moderators) discussing the community problem. During the portion of the community meetings analyzed in this article—that is, when participants listened to and responded to the pre-recorded vignettes—the mean number of total comments per group (including dialogue and non-dialogue participant comments, as well as moderator comments) was 33.93 (max: 76, min: 11).

TABLE 1. Group-Level Effects

	Dialogue	Unique resources
Control mean	9.79	2.68
$\hat{\beta}$	4.96	–1.18
	(2.49)	(0.31)
RI *p*-value	0.03	<0.01

Note: $K = 56$. $\hat{\beta}$ denotes difference-in-means estimate. Robust standard errors are reported in parentheses. Randomization inference performed with one hundred thousand simulated randomized treatment assignment vectors, blocked by country, site, and gender following the same structure used for actual randomization. Results are robust to covariate adjustment. Complete model results are presented in Supplementary Table 3S, available at Masterson (2023).

The first hypothesis states that when a group is recruited through referral sampling, members will engage more in response to community problems. Figure 2 shows that discussion in networked groups exhibited higher engagement in response to the community problems than in the randomly sampled groups. In randomly sampled groups, an average of 9.79 comments were dialogue per community meeting, whereas the networked groups made 14.75 dialogue comments on average. In randomly sampled groups, 29.9% of participant comments were dialogue and 41.9% of participant comments were dialogue in networked groups. This constitutes a 50.7% increase from baseline in the number of dialogue statements, and a 12-percentage-point increase in the share of comments that were dialogue.[22] As shown in Section 8 of the Supplementary Material, results are robust to covariate adjustment.

H2 – Group-Level Network Effect on Resource Diversity

The second hypothesis states that groups recruited through referral sampling will draw on fewer unique resources in their responses to community problems. Figure 3 shows that the average number of unique resources discussed in a given community meeting was 2.68 in randomly sampled groups and 1.5 in networked groups. As shown in the right panel, the difference-in-means estimate for the effect of a group being recruited through referral sampling is –1.18. This constitutes a 44% decrease in the number of unique resources discussed. As shown in Section 8 of the Supplementary Material, results are robust to covariate adjustment.

Disaggregated Analysis of Resource Diversity

I also examine what types of resources drive the group-level network effect on unique resources. The resources in Table 2 are binary variables, and each indicates whether at least one respondent stated that Syrians can turn to each actor in response to the community problem. The experimental effects are also presented graphically in Figure 4. I find that networked groups are consistently *less* likely to say that they could draw on a range of resources. Across the different resources, the randomly sampled groups more often made statements that Syrians could access the resources to help mitigate the problem under discussion. That is, the networked groups had a lower rate of saying that Syrians could turn to resources, such as leaders, to help mitigate the collective problem under discussion.

[21] Heterogeneous treatment effects analysis by gender and by country are discussed in Section 10 of the Supplementary Material and are consistent with the article's findings.

[22] Given the blocked small-N design, statistical significance is calculated with randomization inference. OLS regression results are presented in Sections 3 and 4 of the Supplementary Tables, available at Masterson (2023). Conclusions based on OLS *p*-values are consistent with RI *p*-values.

FIGURE 2. Group-Level Dialogue Results

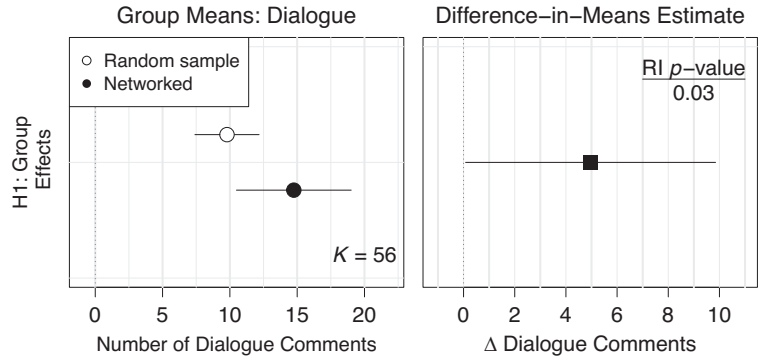

FIGURE 3. Group-Level Resources Results

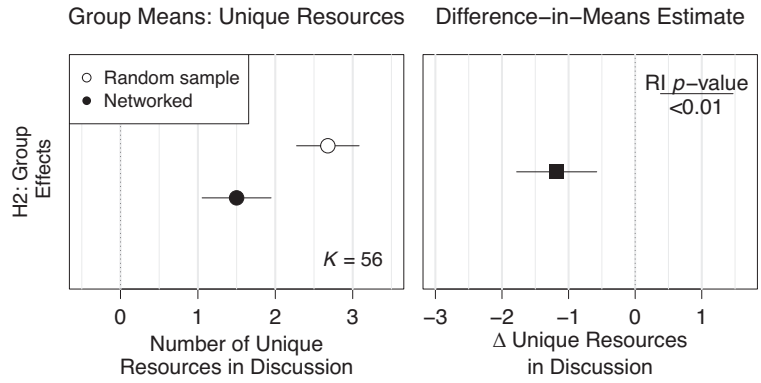

TABLE 2. Group-Level Effects on Disaggregated Resources

	Leaders	Brokers	Sulha	Host	NGOs	Gov.	Police
Control mean	0.36	0.57	0.5	0.61	0.18	0.18	0.29
$\hat{\beta}$	−0.25	−0.32	−0.29	−0.18	−0.14	−0.11	0.11
	(0.11)	(0.13)	(0.12)	(0.13)	(0.08)	(0.09)	(0.13)
RI *p*-value	0.01	0.01	0.04	0.12	0.03	0.45	0.27

Note: $K = 56$. $\hat{\beta}$ denotes difference-in-means estimate. Robust standard errors are reported in parentheses. Randomization inference performed with one hundred thousand simulated randomized treatment assignment vectors, blocked by country, site, and gender following the same structure used for actual randomization. Results are robust to covariate adjustment. Complete model results are presented in Supplementary Table 4S (Masterson 2023).

These disaggregated results provide fine-grained evidence for examining which types of resources drive the negative group-level network effect on resource diversity. We see clear evidence that networked groups are at a disadvantage in turning to Syrian leaders, brokers, community dispute resolution (Sulha), and NGOs. The estimated effect for discussing turning to the host community is large and negative but not statistically significant (RI *p*-value: 0.12). We do not see clear evidence of a network effect for turning to the government or police.

The experimental results for the government and police are not what I expected from my theory. The point estimate for relying on the government is negative, which aligns with the theory, but is not statistically significant. The point estimate for discussing turning to the police is actually positive, the opposite of what my theory predicts, although this estimate is also not

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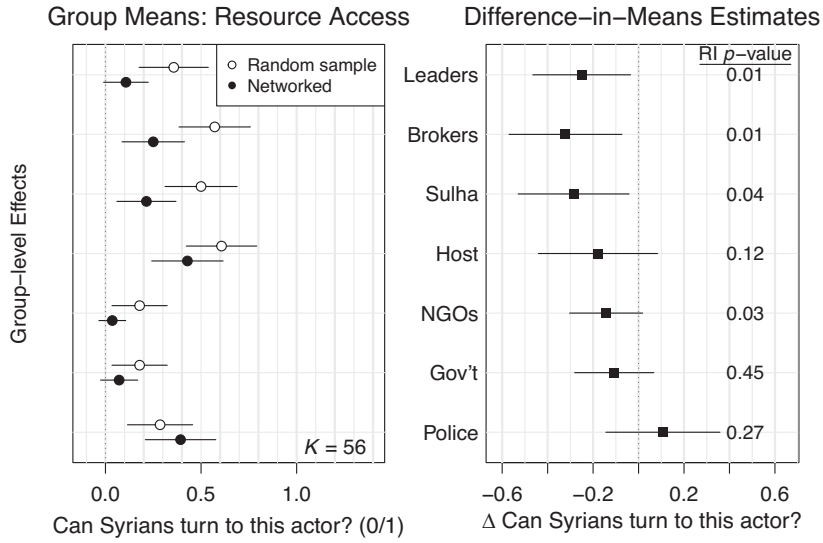
FIGURE 4. Group-Level Disaggregated Resources Results



statistically significant. The experimental results do not provide evidence of group-level network effects on accessibility of police or government for refugees. However, a number of important descriptive findings stand out. Nontrivial shares of the groups discussed turning to the host community (51.8%) and the police (33.9%) as useful for mitigating refugee community problems. In contrast, the rate of turning to the government is quite low (12.5%). The frequency of comments about the host community and local police suggests the importance of understanding determinants of local policymaking in refugee settings (Mourad 2017) and native attitudes toward refugees (Zhou 2018).

Although I am hesitant to engage in *post hoc* theorizing (and another study would be necessary to test any refined hypotheses), I see a pattern in the results where network diversity facilitates access to other Syrians who may be helpful (i.e., leaders, brokers, and dispute mediators) but does not do so for obtaining help from host community members (i.e., host community, government, and police). NGOs—composed of a mix of international, Syrian, and Lebanese and Jordanian staffers and organizations—do not fit neatly within this pattern, and we do see evidence of a network effect on NGO access. This evidence suggests that there may be bounds on what network ties facilitate in collective problem solving. Social ties may not be a panacea for resource access. For refugees to access resources from a socially dominant out-group (in this case, the Lebanese or Jordanian host community), they may require more than just the informational and heuristic benefits that come from diverse network ties.

A second striking descriptive finding is how rarely Syrians state that they would turn to NGOs to confront their problems. This aligns with findings from van der Windt (2016) that local institutions, not NGOs, are key in sustaining high levels of intra-community cooperation. This emphasis on internal refugee community resources highlights the importance of work in political science seeking to understand the internal politics of refugee communities, including how refugees access housing, jobs, and services (Parkinson and Behrouzan 2015), and develop informal institutions for public safety and property rights (Hajj 2016).

Individual-Level Network Effects

Both group-level network effects and individual-level network effects would result in correlations between group structure and outcomes. If ties are more likely between similar people, their outcomes could be correlated because of similarities in their characteristics rather than as a consequence of their interactions. To disentangle this endogeneity, I present experimental estimates of the effect on individual behavior of a person joining a community meeting with a group of people drawn from a referral sample (forming a networked group) compared to a baseline group of randomly sampled individuals. The interpretation of these effect estimates differs with that of the group-level estimates above. The group-level experiment compared counterfactual groups recruited through different strategies that manipulated group structure. The individual-level estimates below represent the expected change in individual behavior when a person is assigned to a community meeting with their close network rather than a randomly sampled group.

H3 – Individual-Level Network Effect on Engagement

First, I test for individual-level network effects on dialogue and resources. The third hypothesis states that individuals assigned to join a community meeting with

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their close network will engage more in response to community problems. Table 3 presents results for individual-level random assignment to a community meeting with a participant's close network. In the left column, we see that individuals assigned to a networked group did in fact engage with each other in response to the community problems at higher rates than those assigned to randomly sampled groups. Individuals in randomly sampled groups made 0.87 dialogue comments on average, whereas individuals in networked groups made 1.54, and the difference is statistically significant with a randomization inference p-value of 0.01. This constitutes nearly a doubling of the number of dialogue statements and a 12.1-percentage-point increase in the share of comments that were dialogue, from 29.7% of comments being dialogue in randomly sampled groups to 41.7% of comments being dialogue in networked groups. As shown in Section 8 of the Supplementary Material, results are robust to covariate adjustment. This evidence supports Hypothesis 3.

H4 – Individual-Level Network Effect on Diversity of Resources

The fourth hypothesis states that individuals assigned to sit with a networked group will discuss fewer unique resources. The aggregated resource results are shown in the right column of Table 3 and the disaggregated resource results are plotted in Figure 5. The results do not show strong evidence of individual-level network effects on resource diversity. Looking at overall (aggregated) discussion of resources in Table 3, the point estimate is fairly small and not distinguishable from zero. Although the standard error is relatively large, making it hard to draw a precise conclusion, the contrast with the resources results from the group-level experiment in Figure 3 is clear. Turning to the disaggregated resources results in Figure 5, we do not see strong evidence of individual-level treatment effects on resource diversity. Looking at the estimated effect on accessing brokers, we see that the 95% confidence interval does not include zero, but the statistical significance does not obtain with randomization inference.

TABLE 3. Individual-Level Effects

	Dialogue	Unique resources
Control mean	0.87	0.34
$\hat{\beta}$	0.66	–0.09
	(0.41)	(0.12)
RI p-value	0.01	0.58

Note: $N = 258$. $\hat{\beta}$ denotes difference-in-means estimate. Cluster robust standard errors, clustered at the group level, are reported in parentheses. Randomization inference performed with one hundred thousand simulated randomized treatment assignment vectors, clustered at the group level and blocked by country, site, and gender following the same structure used for actual randomization. Complete model results are presented in Supplementary Table 5S (Masterson 2023).

Overall, in the group-level experiment, we see clear evidence for Hypothesis 2 but in the individual-level experiment, we do not find strong support for Hypothesis 4.

ALTERNATIVE EXPLANATIONS

Until now, I have interpreted results on cooperation and resource diversity through the lens of theory about information flow in different group structures, namely, what information people bring to and transmit in deliberative problem solving settings. In Section 9 of the Supplementary Material, I present a battery of tests for three alternative explanations for the observed results: (i) trivial conversation, (ii) normative obligations and social preferences, and (iii) network location.

First, the findings on the impacts of group structure on behavior in the community meetings could be driven by trivial conversation dynamics rather than meaningful group dynamics. Networked groups may simply talk more, both about trivial matters and in response to community problems. And the resource diversity results would be trivial if randomly sampled groups discuss resources more but do not have more access to resources. The data, however, do not support these possibilities. As discussed in the results for the group-level network effect on engagement, networked groups not only exhibit a higher number of comments engaging with problems but also a higher *share* of comments engaging with problems. Further, I do not find evidence that networked groups discussed resources differently *except for* changes in statements about being able to access resources. These results support the article's conclusions that networked groups have a cooperative advantage and a resource diversity disadvantage. The results do not support the possibility that trivial conversational dynamics explain the experimental results. The results obtain in both the group- and individual-level experiments. Full exposition of these tests can be found in Section 9.1 of the Supplementary Material.

Second, the results do not show evidence that groups viewed the problems from a more collective perspective or through a more sociotropic lens. The lack of evidence of these mechanisms aligns with existing studies (e.g., Habyarimana et al. 2009) that find that people do not exhibit greater concern for their in-group peers' welfare or prefer working with in-group members. This supports the interpretation of the dialogue results as driven by information flow, rather than normative obligations and social preferences. The results obtain in both the group- and individual-level experiments. I present full tests in Section 9.2 of the Supplementary Material.

Third, results show that networked groups are more connected to their community (outside the community meeting). Because networked groups are more connected with their community, we might expect them to have access to a wider range of information about resources. Yet the article's results on resources show that even though the networked groups know *more*

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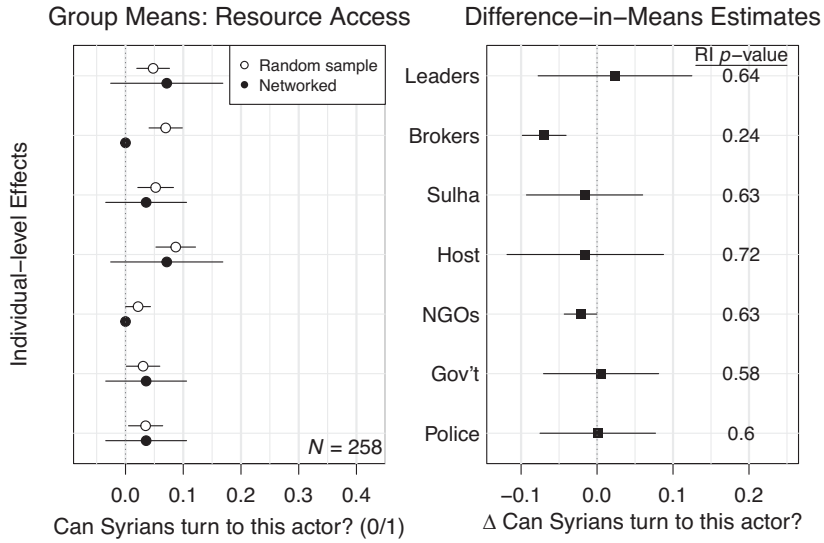
FIGURE 5. Individual-Level Disaggregated Resources Results.



Note: Table version of results is presented in Supplementary Table 6S (Masterson 2023).

people in the community, they nonetheless draw on external resources *less* in the community meetings. This further supports the key finding from the parallel group-level and individual-level experiments about resource access: the resource diversity disadvantage of networked groups is driven by structural changes in the groups and not individual-level effects. The results obtain in both the group- and individual-level experiments. Full results are presented in Section 9.3 of the Supplementary Material.

DISCUSSION

I find evidence of group-level network effects on both engagement and resource diversity. Networked refugee groups exhibit higher engagement in response to collective problems, supporting Hypothesis 1 and aligning with much existing evidence that networked groups have an informational advantage that incentivizes engagement in collective problem solving. Second, I find evidence supporting Hypothesis 2 that networked refugee groups draw on fewer unique resources in their responses. This aligns with a great deal of work on the benefits of diversity in problem solving.

The article's second set of experimental results come from random assignment of individuals to networked or unnetworked groups. The results for individual-level network effects support Hypothesis 3: interaction with one's close network increases engagement in confronting refugee community problems. In contrast, I do not find support for Hypothesis 4. Interaction with one's networked group does not appear to decrease (or increase) the diversity of resources that an individual brings up in the community meetings. This implies that the group-level effect found when testing Hypothesis 2 is driven by structural features of group composition, not individual-level effects on behavior. To be clear, saying that the resource disadvantage of networked groups is driven by composition does not mean that the effect is not meaningful; rather, we need to be clear about the level at which we are identifying effects. When recruiting groups, the group-level effect of using one recruitment mechanism rather than another represents a meaningful causal effect between two counterfactual groups. That being said, a researcher would be mistaken to ascribe an individual-level behavioral interpretation to these structural effects, which would constitute a form of selection bias in estimating network effects.

The results from the group-level experiment show what forms of cooperation we can predict if groups were recruited to form tightly-knit groups or not. In refugee communities, we can imagine this intervention corresponding to a decision rule that an NGO might use to form social committees for community-driven programming or a state might use to determine entrance into a refugee camp. More generally, this sort of group-level assignment corresponds to interventions where a policymaker or program designer needs to form groups, as opposed to situations where people self-select into groups.

CONCLUSION

This article presents evidence on the ways in which refugee communities work together and access resources to mitigate community problems they commonly face, such as accessing housing and jobs, promoting public safety, and securing support from humanitarian organizations. The dominant explanation in political science for higher levels of cooperation

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in networked groups states that dense networks facilitate information flow and effective in-group sanctioning. In contrast, a wide-ranging body of scholarship, including work in network science and resource mobilization theory, predicts that less densely networked and more diverse groups bring a wider range of skills, information, and knowledge that may make them more effective in solving problems.

This article finds that while networked groups of refugees have a cooperative advantage that leads to higher engagement in collective problem solving, they suffer a resource diversity disadvantage. The resource disadvantage of networked groups is driven by group-level structural factors (e.g., characteristics of group members) rather than a behavioral effect of different settings. This matters because the free-rider problem is neither the sole nor the primary obstacle to cooperation for refugee communities. Looking broadly at responses to social dilemmas, whether people have access to resources and information necessary for effective action will shape their choice to act or not. The availability of and constraints on information and resources are critical determinants of cooperation, and some communities lack resources to solve public goods problems even when shirking would not otherwise be a binding constraint on action.

Despite the article's theoretical and empirical advances, it has limitations that warrant discussion and attention in future work, three of which I discuss below. First, community meetings in this study capture a critical stage in collective problem solving—deliberation to generate ideas and identify resources and social connections—but the data do not measure subsequent action. More generally, group discussion offers valuable data for studying deliberative dynamics and renders a broad range of interventions feasible and ethical. The data will be most valuable when the researcher is interested in a phenomenon where group dynamics and deliberation are of central interest. Nonetheless, important questions remain about the relevance of discussion in community meetings for understanding naturalistic community dynamics. Mobilizing resources for problem solving is a process that requires action beyond the deliberation captured in this research. The network effects studied in this article in community discussions may differ from network effects on people's behavior in their everyday lives, even with the same peers. Future research should examine the correlation between participant interaction in moderated meetings and behavior in natural environments, with attention to factors—for example, costs, benefits, and risks of action—that drive (and do not drive) variation in network effects across settings.

Second, the article does not theorize or test how different types of diversity affect refugee community cooperation and resource access. This study provides evidence on the effects of diversity with respect to non-ethnic ascriptive and descriptive traits that correlate with greater diversity of knowledge and problem-solving heuristics (e.g., Page 2007). In the research context, although social hierarchies obviously exist, no single social division sorts Syrian refugees into a well-defined social hierarchy, such as a highly salient ethnic division.[23] Dynamics of diversity and problem solving might differ for refugee populations with a strong hierarchical social cleavage. Diversity with respect to a stratifying feature may come with bias and discrimination, which could both change the "average" effect of diversity and lead to heterogeneity in the effect of diversity between people in a socially dominant group and others in a marginalized group (see, e.g., Abascal and Baldassarri 2015).

Third, I present data from refugee communities in a specific setting and results from similar experiments may differ in distinct contexts. Cultural and linguistic setting and context-specific social norms could moderate network effects by shaping refugees' expectations about how much they (and their peers) should contribute to collective problems and their repertoire of strategies for searching networks for resources. Further, the form and function of refugee networks may vary with the share of refugees in camps, and the degree of government control over camp entry and exit. High levels of camp regulation (e.g., Somalis in Kenya or Rohingya in Bangladesh) may constrain network linkages to hosts and change the repertoires of strategies that refugees can use to find solutions to problems. Last, future research should explore the applicability of the article's theory to internally displaced persons (IDPs), who constitute an even larger global population than refugees. IDPs' strategies for political action and community organizing may differ from refugees, as IDPs still reside within their home country and therefore face distinct opportunities for and constraints on collective action and resource access.

This project has lessons for humanitarian program design that aims to better understand and promote the internal capacities of refugee communities. The experimental results in this article speak to NGO choices about how to design and recruit for refugee community-driven programs. The underlying assumption of community programming is that beneficiary communities often have internal collaborative capacities to help themselves that aid agencies fail to recognize. My findings suggest that this approach will often not be the right answer. If refugee groups do not have the internal resources necessary to mitigate their problems, community-driven programming that attempts to leverage a group's ability to solve problems internally may be promoting precisely the wrong capacities. In refugee communities, program design may be more effective if NGOs support refugees in asking who they

[23] Despite the ethnic and religious diversity of Syrians on the whole, the vast majority of *Syrians in Lebanon and Jordan* are Sunni Arab. In a representative sample of Syrians in Lebanon in late spring 2015, Corstange (2018) finds that Sunni Arabs make up about 88% of the Syrian population in the country. The Syrian Refugee Life Study (SRLS) asked about religion/sect (though not ethnicity) in a representative sample of Syrians in Jordan in 2020 and found that 99.8% of the sample was Sunni Muslim (unpublished statistic, obtained from correspondence with SRLS team). Given that most of the Syrians in Jordan are from central and southern Syria, ethnicity is likely similarly homogeneous.

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can go to for help, rather than asking how they can solve a problem themselves. Policymakers and program designers should be mindful of the types of resources that networks facilitate access to in a given context. In this research setting, the findings suggest that diverse groups have greater access to a broad network of Syrians and NGOs, but not Lebanese and Jordanian government actors or police. The findings highlight the specificity and contingency of effective program design in refugee crises. In communities where trust or reciprocity is the binding constraint for effective cooperation, building social ties and systems of accountability within the community can help. In communities where resource access is the central problem, linking refugees to service providers, surrounding neighborhoods, and local authorities, in ways that are sensitive to the dynamic vulnerabilities that refugees face vis-à-vis these actors, may be an effective way to facilitate access to the resources necessary to mitigate problems.

SUPPLEMENTARY MATERIAL

The supplementary material for this article can be found at https://doi.org/10.1017/S0003055423001107. The Supplementary Tables document is available at the American Political Science Review Dataverse (Masterson 2023).

DATA AVAILABILITY STATEMENT

Research documentation and data that support the findings of this study are openly available at the American Political Science Review Dataverse: https://doi.org/10.7910/DVN/IZWS10.

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CONFLICT OF INTEREST

The author declares no ethical issues or conflicts of interest in this research.

ETHICAL STANDARDS

The author declares the human subjects research in this article was reviewed and approved by Yale University and certificate numbers are provided in the Supplementary Material.

REFERENCES

Abascal, Maria, and Delia Baldassarri. 2015. "Love Thy Neighbor? Ethnoracial Diversity and Trust Reexamined." *American Journal of Sociology* 121 (3): 722–82.
Auerbach, Adam Michael. 2017. "Neighborhood Associations and the Urban Poor: India's Slum Development Committees." *World Development* 96: 119–35.
Blau, Peter M., and Joseph E. Schwartz. 1984. *Crosscutting Social Circles*. Orlando, FL: Academic Press.
Cammett, Melani, and Aytug Sasmaz. 2021. "Equity with Prejudice: International NGOs and Healthcare Delivery in Refugee Crises." Program on Governance and Local Development Working Paper No. 44.
Charnysh, Volha. 2019. "Diversity, Institutions, and Economic Outcomes: Post-WWII Displacement in Poland." *American Political Science Review* 113 (2): 423–41.
Christia, Fotini, Dean Knox, and Jaffar Al-Rikabi. 2017. "Networks of Sectarianism: Experimental Evidence on Access to Services in Baghdad." Working Paper.
Corstange, Daniel. 2018. "The Syrian Conflict and Public Opinion among Syrians in Lebanon." *British Journal of Middle Eastern Studies* 46 (1): 178–200.
Cruz, Cesi, Julien Labonne, and Pablo Querubin. 2020. "Social Network Structures and the Politics of Public Goods Provision: Evidence from the Philippines." *American Political Science Review* 114 (2): 486–501.
Cyr, Jennifer. 2017. "The Unique Utility of Focus Groups for Mixed-Methods Research." *PS: Political Science & Politics* 50 (4): 1038–42.
Easterly, William. 2006. *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good*. New York: Penguin.
Fearon, James D., and David D. Laitin. 1996. "Explaining Interethnic Cooperation." *American Political Science Review* 90 (4): 715–35.
Granovetter, Mark. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78 (6): 1360–80.
Habyarimana, James, Macartan Humphreys, Daniel N. Posner, and Jeremy M. Weinstein. 2009. *Coethnicity: Diversity and the Dilemmas of Collective Action*. New York: Russell Sage Foundation.
Hajj, Nadya. 2016. *Protection Amid Chaos: The Creation of Property Rights in Palestinian Refugee Camps*. New York: Columbia University Press.
Harpviken, Kristian. 2009. *Social Networks and Migration in Wartime Afghanistan*. New York: Palgrave Macmillan.
Holland, Alisha C. 2017. *Forbearance as Redistribution: the Politics of Informal Welfare in Latin America*. Cambridge: Cambridge University Press.

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Khoury, Rana B. 2017. "Aiding Activism? Humanitarianism's Impacts on Mobilized Syrian Refugees in Jordan." *Middle East Law and Governance* 9 (3): 267–81.
Khoury, Rana B. 2020. "Hard-to-Survey Populations and Respondent-Driven Sampling: Expanding the Political Science Toolbox." *Perspectives on Politics* 18 (2): 509–26.
Kustov, Alexander, and Giuliana Pardelli. 2018. "Ethnoracial Homogeneity and Public Outcomes: The (Non)effects of Diversity." *American Political Science Review* 112 (4): 1096–103.
Laitin, David D., and Sangick Jeon. 2015. *Exploring Opportunities in Cultural Diversity*. Hoboken, NJ: Wiley Online Library.
Larson, Jennifer M. 2017. "Networks and Interethnic Cooperation." *Journal of Politics* 79 (2): 546–59.
Larson, Jennifer M., and Janet I. Lewis. 2017. "Ethnic Networks." *American Journal of Political Science* 61 (2): 350–64.
Manski, Charles F. 1993. "Identification of Endogenous Social Effects: The Reflection Problem." *Review of Economic Studies* 60 (3): 531–42.
Masterson, Daniel. 2023. "Replication Data for: Refugee Networks, Cooperation, and Resource Access." Harvard Dataverse. Dataset. https://doi.org/10.7910/DVN/IZWS10.
Maxwell, Rahsaan. 2019. "Cosmopolitan Immigration Attitudes in Large European Cities: Contextual or Compositional Effects?" *American Political Science Review* 113 (2): 456–74.
McCarthy, John D., and Mayer N. Zald. 1977. "Resource Mobilization and Social Movements: A Partial Theory." *American Journal of Sociology* 82 (6): 1212–41.
McLeod, Poppy Lauretta, Sharon Alisa Lobel, and Taylor H. Cox Jr. 1996. "Ethnic Diversity and Creativity in Small Groups." *Small Group Research* 27 (2): 248–64.
McPherson, Miller, Lynn Smith-Lovin, and James M Cook. 2001. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology* 27: 415–44.
Miguel, Edward, and Mary Kay Gugerty. 2005. "Ethnic Diversity, Social Sanctions, and Public Goods in Kenya." *Journal of Public Economics* 89 (11): 2325–68.
Morris, Aldon D. 1986. *The Origins of the Civil Rights Movement*. New York: Free Press.
Mourad, Lama. 2017. ""Standoffish" Policy-Making: Inaction and Change in the Lebanese Response to the Syrian Displacement Crisis." *Middle East Law and Governance* 9 (3): 249–66.
Nemeth, Charlan J. 1986. "Differential Contributions of Majority and Minority Influence." *Psychological Review* 93 (1): 23–32.
Page, Scott E. 2007. *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*. Princeton, NJ: Princeton University Press.
Pardelli, Giuliana, and Alexander Kustov. 2022. "When Coethnicity Fails." *World Politics* 74 (2): 249–84.
Parkinson, Sarah E. 2022. "(Dis)Courtesy Bias: "Methodological Cognates," Data Validity, and Ethics in Violence-Adjacent Research." *Comparative Political Studies* 55 (3): 420–50.
Parkinson, Sarah E., and Orkideh Behrouzan. 2015. "Negotiating Health and Life: Syrian Refugees and the Politics of Access in Lebanon." *Social Science & Medicine* 146: 324–31.
Parkinson, Sarah Elizabeth. 2013. "Organizing Rebellion: Rethinking High-Risk Mobilization and Social Networks in War." *American Political Science Review* 107 (03): 418–32.
Pearlman, Wendy. 2020. "Host State Engagement, Socioeconomic Class, and Syrian Refugees in Turkey and Germany." *Comparative Politics* 52 (2): 241–72.
Tajima, Yuhki, Krislert Samphantharak, and Kai Ostwald. 2018. "Ethnic Segregation and Public Goods: Evidence from Indonesia." *American Political Science Review* 112 (3): 637–53.
van der Windt, Peter. 2016. "The Political Economy of Heterogeneous Communities: Local Governance and Cooperation in the Congo and Sierra Leone." PhD diss. Columbia University.
Wood, Elisabeth Jean. 2008. "The Social Processes of Civil War: The Wartime Transformation of Social Networks." *Annual Review of Political Science* 11: 539–61.
Zhou, Yang-Yang. 2018. "Refugee Proximity and Support for Citizenship Exclusion in Africa." Working Paper.

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