### Interethnic Friendship, Trust, and Tolerance: Findings from Two North Iraqi Cities<sup>1</sup>

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This article examines correlates of social trust and tolerance within a high-violence context. The authors study first the extent to which friendship ties that cross ethnic boundaries are associated with specific interaction spaces (neighborhoods, workplaces, civil society organizations, and political parties) and, second, the extent to which interethnic friendships are associated with trust and tolerance. Using individual-level data (N=2,264) on interethnic contacts collected in 2006 in the two northern Iraqi cities of Erbil and Kirkuk, the authors show that people who spend time within ethnically heterogeneous interaction spaces are considerably more likely to have friendship ties that cross ethnic group boundaries and, in turn, also to express general social trust, interethnic trust, and tolerance toward outgroups.

#### INTRODUCTION

Social trust and tolerance are conducive to core functions of a cohesive society, and it is of great importance for the social sciences to understand the mechanisms by which trust and tolerance are generated and maintained. There is a large and growing literature on this, but since most previous studies are situated in stable environments, we need more research on social trust and tolerance in violent contexts. In this article, we will study trust and tolerance in a context of ethnic conflict, which as a result of weak-

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ening of strong states and authoritarian dictatorships has come increasingly to the fore over the past decades. More specifically, we relate to two alternative hypotheses of social trust and tolerance formation: the contact hypothesis and the heterogeneity-conflict hypothesis. In the former, contacts between ethnic groups are believed to increase the basis for trust and tolerance, whereas the latter holds that ethnic heterogeneity in social contexts will lead to friction and conflict. We argue that the potential tension between these two hypotheses can largely be resolved by distinguishing between ethnic heterogeneity within and outside structurally constraining interaction spaces. Within such interaction spaces, interethnic contacts are repetitive and may be developed into friendship relations, which in turn may promote the formation of social trust and tolerance.

Our study is situated within the context of Iraq. Plagued by two recent wars and a history of dictatorship and authoritarianism, it contains an ethnically diverse population, and ethnic conflict is highly manifest in many areas. In this article, we will study two cities in northern Iraq, Erbil and Kirkuk, which both suffer from levels of intergroup violence and threats far above what is perceived as normal in stable democracies. But they also differ substantially with regard to the experience of violent ethnic conflict since the fall of the Baath regime in 2003. Although ethnic relations have been problematic in both cities, development in Erbil has been relatively more peaceful, whereas interethnic relations in Kirkuk have been especially violent. In fact, as argued by Anderson and Stansfield (2009, p. 9), "Few, if any, contested territories can match the complexity of the town of Kirkuk. . . . Kirkuk is a classic divided city, defined as a place in which groups are rivals for power and resources and where there is a fundamental conflict over the cultural identity and state location of the city."

It has been argued in previous research that interethnic social capital, understood as interethnic trust and tolerance generated out of interethnic contacts or relations, has a preventive effect on ethnic conflict (Varshney 2002) and that it facilitates interethnic reconciliation in the aftermath of violent conflicts (Pickering 2006). Drawing on Putnam (2000), Varshney has argued that interethnic networks of civic engagement prevent violent ethnic conflict because ethnically heterogeneous organizations constitute potential meeting places where interethnic relations are likely to be formed and maintained. This means that they foster interethnic integration at the grassroots level, which in turn is likely to promote increased outgroup trust and tolerance. However, this research has relied on ecological data on organizations, and in order to understand trust and tolerance formation better, the analysis must be ratcheted down to the individual level. In this study, we use individual-level data (N = 2,264) on interethnic contacts and relations in Erbil and Kirkuk. Our data allow us to study how inter-

ethnic friendship relations are associated with interaction spaces in multiethnic settings—in this case, workplaces, neighborhoods, political parties, and civil society organizations—and how this in turn is associated with social trust and outgroup tolerance. Hence, what we propose is a two-stage model of trust and tolerance formation in which interaction spaces are important foremost because they affect the likelihood that interpersonal relations will form across ethnic boundaries, and interethnic friendship has the most direct effect on trust and tolerance.

We hypothesize that interethnic friendship ties are more likely in ethnically heterogeneous interaction spaces, constituting contact opportunities, and that this is a key factor for understanding interethnic trust and tolerance. We thereby connect to a contested question in social science: whether heterogeneous interaction spaces lead to heterogeneity in individuals' social networks or whether preference-based tendencies of homophily are strong enough to counteract heterogeneity at the social networks level. According to a structuralist tradition, the composition within interaction spaces provides the opportunity structure for relations and tie formation (Blau 1977; Feld 1981). At the same time, however, the homophily principle suggests that only individuals with similar characteristics tend to form relations (Lazarsfeld and Merton 1954). Even within heterogeneous interaction spaces, social relations tend to be homogeneous, and social networks generally exhibit lower heterogeneity than the population as a whole (Marsden 1990). Hence, to what degree multiethnic workplaces and neighborhoods and so forth tend to be associated with interethnic friendship formation in a violent context is very much an open empirical question.

By studying the association between multiethnic interaction spaces and interethnic friendship, trust, and tolerance in Erbil and Kirkuk, we are in a position to test key hypotheses in highly problematic contexts. If we can show that the contact hypothesis is supported by data even in such contexts, imbued with factors working against the positive effect of interethnic contacts and relations on trust and tolerance, that hypothesis would be considerably strengthened. Moreover, by comparing Erbil and Kirkuk, we are also in a position to discuss the extent to which differences in intergroup violence and polarization influence the association between heterogeneous interaction spaces and interethnic friendship and between interethnic friendship and trust and tolerance. We will argue that there are theoretical reasons to assume that the associations between heterogeneous interaction spaces and interethnic friendship will be stronger in the more violent and polarized city of Kirkuk. The reason is that there are few chances for interethnic encounters outside of such interaction spaces in a context of polarization, which is why their importance for interethnic friendship will be greater in a relative sense. In a similar vein, we will argue that the association between interethnic friendship and trust and tolerance

is likely to be stronger in Kirkuk, since trust and tolerance become more closely connected to relations that do exist in polarized and violent contexts.

The article will be structured in the following way. First, we will give a brief background description of Kirkuk and Erbil, with a particular focus on the recent history of interethnic relations in the two cities. Second, we will define central concepts and, in particular, outline the theoretical arguments for how interethnic friendship relations may depend on ethnically heterogeneous interaction spaces, how interethnic friendship relations are related to social trust and outgroup tolerance, and why there are reasons to believe that these mechanisms differ significantly depending on how violent the contextual environment is. From this discussion we will formulate five hypotheses. Third, we discuss data and methods and report the results from our tests of the five hypotheses. A final section presents conclusions.

#### ERBIL AND KIRKUK

For this study we have chosen Erbil and Kirkuk, the two most heterogeneous of the larger cities in the northern Kurd-dominated areas of Iraq. Both cities are provincial centers, and democratic institutions are in place in both cities: a provincial parliament and (in the case of Erbil) a regional parliament as well. The regional parliament was created in 1992 and the other two in December 2004, a year and a half after the fall of the Baath regime. During the years that have passed since the fall of that regime, political institutions have worked less effectively in Kirkuk than in Erbil, and ethnic relations have been considerably more violent.<sup>2</sup>

One important indicator is corruption. According to Transparency International (http://www.transparency.org), Iraq is among the most corrupt countries in the world, but we do find important variations within the country. Kirkuk is among the most corrupt cities in Iraq, whereas Erbil fares much better. According to a report about corruption from the International Republic Institute, on a scale from 1 to 20, Kirkuk scored 18.98 and Erbil 6.94. In fact, Kirkuk was considered the second most corrupt region in Iraq (ITC 2007).

In addition, foreign investments are increasing in Erbil. Between 2006 and 2008, foreign companies invested \$11 billion in various projects in the Erbil region (Sbeiy.com 2008), and 18 countries, including Great Britain, France, Russia, and the United States, have opened consulates or chambers of commerce in Erbil. Nothing of the sort is happening in Kirkuk. The main reasons are relentless corruption and lack of security.

<sup>2</sup> The main reason for choosing Erbil and Kirkuk rather than other cities in the area is that all four major ethnic groups (Kurds, Arabs, Turkmen, and Assyrians/Chaldeans) are represented there. We did not find any other larger cities that met this condition.

Most important, developments have been more violent in Kirkuk, in particular, tensions between ethnic groups. Between 2004 and 2008 more than 1,850 people were killed in Kirkuk and more than 6,000 persons were injured in various terrorist actions, many of which were explicitly aimed at ethnic outgroups. Only in 2005, for example, Kirkuk witnessed more than 5,000 bomb detonations, many of which were explicitly aimed at ethnic outgroups. Between 2004 and 2008, almost 500 persons were kidnapped, and 149 demonstrations took place (these data were collected from the Kirkuk police force and the Provincial Joint Coordination Centre). Not all of these violent acts were ethnically motivated, but the people concerned often interpreted them as interethnic hostility (Sofi 2009). In Erbil, during the same period, approximately 350 people were killed, about half of them in various terrorist attacks (data collected from the Erbil police force; see also Sofi 2009, chap. 4). Bomb explosions, missile attacks, and the like have been rare in Erbil compared to Kirkuk, as have ethnic demonstrations.

There are important historic, economic, and demographic differences between the two cities, which at least partly explain why developments have been more problematic in Kirkuk than in Erbil. First, Erbil but not Kirkuk was included in the protected zone that was established in Iraq north of the 36th parallel in the aftermath of the first Gulf War in 1991 (UN Security Council Resolution 688, April 5, 1991). The purpose of the zone was to protect Kurds and other ethnic minorities from further aggression. This gave the residents in the zone some autonomy from the Bagdad government. A regional parliament and government were created in 1992. The exclusion of Kirkuk from the zone was symptomatic. Its status has been a matter of contention for many decades. For Kurds, Kirkuk is traditionally considered one of the most important regions in the Kurdish part of Iraq. For many Arabs, on the other hand, and in particular for the national government in Bagdad, Kirkuk is part of Iraq proper. Because of this, Kirkuk is not officially part of Iraqi Kurdistan, which is today recognized by the 2005 Iraqi constitution (sec. 5/113) as an autonomous federal state within Iraq.

One of the main reasons Kirkuk is a matter of contention is that it has large oil reserves. A major proportion of Iraqi oil is produced in Kirkuk. Because of this Kirkuk is of higher economic-strategic interest to group elites, which have used various measures to attempt to tilt the demographic balance to their favor. As a result, Kirkuk (unlike Erbil) experienced a rather dramatic "Arabization" process during the Baath regime (1968–2003). The purpose of the Arabization policy was to establish an Arab majority population in the strategic, oil-rich areas around Kirkuk. The dominance of non-Arab peoples in the Kirkuk region was seen as a source of political instability. Because of this, non-Arab peoples were forced to leave their homes, and Arabs took their place. The Arabization policy was effective (Iraq Prin-

cipal Bureau of Statistics 1957, 1977; Muhammad 2003, p. 27) and was especially intense in the 1980s when the Baath regime founded all-Arab settlements around Kirkuk and other cities in the region. The purpose was to ensure majority dominance and to create buffer zones in order to protect the oil fields from riots and other disturbances. In total, from 1963 and throughout the 1990s, more than 200,000 Kurds, Turkmen, and Assyrians were forced to leave Kirkuk (Human Rights Watch 1993, 2004; Muhammad 2003, pp. 38–48). In the so-called Anfal campaign, in the late 1980s, tens of thousands of people—mostly Kurds, Turkmen, and Assyrians/Chaldeans—were killed (Makiya 1993, chap. 5; cf. Gurr and Harff 1994, pp. 28–30).

The Arabization process and the Anfal campaign in particular had important consequences. They changed the ethnic composition of Kirkuk by encouraging all-Arab settlements (Anderson and Stansfield 2009). In addition, many people lost relatives and loved ones in the Anfal campaign and are today living with the memory of their losses (McDowall 1997, pp. 383, 391). Such memories probably obstruct interethnic tolerance and trust (Rothstein 2000; Rydgren 2007).

Because Erbil lacked major oil reserves, the Arabization policy there was considerably less thorough, and the city and its satellite villages were less severely hit by the Anfal campaign than Kirkuk. As a result, these policies did not affect the demographic structure to the same extent nor generate as traumatized a collective memory as they did in Kirkuk (see Sofi 2009, chap. 3). Control of Kirkuk continues to be viewed as crucial, even after the demise of the Baath regime, largely because of the strategic oil fields in the Kirkuk area, and, since 2003, ethnic group elites have tried in different ways to manipulate the demographic balance to their own group's favor.

Today, both Erbil and Kirkuk are ethnically heterogeneous cities. However, in Erbil, Kurds are the dominant majority, accounting for approximately 85% of the population, and there are several minor minorities (approximately 5% Turkmen, 5% Assyrians, and 5% Arabs and other minorities). In Kirkuk there is no ethnic group that constitutes an absolute majority: the Kurds are the largest group in Kirkuk, with approximately 40%–45% of the population; Arabs, approximately 30%–35%; Turkmen, 20%–25%; and Assyrians, 1%–2%.<sup>3</sup>

<sup>3</sup>These figures could be compared to those for Iraqi Kurdistan as a whole (including the Kirkuk region), where Kurds predominate with 75% of the population, followed by Turkmen (8%–10%), Assyrians/Chaldeans (3%–5%), and Arabs (approximately 10%; for assessments, see Iraq Principal Bureau of Statistics [1947, 1957, 1965, 1970, 1977, 1987], Middle East Watch [1993], and McDowall [1997, p. 380]). That the proportion of Kurds in Kirkuk has increased since the 1977 census is mainly due to the return of expelled Kurds to the city.

There are thus several reasons why ethnic relations are more problematic in Kirkuk than in Erbil. First, Kirkuk is of economic-strategic interest to elites. Second, the Arabization policy still generates tension between groups in Kirkuk: in fact, tension between ethnic groups, between Kurds and Arabs in particular, was growing at the grassroots level after the fall of the Baath regime in 2003. For example, since 2004, state authorities have dealt with 36,000 civil cases related to multiple ownership of houses, of which 34,000 are still unresolved (Sbeiy.com 2009). Third, many Arabs—as well as Turkmen—react against what they saw as the "Kurdification" of Kirkuk after 2003 (Anderson and Stansfield 2009, pp. 60–61). Fourth, there is no clear majority group in Kirkuk, which creates stronger incentives for power struggles. Fifth, collective memories in Kirkuk are likely to be more problematic and aversive to ethnic outgroups.

Hence, Kirkuk and Erbil constitute two very different cases. Although both cities are witnessing violent conflict between ethnic groups, the situation is much graver in Kirkuk. Because of this, and for reasons discussed below, we would expect that ethnic groups are less integrated at the interpersonal level in Kirkuk than in Erbil and that the level of generalized trust and tolerance is lower there. There are also some reasons to believe that the mechanisms of interethnic friendship formation and trust and tolerance formation will work in different ways in the two cities because of differences in interethnic violence and intergroup polarization. Our selection of cases permits us to put our key mechanisms to sharp tests. This is especially important for the contact hypothesis. If we can show that this hypothesis is supported by data even in such highly problematic contexts, imbued with factors working against the positive effect of interethnic contacts and relations on trust and tolerance, this hypothesis would be strengthened. For similar reasons, this is also the case for the mechanisms of friendship formation.

#### CONTACT, TRUST, AND TOLERANCE

In the theoretical discussion below, we present a probabilistic chain of mechanisms: people who repeatedly interact within certain spaces are likely to generate friendship ties with one another, and the likelihood that people form ethnically heterogeneous friendship networks increases as a function of how ethnically heterogeneous—and how structurally constraining—the interaction spaces are. Interethnic friendship relations, in turn, are likely to promote social trust and outgroup tolerance.

The *contact hypothesis* thus constitutes one of the key mechanisms. It builds on the assumption that contacts between members of different ethnic groups will reduce prejudice and xenophobia. The reason is that encounters increase firsthand information about ethnic outgroup members, which

increases the likelihood that ethnic stereotypes and prejudice will be falsified, and which may increase the awareness that ethnic outgroups are as heterogeneous as the ethnic ingroup—that is, that they are not all the same (Allport 1954; see also Rydgren 2004; Côté and Erickson 2009). Certain conditions must be fulfilled before increased contact between individuals from different ethnic groups leads to reduced prejudice and xenophobia. Contact must be of such frequency, duration, and closeness that it has the potential to lead to meaningful relationships between the individuals concerned, and contacts should be symmetrical such that interacting parties are of approximately equal status in the encounter situation (Allport 1954; see Pettigrew [1998] for additional conditions and Pettigrew and Tropp [2006] and references therein for support for the contact hypothesis). In this study we will make a distinction between friendship or acquaintance relations that cross ethnic boundaries and casual contacts with outgroups (see Forbes 1997, p. 20), and consistent with the contact hypothesis, we argue that only the former promotes increased outgroup tolerance.

Previous research provides good reasons to expect that contacts between members of different ethnic groups will also increase social trust.<sup>4</sup> Social trust, which can be defined as "trust in unknown people, that is, people about whom we do not have any information about their trustworthiness" (Herreros 2004, p. 13), is strongly influenced by social category belonging and social networks. People tend to view unknown others with whom they share social category belonging as more trustworthy than unknown others belonging to outgroups; that is, shared category belonging is a basis for social, depersonalized trust (Brewer 1979; Macy and Skvoretz 1998; Kramer 1999; Yuki et al. 2005). People are also more likely to trust unknown others if they know or believe that they are indirectly linked in a social network through mutual friendship or acquaintances (Coleman 1990; Yuki et al. 2005). For that reason, we may assume that social trust is generally higher within than between ethnic groups, in particular, in situations in which there are few relations that cross ethnic boundaries, and we may assume that interethnic social trust will increase as a function of how integrated different ethnic groups are at the micro level.

We argue that ethnic heterogeneity promotes the formation of trust and tolerance only insofar as it facilitates ethnic integration, that is, acquaintance or friendship relations that cross ethnic boundaries. Otherwise ethnic heterogeneity may lead to lower social trust and less outgroup tolerance, as has

<sup>&</sup>lt;sup>4</sup> Trust and tolerance should be understood as two distinct dispositions; it is possible to tolerate someone without trusting her and vice versa.

<sup>&</sup>lt;sup>5</sup> The reason for this assumption is that such network ties reduce the information asymmetry between ingroup and outgroup.

been argued by proponents for the heterogeneity-conflict hypothesis. For that reason we need to distinguish between ethnic heterogeneity within and outside of structurally constraining interaction spaces. In localities in which heterogeneity does not penetrate into interaction spaces, interethnic interactions are unlikely to be anything but casual, and hence unlikely to promote increased interethnic trust and outgroup tolerance, whereas acquaintance or friendship relations are much more likely to develop in localities in which heterogeneity penetrates into interaction spaces (Blau 1977, pp. 83–84; see also Blau and Schwartz 1984).

## INTERACTION SPACES, FOCI OF ACTIVITY, AND THE CREATION OF SOCIAL TIES

The discussion above points to the importance of cross-cutting ties that bridge ethnic group boundaries and the ways in which such ties are generated. Here, interaction spaces or "foci of activity," in which relations may potentially form, are of particular importance (Feld 1981, 1982). Feld (1981, p. 1016) defines a focus as "a social, psychological, legal, or physical entity around which joint activities are organized (e.g., workplaces, voluntary organizations, 'hangouts,' families, etc.)." So conceived, foci are "social structures which systematically constrain choices to form and maintain relationships" (Feld 1982, p. 797) and from which it is usually difficult or costly to disassociate oneself. Very few relationships develop from singular encounters but need the recurring interactions provided by foci in order to take form (Feld 1982, p. 797). The effects of foci on social relations vary according to the degree of structural constraints: the greater the constraints, the greater the likelihood that two persons sharing the same foci will form a social relation. Earlier research has shown that family and kin are the most important organizational foci for creating interpersonal ties and that schools, workplaces, and voluntary organizations provide the great majority of ties that are not kin (McPherson, Smith-Lovin, and Cook 2001, p. 431).

Hence, we may assume that social relations, in our case friendship formation across ethnic boundaries, are contingent on geographical proxim-

<sup>6</sup> Under this umbrella concept we include three different theories that lead to very similar predictions. The *realist group conflict theory* (e.g., Pettigrew 1957; Blalock 1967; Olzak 1992) states that people tend to view ethnic outgroups more negatively because of competition over scarce resources, implying that outgroup tolerance will be lower in ethnically heterogeneous settings. *Group threat theory* argues that interethnic hostility arises from a perceived threat toward the ingroup position and group identity posed by the increased presence of ethnic outgroups in people's immediate social surroundings (e.g., Blumer 1958; Bobo and Tuan 2006). More recently, Putnam (2007) has presented the *constrict theory*—or the *hunkering down hypothesis*—which states that ethnic diversity makes people withdraw from social life and become more isolated, affecting community cohesion and social trust in negative ways (see also Laurence 2011; for negative findings and criticism, see, e.g., Portes and Vickstrom [2011]).

ity, a shared social context, and social proximity. Even though friendship formation is in part driven by preference (demand), the supply of candidates exerts an independent influence on friendship formation; individuals cannot go beyond their opportunity structure (Blau 1977). There is extensive evidence that context matters for tie formation such as the classical propinquity effect shown by Festinger, Schachter, and Back (1950) but that this interacts with homophily preferences in creating homogeneous networks (Huckfeldt 1983; Marsden 1990; Mollenhorst, Völker, and Flap 2008). Hence, the homophily principle suggests that relations among individuals are selected on the basis of social likeness even within interaction spaces, which has been supported by ample evidence (Lazarsfeld and Merton 1954; Verbrugge 1977; McPherson and Smith-Lovin 1987; DiPrete et al. 2011). There is thus no guarantee that shared social context and geographical proximity will be a sufficient catalyst for interethnic friendship formation.<sup>7</sup>

Yet, as argued above, a heterogeneous interaction space might be a precondition for the formation of heterogeneous ties (Blau 1977; Feld 1981).<sup>8</sup> The opportunity structure can act as a force partially exogenous to preference: acquaintanceships and friendships may arise by happenstance on the basis of the pool of available alters that are "forced" into repetitive interactions within structurally constraining interaction spaces. However, it should be emphasized that the extent to which multiethnic interaction spaces really provide a basis for interethnic friendship formation in a context of high violence is an empirical question, where the demand mechanism of homophily and supply mechanism of available alters partly work in opposite directions. Whether the former or the latter will exert the stronger effects is likely to depend on context, as will be further discussed below.

#### POLARIZATION

There are theoretical reasons to believe that ethnic groups become increasingly decoupled from one another during violent conflicts, which could potentially be a major reason why ethnic conflict tends to reinforce itself in

<sup>&</sup>lt;sup>7</sup> Context may cause both homogeneity and heterogeneity in social networks, depending on the relative level of heterogeneity, but virtually all networks are less heterogeneous than the population as a whole (Marsden 1990).

<sup>&</sup>lt;sup>8</sup> Some research in schools, e.g., suggests that heterogeneous relations are contingent on the heterogeneity in the interaction space, although the pattern involves complexities (Moody 2001; Fischer 2008). Moreover, Wimmer and Lewis (2010) argue that nearness in coresidence and course taking is more important than true homophily in creating racially homogeneous networks. Marsden (1990) reports that racial and religious heterogeneity is larger in nonkin than in kin relations, that social groups are less heterogeneous than workplace and neighborhood relations, and, finally, that heterogeneity is larger among nonkin workers than among nonkin neighbors.

vicious circles. As noted already by Coleman (1956, p. 12), as "controversy develops, associations flourish within each group, but wither between persons on opposing sides. People break off long-standing relationships, stop speaking to former friends who have been drawn to the opposition, but proliferate their associations with fellow-partisans." Put in other terms, "homophily becomes more important to tie activation during times of crisis or trouble" (McPherson et al. 2001, p. 436).

There are several reasons for this, such as pressure from an ingroup on its members to show group loyalty and the risk of being the victim of collective liability by the actions of outgroup members. Hence, in polarized situations, cross-cutting ties may be difficult to sustain because there are few people capable of bridging the gap separating the groups. Ethnicity is likely to have increasingly acute implications for people's welfare, even at an early stage of violent conflict, which means that it will become more salient vis-àvis other social categorizations. As a result, social relations are likely to become increasingly ethnified, which is likely to further escalate the conflict.

For the purposes of this article, this indicates that homophily tendencies are likely to be stronger in polarized situations; that is, preferences for sameness are likely to be more prevalent and salient, which may counteract the effects of heterogeneous interaction spaces on friendship formation. Within heterogeneous interaction spaces, among the pool of available alters, people will have a stronger tendency to select those who belong to the same group as theirs. This demand-centered proposition, however, may be countered by an opposing structural effect: in a violent, strongly polarized situation, interethnic friendship relations are highly unlikely to be established outside of the more or less narrowly drawn boundaries of ethnically heterogeneous interaction spaces. In other words, there are reasons to believe that in a highly polarized situation, interethnic friendship relations can be established and maintained only within structurally constraining, ethnically heterogeneous interaction spaces. This would rather lead us to expect that the more violent the conflict between ethnic groups, the more important in a relative sense ethnically heterogeneous interaction spaces are for the formation of interethnic friendship relations. It is an open question whether the preference-based or the structural mechanism will have the upper hand, but consistent with the theoretical model outlined above, we will argue in favor of the structural mechanism and hypothesize that the level of polarization will strengthen the associations between ethnically heterogeneous interaction spaces and interethnic friendship relations and indirectly strengthen the ways in which interethnic trust and tolerance are generated. Moreover, we may assume that trust and tolerance under violent and polarized circumstances become more closely connected to relations that do exist, why we may expect to find a stronger association between interethnic ties and trust and tolerance in Kirkuk compared to Erbil.

#### HYPOTHESES

On the basis of the theoretical perspective outlined above, we can formulate five hypotheses pertaining to the principal aims of this article, that is, to study interethnic friendship relations, social trust, and outgroup tolerance in violent multiethnic settings.

Hypothesis 1.—Exposure to ethnically heterogeneous interaction spaces, or foci of activity, increases the likelihood that friendship ties crossing ethnic boundaries will be observed.

Hypothesis 2.—Having ethnically mixed social networks is associated with more general social trust and interethnic social trust (contact hypothesis 1).

Hypothesis 3.—Having ethnically mixed social networks is associated with more tolerance of other groups (contact hypothesis 2).

Hypothesis 4.—The association between heterogeneous interaction spaces and the likelihood of interethnic friendship will be stronger in Kirkuk than in Erbil because of differences in interethnic violence and intergroup polarization.

Hypothesis 5.—Because of differences in interethnic violence and intergroup polarization, we also expect the association between interethnic friendship ties and trust and tolerance to be stronger in Kirkuk than in Erbil.

#### DATA

We use data collected by the second author in Erbil and Kirkuk in 2006 as a part of five months of fieldwork in the region. The data we use consist of a questionnaire that included 53 questions and took approximately 20 minutes to fill out. Questionnaires were made available in both Arabic and Kurdish, and respondents filled out the questionnaires while the second author was waiting, so that he could collect them upon leaving. Participants were briefly introduced to the research questions underlying the questionnaires (i.e., that we were interested in studying interethnic relations in the city) but were not offered any compensation for participating.

<sup>9</sup>The second author was born in Northern Iraq (from where he emigrated in the early 1990s at the age of 25). His involvement was a prerequisite for the empirical part of this study. Without his deep knowledge of the community and without his language skills (he is fluent in both Arabic and Kurdish and has a working knowledge of other local languages and dialects), data collection would have been much more difficult.

<sup>10</sup> The second author is Kurdish, which could potentially cause interviewer bias. However, this risk is less pronounced when questionnaires are used compared to personal interviews, and the second author—who was aware of this potential problem—did not notice anything during the data collecting process that indicated that non-Kurdish respondents reacted in a negative way toward him. Moreover, the refusal rate was not dramatically higher for Arabs or the two other non-Kurdish groups.

It was impossible to identify and use a strictly randomized sample as reliable population registers do not exist. For that reason, we chose to distribute the questionnaires at people's homes, at various public places (including street corners, marketplaces, and coffeehouses), and in workplaces and organizations using, to the largest extent possible, a combination of strategic and systematic sampling. The total sample consists of 2,264 completed questionnaires.<sup>11</sup> Of the total sample, 1,476 cases were collected in Erbil and 788 in Kirkuk.

The selection of distribution venues for the questionnaires was based on knowledge acquired during the fieldwork, and the aim was to achieve as high an overall representativeness as possible with regard to ethnicity and socioeconomic status. More specifically, in Erbil we divided the city into five districts: north (Shorsh, Sefin, and Kani), south (Azadi, Zanyari, Rasti, and Rizgary), east (Setagan, Mamostayan, Runaki, and Badawe), west (Newroz, Tureq, and Nishtiman), and the central part (Tairawe and Bazar). None of these districts are strongly ethnically skewed, in comparison to the composition of ethnic groups in the city at large—which is true for almost all districts in Erbil—but they were selected to cover both richer and poorer neighborhoods as well as central and suburban districts. In addition, we included Ankawe, which is dominated by Assyrians/Chaldeans (officially Ankawe is a separate municipality, but it has become integrated as a city district of Erbil). In these districts the questionnaires were distributed by knocking on people's doors. Most people live in privately owned townhouses or small houses, and apartment blocks are uncommon. The selection of streets or blocks, and within them the selection of houses, was systematic, for example, every third or every fourth street/block/house depending on the size of the neighborhood. Systematic sampling is a good way to proxy randomness in settings without a sampling frame, the only caveat being whether the decision rule correlates with some underlying characteristic of the population (which we have no reason to suspect in this case). We also distributed questionnaires in coffeehouses and teahouses and on popular streets and in marketplaces such as Bata and Shekhela, where many people circulate (independent of where they live in the city). In those venues, the selection rule was to include all individuals who were encountered.

In Kirkuk, city districts dominated by one particular group are more common: the northern parts of the city tend to be dominated by Kurds and the southern parts by Arabs, whereas the central parts are more mixed (but occasionally with neighborhoods dominated by Turkmen, Kurds, or Assyrians/

<sup>&</sup>lt;sup>11</sup> Since we do not have a sampling frame, we cannot estimate any response rates. Nonresponse consists of not-at-home nonresponses and refusals. We have only an indication of the size of the latter factor. We distributed 2,400 questionnaires, and 2,264 of them were returned.

Chaldeans). To cover these differences, we distributed questionnaires in all of these areas: north (Rehimawe, Azadi, and Hemam Eli Beg), south (Hey alwasity, Hey al-qadisiye, Al-urubeh, and Dour al-Amn), and central (Shorije, Imam Qasm, Begler, Almas, Arafa, Domiz, and Al-Tisein). By doing this, we also covered both richer and poorer neighborhoods as well as central and suburban areas. As in Erbil, questionnaires were distributed by knocking on people's doors (also in Kirkuk most people live in privately owned townhouses or small houses), at coffeehouses and teahouses, and on popular streets and at marketplaces (such as Hesireke and Jimhuri). In addition, in both cities a number of questionnaires were distributed at workplaces and in organizations. In Kirkuk, these were selected to cover different degrees of ethnic homogeneity (see Rydgren and Sofi [2011] for these lists), and in Erbil—where statistics on ethnic composition of workplaces and organizations are missing—they were selected arbitrarily.

Although not optimal from a methodological standpoint, we see no reasons to expect that the sample will be seriously biased, except for gender and a slight underrepresentation of Arabs (in Kirkuk) and a corresponding overrepresentation of Assyrians/Chaldeans. Of those who filled in the questionnaire, 76% were men and 24% were women. The reason for the gender bias is that males in the household tended to fill in the questionnaire and that women are underrepresented in workplaces and in organizations. The composition of ethnic groups in the sample was 59% Kurds, 17% Turkmen, 15% Assyrians/Chaldeans, and 8% Arabs. More specifically, in Kirkuk the proportion of Arabs in the sample was 22% compared to the estimated 30%–35% in the population, whereas the proportion of Arabs in Erbil is relatively small both in our sample and in the general population. One reason for the slight underrepresentation of Arabs in Kirkuk was the higher refusal rate in areas dominated by Arabs.<sup>12</sup> To somewhat get at this problem we controlled for relevant socioeconomic and sociodemographic background factors (age, gender, education, social class, and ethnicity) in all models.

Table 1 contains a description of the items in our data, the definitions of variables, and, when applicable, the wordings of the survey questions they are based on. Education and social class are coded from open-ended questions. The educational levels approximate what is standard in international comparisons, except that the highest level of postsecondary education groups together various forms of postsecondary education without separating out university education (tertiary), because of the low proportion of individuals with a university degree. The way social class is coded approximates the Erikson-Goldthorpe-Portocarero social class scheme (see

 $<sup>^{12}</sup>$  However, it should be noted that the refusal rate tended to be slightly lower than average for all groups in these areas.

#### TABLE 1 Variable Definitions

Variable	Definition
Background:	
City	Kirkuk = 1 and $Erbil = 0$
Ethnic group	Kurds (reference), Arabs, Assyrians/Chaldeans, Turkmen
Age	In years + squared term
Gender	Female $= 1$ , male $= 0$ (reference)
Education	No education, elementary education (reference), secondary education, postsecondary education, and education is missing
Social class	Higher-grade professionals, administrators, and officials; lower-grade professionals, administrators, and officials; self-employed, qualified workers (reference), unqualified workers, students, pensioners, unemployed, and social class is missing
Organization member	Are you member of a civil organization? yes = $1$ , no = $0$ (reference)
Party member	Are you member of a political party? yes $= 1$ , no $= 0$ (reference)
Social contact patterns:	
Interethnic friendship	Do you have friends belonging to other ethnic groups? yes = 1, no = 0 (reference)
Heterogeneous neighborhood	Do you have neighbors belonging to other ethnic groups? yes = 1, no = 0 (reference)
Heterogeneous work- place Social trust and tolerance:	In your workplace, do you have colleagues who belong to other ethnic groups? yes = 1, no = 0 (reference)
Social trust	Generally speaking, do you trust people in your city; would you be willing to cooperate with them? yes $= 2$ , neither trust nor distrust $= 1$ , no $= 0$
Interethnic trust	Generally speaking, do you trust people belonging to other ethnic groups; would you be willing to cooperate with them? yes $= 2$ , neither trust nor distrust $= 1$ , no $= 0$
Intermarriage	Would you consider marrying someone belonging to another ethnic group? no = 0, don't know = 1, a yes = 2

<sup>&</sup>lt;sup>a</sup> The "don't know" item was located between yes" and "no"; for more, see n. 15 in text.

Erikson and Goldthorpe 1992). The other background variables are self-explanatory (age, gender). The ethnic categories were chosen to represent the population in Erbil and Kirkuk, as discussed above. We have included individuals with missing information on education and social class in dedicated categories, as we believe that these cases do contribute important information. This procedure does not influence the results in any substantial way. We also asked whether the respondent is a member of an organization or a political party, which we include as a further control in some models.

The workhorse in our theoretical analysis outlined above is what we call *interaction spaces* and the extent to which they are ethnically heterogeneous. We gauge this with straightforward questions about the existence of other ethnic groups within respondents' neighborhoods and workplaces and

whether the respondent herself has interethnic friendship ties. In a supplementary analysis, we analyze intensity of interethnic interactions within neighborhoods and workplaces, which is measured as indices based on five and two items, respectively, such as "Do you often interact with your interethnic neighbors" (see table A1, app. A). Workplaces and neighborhoods constitute a type of interaction space that is comparatively structural, that is, to a small degree chosen by the individuals in our sample. Because much of the literature in this field revolves around organizations, we also look specifically at those who are members of an organization or a political party and whether this was an ethnically homogeneous or heterogeneous organization (see table A1 for item wordings). For obvious reasons, these interaction spaces are less structural than neighborhoods and workplaces. We will focus our analysis on workplaces and neighborhoods, and then in a supplementary section we will analyze organizations and political parties as potentially heterogeneous interaction spaces to verify or qualify our results.13

The outcomes of interest are, first, the degree of *general* social trust the respondent expresses toward other people in his or her city. This item approximates the General Social Survey item on social trust, which is standard in the literature on social trust. This is followed by a question on *interethnic* trust, that is, trusting individuals of an ethnicity different from theirs, and then we ask whether the respondent would, hypothetically, consider marrying someone of another ethnicity, which is a sharp test of outgroup *tolerance* and of whether individuals would be willing to translate their attitudes into actual behavior. Each of these four chief outcome variables is measured in three steps, with "yes" and "no" as extreme points and then an intermediate

<sup>&</sup>lt;sup>13</sup>The population at risk differs across these interaction spaces. Neighborhood is valid for all whereas organizations and political parties apply only for those who are themselves members. In the case of workplaces, the issue of the population at risk is more ambiguous. Not everyone states an occupation and some are pensioners and students, yet many of them claim to have a heterogeneous workplace. In our main analysis, we have included the whole sample, but as a sensitivity analysis we excluded all without a strong attachment to the labor market. The reason is that we might otherwise pick up the effect of having a job rather than of having a job in a heterogeneous workplace. The results from the different sample selections produce essentially the same results, and the results that involve workplaces are not contingent on any spurious relation.

<sup>&</sup>lt;sup>14</sup>The initial phrasing is very similar, but instead of emphasizing "that you can't be too careful in dealing with people," our question emphasizes whether one would be willing to cooperate with people. Given the context, this should increase validity since this ties a concrete action (albeit hypothetical) to the attitude.

<sup>&</sup>lt;sup>15</sup> The "don't know" item was located between "yes" and "no," and we view this as an intermediate position of uncertainty (the survey does not generally contain "don't know" answers). Omitting the category (394 cases) gives substantially similar results, and our conclusion is not dependent on this assumption.

alternative (which varies across items). We also ask the individuals how they rate the quality of interethnic relations within each of the four interaction spaces (see tables 1 and A1).

There are also good reasons to assume that the difference between the cities regarding the level of corruption is potentially important. As argued by Rothstein (2005), the workings of political and legal institutions are crucial for social trust. If such institutions are generally seen as fair and just, the level of social trust is higher. In order not to confound our results with otherwise unobserved effects of experiences of corruption and of crime and violence, which are widespread and differ substantially between the cities, and probably also between ethnic groups, we include controls for trust in the legal system and satisfaction with the police (see table A1 for item wordings).

#### **METHODS**

Our research interest is descriptive, and we start by presenting cross-tabulations describing the basic associations between our binary and ordinal outcome variables. To qualify our results, we then estimate binary and ordered logit regressions and report average marginal effects, that is, the change in probability associated with a one-unit difference in an independent variable. For reference purposes, we present data with indications of statistical significance using heteroscedasticity-robust t-values and statistical tests as if we had a random sample. This is not the case; although we do not believe that sampling biases are large, these measures should be taken as indicative rather than definitive.

<sup>16</sup>A part of our research interest revolves around comparing estimates across Erbil and Kirkuk as two cases. Binary and ordinal logit models are estimated under an assumption of constrained error variance, and the coefficients are generally not comparable across groups and specifications (see Mood [2010] for a discussion and references). There is no general remedy for this problem, but as predicted probabilities are not subject to this bias (Long 2009), we present average marginal effects on predicted probabilities for the most positive outcome, i.e.,  $\sum [\partial P(y = \max | \mathbf{X} = \mathbf{x}_i)/\partial x]/n$ , a parameter that is comparable across groups (Mood 2010). Moreover, we have examined the assumption of parallel slopes in the standard ordered logit model using generalized ordered logit models (Williams 2006), which estimates additional parameters for coefficients that differ across levels of the outcome, e.g., whether  $\beta$  for 0 vs. 1 differs from  $\beta$  for 1 vs. 2. While there are some examples of coefficients that differ across levels, these do not change our conclusions in any substantive way. Deviations are moderate in all other cases, and we present ordinary ordered logit estimates for ease of presentation. We have also compared our results to those of linear regression models (which produce estimates that are comparable across groups or models). In the case of a binary outcome, this model is often called the *linear probability model* and produces unbiased estimates. In the case of ordinal outcomes, one must invoke an assumption of equidistance for the levels of the outcome in order for them to produce unbiased estimates. These linear models produce the same substantive results as the binary/ ordinal logit models presented in the article.

A short note on causality is warranted before we present the results. As we rely on cross-sectional data, we will not be able to assess causality, and the results below should be understood as statistical associations.<sup>17</sup> However, we argue that selection effects—whereby people with higher trust and more positive attitudes toward ethnic outgroups are more likely to select into ethnically heterogeneous interaction spaces—are less likely for workplaces (see Mutz and Mondak 2006, p. 141). In Erbil and Kirkuk, most people are not in a position to choose their workplace on the basis of preferences for ethnic homogeneity or heterogeneity; they generally must take whatever jobs they are offered and for which they have training. For many people, the same applies for neighborhoods: to move around the city is costly and something most people cannot afford. However, for people moving into the cities—in particular for expelled Kurds (but also Turkmen and Assyrians/ Chaldeans) returning to Kirkuk—ethnic group affiliation is a potential selection criterion for where to live. Moreover, we cannot exclude the possibility that people who are more trustful and tolerant are more likely than others to be friend ethnic outgroups given the pool of available alters provided by the interaction spaces.

#### RESULTS

Descriptive Statistics and Bivariate Analysis

Table A2 in appendix A provides descriptive statistics of background characteristics for individuals in Erbil and Kirkuk separately. It is clear that sample characteristics differ a great deal between the cities, and we believe that most of these differences are due to the contrasting social circumstances. Most prominently, ethnic composition differs substantially, with few Arabs in Erbil. It is reassuring that both the gender and age distributions are similar across cities in our sample. We also see that Erbil appears to be better off in socioeconomic terms: the proportion of individuals with the highest level of education is higher in Erbil, and this holds true for individuals in nonmanual classes and for students as well.

Table 2 shows two rows of cross-tables of having interethnic friends by heterogeneous neighborhood and workplace, respectively, separately for Erbil and Kirkuk. First, while Kirkuk is the more polarized of the two cities, it is also the less segregated. Second, the proportion of respondents who state that they have interethnic friends is, overall, relatively similar in

<sup>17</sup> For several reasons, a strict panel design, which would have allowed us to address causality more accurately, was not possible to use in the two cities that we study here. Most important, the lack of reliable population registers would have made it extremely difficult to keep track of people.

TABLE 2
BIVARIATE ANALYSES OF INTERACTION SPACES AND INTERETHNIC FRIENDSHIP

	Er	BIL	Kirkuk		
Interethnic Friendship	No	Yes	No	Yes	
Heterogeneous neighborhood:					
No	238	60	104	31	
	(36.8)	(7.2)	(49.8)	(5.4)	
Yes	409	769	105	548	
	(63.2)	(92.8)	(50.2)	(94.6)	
Total	647	829	209	579	
	(100)	(100)	(100)	(100)	
$P(\chi^2)$	.0	00	.0	0	
Cramér's V	.3	37	.5	2	
Heterogeneous workplace:					
No	156	142	90	45	
	(41.4)	(12.9)	(54.9)	(7.2)	
Yes	221	957	74	579	
	(58.6)	(87.1)	(45.1)	(92.8)	
Total	377	1,099	164	624	
	(100)	(100)	(100)	(100)	
$P(\chi^2)$	.0	00	.0	0	
Cramér's V	.3	31	.5	1	

Note.—The entries are numbers of observations, and the numbers in parentheses are percentages.

Erbil and Kirkuk (cf. table A2), whereas this differs across homogeneous and heterogeneous interaction spaces. Those spending time in ethnically heterogeneous interaction spaces are more likely to have interethnic friendship networks, which provides support for hypothesis 1. This is the case for both neighborhoods and workplaces and for both Erbil and Kirkuk. In fact, in heterogeneous interaction spaces the proportion of respondents with interethnic friends is close to or above 90% in both cities. Yet, there are some important differences between the two cities, indicating support for hypothesis 4: for those residing in an ethnically homogeneous neighborhood in Erbil, the likelihood of having an ethnically mixed friendship network is still considerably larger than that of having a homogeneous one. This is much less the case in Kirkuk. And whereas those in Erbil working in a homogeneous workplace are still slightly more likely to have a heterogeneous friendship network, in Kirkuk they are more likely to have a homogeneous one. Hence, presumably because of the overall polarization in Kirkuk, fewer interethnic friendship relations exist outside of structurally constraining heterogeneous interaction spaces, which indicates that interethnic friendships are more closely related to heterogeneous interaction spaces in Kirkuk than in Erbil (for reference, we show Cramér's V measure of association, which is larger in Kirkuk).

Table 3 further analyzes trust and tolerance by interethnic friends and provides support for hypotheses 2 and 3. Having interethnic friendship relations is related to higher social and interethnic trust and more tolerance, and, not least important, the likelihood of distrust and intolerance is considerably higher for those who do not have friendship ties spanning ethnic boundaries (cf. table A2). This is true for both Erbil and Kirkuk: among those with interethnic friends, the levels of trust and tolerance are very similar across the two cities. However, here, too, we find important differences between the cities: whereas social and interethnic distrust is relatively low in Erbil even for

 ${\bf TABLE~3}$  Bivariate Analyses of Interethnic Friendship and Dimensions of Trust

	Er	BIL	Kiri	KUK
	No	Yes	No	Yes
Social trust:				
No	24	37	53	19
	(8.2)	(3.2)	(39.6)	(2.9)
To some extent	157	499	69	348
	(53.6)	(43.1)	(51.5)	(53.9)
Yes	112	623	12	279
	(38.2)	(53.8)	(9)	(43.2)
Total	293	1,159	134	646
	(100)	(100)	(100)	(100)
$P(\chi^2)$	.c	00	.0	0 ` ´
Cramér's V	.1	.5	.5	0
Interethnic trust:				
No	64	66	67	32
	(22.5)	(5.8)	(55.8)	(5)
To some extent	178	652	47	398
	(62.5)	(57)	(39.2)	(62.8)
Yes	43	425	6	204
	(15.1)	(37.2)	(5)	(32.2)
Total	285	1,143	120	634
	(100)	(100)	(100)	(100)
$P(\chi^2)$	.0	\ /	.0	\ /
Cramér's V	.2	7	.5	6
Tolerance:				
No	155	389	84	215
	(57)	(34.4)	(68.3)	(35.2)
Don't know	61	175	35	123
	(22.4)	(15.5)	(28.5)	(20.1)
Yes	56	568	4	273
100	(20.6)	(50.2)	(3.3)	(44.7)
Total	272	1,132	123	611
_ 5564	(100)	(100)	(100)	(100)
$P(\chi^2)$	.0	\ /	.0	\ /
Cramér's V	.2		.3	

Note.—The entries are numbers of observations, and the numbers in parentheses are percentages.

those lacking interethnic friendship relations, distrust is very high in Kirkuk among these respondents. We find the same difference related to tolerance, although the contrast between the cities is smaller. Again, this indicates that the explanatory mechanisms outlined above have larger associations in the more violent and polarized Kirkuk, thus indicating support for hypothesis 5.

#### Multivariate Analysis

Below we will elaborate on these findings using multivariate analyses, which will allow us to take additional dimensions into account and to control for important factors that might otherwise bias our results. The main findings reported in the bivariate analyses above are confirmed in the multivariate analyses, which is reassuring.

To give an initial picture of the opportunity structure of interaction, we analyze the prevalence of living in heterogeneous interaction spaces on city and on ethnic group, with and without controls, in table 4. The coefficients shown are the average marginal effects. Living in a heterogeneous neighborhood is more likely in Kirkuk than in Erbil, and this also holds for workplaces even though the associations are weaker. Arabs are much less likely to live in heterogeneous neighborhoods than Kurds, but there is no difference when it comes to heterogeneous workplaces. The Turkmen and the Assyrians/Chaldeans are in turn more likely than Kurds to live and work in heterogeneous environments.

Table 5 shows the associations of the neighborhoods and workplaces with interethnic friendship in Erbil and Kirkuk. Heterogeneous neighborhoods and workplaces are associated with interethnic friendship, consistent with hypothesis 1. These associations exist in both Erbil and Kirkuk but tend to be stronger in Kirkuk (see models 1 and 2) as predicted in hypothesis 4, largely because the prevalence of interethnic friendships in homogeneous interaction spaces differs between the two cities. Controlling for individual characteristics has some but not overly strong influence on the estimated associations (models 3 and 4). When we include neighborhoods and workplaces in the same model simultaneously, we can see that the associations drop but that the association sizes are still substantial (model 5) and that the differences between Erbil and Kirkuk decrease. Heterogeneous neighborhoods and workplaces are thus partially independently associated with interethnic friendship, which is evidence in favor of hypothesis 1. The forces of homophily are not strong enough to counter the opportunity structure of multiethnic environments. It should also be noted that Turkmen and Assyrians/Chaldeans are more likely to have interethnic friendship networks than either Kurds or Arabs. This is to be expected since, all things being equal, members of smaller groups are always more likely to

have contacts with members of larger groups than vice versa (e.g., Blau 1977).<sup>18</sup>

In table 6, we analyze our indicators of trust and tolerance and hypotheses 2, 3, and 5. For each outcome, the table displays four models; the first shows only interaction spaces without individual controls, the second introduces individual controls, and the third introduces interethnic friendship, our focal variable. In the fourth and final model, legal trust and satisfaction with the police are introduced as potentially confounding variables. Models 1 and 2 show that heterogeneous neighborhoods are associated with higher levels of general social trust and interethnic trust in Kirkuk but not in Erbil but are associated with our indicator of tolerance—whether one would consider marriage to an individual of different ethnicity—in both cities. Heterogeneous workplaces have a more robust association with general social trust, interethnic trust, and tolerance in both cities. Introducing individuallevel controls tends to weaken these associations but in some cases to magnify the difference across cities. In model 3, we introduce our focal variable, which according to our theory should provide the link between heterogeneous interaction spaces and trust and tolerance. The direct associations between heterogeneous interaction spaces and trust and tolerance tend to diminish or in some cases even disappear. Interethnic friendship provides a comparatively strong association with all aspects of trust and tolerance. Hence, our hypotheses 2 and 3 receive support. It is interesting to note that the associations are virtually unchanged when legal trust and satisfaction with the police are included in model 4. This is reassuring since interethnic trust and tolerance could be confounded by the overall security situation, especially in violent contexts, and where violent acts are often understood in ethnic terms.<sup>19</sup>

For heterogeneous workplaces, the association with trust and tolerance tends to be explained by interethnic friendship, except for interethnic trust, where workplaces provide an independent association, and for social trust, where we find an association only in Kirkuk. Heterogeneous neighborhoods tend to have a separate association with trust and tolerance in Kirkuk but not in Erbil. This suggests that it is necessary to take the intermediate variable of interethnic friendship into account when studying the role of heterogeneous interaction spaces for trust and tolerance. The theoretical model outlined above is thus supported; that is, the main association

<sup>&</sup>lt;sup>18</sup> To this we may add contextually grounded reasons: Turkmen and Assyrians/Chaldeans are minority groups not only in the two cities but also nationally in Iraq, and they have strong interests in maintaining friendly interethnic relations with other groups. For Arabs it may be different since they belong to the majority group nationally.

<sup>&</sup>lt;sup>19</sup>We have further estimated the models in tables 4 and 5 separately for Erbil and Kirkuk (not shown). These regressions corroborate our findings. So the results are not driven by either Erbil or Kirkuk as a unique case, but the main results apply to both cities.

TABLE 4 Logit Regression Estimates of Involvement in Heterogeneous Interaction Spaces on City, Ethnic Group, and Control Variables

		GENEOUS ORHOOD		GENEOUS IPLACE
	(1)	(2)	(1)	(2)
Female gender		.042		.006
Age		(1.689) .004 (.723)		(.260) .000 (.099)
Age squared		.000 (115)		.000
Education		( ' ' ')		(** ***)
(ref. = elementary):		2014		000
No education		.201*		.098
Coordom oducation		(2.291) .049		(1.429)
Secondary education				.046
Postsecondary education		(1.556) .095**		(1.706) .175***
rostsecondary education		(2.782)		(5.662)
Education is missing		.063		.092**
Education is missing		(1.867)		(3.043)
Social class (ref. = qualified worker): Higher-grade professionals,		(1.507)		(3.043)
administrators, and officials		09		209***
,		(-1.690)		(-3.902)
Lower-grade professionals,		,		,
administrators, and officials		026		118**
		(648)		(-2.878)
Self-employed		019		236***
		(488)		(-6.057)
Unqualified workers		.071		127**
		(1.467)		(-2.754)
Students		.037		095*
		(.879)		(-2.285)
Pensioners		.053		341***
		(.654)		(-5.149)
Unemployed		02		447***
		(310)		(-8.160)
Social class is missing		022		162***
		(475)		(-3.456)
Organization member		.061**		.024
		(2.946)		(1.314)
Party member		.048*		.039*
Ethnicites (not = W 1)		(2.183)		(1.978)
Ethnicity (ref. = Kurd):	225***	107***	056	000
Arab	225***	187***	056	.009
Turkenon	(-6.016)	(-4.921)	(-1.630) .150***	(.249)
Turkman	.431***	.464***		.180***
Assurian/Chaldean	(11.128) .219***	(10.584) .226***	(5.262) .127***	(5.958) .114***
Assyrian/Chaldean		4		
	(8.072)	(7.747)	(4.503)	(3.946)

TABLE 4 (Continued)

	Heterog Neighbo		Heteroo Work	
	(1)	(2)	(1)	(2)
Kirkuk (city)	.241***	.225***	.066**	.093***
	(9.955)	(8.878)	(3.056)	(4.084)
N	2,258	2,133	2,258	2,133
	.124	.149	.025	.127

Note.—Coefficients refer to average marginal effects of p ( $y = \max$ ) (see text); t-values (in parentheses) are provided for reference purposes (not entirely random sample).

of interaction spaces with trust and tolerance is mediated by interethnic friendships. Yet, as is evident from table 6, there is also some direct association between interaction spaces and attitudes, even when controlling for friendship.

Moreover, the results indicate substantial differences between the two cities for the association between interethnic friendship and trust and tolerance. The interaction effect is strongly positive for social and interethnic trust, meaning that associations are stronger in Kirkuk than in Erbil, indicating support for hypothesis 5. This is driven by differences in trust across cities in the group without interethnic friendships, as indicated by the cross-tables above. For attitudes toward intermarriage as an indicator of tolerance, the coefficient is smaller. This is, however, not the end of the story since trust and tolerance are generally lower in Kirkuk. Hence, what we pick up as a stronger association is indicative of the greater polarization in Kirkuk. That city is more divided between those who trust and tolerate and those who do not, and here friendships and contacts matter to a large degree. In Erbil, by contrast, contacts have less meaning since the overall state of affairs is less polarized there and relations are generally of higher quality. We may speculate that even though polarization is bad, the contact that does exist across ethnic groups does tend to engender trust.

Differences between ethnic groups are far from straightforward, but we can see that Turkmen tend to display higher levels of interethnic trust and tolerance, with small differences between Arabs, Kurds, and Assyrians/ Chaldeans. When law and order trust and attitudes are controlled for, the differences diminish or disappear. The exception is attitudes toward interethnic intermarriage, where Assyrians/Chaldeans stand out as the most negative group. This is likely to be a result of religious rather than ethnic identity (Assyrians/Chaldeans are Christian whereas the other three groups are predominantly Muslim), and because they are the smallest group, Assyrians/

<sup>\*</sup> P < .05.

<sup>\*\*</sup> P < .01.

<sup>\*\*\*</sup> P < .001.

 ${\bf TABLE~5}$  Logit Regression Estimates of Interethnic Friendship on Involvement in Heterogeneous Interaction Spaces and Control Variables

	(1)	(2)	(3)	(4)	(5)
Female gender			047* $(-2.505)$	036 $(-1.934)$	045* (-2.443)
Age			008 $(-1.717)$	007 $(-1.533)$	008 $(-1.742)$
Age squared			.000*	.000*	.000* (2.094)
Education (ref. = elementary): No education			.051	.091	.055
Secondary education			(.909) .036	(1.375) .048*	(.961) .035
Postsecondary education			(1.612)		
Education is missing			(5.005) .04 (1.550)	(4.291) .024 (.962)	(3.904) .022 (.931)
Social class (ref. = qualified worker): Higher-grade professionals,			(1.550)	(.902)	(.931)
administrators, and officials			092 $(-1.920)$	041 $(872)$	043 $(959)$
Lower-grade professionals, administrators, and			( 1.720)	( .072)	( .,,,,)
officials			051 $(-1.459)$	008 $(231)$	019 (578)
Self-employed			099** $(-3.143)$	03 (938)	043 $(-1.425)$
Unqualified workers			066 $(-1.690)$	.005	026 (704)
Students			121*** (-3.666)	069* (-2.064) 085	085** $(-2.721)$
Unemployed			203** (-3.013) 206***	(-1.239)	125 (-1.937) 078
Social class is missing			(-4.793) 096**	(485) 041	(-1.833) $053$
Organization member			(-2.597) .085***	(-1.097)	(-1.485)
Party member			(5.456) .029	(6.174)	(5.310) .027
Ethnicity (ref. = Kurd):		المالات الحادث	(1.840)	(1.887)	(1.761)
Arab	.002	078** $(-2.883)$	.035 (1.169)	05 $(-1.782)$	(.661)
Turkman	.133*** (4.289) .088***	.206*** (6.730)	(4.082)	(5.997)	(4.167)
Assyrian/Chaldean	(3.412) 064*	.126*** (4.840) 060*	(4.376) 041	(6.040) 039	(4.315) 088**
(	(-2.549)	(-2.295)	(-1.647)	(-1.471)	(-2.746)

TABLE 5 (Continued)

	(1)	(2)	(3)	(4)	(5)
Heterogeneous neighborhood	.223***		.195***		.159***
	(10.925)		(9.915)		(8.610)
Heterogeneous neighborhood	` ′		, ,		,
× Kirkuk (city)	.113**		.120***		.078*
· -/	(3.087)		(3.325)		(2.123)
Heterogeneous workplace	. ,	.175***	, ,	.153***	.108***
		(9.867)		(8.351)	(6.256)
Heterogeneous workplace		.174***		.151***	.096**
× Kirkuk (city)		(5.147)		(4.556)	(3.040)
N	2,258	2,258	2,133	2,133	2,133
Pseudo $R^2$	.193	.18	.279	.25	.32

Note.—Coefficients refer to average marginal effects of p (y = max) (see text); t-values (in parentheses) are provided for reference purposes (not entirely random sample).

Chaldeans are more concerned about the demographic threat to their communal existence.

#### Supplementary Analysis: Intensity of Interethnic Relations

In table A3 in appendix A, we analyze the intensity of interethnic relations specific to the interaction spaces of neighborhoods and workplaces, which is an alternative measure of acquaintance or friendship contacts across ethnic boundaries. In contrast to our general measure of interethnic friendship, which discriminates only between the presence and absence of an interethnic tie, our measure of intensity does discriminate between different sporadic and regular interaction patterns, which according to our theoretical models should be crucial for understanding trust and tolerance. This, however, limits the sample to those who have interethnic relations within neighborhoods and workplaces. However, we can control for having any interethnic friend regardless of its source and for heterogeneity in the complementary interaction space; that is, within neighborhoods we can control for whether the workplace is or is not ethnically heterogeneous. Within neighborhoods, the intensity of interethnic relations is strongly associated with trust and tolerance. Interestingly, this association does not differ across cities, even though the point estimates suggest that it might be stronger in Kirkuk. Intensity of interethnic relations within the workplace has a weaker association with trust and tolerance compared to such relations within neighborhoods, and this can be explained by the fact that we measure fewer aspects of intensity for workplaces compared to neighborhoods, which might attenuate the association (see table A1).

<sup>\*</sup> *P* < .05.

<sup>\*\*</sup> P < .01.

<sup>\*\*\*</sup> P < .001.

TABLE 6
Ordinal Logit Regression Estimates of Quality of Ethnic Relations on Interethnic Friendship and Heterogeneous Interaction and Control Variables

		SOCIAL	SOCIAL TRUST			INTERETHNIC TRUST	TRUST		Woo	ULD CONSIDER	Would Consider Intermarriage	3E
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Ethnicity (ref. = Kurd):												
Arab	110**	044	043	019	.021	.023	.024		.051	*4.00	*890.	.056
	(-2.740)	(-1.097)	(-1.104)	(484)	(.633)	(.646)	(965)	(.620)	(1.492)	(2.247)	(2.016)	(1.533)
Turkman	018	.001	600.—	072*	.111***	.102***	****		.145***	.156***	.141***	***660
	(629)	(.033)	(306)	(-2.350)	(4.551)	(3.820)	(3.306)		(5.451)	(5.585)	(5.148)	(3.466)
Assyrian/												
Chaldean	065*	.011	005	900.	.011	.027	.007	.001	398***	341***	355***	368***
	(-2.229)	(.372)	(155)	(.211)	(.418)	(626.)	(.261)	(.029)	(-12.988)	(-10.588)	(-11.072)	(-10.927)
Kirkuk (city)		492***	573***	543***	321***	308***	359***	306***	287***	281***	250***	229***
	(-9.008)	(-9.391)	(-9.768)	(-9.030)	-6.984	-6.358	-6.497)	(-5.289)	(-5.962)	(-5.822)	(-4.782)	(-4.050)
Heterogeneous neighbor-												
hood	.023	.01	018	041	**070.	.058*	.021	.007	.109***	.114***		.05
	(.901)	(.402)	(652)	(-1.503)	(2.962)	(2.397)	(.832)	(.293)	(4.448)	(4.613)	(2.693)	(1.915)
$\begin{array}{c} \text{Heterogeneous} \\ \text{neighborhood} \\ \times \text{Kirkuk} \end{array}$												
(city)	.298***	.261***								*980	80.	*680.
	(6.155)	(5.547)	(3.508)	(3.309)	(6.028)	(5.371)	(4.049)	(4.226)	(2.093)	(2.006)	(1.863)	(1.972)

.022		860.	(1.755)	.198***	(6.043)			004	(068)			Yes		Yes	1,845	.138
.037		.112*	(2.060)	.198***	(6.246)			.005	(860.)			Yes		No	2,016	.134
.076**		.147**	(2.894)									Yes		°N	2,016	.121
.101***		.146**	(2.962)									No		No	2,132	860.
.121***		.005	(.100)	.193***	(5.517)			.160*	(2.482)			Yes		Yes	1,876	.151
.137***		0	(.008)	.199***	(5.566)			.182**	(2.847)			Yes		Š	2,062	.112
.169***		.082	(1.658)									Yes		No	2,062	680.
.181***		.051	(1.097)									No.		Š	2,176	.071
.012		.130*	(2.451)	.128***	(3.770)			.239***	(3.501)			Yes		Yes	1,898	.161
.066*		.110*	(2.059)	.131***	(3.689)			.268***	(4.031)			Yes		Š	2,102	.115
.085**		.215***	(4.128)									Yes		$^{\circ}_{ m N}$	2,102	660.
.105***		.147**	(2.891)									No		No	2,226	.057
Heterogeneous workplace	Heterogeneous workplace × Kirkuk	$(city) \cdots$		Interethnic friends		Interethnic friends	imes Kirkuk	(city)		Individual-level	control	variables	Law and order trust and	attitudes	$N \cdots \cdots N$	Pseudo $\mathbb{R}^2$
													16	77		

Nore.—Coefficients refer to average marginal effects for of  $\rho$  ( $\nu$  = max) (see text); (the most positive answer); t-values (in parentheses) are provided for reference purposes (not entirely random sample).

a Equations contain controls for age, age squared, gender, education, social class, organization membership, and party membership.

<sup>\*</sup> P < .05.

<sup>\*\*</sup> P < .01.

<sup>\*\*\*</sup> P < .001.

In sum, these analyses give further support to hypotheses 2 and 3 (that interethnic friend relations are positively associated with trust and tolerance) but cast some doubt on whether this differs between Erbil and Kirkuk, as suggested by hypothesis 4. Intensity of interethnic relations has more explanatory power than extent of friendship relations alone. Having access to heterogeneous interaction spaces per se, by contrast, without having friendship ties has a very small independent association with the quality of ethnic relations. Hence, contact opportunities are likely to be effective in generating interethnic trust and outgroup tolerance only to the extent that they generate relatively stable relations crossing ethnic boundaries. It should be emphasized that interaction spaces per se are not negatively associated with trust and tolerance, indicating that the heterogeneity-conflict hypothesis is not supported by our study.

# Supplementary Analysis: Organizations and Political Parties as Interaction Spaces

Tables B1–B3 in appendix B correspond to the same analyses as in tables 3–5, but for organizations and political parties. The sample is limited to individuals who are members of organizations and parties, and therefore the results are not entirely comparable to those of neighborhoods and workplaces. Table B1 shows that heterogeneous parties are less common in Kirkuk than in Erbil, but only on the margin. It also appears that the Kurdish majority more often joins heterogeneous parties and that Arabs, Turkmen, and Assyrians/ Chaldeans are to a larger extent members of homogeneous organizations and political parties.

Table B2 reveals that heterogeneous organizations and parties are associated with interethnic friendship, but only in Kirkuk (models 2 and 3). When both heterogeneous neighborhoods and workplaces are included in the same model, heterogeneous organizations have a generally positive association with interethnic friendship in both Erbil and Kirkuk, while heterogeneous parties are negatively associated with interethnic friendship in Erbil but not in Kirkuk. However, one should remember that the sample size decreased drastically (from N = 1,047 and 1,258 to N = 700), and so this association can potentially be explained by sample selection issues. Nonetheless, in three-quarters of the combinations of city and type of organization, we can find positive associations that provide further support for the hypothesis (hypothesis 1) that heterogeneous interaction spaces are associated with higher incidences of interethnic friendship.<sup>20</sup>

<sup>20</sup>Why heterogeneous parties do not provide grounds for interethnic friendships in Erbil is puzzling, but one should not forget that the sample is now down to N = 700 and that a model with more observations but fewer controls yielded a zero effect in Erbil (not negative).

Table B3 shows that there is an independent association between both heterogeneous organizations and parties and social trust, but for interethnic trust, there are no substantial associations. Heterogeneous organizations have a positive association with our indicator of tolerance (to consider intermarriage). For organizations, there is a positive association with both ethnic relations and tolerance, but only in Kirkuk. The association of heterogeneous interaction spaces with trust and tolerance is substantially reduced when we control for interethnic friendship relations. These analyses are, of course, constrained by the small sample size (N=700) but nonetheless suggest that organizational heterogeneity is important for trust and tolerance, both directly and indirectly.

As in the previous analysis, interethnic friendships are important, but more on a par with the size of the association of the interaction spaces than the dominant factor. These results give further support to hypotheses 1–4.

#### CONCLUSION

This study finds support for the theoretical argument that heterogeneous social interaction spaces correlate positively with interethnic friendship relations and that interpersonal relations that cross ethnic group boundaries are associated with more social trust, interethnic trust, and tolerance. We found support for these mechanisms in both Erbil and Kirkuk, which not only provide highly problematic and violent multiethnic settings but also differ from one another in many important respects. Not even in violent and highly polarized settings such as Erbil and especially in Kirkuk are tendencies toward homophily based on preferences for sameness strong enough to counteract the importance of ethnically heterogeneous interaction spaces for interethnic friendship relations. And even in violent and polarized contexts, the contact hypothesis is supported.

We tended to find stronger associations in the more violent Kirkuk than in the relatively more peaceful Erbil between ethnically heterogeneous interaction spaces and interethnic friendship relations and between interethnic friendship relations and social trust, interethnic trust, and tolerance. One interpretation of this is that the degree of polarization in the surrounding context matters in particular when individuals are not well integrated. Under polarized circumstances, fewer persons outside of heterogeneous interaction spaces have interethnic friendship relations, and we may speculate that trust and tolerance are more closely connected to those interethnic relations that do exist.<sup>21</sup> For individuals who were integrated, on the other hand, we found

<sup>&</sup>lt;sup>21</sup>This finding confirms previous research based on qualitative data, which indicated that there was a considerable potential for interethnic friendship, and for intergroup trust, in Kirkuk (see Rydgren and Sofi 2011).

that the associations between intensity of interethnic relations within heterogeneous interaction spaces and social trust, ethnic trust, and tolerance were large and similar across cities (although point estimates were very large in Kirkuk). These results are interesting and of obvious general relevance, but we should keep in mind that we have a very limited number of cases at the aggregated level to draw from in this study and that more research is needed.

It should also be noted that not all interaction spaces were equally important for interethnic friendship. For example, a mixed neighborhood seems to be slightly more associated with interethnic friendship than is a heterogeneous workplace. Our analyses thus point to the importance of looking at different kinds of interaction spaces: different kinds of interaction spaces seem to be independently associated with interethnic friendship and, directly or indirectly, with trust and tolerance. Inferences cannot easily be made across types of interaction spaces without the risk of bias. If we had followed Varshney (2002) and others working in the tradition of Robert Putnam (2000) and focused primarily on civil society organizations, we would have missed this complex pattern. Our results indicate that relations within interaction spaces, not interaction spaces per se, are important for trust and tolerance. This points to a great risk in using interaction spaces as a proxy for real interactions. Contact is a necessary but not sufficient criterion for trust and tolerance. In order to study the complex links between heterogeneous interaction spaces, interethnic friendship, and trust and tolerance, we need individual-level data, largely because this would allow us to sort among explanations with greater accuracy.

Our results also suggest that ethnic heterogeneity is not per se negatively associated with trust and tolerance. Our study indicates that at least within structurally constraining interaction spaces, ethnic diversity is a positive phenomenon, even in highly violent settings, and that the heterogeneity-conflict hypothesis is unsupported by our data. Ethnic heterogeneity outside of structurally constraining interaction spaces, where casual contacts with outgroups are unlikely to develop into closer relations, may still be associated with lower trust and intergroup tolerance. However, our results question the universality of the conflict-heterogeneity hypothesis and point to the importance of making a clear distinction between ethnic heterogeneity outside and inside of structurally constraining interaction spaces, a distinction that has often been lacking in previous research.

Finally, let us say that although we doubt that interethnic friendship, trust, and outgroup tolerance are sufficient factors to prevent violent ethnic conflict, we believe that they are important and that by focusing on these factors we will find a potentially important complement to other explanations of ethnic conflict—in particular, theories focusing on elite mobilization. Mobilization against ethnic outgroups is often a crucial element in elite power struggles, and interethnic trust and outgroup tolerance generated by inter-

ethnic friendship relations and heterogeneous interaction spaces play a potentially important role by making this kind of mobilization less likely to succeed. In situations in which ethnic groups are mutually detached and interethnic trust and outgroup tolerance are low, attempts by elite actors to scapegoat ethnic outgroups, or to frame them in negative ways, are more likely to resonate with the populace. And even if interethnic friendship, crossethnic trust, and outgroup tolerance have so far failed to counteract other conflict-generating factors in Kirkuk, the situation might have been even worse if ethnic groups had been more decoupled and if the level of trust and tolerance had been lower.<sup>22</sup> Now there are some reasons for hope. Our 2006 data also reveal that the level of optimism was, at that time, quite high in both Erbil and Kirkuk: whereas 40% in Erbil described relations between ethnic groups as good and in Kirkuk only 15% did so, 46% in Kirkuk and 55% in Erbil believed that ethnic relations would get better in the near future.

<sup>&</sup>lt;sup>22</sup> However, it should be emphasized that the level of intergroup violence can potentially be relatively decoupled from attitudes at the grassroots level. We may reasonably assume that only a relatively small, rather select group of people engage in the violent acts seen in Kirkuk, although their actions have wide ramifications at the more aggregate level. Sometimes these groups may even consist of terrorist cells that come in from other parts of Iraq rather than of members of the local communities.

# APPENDIX A

Supplementary Tables

Variable

TABLE A1
AUXILIARY VARIABLE DEFINITIONS

Definition

A scale between 0 and 1 based on the following items: (i) Do you often interact with your interethnic neighbors? (ii) Do you participate in interethnic neighbors? (elebrations of holidays and vice versa? (iii) Do you invite interethnic neighbors to your home? (iv) Do your children play with children of interethnic neighbors? (v) Do you often greet interethnic neighbors? The response categories (yes, often = 2, sometimes = 1, no = 0) have been summed and rescaled so that max = 1. Cronbach's $\alpha = .86$ .	A scale between 0 and 1 based on the following items: (i) Do you interact with your interethnic colleagues after work (promenade, have coffee, do something else)? (ii) How often have you invited interethnic colleagues to your home? The response categories (i: yes, often = 2, sometimes = 1, no = 0, ii: many times = 2, sometimes = 1, never = 0) have been summed and rescaled so that max = 1. Cronbach's $\alpha = .72$ .		Among the members, are there people belonging to other ethnic groups? yes = 1, no = 0 (reference) <sup>b</sup> Among the members, are there people belonging to other ethnic groups? yes = 1, no = 0 (reference) <sup>b</sup>		Generally speaking, do you trust the legal system in your city? yes = 2, neither trust nor distrust = 1, no = 0	Generally speaking, are you satisfied with how the police operate in your $\operatorname{city}^2 \operatorname{yes} = 2$ , to some extent $= 1$ , no $= 0$	If you were the victim of a criminal act, would you report that to police? yes $= 2$ , don't know $= 1$ , no $= 0$	Do you think criminals should be put to justice? $yes = 2$ , don't know = 1, no = 0	<sup>a</sup> Put only to individuals at risk (organization members or party members and individuals with interethnic peers in parties and in organizations). <sup>b</sup> The original responses were yes, many $= 2$ , a few $= 1$ , no $= 0$ (reference).
Quality of relations within interaction spaces: Intensity of interethnic relations in neighborhood	Intensity of interethnic relations in workplace	Social contact patterns:	Heterogeneous organization <sup>a</sup> Heterogeneous political party <sup>a</sup>	Law and order trust and attitudes:	Legal trust	Satisfaction with police	Would report crime against self	Agrees criminals should be put to justice	<sup>a</sup> Put only to individuals at <sup>b</sup> The original responses wer

 ${\bf TABLE~A2}$  Descriptive Statistics of Individual Background Characteristics

	Erb	IL	Kirku	K
Variable	Mean	N	Mean	N
Female gender	.24	1,476	.224	788
	(.427)		(.417)	
Age	34.562	1,446	36.246	767
	(12.727)		(12.212)	
No education	.008	1,476	.041	788
	(.089)		(.200)	
Elementary education	.25	1,476	.234	788
Constitution	(.433)	1 456	(.424)	700
Secondary education	.2	1,476	.269	788
Postsecondary education	(.400) .363	1,476	(.443) .256	788
rostsecondary education	(.481)	1,470	(.436)	100
Education is missing	.178	1,476	.197	788
Education is missing	(.382)	1,470	(.398)	700
Higher-grade professionals, administrators,	(.302)		(.576)	
and officials	.065	1,476	.04	788
	(.247)	1,170	(.197)	, 00
Lower-grade professionals, administrators,	(* **)		()	
and officials	.25	1,476	.173	788
	(.433)	ŕ	(.379)	
Self-employed	.153	1,476	.224	788
	(.360)		(.417)	
Qualified workers	.101	1,476	.134	788
	(.302)		(.341)	
Unqualified workers	.073	1,476	.107	788
	(.261)		(.310)	
Students	.21	1,476	.12	788
ъ .	(.407)		(.325)	
Pensioners	.018	1,476	.03	788
II d	(.134)	1 456	(.171)	700
Unemployed	.016	1,476	.063	788
Social class is missing	(.126) .11	1 476	(.243)	788
Social class is missing	(.313)	1,476	.104 (.305)	100
Organization member	.54	1,421	.412	776
organization member	(.499)	1,721	(.493)	770
Party member	.594	1,458	.561	785
Turey member	(.491)	1,100	(.497)	, 00
Kurd	.661	1,470	.473	788
	(.473)	,	(.499)	
Arab	.004	1,470	.223	788
	(.063)		(.416)	
Turkman	.157	1,470	.19	788
	(.364)		(.392)	
Assyrian/Chaldean	.176	1,470	.112	788
	(.381)		(.316)	
Interethnic friends	.798	1,476	.828	788
	(.401)		(.377)	
Heterogeneous neighborhood	.561	1,476	.734	788
	(.496)		(.441)	

TABLE A2 (Continued)

	Erb	IL	Kirkuk		
Variable	Mean	N	Mean	N	
Heterogeneous workplace	.744	1,476	.791	788	
TT .	(.436)		(.406)		
Heterogeneous organization:					
No ethnic peers	.197	751	.243	312	
	(.398)		(.429)		
Few ethnic peers	.505	751	.5	312	
	(.500)		(.500)		
Many ethnic peers	.296	751	.256	312	
	(.457)		(.437)		
Heterogeneous party:					
No ethnic peers	.196	846	.286	436	
•	(.397)		(.452)		
Few ethnic peers	.433	846	.479	436	
P	(.495)		(.500)		
Many ethnic peers	.369	846	.233	436	
many conne peers	(.483)	010	(.423)	100	
Intensity of interethnic relations:	(.405)		(.423)		
in neighborhood	.371	1,476	.494	788	
III neighborhood		1,470		100	
:	(.364)	1.456	(.362)	700	
in workplace	.611	1,476	.613	788	
~	(.618)		(.587)		
Social trust <sup>a</sup>	.646	873	.679	580	
	(.254)		(.238)		
Interethnic trust <sup>a</sup>	.393	1,161	.393	621	
	(.301)		(.280)		
Would consider intermarriage <sup>a</sup>	1.056	1404	.97	734	
	(.910)		(.885)		
Law and order trust and attitudes:	` '		` /		
Legal trust <sup>a</sup>	1.054	1,421	.883	710	
0	(.697)	,	(.611)		
Satisfaction with police <sup>a</sup>	1.058	1,441	.935	747	
buttered with police	(.753)	1,111	(.586)		
Would report crime against self <sup>a</sup>	1.103	1,438	1.086	696	
would report erinic against seir	(.622)	1,430	(.510)	070	
Agrees criminals should be put to	(.022)		(.310)		
0 1	1 215	1 421	1 2 4 2	706	
justice <sup>a</sup>	1.215	1,431	1.343	706	
	(.790)		(.798)		

<sup>&</sup>lt;sup>a</sup> Variables take the values 0, 1, and 2 (see table 1 or A1).

Ordinal Logit Regression Estimates of Quality of Ethnic Relations on Interethnic Friendship and Heterogeneous Interaction and Control Variables within Neighborhoods and within Worrplaces TABLE A3

		SOCIA	Social Trust			Interethnic Trust	NIC TRUST		Wou	D CONSIDE	Would Consider Intermarriage	RRIAGE
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Within neighborhoods: Heterogeneous workplace	.05	.051	007	039	.157***	.188***	.113**	*110*	.031	.03	016	014
Heterogeneous workplace × Kirkuk (city)	(1.089)	(1.058)	(146)	(905)	(3.603)	(4.120)	(2.706)	056	(./18)	(.644)	(358)	(302)
	(.417)	(1.086)	(1.591)	(1.890)	(698)	(251)	(.408)	(.741)	(3.161)	(2.993)	(3.277)	(2.671)
Interethnic friends	.141	.116	.023	.075	.167*	.157*	.034	.058	.185**	.182**	960.	60.
	(1.867)	(1.600)	(.326)	(1.121)	(2.114)	(2.102)	(.517)	(.846)	(3.184)	(2.858)	(1.561)	(1.397)
Interethnic friends $\times$ Kirkuk												
(city)	.235	.351**	.221*	.202	.320**	.379**	.284*	.285*	.215*	.207*	.085	.107
	(1.487)	(2.657)	(1.985)	(1.628)	(2.619)	(3.117)	(2.473)	(2.473)	(2.236)	(2.045)	(.855)	(1.001)
Intensity of interethnic relations in												
neighborhood			.520***	.386***			.642***	.537***			.462***	.433***
			(6.831)				(8.379)	(6.707)			(6.651)	(5.923)
Intensity of interethnic relations in												
neighborhood × Kirkuk (city)			.204	.225			.02	.027			.17	.172
			(1.859)	(1.948)			(.194)	(.239)			(1.793)	(1.672)
Individual-level control variables	Š	Yes	Yes	Yes	No	Yes	Yes	Yes	°Z	Yes	Yes	Yes
Law and order trust and attitudes	Š	Š	$^{ m N}_{ m o}$	Yes	No	No	Š	Yes	$ m N_0$	$N_0$	$ m N_0$	Yes
N	1,383	1,301	1,301	1,156	1,364	1,285	1,285	1,151	1,329	1,249	1,249	1,130
Pseudo $\mathbb{R}^2$	.013	.067	.132	.161	.032	.065	.144	.167	.117	.137	.191	.188

TABLE A3 (Continued)

		SOCIAL	Social Trust			INTERETH	INTERETHNIC TRUST		Wou	Would Consider Intermarriage	R INTERMAI	RIAGE
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Within workplace: Heterogeneous neighborhood	007	025	045	052	40.	.034	003	009	.052	*650.	.028	.016
Heterogeneous neighborhood × Kirkuk (citv)	(206)	.189***	(-1.388)	(-1.635)	(1.285)	(1.008)	_	(284)	(1.765)	(1.970)	(206.)	549)
	(3.899)	(3.328)	(1.790)	(1.780)	(4.015)	(3.596)	(1.794) $112*$	(2.498)	(3.341) (243***	(2.918)	(1.575)	(1.532)
	(1.949)	(1.864)	(.810)	(1.148)	(3.459)	(3.616)		(2.632)	(5.918)	(5.748)	(4.344)	(4.127)
Interethnic friends $\times$ Kirkuk (city)	.258*	.321***		.222*	.186	.189		.104	.076	.041	014	900'-
	(2.432)	(3.421)	(2.803)	(2.454)	(1.762)	(1.802)	(1.294)	(1.067)	(886.)	(.549)	(198)	(085)
Intensity of interethnic relations in workplaces							.210***	***157***			*	.163***
•			(4.636)	(2.590)			(7.101)	(5.257)			(6.717)	(5.843)
Intensity of interethnic relations in workplaces × Kirkuk (city)			.131**				980	880.			.064	690
			(2.693)	(2.525)			(1.849)	(1.851)			(1.640)	(1.647)
Individual-level control variables <sup>a</sup>	$ m N_{o}$		Yes	Yes	No	Yes	$\Lambda$ es	Yes	$^{ m N}_{ m o}$	Yes	Yes	Yes
Law and order trust and attitudes	$ m N_{o}$	No	$ m N_{o}$	Yes	$ m N_{o}$	$ m N_{o}$	Ñ	Yes	$^{ m N}$	$ m N_{o}$	$ m N_{o}$	Yes
N	1,690		1,601	1,433	1,666	1,584	1,584	1,429	1,639	1,554	1,554	1,411
Pseudo $R^2$	.028		.107	.137	.036	.061	.11	.133	.107	.13	.163	.16

Nore.—Coefficients refer to average marginal effects of  $\rho$  ( $\nu$  = max) (see text); t-values (in parentheses) are provided for references purposes (not entirely random sample).

<sup>a</sup> The equations contain controls for age, age squared, gender, education, social class, organization membership, and party membership.

<sup>\*</sup> P < .05.

<sup>\*\*</sup> P < .01.

<sup>\*\*\*</sup> P < .001.

# APPENDIX B Analyses of Civil Organizations and Political Parties as Interaction Spaces

TABLE B1

LOGIT REGRESSION ESTIMATES OF INVOLVEMENT IN HETEROGENEOUS INTERACTION

SPACES ON CITY, ETHNIC GROUP, AND CONTROL VARIABLES

	Heterogeneous Organization <sup>a</sup>	Heterogeneous Political Party <sup>a</sup>
Female gender	021	044
	(688)	(-1.402)
Age	.005	.012*
	(.811)	(2.154)
Age squared	.000	000*
	(786)	(-2.489)
Education (ref. = elementary):		
No education		.294**
		(2.938)
Secondary education	049	011
	(-1.255)	(312)
Postsecondary education	.058	.05
71	(1.311)	(1.312)
Education is missing	.096*	.138**
C : 1 1 ( C 1:C 1 1 )	(2.097)	(3.121)
Social class (ref. = qualified worker):		
Higher-grade professionals, administrators,	06	001
and officials	06	091
I	(818)	(-1.504)
Lower-grade professionals, administrators,	105*	024
and officials	105*	024
Colf amendanced	(-2.105) $043$	(521) 093*
Self-employed	043 $(775)$	
Unqualified workers	(773) 12	(-2.089) $.009$
Oriquanned workers	(-1.915)	(.153)
Students	(-1.913) 102	084
Students	(-1.892)	(-1.696)
Pensioners	.02	.038
Telisioners	(.193)	(.357)
Unemployed	275***	131
Onemployed	(-3.297)	(-1.930)
Social class is missing	076	062
books class is imponing	(-1.224)	(-1.123)
Ethnicity (ref. = Kurd):	( 1.221)	(1.120)
Arab	100*	189***
	(-1.998)	(-4.206)
Turkman	114***	198***
	(-3.448)	(-6.741)
Assyrian/Chaldean	196***	194***
	(-5.479)	(-5.700)
	( 0)	( 000)

TABLE B1 (Continued)

	Heterogeneous Organization <sup>a</sup>	Heterogeneous Political Party <sup>a</sup>
Kirkuk (city)	011 (398)	069** (-2.767)
N	1,037 .076	1,258 .099

Note.—Coefficients refer to  $\partial P(y=1)/\partial x$ ; *t*-values (in parentheses) are provided for reference purposes (not entirely random sample).

TABLE B2

LOGIT REGRESSION ESTIMATES OF INTERETHNIC FRIENDSHIP ON INVOLVEMENT IN HETEROGENEOUS INTERACTION SPACES AND CONTROL VARIABLES

	(1)	(2)	(3)	(4)	(5)
Female gender			021	014	023
			(793)	(489)	(672)
Age			.003	004	.006
0-				(575)	
Age squared			0	0	0
11ge squared			(106)	-	
Social class (ref. = qualified			()	(====)	()
worker):					
Higher-grade professionals,					
administrators, and					
officials			1	133*	029
				(-2.186)	
Lower-grade professionals,			( 1.701)	( 2.100)	(20)
administrators,					
and officials			002	082	.021
				(-1.716)	
Self-employed			025		.002
				(-2.418)	(.041)
Unqualified workers			( )	044	.004
				(851)	
Students			042		.006
			(978)	(-1.134)	
Pensioners			182*		
			(-2.255)	(-2.847)	
Unemployed			· /	109	'
F 15 11 11 11 11 11 11 11 11 11 11 11 11			(265)	(-1.419)	(815)
Social class is missing			\	094	058
			(773)	(-1.956)	(963)
Education (ref. = elementary):			()	(/	(/
No education			.034	.031	078
				(.343)	
			()	()	()

<sup>&</sup>lt;sup>a</sup> Limited to individuals who are members of an organization or party.

<sup>\*</sup> P < .05.

<sup>\*\*</sup> P < .01.

<sup>\*\*\*</sup> P < .001.

TABLE B2 (Continued)

	(1)	(2)	(3)	(4)	(5)
Secondary education	(-)	(-)	.059	.031	.015
Secondary education			(1.927)	(1.068)	(.399)
Postsecondary			(1.727)	(1.000)	(.077)
education			.117***	.141***	.043
			(3.396)	(4.145)	(1.108)
Education is missing			.027	.03	.009
			(.723)	(.863)	(.198)
Ethnicity (ref. $=$ Kurd):					
Arab			.031	032	.001
m 1			(.721)	(837)	(.012)
Turkman			.128***	.184***	.014
. (0) 11			(3.911)	(4.524)	(.313)
Assyrian/Chaldean			.292***	.302***	
Kirkuk (city)			(3.835) 147**	(4.170) 109*	102**
Kirkuk (city)				(-2.458)	
Heterogeneous			( 3.140)	( 2.436)	( 3.100)
organization	.087***		.053		.120*
organization	(3.695)		(1.876)		(2.427)
Heterogeneous organization	(0.0)0)		(1.070)		(2.121)
× Kirkuk (city)	.046		.209***		097
( ),	(1.501)		(4.033)		(-1.242)
Heterogeneous party	` ′	.047*	` ′	.01	158*
		(2.003)		(.314)	(-2.530)
Heterogeneous party					
× Kirkuk (city)		.113***		.235***	.223**
		(3.656)		(4.625)	(2.717)
Heterogeneous					
neighborhood					.171***
TT /					(4.974)
Heterogeneous neighborhood					002
× Kirkuk (city)					003 $(043)$
Heterogeneous					(043)
workplace					.068*
workplace					(2.160)
Heterogeneous workplace					(2.100)
× Kirkuk (city)					.084
(3-5)					(1.350)
N	1,063	1,282	1,047	1,258	700
Pseudo R <sup>2</sup>	.024	.022	.135	.142	.231
North Coefficients refer to		. 1			. 1 /:

Note.—Coefficients refer to average marginal effects of p ( $y = \max$ ) (see text); t-values (in parentheses) are provided for reference purposes (not entirely random sample). Limited to individuals who are members of an organization or party.

<sup>\*</sup> P < .05.

<sup>\*\*</sup> *P* < .01.

<sup>\*\*\*</sup> P < .001.

Ordinal Logit Regression Estimates of Quality of Ethnic Relations on Interethnic Friendship and Heterogeneous Interaction and Control Variables for Members of Civil Organizations or Political Parties TABLE B3

		SOCIAL TRUST <sup>a</sup>	Trust <sup>a</sup>			INTERETHN	ic Trust <sup>a</sup>		Woul	Would Consider	Intermarriage <sup>a</sup>	.GE <sup>a</sup>
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Kirkuk (city)	452***	518**	455**	467***	349**	448***	620**	558***	420***	420***	539***	436**
	(-4.794)	(-5.299)	(-3.812)	(-3.772)	-4.199)	(-5.021)	-5.297)	3.998)	-3.443)	(-4.372)	(-4.163)	(-3.188)
Heterogeneous neighborhood	.018	.018	023	061	**980	.058	.03	022	.126***	.116***	.108**	.048
	(.529)	(.497)	(562)	(-1.434)	(2.602)	(1.702)	(.750)	542)	(3.551)	(3.541)	(2.950)	(1.245)
Heterogeneous neighborhood												
× Kirkuk (city)	.313***	.255***	.266**	.159	.295***	.289***	.324***	.307***	.022	.115	.121	.083
	(4.129)	(3.364)	(2.915)	(1.719)	(4.537)	(4.266)	(3.697)	(3.526)	(.341)	(1.786)	(1.476)	(1.014)
Heterogeneous workplace	.162***	.128**	.154***	980.	.200***	.179***	.157***	.110*	*560.	.073	.078	.02
	(4.126)	(3.151)	(3.419)	(1.921)	(5.472)	(4.523)	(3.395)	(2.330)	(2.338)	(1.866)	(1.706)	(.421)
Heterogeneous workplace												
× Kirkuk (city)	.138	.247**	.214*	.117	.092	.11	*661.	.11	.07	050.	.14	.052
	(1.585)	(2.843)	(2.157)	(1.221)	(1.124)	(1.267)	(1.974)	(1.037)	(.745)	(.700)	(1.296)	(.468)
Heterogeneous organization	.133**	.154***	.141*	.177**	*480.	*060.	990.	.052	.106*	.117**	.067	.05
	(3.105)	(3.694)	(2.408)	(3.230)	(2.169)	(2.380)	(1.316)	(1.033)	(2.271)	(2.849)	(1.283)	(.950)
Heterogeneous organization												
× Kirkuk (city)	055	029	.104	02	083	003	.204*	.154	.328***	.218**	.336**	.320**
	(723)	(388)	(.957)	(193)	(-1.096)	(035)	(2.005)	(1.509)	(4.085)	(3.029)	(2.696)	(2.958)

Heterogeneous party			.109	790.			.003	.027			260.	.136*
			(1.777)	(1.152)			(.046)	(.502)			(1.640)	(2.248)
Heterogeneous party × Kirkuk (city)			205	161			147	165			031	16
			(-1.944)	(-1.628)			(-1.350)	(-1.569)			(266)	(-1.620)
Interethnic friends				023				.11				.166**
				(413)				(1.809)				(3.198)
Interethnic friends												
× Kirkuk (city)				.338**				.198				.177
				(2.807)				(1.457)				(1.861)
Individual-level controls <sup>b</sup>	$^{ m N}_{ m o}$	Yes	Yes	Yes	Š	Yes	Yes	Yes	No	Yes	Yes	Yes
Law and order trust and												
attitudes	oN	No	No	Yes	No	Š	No	Yes	No	No	No	Yes
N	1,054	1,038	764	703		1,007	746	691	1,005	686	728	681
Pseudo $\mathbb{R}^2$	.063	.102	.118	.196		960.	.107	.167	.052	.132	.159	.198

NOTE.—Coefficients refer to average marginal effects of p ( $y = \max$ ) (see text); t-values (in parentheses) are provided for reference purposes (nonrandom sample).

<sup>b</sup> The equations contain controls for ethnic group, age, age squared, gender, education, social class, organization membership, and party membership. <sup>a</sup> Limited to individuals who are members of an organization or party.

\* P < .05.

\*\* P < .01.

\*\*\* P < .001.

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