

Cross-Ethnic Interactions and the Influence of Politics

Evidence from Online Spaces and a Field Experiment in Bosnia and Herzegovina

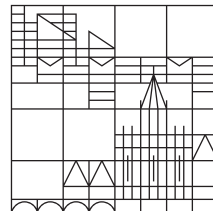
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Zusammenfassung

In der aktuellen gesellschaftlichen Diskussion taucht vermehrt ein möglicherweise geringer sozialer Austausch über Gruppengrenzen hinweg auf (Stichwort "Filterblase"). Dabei besagt eine weit vertretene Meinung, dass moderne Kommunikationstechnologien, darunter insbesondere das Internet, soziale Segregation verstärken. Bisher wurde dieses Phänomen allerdings noch nicht im Kontext einer multiethnischen Gesellschaft untersucht, obwohl davon ausgegangen werden kann, dass soziale Segregation deutlich gravierendere Folgen in solchen Gesellschaften hat, da diese von vornherein stärker von tiefgreifenden sozialen Trennlinien geprägt sind. In der vorliegenden Dissertation untersuche ich soziale Interaktionen über ethnische Gruppengrenzen hinweg, fokussiere dabei auf Bosnien-Herzegowina und auf die Auswirkungen, die die Politik auf die Ausgestaltung von interethnischen Interaktionen hat. Häufig wird argumentiert, dass der Politik eine zentrale Rolle bei der sozialen Konstruktion von ethnischer Identität zukommt. Gegenwärtig wurde aber noch nicht untersucht, inwiefern Politik ethnische Segregation verstärkt.

Die vorliegende Dissertation adressiert diese Fragestellung, indem sie zuerst untersucht, ob und in welchem Maße interethnische Interaktionen auf einer großen Bloggerplattform in Bosnien-Herzegowina stattfinden. Unter interethnischen Interaktionen werden hierbei soziale Interaktionen zwischen Angehörigen verschiedener ethnischer Gruppen verstanden. Die Ergebnisse zeigen, dass bosnische Blogger tatsächlich stark ethnisch segregiert sind, und dass das Ausmaß dieser ethnischen Segregation deutlich über das hinaus geht, was durch Charakteristika des Netzwerks oder soziodemografische Faktoren der Blogger erklärt werden könnte. Des Weiteren zeigt sich, dass politisch engagierte Blogger noch weniger als andere Blogger mit Angehörigen einer anderen ethnischen Gruppe interagieren, allerdings handelt es sich hierbei nur um eine schwache Tendenz.

Als nächsten Untersuchungsstrang betrachte ich die Auswirkungen, die Kommunalwahlen in Bosnien-Herzegowina auf die Dynamik interethnischer Interaktionen zwischen Bloggern haben. Im Kontext ethnisierte Politik kann davon ausgegangen werden, dass politische Akteure ethnische Identität als ein Instrument der politischen Mobilisierung verwenden. Ich erwarte, dass dies Auswirkungen auf die interethnischen Interaktionen zwischen Bloggern hat – genauer gesagt gehe ich davon aus, dass die Häufigkeit interethnischer Interaktionen im Vorfeld von Wahlen abnimmt. Diese Annahme wird von den Ergebnissen bestätigt. Tatsächlich nehmen interethnische Interaktionen im Vorfeld von Wahlen ab, allerdings verbleiben sie auch im gesamten Untersuchungszeitraum nach den Wahlen auf niedrigem Niveau. Zusätzlich untersuche ich, ob die Wahlen einen stärkeren Effekt auf Blogger haben, die aus ethnisch polarisierten Gemeinden stammen. Die Ergebnisse deuten in die Richtung dieser Annahme, sind allerdings nicht statistisch signifikant.

In einem dritten Untersuchungsstrang führe ich ein Feldexperiment durch, das Interaktionen zwischen bosnischen Politikern und Bürgern näher beleuchtet. Genauer gesagt untersuche ich, in welchem Ausmaß Politiker experimentell variierte Emailanfragen beantworten, und inwieweit die Antwortwahrscheinlichkeit von der ethnischen Identität und Parteizugehörigkeit des anfragenden Bürgers beeinflusst wird. Die Ergebnisse sind ermutigend: Bosnische Politiker zeigen sich insgesamt responsiv, und diskriminieren in ihrem Antwortverhalten wenig entlang ethnischer oder politischer Gruppengrenzen. Ausschließlich Politiker einer ethnischen Gruppe (Kroaten) antworten deutlich häufiger Bürgern ihrer eigenen Ethnizität, was ich mit dem Verhältnis dieser ethnischen Gruppe

zum bosnischen Staat erkläre.

Insgesamt leistet die vorliegende Dissertation einen wichtigen Beitrag zum Verständnis interethnischer Interaktionen in einer multiethnischen Gesellschaft, und dem Einfluß, den Politik auf diese Interaktionen hat. Auch die Onlinewelt ist ethnisch segregiert; ethnische Onlinesegregation tritt zusätzlich verstärkt zum Zeitpunkt politischer Wahlen auf. Allerdings diskriminieren Politiker – von denen oft behauptet wird, sie trügen maßgeblich zur Entstehung ethnischer Trennlinien bei – selbst deutlich weniger entlang ethnischer Merkmale als erwartet. Dies erkläre ich nicht zuletzt dadurch, dass Politiker möglicherweise nur geringfügig intrinsisch motiviert sind, ethnische Trennlinien zu verstärken, sondern vor allem den Anreizen des politischen Systems folgen, dies zu tun.

Abstract

In recent times, the argument of a lack of social interactions across group lines has been put forward repeatedly by journalists and scholars alike (so-called “filter bubbles”). Modern communication technology, and especially the Internet is supposed to be contributing to greater social segregation. This phenomenon has to date not been examined in the context of a multi-ethnic society. However, social segregation should be far more detrimental in multi-ethnic contexts, which are from the outset often characterized by deep-running social divisions. To examine social interactions across group lines, I focus on the case of Bosnia and Herzegovina and pay specific attention to the impact politics has on cross-ethnic interactions. It has long been argued that politics plays a substantial role in the construction and rendering salient of ethnic identity, however, it has to date not been examined whether politics contributes to decreasing cross-ethnic interactions.

To close this gap, this dissertation first estimates the existence and extent of cross-ethnic interactions on a large blogger platform in Bosnia and Herzegovina. By cross-ethnic interactions, I understand social interactions between members of different ethnic groups. I find that Bosnian bloggers are strongly segregated along ethnic lines, and that the level of segregation goes beyond what could be explained by network characteristics or sociodemographic attributes of the bloggers. Furthermore, I examine whether active engagement with politics makes bloggers less likely to interact with individuals from other ethnic groups. I find evidence for such a tendency, though the effect is not strongly pronounced.

Thereafter, I examine which impact municipal elections in Bosnia and Herzegovina have on dynamics in cross-ethnic interactions between bloggers. Given a context of ethnicized politics, where political actors frequently use appeals to ethnicity as a means to mobilize politically, cross-ethnic interactions should decrease in the run-up of elections. The results support this theory. However, cross-ethnic interactions do not revert to their higher pre-election levels once elections are over – during the entire time frame studied, they remain low. Additionally, I examine whether political elections have a stronger impact on bloggers from municipalities which are ethnically polarized. I find some limited evidence for this expectation, though the effect is not statistically significant.

Finally, I employ a field experiment to examine interactions between Bosnian citizens and representatives. More specifically, I investigate to which extent the responsiveness of politicians to experimentally varied email requests from presumed citizens changes as a function of citizens’ ethnic identity and party affiliation. The findings are encouraging: politicians are quite responsive to citizens across the board, and discriminate little along party or ethnic lines. I find solely that politicians from one ethnic group (Croats) give preference to coethnic citizens, which I explain by the strained relations of this ethnic group with the multi-ethnic Bosnian state.

Overall, this dissertation makes important contributions to our understanding of cross-ethnic interactions in multi-ethnic societies, and the impact that politics has on them. Social interactions appear to be segregated even in the online world. Additionally, online ethnic segregation tends to increase around election times. At the same time, politicians – who are often assumed to be responsible for those trends – do not discriminate along ethnic lines extensively, potentially because they are not intrinsically motivated to promote ethnic divides, but are incentivized to do so by the political system.

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1

Introduction

In recent times, a vivid public discussion has arisen about the existence and impact of increased social segregation in society and politics (so-called “filter bubbles”). This concept refers mostly to the phenomenon that different groups in society, and especially in the online world are assumed to live disconnected in their own realities, and interact little with one another. For example, the 2016 election of U.S. President Donald Trump is said to have been accompanied by large social divisions. In a 2016 survey, 15% of U.S. respondents indicated that they had stopped talking to a family member or a close friend as a result of the election (Szep, 2016). Various journalists have suggested that citizens live in filter bubbles with regard to political content (e.g. Bohannon, 2015; El-Bermawy, 2016; Wong, Levin and Solon, 2016). To counter such phenomena in the run-up to the German 2017 election, the German newspaper *Die Zeit* started the initiative *Deutschland spricht* (*Germany talks*) to increase interactions between citizens who differ strongly in their political opinions (Bangel et al., 2017). The organizers call it a “dating platform of the politically different-minded” (“eine Partnerbörse für politisch Andersdenkende”) and hope it will reduce polarization in society. Others propose that not only citizens, but also politicians interact little across group lines (King, 2017; Latham, 2014). For example, the 2017 German candidate for chancellor Martin Schulz has stated that political decision-makers in Brussels have lost touch with the lives of average citizens (Brössler and Kirchner, 2017; King, 2017). This lack of interactions across various strands of society is considered by most observers to be detrimental for a country’s political climate and social cohesion, and could lead to increased polarization of society. Latham (2014) argues in a similar stance that citizens have lost trust in

politics exactly because politicians live detached from normal people's reality.

Opinions differ as to how such societal segregation and lack of interactions across group lines come about. Several influential thinkers have proposed that *modern communication technology* not only allows to connect people, but also plays a pivotal role in creating modern-day societal segregation (Ebo, 1998; Garrett, 2009*b,a*; Morozov, 2012; Pariser, 2011; Sunstein, 2001). Filter algorithms and personalized content on social media lead to the phenomenon that people's opinions are more often confirmed than challenged, which could contribute to centrifugal movements in political opinion and worldviews. In fact, Mutz and Martin (2001) have shown empirically that selective exposure increases when content is more personalized, which often is the case in online media.

The issue of a drifting apart of society takes on an entirely different dimension in societies which are *per se* characterized by deep-running social divides. Such is the case in many multi-ethnic societies. In such societies, the population comprises several distinct ethnic groups (defined by separate languages, cultures, histories, religions etc.). In some of these societies, political and ethnic divides overlap, and politics has become ethnicized. An ethnicization of politics refers to the fact that ethnic interests are explicitly used to mobilize politically. Existing research has found that ethnicized political mobilization may lead to riots (Wilkinson, 2004). Kasara (2016) gives evidence that segregation in multi-ethnic societies can cause violence by eroding trust between ethnic groups. In multi-ethnic contexts, these examples suggest, overcoming social divides through extensive cross-ethnic exchange would be needed even more urgently than elsewhere as a means to increase social cohesion and prevent society from drifting apart.

As a first step, however, we need to apprehend the existence and extent of such social segregation in multi-ethnic societies, and understand whether and how much politics indeed is conducive to its formation. How much are individual-level social relations in multi-ethnic societies in fact divided along ethnic lines, specifically in the online sphere? And what role does politics play in creating micro-level ethnic divides in multi-ethnic societies? How do cross-ethnic relations between representatives and represented play out? These questions have to date not been answered by empirical research. In the light of the heated public discussion around deep-running social divides, the lack of empirical research in this area, especially with a focus on multi-ethnic societies, is puzzling. As a result, this dissertation sheds light both on cross-ethnic interactions between citizens, and on cross-ethnic interactions between representatives and represented. Each time, I examine which role politics plays in enhancing group-based segregation in social interactions. In the following, however, I first present a number of concepts central to the understanding of the empirical research presented in this dissertation.

1.1 Central Concepts

This dissertation examines divisions in cross-ethnic interactions and the impact of politics on them in the context of a multi-ethnic society with highly ethnicized politics. Yet before outlining the central contributions and summarizing the empirical chapters, it is necessary to introduce several core concepts. In the following paragraphs, I will consequently outline what I understand by ethnicity and cross-ethnic interactions, and by ethnicized politics. As Bosnia and Herzegovina constitutes the empirical case of this dissertation, I present how these concepts can be applied to the Bosnian context in Section 1.4.3 below.

1.1.1 Ethnicity and cross-ethnic interactions

The focus of this dissertation lies on cross-ethnic interactions. By cross-ethnic or interethnic interactions, I understand social interactions between individuals of different ethnic origin.¹ To define what constitutes ethnicity, I follow Chandra’s constructivist understanding. She defines ethnic groups as groups based on a shared belief in a common descent (2006). Connected to this belief are what she calls “descent-based attributes”, i.e. attributes associated with or believed to be associated with common descent (Chandra, 2006, 400). These attributes can include all or a combination of the following factors: a shared history, culture, language, religion and phenotypical features (cf. Chandra, 2006, 400; Vogt, 2014). Importantly, the *belief* in a common descent is assumed to be socially and politically constructed, and in consequence ethnic identities are seen to be socially constructed. This constructivist understanding of ethnicity is by many regarded as the antipode of an earlier, “primordial” (Shils, 1957) understanding, which sees ethnicity as a given, “unchanging and unchangeable” (cf. Geertz, 1963, 109). However, it is important to note that even early primordialists merely claimed ethnicity to be *perceived* as a given (e.g. Geertz, 1963). In other words, the *actors* themselves are often primordialists (Allahar, 1994; Gil-White, 1999). As a scholar, one could in consequence take on a “primordialism of the actor”, and assume, as Allahar (1994) has put it, “a socially constructed primordial identity”. Put differently, ethnicity is socially constructed to be perceived as primordial.

Ethnicity differs from other types of social identity in the sense that it is both more sticky and more visible (Chandra, 2006, 414ff). Its stickiness entails that it is harder to modify (Chandra, 2006, 414). For example, skin color and descent are harder to change than occupation or level of education. Ethnicity is also more visible, e.g. by an individual’s name, speech and physical features (Chandra, 2006, 416). In interactions with total strangers, people are as a result often able to intuitively tell the ethnicity of their counterparts, which is not possible to the same extent for most other social identi-

¹I use the term “cross-ethnic” and “interethnic” interchangeably. The opposite are *intraethnic* interactions, which refer to interactions between members of the *same* ethnic groups.

ties (Chandra, 2004, 38). This has important consequences for cross-ethnic interactions: due to its high visibility, ethnicity allows discriminatory behavior even between entire strangers. By discriminatory behavior, I mean that the nature and/or intensity of interactions differ as a function of the ethnicity of the individuals involved. In fact, Chandra argues that ethnicity constitutes “costless data” (2004, 37) about an individual’s identity, while data about other identities such as profession, tastes, assets or political viewpoints necessitates far more costly background checks. Costs include securing the cooperation of the individual concerned, or paying third parties to obtain or record data (Chandra, 2004, 37). Because data on ethnic identity is so cheap and openly available, Chandra postulates, ethnicity should constitute the default scheme along which individuals discriminate (i.e. differentiate) under heavy information constraints (Chandra, 2004, 44; see as well Birnir, 2007b).

1.1.2 Politics and ethnic politics

In the field of political science, various researchers have proposed that political elites play a pivotal role in the construction and rendering salient of ethnic identities (e.g. Eifert, Miguel and Posner, 2010; Posner, 2004, 2005; Wilkinson, 2004). For the elites, ethnicity can constitute a means to gain support from the masses (Fearon and Laitin, 2000), suggesting that ethnicity is in certain contexts constructed for *political* reasons. In line with this argument, Posner (2004) finds that ethnic identity is only socially salient in contexts where ethnic groups constitute a large enough support base for politicians to gain and retain office. Posner deduces from this finding that politicians mobilize along ethnic lines only when it makes sense to them politically.

Given such circumstances, however, ethnicity can take on central roles in politics. This phenomenon has been called *ethnic politics*, or *ethnic voting*, depending on the focus.² The exact definition of what constitutes ethnic politics varies. According to Huber (2012), an ethnicization of electoral behavior is simply equivalent with a correlation between ethnic identity and vote choice. If, for example, each ethnic group in a political system had its own party, correlation between group and vote choice would be perfect, implying a high ethnicization of politics (compare Figure 2.4 below). In line with this approach, Horowitz (1985, 293) argues that it would be sufficient to examine the support base of parties to identify a system of ethnic politics. The rationale behind this argument is that the support base has formed as a consequence of parties’ appeals: if parties only

²I consider here only a top-down perspective on ethnic politics in the sense that I see political actors as the driving force rendering ethnicity politically and socially relevant. Without being able to offer an extensive literature review here, it appears that findings from existing empirical studies speak more in favor of a top-down perspective than for a bottom-up perspective. A bottom-up perspective would mean that ethnicity is first rendered salient at the lower levels of society, and then travels upwards into the political sphere. While existing research has offered evidence that ethnicity is highly salient even on the micro-level (e.g. Habyarimana et al., 2007, 2009; Michelitch, 2015), I am not aware of authors who would have suggested or given empirical evidence that the micro-level renders ethnicity salient at the macro-level.

promote the interests of one ethnic groups, their support base will consequently consist exclusively of members of this group (Horowitz cited in Chandra, 2011). This approach has the advantage of remaining entirely agnostic to the *content* of politics, such as the content of election campaigns.

Chandra (2011), on the other hand, makes her definition of ethnic parties not dependent on parties' support base, but on their actions: in her view, an ethnic party is a political party "that champions the interests of an ethnic group". This signifies that not only the outcome (support base) is taken into account, but the causing actions of the relevant actors (politicians).³

Considering the close connection between politics and ethnic identity in many societies, I lay in this dissertation specific focus on the impact of politics on cross-ethnic interactions. If politics is assumed to play an important role in the construction and rendering salient of ethnic identity, does politics even influence cross-ethnic interactions, and more specifically how much and how frequently individuals from different ethnic groups interact? In other words, does politics increase ethnic segregation in individual-level social interactions? To apprehend the influence of politics, I am interested in contexts which increase the salience of politics. These comprise interactions between citizens and political representatives, but also the activity of writing about political topics, and times of political elections. I argue that we can track the influence of politics on cross-ethnic interactions when we look at what happens in contexts in which politics becomes more salient. As I will show in the course of this dissertation, politics understood in this manner does indeed influence the extent to which individuals form relations across ethnic lines. By showing this, the dissertation speaks to important gaps in our understanding of the interconnection between ethnicity, politics, and individual-level interactions, as I will outline in the following.

1.2 Gaps and Central Contributions

This dissertation makes several important theoretical, empirical, and methodological contributions to gaps in existing research. I shortly present these gaps and contributions, including references to the relevant literature, in the following.

1.2.1 Theoretical and empirical contributions

Identity-based online segregation in a multi-ethnic context Existing studies have shown that online networks tend to be segregated along lines of political ideology (Adamic and Glance, 2005; Barberá et al., 2015; Tremayne et al., 2006), nationality

³Normatively, ethnic politics can be both desirable and undesirable. It is desirable if it helps protect the interests of the groups concerned (e.g. Bird, 2014; Lijphart, 1977), but becomes undesirable if it leads to ethnic competition and a cementation of ethnic divides in society (e.g. Horowitz, 1985; Rabushka and Shepsle, 1972).

(Etling et al., 2010), or religious views (Kelly and Etling, 2008). Most existing systematic large- N studies have thereby focused on opinion-based segregation, such as the left-right political spectrum (Adamic and Glance, 2005; Barberá et al., 2015; Tremayne et al., 2006) or the secular-reformist religious divide (Kelly and Etling, 2008). At the same time, the existence and extent of online segregation based purely on lines of identity has not yet been studied. More specifically, there exists to date no systematic study of online ethnic segregation in a multi-ethnic society. This gap is puzzling, for at least two reasons. First, more and more social interactions take place online, increasing the importance of online dynamics for society at large. Second, we can assume that online segregation has more detrimental impacts in multi-ethnic societies, where social relations are regularly characterized by ethnic tensions. To close this gap, this dissertation offers a first systematic investigation of the existence and extent of online ethnic segregation in a multi-ethnic society.

Micro-mechanisms of ethnic politics As mentioned above, existing research suggests that political actors play a crucial role in the social construction of ethnicity (e.g. Eifert, Miguel and Posner, 2010; Posner, 2004, 2005; Wilkinson, 2004). However, existing research has to date neither theorized nor examined whether politics in such contexts contributes to the formation of micro-level social segregation. Theorizing and examining whether such is indeed the case closes an important gap in our understanding of the social fabric of multi-ethnic societies, and the impact of politics on it.

I examine this question both with regard to individual-level interactions between citizens (bloggers) and individual-level interactions between politicians and citizens. This will allow me to compare the two. Taking a broad perspective, we could expect that politicians tend to build ethnically more segregated relationships than citizens do among themselves. The reason for this expectation is the fact that politicians are often seen as the driving force behind the ethnicization of politics, and that this should be mirrored in politicians' own social interactions.

1.2.2 Methodological contributions

Fine-grained behavioral data on cross-ethnic interactions In this dissertation, I use exclusively Internet and modern communication technology (ICT) to collect data on interethnic interactions in their real environment. Today, ICT has more and more become an integral part of everyday life, so that it can now successfully be used by the social scientist to collect large amounts of data on individuals' behavior in their "natural environment". As Lazer et al. (2009) have put forward in their seminal article in *Science*, the capacity to collect and analyze "massive amounts of data" has already transformed the natural sciences, and is now about to transform the social sciences. I contribute to this ongoing transformation by using solely ICT-based data collection

both for observational and experimental data (cf. Zeitzoff 2014). I thereby exemplify the range of possible applications of ICT-based data collection in the social sciences.

Additionally, I offer a unique, fine-grained dataset on individual-level interactions in a multi-ethnic society. To date, it has been extremely difficult to obtain behavioral data on cross-ethnic interactions as they play out in their real environment. Most existing data either relies on self-reporting (which is inherently prone to all sorts of measurement and social desirability bias), or includes only very small sets of individuals (e.g. Aguilar and Molina, 2004; Aguilar, 2004). The data I introduce in this dissertation includes not only information on individuals' personal networks, but also a large number of additional variables on individual level, such as age, gender, interests, home town and ethnicity. This will enable researchers to investigate various additional research questions, going well beyond what is presented in the current dissertation.

Simulation for inference in diverse contexts Regression (and other parametric approaches) are without doubt still the most-used method of quantitatively oriented social scientists. While wisely applied and clearly of great value in many contexts, such methods are not without shortcomings. To be more precise, the results of parametric approaches rely on the assumption of a specific underlying distribution of the data that may very well be violated. Such violations are more likely in certain contexts, for example, when the number of observations is limited, or when the data is in a non-standard format. As a consequence, various researchers have proposed simulation as an alternative or supplementary method for (exact) inference. They have given diverging names to this procedure: simulation (King, Tomz and Wittenberg, 2000), permutation tests (Ernst, 2004), randomization inference (Gerber and Green, 2012; Ernst, 2004), and quadratic assignment procedure (Hubert and Schultz, 1976). In principle, all applications have in common that they simulate alternative distributions of the independent or dependent variable, or a combination of the two. By permuting values of these variables, it is possible to estimate what would happen if there was no systematic relationship between independent and dependent variable(s). In a second step, scenarios of no systematic relationship between independent and dependent variables can be compared to the actual scenario, thereby quantifying how systematic any relationship between independent and dependent variable(s) is. In contrast to parametric approaches, this method can be even applied to small datasets and non-standard data formats. Although the above-cited authors have presented various applications in different fields, to date a coherent application and discussion across various use cases has been missing. In this dissertation, I use simulation methods for inference in such diverse contexts as network data and experiments. Additionally, I extend existing approaches for further use cases, such as non-standard treatment assignments in experiments and for the measurement of group differences in networks. Simulation approaches are of great value for all researchers working with small datasets, non-standard data formats, and entirely new use cases,

which will not least occur more often as ICT-based methods of data collection become more common.

1.3 Set-Up of Dissertation

This cumulative dissertation consists of the present introduction, **three main empirical chapters**, and a conclusion. In the conclusion (Chapter 5), I summarize the lessons learned, critically reflect upon the contributions made, and discuss avenues for future research. The following paragraphs summarize the arguments, methods, findings and implications of each of the three main empirical Chapters 2 to 4.

1.3.1 Chapter 2 – Online Ethnic Segregation in a Post-Conflict Setting

In the first empirical study (joint work with Nils B. Weidmann), I speak to the literature and recent public debate on online segregation. As mentioned above, a number of existing studies have established that online networks tend to be segregated along lines of opinion, most prominently the left-right political cleavage, but also along secular-reformist religious divides. Such online segregation is assumed to be detrimental for inclusive public debates, and has been associated with a polarization of society at large. In multi-ethnic societies with deep ethnic cleavages, polarization may have even more tangible consequences. However, online segregation has to date not been studied in such contexts. To address this gap, this study first measures the existence and extent of ethnic segregation in a large online network. We then build on the existing literature on ethnic politics to theorize that politics should have an impact on the level of ethnic segregation in individuals' networks. We theorize that politically interested individuals identify stronger along ethnic lines, and therefore should have more ethnically segregated personal networks.

To examine these hypotheses, we focus on Bosnia and Herzegovina's largest blogger platform. Bosnia and Herzegovina is a country where ethnic identity is politically highly salient. We use large-scale webscraping for data collection, and are able to deduct the ethnicity of bloggers from slight language differences between ethnic groups. Using Monte Carlo simulation, we find evidence for pronounced ethnic divisions that cannot be explained by network characteristics, such as respective sizes of ethnic groups, or other socio-demographic attributes of the bloggers. Furthermore, we find that political bloggers tend to have indeed somewhat more ethnically segregated networks.

The findings signify that offline ethnic divides clearly transcend into the online sphere despite the absence of physical and geographical boundaries. In the light of the findings, it appears unlikely that a broad public exchange transcending ethnic categories will spontaneously develop online. Furthermore, those who currently dominate the political debate on the blogger platform appear to be individuals who exhibit a behavior that

discriminates more strongly along ethnic lines than the average.

1.3.2 Chapter 3 – Do Political Elections Fragment Ethnic Interactions? Evidence From a Bosnian Blogger Network

In the second study, I depart from the static view on the blogger network as examined in the previous study and take a closer look at temporal dynamics in cross-ethnic interactions. More precisely, I analyze how cross-ethnic interactions among Bosnian bloggers are impacted by the 2016 municipal elections in Bosnia and Herzegovina.

Existing research has long stated that politicians mobilize along ethnic lines as a means to gain support from voters (ethnic mobilization). Other research has shown that political elections can enhance the importance of ethnic identity among average citizens. This study is the first to examine how cross-ethnic interactions, and particularly the extent of cross-ethnic interactions is impacted by elections in a context where ethnicity plays an important role for political mobilization. To examine this issue, I analyze trends in the establishment of new friendships between bloggers of the same and opposing ethnicity. I collect data on all newly added connections between bloggers in a time window of ten weeks before and after the Bosnian municipal elections of October 2016. I find that bloggers tend indeed to connect with lower frequency with non-coethnics the closer the elections. However, this trend is not reversed after the elections: the willingness to connect with non-coethnics does not resume in the time frame studied. Furthermore, I investigate whether elections have a stronger effect on decreasing cross-ethnic interactions in ethnically polarized municipalities inhabited by two about equally sized ethnic groups. I argue that when two about equally sized ethnic groups enter into direct political competition, we should see fiercer and more ethnicized electoral competition, whose effect should be traceable in the blogger network. In line with this argument, I find some limited indications that the effect before the elections may indeed be stronger for bloggers from ethnically polarized municipalities, though the effect is not statistically significant.

These findings signify that online interactions and network dynamics are impacted by offline events, and that different offline factors such as local ethnic polarization and political elections potentially interact in shaping the nature of online interactions and network dynamics. This has important consequences for our understanding of the inter-relatedness of online and offline social reality, and for our understanding of the potential of social media to contribute to cross-ethnic dialogue in multi-ethnic countries.

1.3.3 Chapter 4 – Ethnicity and Partisanship: A Field Experiment on MP Responsiveness in Bosnia

In the third study (joint work with Miriam Hänni), I turn the attention from cross-ethnic interactions between bloggers to cross-ethnic interactions between politicians and

1.4. Relevant Aspects of Bosnia and Herzegovina

citizens. Again, I focus on the case of Bosnia and Herzegovina. We examine the extent to which politicians are responsive to citizens in general, and to citizens across ethnic lines specifically. We also examine the extent party affiliation plays for politicians' responsiveness. We hypothesize that politicians are more responsive to citizens from their own ethnic group, and to citizens who share their party affiliation. Additionally, we expect that ethnicity plays a more important role in Bosnia's ethnicized political system than party affiliation. To test these expectations, we run a field experiment where we send experimentally varied emails to Bosnian representatives from different administrative levels and the entire party range. The emails are sent by a presumed citizen inquiring about child benefits, and whose coethnicity and copartisanship with the representative we vary. In analyzing how the likelihood of a response to the email varies as a function of coethnicity and copartisanship, we find no support for increased responsiveness towards citizens with a shared party affiliation. We find support for increased responsiveness towards coethnics only among politicians from one ethnic group, namely Croat politicians. Furthermore, while the overall response rate is comparable to other more developed democracies, we find no support for the expectation that ethnicity is systematically more important than partisanship in explaining responsiveness.

These findings are encouraging, and especially as they appear in a context that would have suggested otherwise: overall responsiveness is relatively high, and ethnicity does not seem to be the only or most important factor explaining political responsiveness. We also discuss explanations for disparities in the ethnic responsiveness bias between politicians from different ethnic groups, and suggest diverging attitudes towards the multi-ethnic state as a possible explanation.

1.4 Relevant Aspects of Bosnia and Herzegovina

As all of the following three empirical chapters focus on cross-ethnic relations in Bosnia and Herzegovina, I offer in the subsequent paragraphs some short background information relevant for the understanding of the empirical chapters. More specifically, I shortly discuss historical impacts on today's ethnic relations, line out Bosnia's ethnic and administrative composition, and give a short overview of political institutions and ethnic voting in Bosnia. Finally, I introduce the blogger platform which forms the empirical base for Chapters 2 and 3.

1.4.1 Impact of the war on today's interethnic relations

During the Bosnian War from 1992 to 1995 which accompanied the disintegration of Yugoslavia, ethnic Serbs, Croats and Bosniaks fought against each other. Out of a pre-war population of about 4.4 million, more than 100,000 people were killed, and about half of all inhabitants were displaced by fighting, ethnic cleansing and economic collapse

(Šedo, 2010, 85; Tabeau and Bijak, 2005). Under the auspices of the U.S. and NATO, the Dayton Peace Agreement ended the war in late 1995. The Dayton Peace Agreement aimed at creating a country in which the formerly fighting groups could live together, and was therefore built on the idea of protecting the rights of each ethnic group. However, by aiming at protecting the rights of each ethnic group, it cemented the concept of ethnicity into Bosnia’s political system (McMahon and Western, 2009). In fact, today’s Constitution of Bosnia and Herzegovina is still the one drafted out in an annex of the Dayton Peace Agreement (see UN Peacemaker Database, 2017).

As Šedo (2010, 85) points out, none of the three ethnic groups obtained all its objectives during the Bosnian war or in the Dayton Agreement. More specifically, ethnic Serbs aimed for full independence (Šedo, 2010, 85), which they did not obtain. Instead, a mainly Serbian federal entity (the Republika Srpska, short RS) was created. The Croats had hoped to obtain a mainly Croat federal entity (Šedo, 2010, 85), but instead share today a federal entity with ethnic Bosniaks (the Federation of Bosnia and Herzegovina, short FBiH). Ethnic Bosniaks aimed for stronger national institutions and an abolition of the federal system (Šedo, 2010, 85). According to Šedo (2010, 85), these unmet goals are still of political relevance today and are frequently used to mobilize voters. Differences in the relationship of Bosnia’s three main ethnic groups to the Bosnian state are of specific importance for Chapter 4 of this dissertation, where we find evidence that these might impact how cross-ethnic relations between politicians and voters play out in today’s Bosnia.

1.4.2 Bosnia’s ethnic and administrative composition

As mentioned above, ethnic Serbs, Croats and Bosniaks constitute the main ethnic groups in Bosnia and Herzegovina. The 2013 Bosnian census was the first (and so far only) census after the Bosnian War, enumerating the entire Bosnian population. The Agency of Statistics of Bosnia and Herzegovina (2016) provides fine-grained results at municipality level. According to this census, ethnic Bosniaks constitute 50.11% of the population, Serbs 30.78% and Croats 15.43%.⁴ 2.73% identify as “Others”, a category that includes Roma, Jews, and other ethnic minorities.

Figure 1.1 displays the administrative and ethnic set-up of Bosnia (figure taken from Nisser and Weidmann, 2016). Panel A displays the three administrative entities of Bosnia and Herzegovina: the Republika Srpska, the Federation of Bosnia and Herzegovina, and the Brčko District. Panels B to D show the distribution of ethnic Bosniaks, Serbs and Croats in each of Bosnia’s 143 municipalities. As the panels indicate, the Federation of Bosnia and Herzegovina is mainly populated by ethnic Bosniaks, with a few mainly Croat municipalities. Only two municipalities in the FBiH have a Serb majority. Serbs form a clear majority in the Republika Srpska, while the Brčko District is about equally split

⁴Own analysis based on data provided by the Agency of Statistics of Bosnia and Herzegovina (2016).

1.4. Relevant Aspects of Bosnia and Herzegovina

between all three ethnic groups. Figure 1.1 thus offers evidence of both an administrative and geographical separation of ethnic groups in Bosnia.

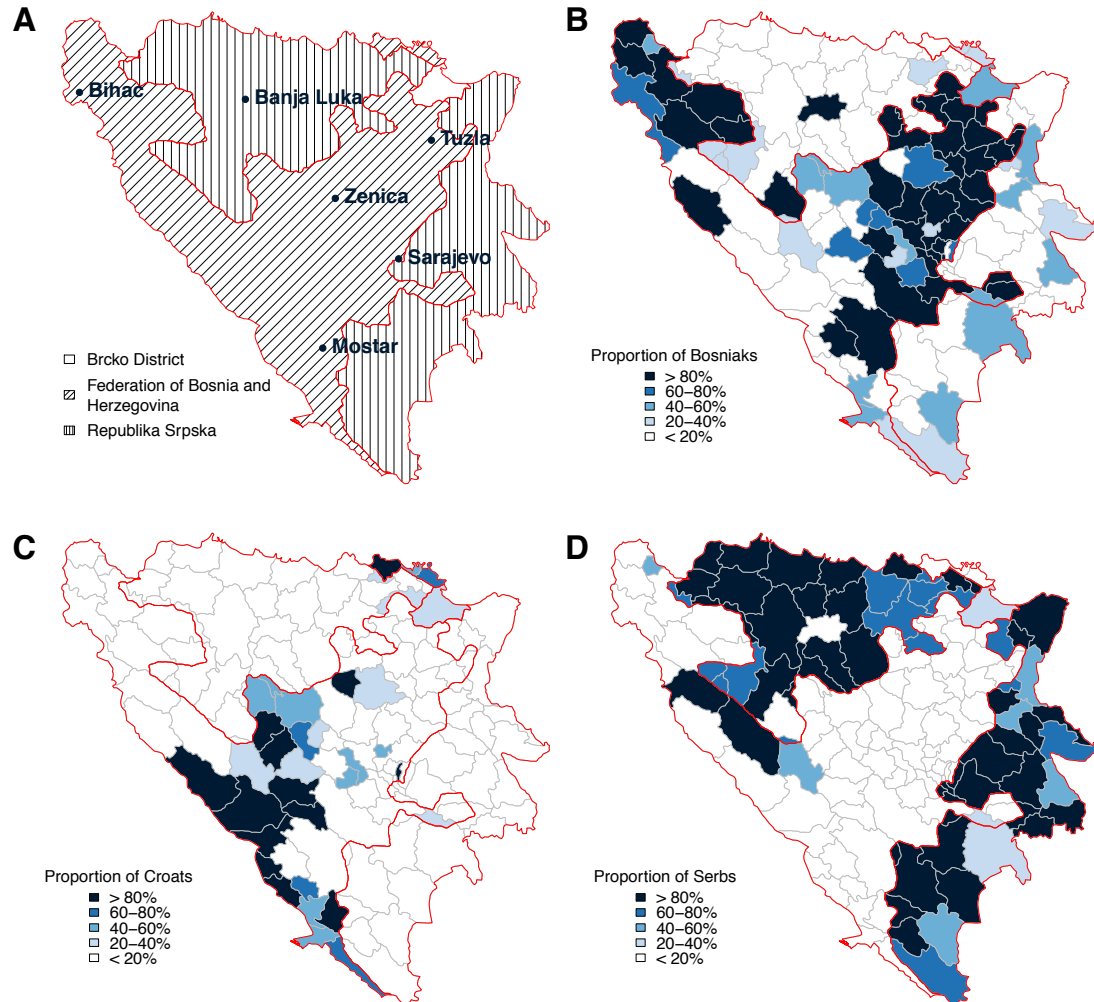


Figure 1.1: (A) The three administrative entities of Bosnia and Herzegovina (Brčko District, Federation of Bosnia and Herzegovina, and Republika Srpska), as well as the largest six cities of the country. The proportion of self-declared Bosniaks (B), Croats (C) and Serbs (D) across 143 municipalities in Bosnia and Herzegovina. Data on the ethnic composition comes from the 2013 Bosnian census (Agency of Statistics of Bosnia and Herzegovina, 2016), data on the geographic boundaries of administrative entities from the GADM dataset (Hijmans, Garcia and Wiecek, 2011). The figure is taken from Nisser and Weidmann (2016).

1.4.3 Political institutions and ethnic voting in Bosnia

Not only administrative units, but also the political system and politics in general are strongly influenced by ethnic identity. In Chapters 2 to 4 of this dissertation, I refer to this fact as an “ethnicized political system” or as “ethnic politics”. Some background

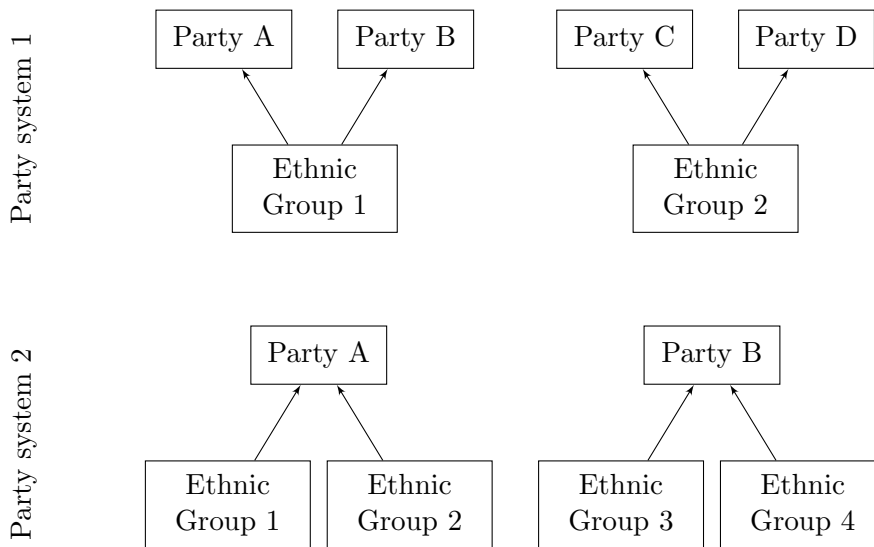


Figure 1.2: Two types of ethnic party systems, adapted from Huber (2012).

information to fully comprehend the influence of ethnicity in Bosnian politics is provided in the following.

As Šedo (2010, 97) underlines, most of Bosnia’s large political parties are linked to one particular ethnic group, and can be classified as nationalist (i.e. ethnic)⁵ with regard to their political programs. This signifies that there are several political parties per ethnic group, but that parties receive primarily votes from members of one ethnic group. This circumstance is illustrated in the upper panel in Figure 1.2, and has led Hulseley (2010, 1135) to argue that the “Bosnian party system is best viewed as three separate party systems, one for each ethnicity”.

Yet the role of ethnicity in politics goes beyond Bosnia’s political parties. To give two additional examples, each ethnic group in Bosnia’s parliamentary bodies can decide that a decision is “destructive of a vital interest of the Bosniak, Croat, or Serb people”, and thereby stop any ongoing legislation (Constitutional Court of Bosnia and Herzegovina, 2016). Additionally, the presidency of Bosnia and Herzegovina consists of three members from the three ethnic groups (Constitutional Court of Bosnia and Herzegovina, 2016). Each president member has a veto power in case they consider a presidency decision to be “destructive of a vital interest of the Entity from the territory” from which they were elected (i.e. of the ethnic group they represent⁶), which stops a presidential decision from

⁵In the Bosnian context, “nationalist” refers to a specific ethnic agenda, as ethnic groups are also called “nationalities”.

⁶In fact, this veto power is indeed given along regional, not ethnic lines. However, since regions are dominated by different ethnic groups, this clearly has an ethnic component and is generally understood and used in such terms (Bahtić-Kunrath, 2011, 904). As Bahtić-Kunrath (2011, 904) points out, Serbian politicians have an more favorable position as veto players, since Croats and Bosniaks share one regional entity, and hence have a more difficult time outvoting one another.

taking effect. These mutual veto-rights often slow down the political process (Bahtić-Kunrath, 2011), and cement a thinking of ethnic antagonism in politics.

1.4.4 Blogger platform

Chapters 2 and 3 of this dissertation examine cross-ethnic relations on the largest blogger platform of Bosnia and Herzegovina, *blogger.ba*. In the following, I shortly offer some background information on this platform. According to Džihana, Čendić and Tahmaz (2012, 41), *blogger.ba* belongs to the top three local websites of Bosnia and Herzegovina, and had about 250,000 real users in Bosnia, and some 400,000 additional users outside the country in 2011 (newer numbers are not available). The reach inside the country is estimated to be 19% (Džihana, Čendić and Tahmaz, 2012). In other words, 19% of the Bosnian population had visited the platform at some point in 2011. The platform was founded in 2007, is free for use and was until 2015 run by the Bosnian news portal *klix.ba*. In early 2015, it was acquired by Dragana Djermanović, a Serbian businesswoman and CEO of an influential Internet marketing agency.⁷

As an example of an influential blog hosted by the platform, Džihana, Čendić and Tahmaz (2012) mention Saudin Bećirević, who published war memoirs on the platform, and has reached more than 750,000 unique visitors.⁸ According to an article on the news portal *klix.ba*, Saudin Bećirević' blog quickly became one of the most visited blogs in Bosnia and Herzegovina.⁹ As a result from the success of his blog, Saudin Bećirević published a best-selling book containing his war memoirs, with texts based on his blog. While this is only an anecdote, it indicates that a blog from this platform has reached circles going well beyond the blogosphere.

⁷See <http://www.klix.ba/biznis/blogger-ba-ipak-nastavlja-svoj-rad-novi-vlasnik-pepper-communications/150220025> and <http://draganadjermanovic.com/en/about-me/> [2017-03-14].

⁸Saudin Bećirević' blog can be found at <http://boreokoociju.blogger.ba>. Saudin Bećirević died unexpectedly in 2009, so his blog is no longer updated today.

⁹See <https://www.klix.ba/vijesti/bih/u-sarajevu-preminuo-saudin-becirevic/091121003> [2017-03-14].

2

Online Ethnic Segregation in a Post-Conflict Setting

Annerose Nisser and Nils B. Weidmann

Abstract

Existing research has shown that online networks are often segregated along identity lines, such as political ideology or religious views. Although online segregation should be specifically detrimental when appearing between ethnic groups in a post-conflict setting, to date we have no systematic evidence on the level of online ethnic segregation. To close this gap, the present study examines online ethnic segregation in a large ethnically mixed blogger network in a post-conflict society, Bosnia and Herzegovina. Since politics has been found to enhance ethnic divides in the offline world, we additionally examine whether segregation is higher for bloggers engaging with political topics. Using large-scale webscraping, automated text analysis and Monte Carlo simulation, we find evidence for pronounced ethnic divisions. Furthermore, we find that political bloggers tend to have more ethnically segregated networks. The findings show that a broad public exchange transcending ethnic categories remains limited in the online context we study, and that those who dominate the online political debate tend to be those who in their social interactions put even more weight on ethnic categories than the average.

Keywords

Online segregation; online fragmentation; homophily; ethnicity; blogging

2.1 Introduction

Existing research has shown that online networks are often segregated: they cluster along political ideology (Adamic and Glance, 2005; Barberá et al., 2015; Pariser, 2011; Tremayne et al., 2006), national lines (Etling et al., 2010), or religious views (Kelly and Etling, 2008). While the concept of segregation has been called differently (online ghettos, online enclaves, echo chamber, online homophily, audience fragmentation, selective exposure, or filter bubble), the phenomenon is generally assumed to be detrimental to an inclusive public debate, and to contribute to the polarization of the larger public (Barberá et al., 2015; Gitlin, 1998; Prior, 2007; Sunstein, 2001). El-Bermawy (2016) has even argued that ‘the filter bubble is destroying democracy.’ While this claim may be exaggerated, we have good reason to be concerned about online segregation: a lack of contact between individuals of different groups (Allport, 1954) and a lack of contact with conflicting opinions (Mutz, 2002) has been associated with lower tolerance towards other groups and other opinions.

The existence of online segregation should be of even greater concern in countries with deep-rooted ethnic cleavages, such as countries that have experienced violent conflict in the past. In such contexts, political and societal polarization resulting from online echo chambers could have very tangible consequences. Yet, online fragmentation has to date been mainly studied in relatively ‘tame’ political contexts, such as cleavages between Democratic and Republican bloggers in the U.S. (e.g. Adamic and Glance, 2005; Barberá et al., 2015; Colleoni, Rozza and Arvidsson, 2014; Tremayne et al., 2006). Additionally, existing research has not yet examined whether politics exacerbates online fragmentation, although politics frequently constitutes a contested and emotionally charged issue. To close this gap, the present study investigates online fragmentation between ethnic groups in a multi-ethnic, post-conflict society, and examines whether engagement with and active interest in politics increases online ethnic fragmentation.¹ By ethnic groups, we understand groups defined by a (belief in a) shared history, common descent, language and/or phenotypical features (Chandra, 2006; Vogt, 2014). By definition, ethnic identities are less malleable and more easily visible than most other identities (Chandra, 2006). We focus on the case of a large blogger network in Bosnia and Herzegovina. Bosnia and Herzegovina experienced violent conflict between ethnic groups in the 1990s, and the ethnic cleavages central to this conflict are still dominant in today’s political life. We expect that offline segregation and ethnic polarization transcend into the online sphere, and that bloggers become ethnically segregated despite the facts that individuals’ ethnicity is more difficult to identify and geographical separation

¹It is to our best knowledge the first study examining online ethnic segregation in a post-conflict setting. Ruesch (2011), focusing on a context of active conflict (Israel/Palestine), conducts a qualitative study of Facebook groups, and comes to the conclusion that ‘virtual spaces bear a potential for increased intergroup communication, yet these potentials are only realized to a very limited degree’. Our study differs in methodology and scale, and in the fact that we take into consideration the influence of political engagement on ethnic segregation.

is overcome online. Furthermore, we expect that engagement with politics increases the level of ethnic segregation in bloggers' personal networks. For the offline world, it has been argued that ethnicity gains cultural and social importance when political actors 'play the ethnic card' as a strategy to gain support. We argue that politics in a post-conflict society is a sensitive, contentious and emotionally charged issue. In line with the argument that threat and contentiousness increases individuals' search for consonant information (Lavine, Lodge and Freitas, 2005), we expect that politically engaged bloggers are more ethnically segregated than other bloggers. Our findings support this argument: bloggers in Bosnia and Herzegovina are highly ethnically segregated, and the existing level of segregation is not explained by any sociodemographic or network factors except ethnicity. Moreover, we find indeed that bloggers writing on political topics establish more ethnically segregated networks than other bloggers.

Our findings suggest that the fragmentation of information exchange and communication along ethnic lines cannot purely be explained by ethnically segregated institutions in the offline world, but continues to exist in an environment where social control and physical boundaries are largely absent, and ethnic categories can exert influence only through subliminal cues. Furthermore, our findings suggest that engagement with politics indeed impacts the ethnic composition of bloggers' personal networks. This implies that politics as an often contested, emotionally and ethnically loaded issue influences the information environment an individual chooses. In other words, those who actively engage in the online political debate tend to be ethnically more segregated than those who engage in other online debates, such as discussions around sports or fashion.

The study proceeds as follows: We first present the existing literature on ethnic segregation and the impact of politics on interethnic relations, and introduce our hypotheses (Section 4.3). We then describe the empirical case examined in our study, as well as language peculiarities of the Bosnian context important for carrying out our study. We also offer an overview of the coding of key variables and the research design (Section 2.3). Finally, Section 4.5 presents our findings. In the last section of this paper, we discuss the implications of our findings, as well as next steps to take in future research.

2.2 Theory and Hypotheses

Online networks have been found to be fragmented around political ideology, especially the Democrat-Republican divide in the U.S. (Adamic and Glance, 2005; Barberá et al., 2015; Colleoni, Rozza and Arvidsson, 2014; Tremayne et al., 2006), national lines (Etling et al., 2010), and religious views (Kelly and Etling, 2008). By online *fragmentation* or online *segregation*, we refer to the fact that people preferentially connect and exchange information with others that are like-minded or similar. Although this phenomenon even occurs in offline contexts, there are two reasons why it is of specific relevance online. First, the Internet is a 'high-choice environment' (Garrett, 2009a) where individuals are

free to choose their sources of information and their interaction partners from a large set of available options. While people’s interaction partners are often set by the environment in offline contexts, people have an easier time to self-select into segregated, homogeneous environments online. Second, algorithms on search portals and social networking sites are optimized to show content that individuals tend to like, and this is most often content similar to what individuals have seen before (Ebo, 1998; Pariser, 2011). To summarize, people’s tendencies of choosing similar or like-minded interaction partners can be enhanced online by (1) the large set of available options, and (2) by the design of online services. For these reasons, Morozov (2012) speaks of the ‘Splinternet’, and Ebo (1998) of ‘cyberghettos’.

But why should we care about the phenomenon of online segregation? Lately, the phenomenon has been discussed in the context of elections, especially the 2016 election of President Trump in the U.S. (e.g. Wong, Levin and Solon, 2016). It has been argued that online segregation can explain public polarization, and exacerbate societal conflicts. The argument is that inside a context of online fragmentation, opinions are seldom challenged, and most often reinforced. Being primarily exposed to corroborating information would lead different parts of the public to drift apart. In fact, Mutz (2002) shows that exposure to dissonant political views enhances political tolerance. Others have argued that exposure to conflicting views is central to a democratic citizenry (Mutz and Martin, 2001; see Habermas, 1996). Furthermore, social psychologists have long proposed that contact with those who are different decreases prejudice and has long-term positive consequences on social relations (especially the contact hypothesis by Allport, 1954; for an application to online contexts see Amichai-Hamburger and McKenna, 2006). Hence, we should be concerned about online fragmentation, as it may have detrimental consequences for social relations in society at large.

As mentioned in the introduction, political and societal polarization resulting from online fragmentation can have specifically tangible consequences in multi-ethnic societies with a history of armed conflict, where interethnic relations often remain tense. This leads us to the question of whether ethnic groups are as fragmented as groups defined by political ideology. Thelwall (2009) offers evidence of ethnic homophily between *Myspace* users in the U.S. However, the U.S. is a relatively ‘tame’ context. Post-conflict societies are often characterized by deep mistrust between ethnic groups (cf. Håkansson and Sjöholm, 2007). As the offline world is segregated (e.g. schools, the media and public administration), ethnic segregation may be perceived as something normal in such countries. At the same time, online spaces could, in the absence of physical barriers and a low visibility of ethnic markers, provide interaction opportunities across ethnic divides. Still, ethnic markers such as language or name (e.g. Dunning and Harrison, 2010; Habyarimana et al., 2007) remain often at least partly visible in the online sphere, enabling people to intuitively identify the ethnicity of their counterpart. Given the existence of ethnic markers and as a result from mistrust and habit from offline networks, people

should therefore strongly prefer interaction partners from their own ethnic groups even in online contexts. This constitutes our first hypothesis:

Hypothesis 1: Online interactions in post-conflict societies exhibit ethnic segregation.

Once we have established the existence and extent of online segregation in a multi-ethnic society, we are interested in whether active engagement with politics makes individuals choose more homogeneous networks. The existing literature assumes that politics is an important factor explaining ethnic divides in multi-ethnic societies. Proponents of a constructivist understanding of ethnicity assume that ethnicity becomes salient when political actors, so-called ‘ethnopolitical entrepreneurs’ (Brubaker, 2002), have an interest in mobilizing along ethnic lines (e.g. Bates, 1974; Ferree, 2006; Posner, 2005). According to this argument, Eifert, Miguel and Posner (2010) show that the importance of ethnic identity among average citizens increases with the temporal proximity of presidential elections: the closer the next election, the more likely are respondents to name ethnicity as their most important identity. The authors explain this by political actors ‘playing the ethnic card’ as a means to gain votes, which in turn impacts how average citizens relate to their ethnic identity. Michelitch (2015) finds that non-coethnics are more disadvantaged in taxi price negotiations in Ghana around election time. More specifically, non-coethnics have to pay higher prices for a taxi ride during election time. Michelitch (2015) explains this by the fact that the election campaign creates an ethnically heated environment that makes individuals discriminate along ethnic lines.

We argue that politically engaged individuals should have more segregated personal networks for two reasons. First, politics in multi-ethnic societies often constitutes a contested, emotionally and ethnically loaded issue. Research on selective exposure and information seeking has shown that individuals have a higher preference for consonant information when they feel threatened (Lavine, Lodge and Freitas, 2005). Since politics frequently constitutes a contested issue in these contexts, politically engaged individuals may more strongly than others seek consonant information. Yet individuals will be more likely to find consonant information among their coethnics on the topics they care about if we assume that political opinions are more ethnically homogeneous within than across ethnic groups.² Second, politically engaged individuals may just care more about ethnicity if they live in a context where ethnicity and politics are frequently evoked together: as politically engaged individuals, they are more frequently exposed to the issue of ethnicity. As a result, they may develop a stronger preference for coethnics, and discriminate more along ethnic lines when choosing their sources of information. In consequence of these two factors, we expect that politically engaged individuals have more ethnically segregated personal networks. This constitutes our second hypothesis:

²In contexts where a strong alignment between vote choice and ethnic identity is prevalent (see e.g. ?), as is the case in many multi-ethnic societies, we have all reason to expect a stronger homogeneity of political opinions within than across ethnic groups.

Hypothesis 2: Political bloggers have more segregated networks than non-political bloggers.

In the subsequent section, we present our case and the research design that tests these hypotheses.

2.3 Case Selection and Methods

In the following section, we first introduce the case our study focuses on: Bosnia and Herzegovina, and the country’s largest blogger platform. We then give an overview of the methods we employ, specifically aspects of the measurement of ethnicity, segregation and political engagement.

2.3.1 Bosnia and Herzegovina

We choose the Bosnian case for different methodological and practical reasons. Bosnia and Herzegovina is representative for a country where ethnic identity and ethnic divisions transcend into public administration and politics. Bosnia’s constitution sets out three ethnically defined ‘constituent people’: ethnic Bosniaks, Serbs and Croats (Bochsler, 2012; Claridge, 2010; Milanovic, 2010). Most political parties are linked to one of the three ethnic groups (Šedo, 2010). Furthermore, political institutions give ethnic groups extensive veto rights that they can and do use against one another (Bahtić-Kunrath, 2011). Political mobilization often takes the shape of appeals to ethnicity (e.g. Hulse, 2010).

Before the war of the 1990s, the inhabitants of Yugoslavia were considered to speak one common language, Serbo-Croatian. After the war, however, language was used as a means to enhance ethnic identities, and thus, differences between languages were encouraged by political actors, for example through the publication of new grammar books (Bugarski, 2012; Okuka, 1998). As a result, language is today a marker of ethnic identity (e.g. Tolimir-Hözl 2009, 2011*a,b*).³ At the same time, differences between languages have remained small (e.g. Kordić, 2008). This signifies that language barriers are negligible and that all ethnic groups can communicate with ease with one another, while being able to infer the ethnicity of their communication partners from their language. For our research, this constitutes a unique situation. The existing language differences allow us to determine the bloggers’ ethnicity from the texts they write on their blogs. At the same time, it is important to note that any observed segregation between ethnic groups on the blogger platform cannot be explained by linguistic barriers to communication, as differences between languages have remained very small.

³The statistical correlation between ethnicity and language is higher than 99% for all three ethnic groups, see Section B.3 of the Appendix.

A final consideration for our case selection is the fact that many Bosnians are active Internet users. By the end of 2013, about 58% of the Bosnian population had Internet access (Communications Regulatory Agency 2014; numbers for later years are not yet available). Furthermore, blogging is a common way in Bosnia of sharing one’s thoughts and connecting with old and new friends. While there are other smaller websites used by Bosnian bloggers, we focus on the country’s largest blogger platform, *blogger.ba*. We introduce this platform in more detail in the following section.

2.3.2 Blogger platform: Data collection and sample description

As mentioned in the introduction, *blogger.ba* belongs to the top local websites in Bosnia and Herzegovina, and has reached about 20% of the Bosnian population in 2011 (Džihana, Ćendić and Tahmaz, 2012). According to the website’s own information, about 340,000 bloggers write on some 312,000 blogs on this site—statistically, this is one blogger for each seventh Internet user in Bosnia and Herzegovina. All bloggers have a personal profile where they publish sociodemographic information on themselves, such as their age, gender and home town. Also, importantly for our purpose, blogger profiles include a list of the blogger’s favorite blogs, comparable to friendship ties on social networking sites. Since many bloggers make active use of this feature, the blogger platform resembles a large social network.

All data used for this study are publicly available on the website, and no registration is necessary to access the data. For our data collection, we use a Python script that automatically extracts all necessary data. Data was collected between August 2015 and February 2016; the study is based on the state of the blogger network in February 2016. To obtain the sample, we use the following procedure: We start with a randomly chosen blogger and obtain all favorite markings of this blogger. In the next step, we obtain all favorite markings of the newly added bloggers, and then repeat the previous step. We stopped the procedure when no more than a few new bloggers were added in each step.⁴ As a result, more active and popular bloggers have a higher likelihood to end up in the sample. This does not constitute a problem, as we are especially interested in bloggers with a certain level of activity and popularity. The procedure results in an original sample of 82,886 bloggers.

In a second step, we restrict the sample to bloggers with a certain level of activity: we only include bloggers who follow at least ten blogs, and who are followed by at least ten others. Furthermore, we only include bloggers that have authored at least ten blog posts. Choosing a lower threshold would leave us with a bigger sample (see Section B.2 of the Appendix for exact details). However, setting the threshold sufficiently high is important for the subsequent analysis, since we are able to determine the bloggers’ language (and thereby their ethnicity) only if they have authored a sufficient number of

⁴The number of new bloggers per day dropped from 20,816 at the beginning of the process to 425 on the last day of the collection effort.

blog posts. Furthermore, we are interested in the level of ethnic segregation inside the bloggers' connections, which is why we include only bloggers with a sufficient number of connections. Finally, restricting the sample in this manner allows us to effectively exclude spam blogs, which are written either with the aim of promoting a certain product or simply contain meaningless text. Spam blogs are only rarely followed by other bloggers, and are therefore effectively excluded using this threshold.

This procedure leaves us with 5,383 bloggers, 6,111 blogs, 667,367 blog posts and 439,625 connections between bloggers. Summary statistics including sociodemographic variables are found in Section B.1 in the Appendix.

2.3.3 Methods

In the following section, we present our research design. This includes (1) the procedure for determining the ethnicity of bloggers, (2) our measure of ethnic segregation, and (3) determining whether a blogger is politically engaged.

Determining the ethnicity of bloggers As mentioned earlier, we take advantage of slight language differences between Bosnian, Croatian and Serbian (see Tolimir-Hözl, 2009, 2011a, and our own analysis in Section B.3 of the Appendix). More specifically, we build on the approach of computer linguists (Tiedemann and Ljubešić, 2012), who provide lists of words that effectively distinguish between Bosnian, Serbian and Croatian. We use these lists to compute three scores for each blog post that indicate how likely a post is written in each of the three languages (Bosnian, Serbian and Croatian). We sum up the three language scores by blogger and assume that the most likely language of a given blogger is the one with the highest additive score. This procedure takes into account the fact that bloggers might sometimes mix languages, and allows us to average over a large number of texts which were often written over an extended period of time.

Using this procedure, we find that 76% of the bloggers write mainly Bosnian texts, 16% write in Croatian and 7% in Serbian.⁵ Compared to data from the 2013 Bosnian census (Agency of Statistics of Bosnia and Herzegovina, 2016), the share of ethnic Serbs is lower, and the share of ethnic Bosniaks is higher among bloggers than among the population (50% of the Bosnian population are ethnic Bosniak, 15% are ethnic Croat, and 30% are ethnic Serb). We believe that this asymmetry can be mainly explained by the fact that bloggers with Serb ethnicity, especially those with strong ethnic ties, have 'migrated' to Serbian platforms, for example *blog.rs*.

Measuring segregation For measuring ethnic segregation, we follow the approach by Echenique and Fryer (2007), who argue that a measure of segregation should be disaggregated to the level of individuals. To measure segregation in this manner, we look

⁵The language of 0.8% of the bloggers could not be coded with certainty, which is why we exclude them from the sample.

at connections between bloggers, more specifically favorite markings: bloggers can mark other blogs as their favorites. Since the design of the platform does not allow bloggers to share blogs, marking someone’s blog as favorite can be interpreted as a sign of support or interest in the blog’s owner. In other words, the design of the platform allows us to infer a blogger-blogger connection from the observed blogger-blog connection, and to see whether bloggers who mark each other as favorites tend to be members of the same ethnic group. Note that those markings are directed and not necessarily mutual, i.e. if blogger A likes blogger B’s blog, blogger B does not necessarily like blogger A’s blog. Put differently, favorite markings rather resemble the ‘follow’ function on Twitter than friendship ties on Facebook.

We quantify the level of a blogger’s ethnic segregation by calculating his/her intra-ethnic link share. The intra-ethnic link share designates the number of favorite markings of coethnic bloggers divided by the number of all existing favorite markings of a given blogger. Mathematically, the intra-ethnic link share for a given blogger b is $\frac{l_{b,e}}{l_b}$, where $l_{b,e}$ are the number of links that b has with members of her own ethnic group e , and l_b are all links b has.⁶ Figure 1 illustrates the concept of intra-ethnic link share for a hypothetical Bosniak blogger. For this blogger, the total number of links l_b is 12, and the number of links to bloggers from her own ethnic group $l_{b,e}$ is 6. Hence, this bloggers’ intra-ethnic link share is $\frac{l_{b,e}}{l_b} = \frac{6}{12} = 0.5 = 50\%$. Put differently, 50% of this blogger’s connections go to bloggers from the same ethnic group.⁷

To test hypothesis 1, we examine whether the intra-ethnic link share in the actually observed network is higher than what we would observe if bloggers connected with randomly selected others. In other words, we compare the observed segregation with a baseline segregation in networks in which ethnicity is randomly assigned, i.e. plays no role (cf. for this approach Echenique and Fryer, 2007; Hubert and Schultz, 1976). To this end, we simulate a large number of networks ($N = 10,000$) in which we permute or “scramble” bloggers’ ethnicity. This signifies that the shares of Bosniaks, Serbs and Croats in the simulated networks correspond to the respective shares in the observed network, and that all other network features are held constant, such as the number of connections of each bloggers. For each simulated network, we then calculate the intra-ethnic link share per blogger, and then average the intra-ethnic link share across all bloggers. If our first hypothesis holds, the average intra-ethnic link share in the actually observed network should be significantly higher than in the simulated networks.

⁶If a blogger has links to several blogs of the same blogger, we count each of those links.

⁷Our measure is very close to Krackhardt’s E-I-Index, which has been used to measure friendship links across subunits in organizations (see Krackhardt and Stern, 1988). Our measure is only different in the sense that it ranges between 0 and 1, not between -1 and 1 as Krackhardt’s E-I-Index. Krackhardt and Stern (1988) argue that a higher share of links across groups helps organizations to better manage and overcome crises.

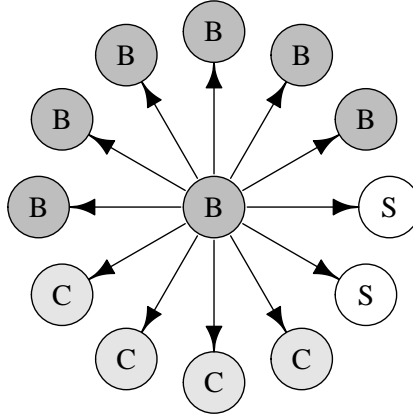


Figure 2.1: Network of a Bosniak (‘B’) blogger with other ethnic Bosniak, Serb (‘S’) and Croat (‘C’) bloggers; the blogger has an intra-ethnic link share of $\frac{l_{b,e}}{l_b} = \frac{6}{12} = 50\%$ (graph created using the `igraph` package for R by Csárdi and Nepusz 2006).

Political blogs and political bloggers To test hypothesis 2, we need to categorize bloggers into those who are politically engaged and those who are not. The design of the platform requires bloggers to assign their blog to one category from a set list, including categories such as politics, sports, technology and love. To discern whether a blogger is politically engaged or not, we rely on the bloggers’ own choice of category. We define a *political blogger* as a blogger who owns at least one political blog (besides their political blog, political bloggers can run other non-political blogs), and a *political blog* as a blog in the category “politics”. Using this categorization, we determine that 2.5% of all bloggers in our sample are politically engaged.

To check whether the bloggers’ own choice of category is a meaningful indicator of their political engagement, we let a native student assistant code 500 randomly drawn blog posts with regard to their political content (we oversampled political blogs and texts from Serb and Croat bloggers). We find that 94% of blog posts from non-political blogs have non-political content. On the other hand, 54% of blog posts from political blogs have indeed political content. This signifies that bloggers identifying themselves as political in fact seem to write frequently about political topics, but also have other interests (46% of blog posts from political bloggers have non-political content). Bloggers that identify as non-political, on the other hand, cover only very seldom political topics (in 6% of their blog posts).

This allows us to tackle our second hypothesis, where we examine the difference in the intra-ethnic link share of political and non-political bloggers. To test this hypothesis, we run again simulations. During each simulation, we permute (‘scramble’) ethnicity separately for political and non-political bloggers, which is necessary because the respective

shares of the three ethnic groups differ between political and non-political bloggers. We then calculate the level of ethnic segregation for each blogger, and calculate separately the averages for political and non-political bloggers. For each simulation, we then calculate the difference between the simulated and the observed intra-ethnic link share, again separately for political and non-political bloggers. If our second hypothesis holds, the difference between actual and simulated segregation should be significantly higher for political than for non-political bloggers. This would signify that political bloggers have ethnically more segregated networks than non-political bloggers.

2.4 Results

In the following, we present our findings with regard to hypothesis 1 (overall ethnic segregation in the network) and hypothesis 2 (higher ethnic segregation for political bloggers).

2.4.1 Evidence of ethnic segregation

To test our first hypothesis, we compare the observed blogger network with 10,000 simulated networks. As outlined in the research design section above, we randomly vary the ethnicity of bloggers, while not changing the existing links between bloggers. Each time we simulate a network, we calculate the intra-ethnic link share per blogger, the average of all intra-ethnic link shares, as well as the average of the intra-ethnic link shares per ethnicity.

The panels in Figure 2 display the results from our simulations. As the upper left panel of the figure shows, the mean intra-ethnic link share in the observed network is considerably higher than the mean intra-ethnic link share in the simulated networks. The observed mean value over all ethnicities is 66.2%, but only 61.5% in the simulated networks. In other words, whereas 61.5% of all connections between bloggers in the random networks occur between bloggers of the same ethnicity, the number of those connections amounts to 66.2% in the observed network. Expressed in standard deviations, the observed value lies 4.48 standard deviations above its expected value. In terms of randomization inference (Gerber and Green, 2012), none of the simulated networks has an intra-ethnic link share as high as the observed network. This corresponds to a p -value of less than 0.0001 (cf. Gerber and Green 2012), implying that ethnicity plays an important and highly significant role for the establishment of connections between bloggers.

Next, we need to check that findings are not explained by exclusively one ethnic group being highly ethnically segregated, but that the phenomenon holds for each ethnic group in the network. Therefore, we look at the level of ethnic segregation inside each group separately. For Bosniak bloggers, the observed segregation lies 5.17 standard

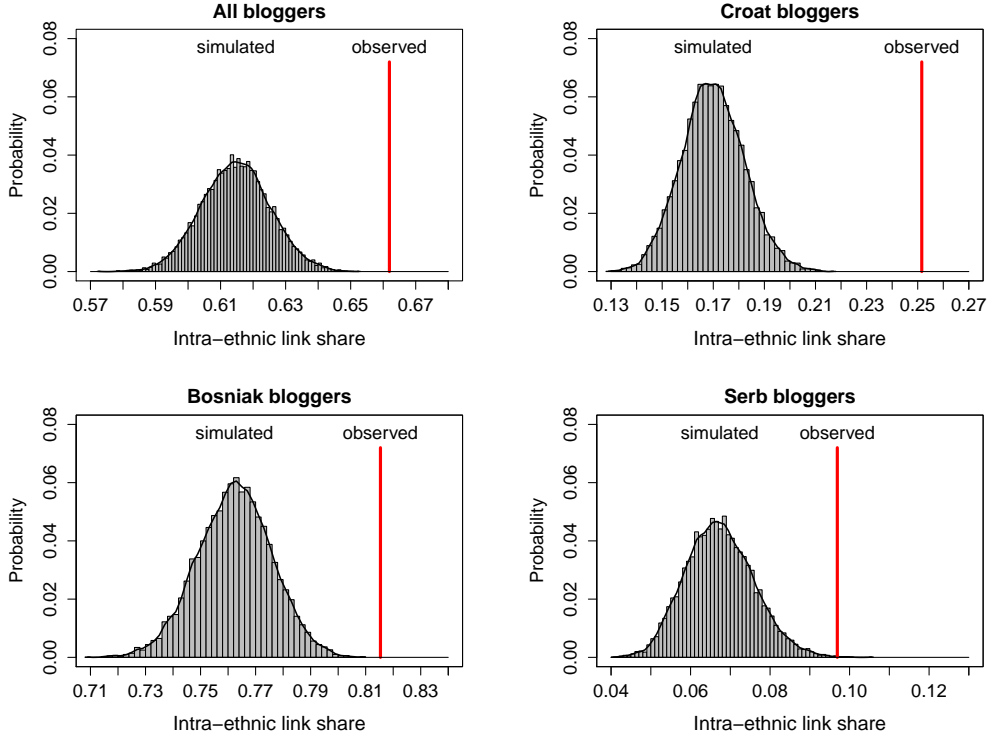


Figure 2.2: Distribution of the mean intra-ethnic link share in 10,000 random simulated networks for all bloggers, Bosniak, Croat and Serb bloggers.

deviations (or 5.3 percentage points) above the expected segregation. For Croats, it is 6.02 standard deviations (8.2 percentage points), and 3.9 standard deviations (3.0 percentage points) for Serbs. The observed value of the intra-ethnic link share lies above any of the 10,000 simulated values both for Bosniak and Croat bloggers, implying a p -value of less than 0.0001 for both Bosniak and Croat bloggers. For Serb bloggers, 7 out of 10,000 simulations reach an intra-ethnic link share at least as high as the observed value, implying a p -value of 0.0007 (cf. Gerber and Green 2012). This signifies that ethnic segregation is high for each ethnic group, and is not dependent on which ethnic group we take into consideration.

2.4.2 Do politically engaged bloggers have more segregated networks?

To test hypothesis 2, we examine the difference in the average intra-ethnic link share between political and non-political bloggers. As outlined above, we expect that political bloggers should be more ethnically segregated than other bloggers, signifying that their intra-ethnic link share should be higher. As mentioned earlier, we use the bloggers' own choice of category to determine whether a blog and blogger is political or not.

75.2% of the links of political bloggers go to bloggers from the same ethnic group, whereas this value is only 66.0% for the links of non-political bloggers. From this, we

cannot directly deduct that political bloggers have a more segregated network than non-political bloggers, as more Bosniaks are political bloggers. At the same time, Bosniaks have by default a higher intra-ethnic link share, as they constitute the majority in the network: even if they choose their connections randomly, they are still more likely to choose someone from their own ethnic group. Yet we are interested only in that part of ethnic segregation that cannot be explained by the respective shares of the ethnic groups in the sample.

To test whether political bloggers have indeed a more segregated network than non-political bloggers, we therefore run 10,000 simulations where we permute (‘scramble’) the ethnicities of bloggers. As the different ethnic groups have different likelihoods of becoming political bloggers (in fact, the majority of political bloggers are ethnic Bosniaks), we permute in each simulation ethnicity separately within the group of political bloggers and within the group of non-political bloggers. In other words, political bloggers in the simulated networks have the exactly same likelihood of being Bosniak as political bloggers in the actual network; the same goes for Croats and Serbs.

In contrast to our approach for testing hypothesis 1, in each simulation we average the intra-ethnic link shares separately for political and non-political bloggers. We again calculate the difference between the observed and simulated value of the intra-ethnic link share of political and non-political bloggers, and compare how much these values differ from the simulated ones. The results are displayed in Figure 3. As we can see in the figure, the actual value of ethnic segregation is significantly higher than the simulated values for both political and non-political bloggers ($p < 0.05$ for political bloggers and $p < 0.0001$ for non-political bloggers). This signifies that both political and non-political bloggers are guided by ethnic affiliation when establishing connections among one another. Actual segregation exceeds random segregation on average by 4.6 percentage points (SD = 0.011) for non-political bloggers, and by 5.9 percentage points (SD = 0.027) for political bloggers. The difference in means is significant in a one-sided t-test ($t(12953) = -45.20$; $p < 0.0001$). This means that political bloggers are indeed significantly more ethnically segregated than non-political bloggers, even when taking into account the different sizes of ethnic groups and a greater likelihood of becoming political bloggers among Bosniaks. In total, this confirms our hypothesis that politically engaged bloggers have ethnically more segregated personal networks than other bloggers.

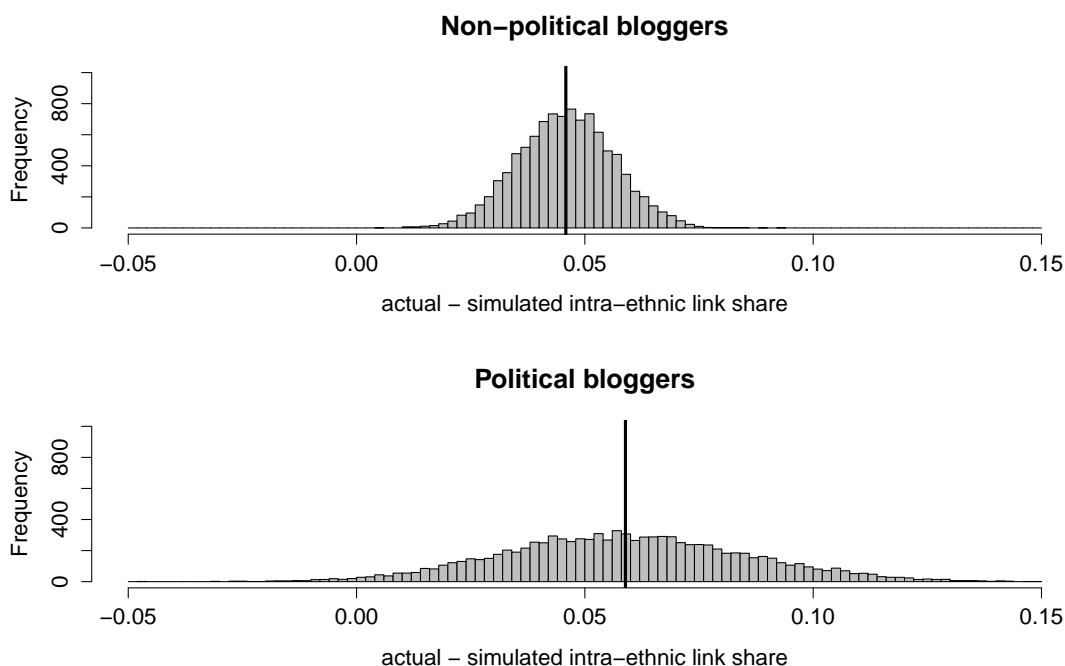


Figure 2.3: Distributions of the difference between the actually observed and the simulated intra-ethnic link share separately for political and non-political bloggers in 10,000 random simulated networks. The black lines mark the respective means of the distributions.

2.5 Conclusion

Recently, it has been argued that the segregation of online networks contributes to a polarization of society at large (e.g. Wong, Levin and Solon, 2016; El-Bermawy, 2016). Our study is the first to examine the existence and extent of online segregation between bloggers from different ethnic groups in a post-conflict, multi-ethnic society. Furthermore, we take a closer look at the role that politics plays in increasing online segregation. More specifically, we investigate whether bloggers writing about political topics have more segregated personal networks than other, less politically engaged and interested bloggers. We expect this to be the case as politics in multi-ethnic, post-conflict societies often constitutes a highly contested and ethnically loaded issue that could increase the concerned bloggers' desire for an ethnically homogeneous environment. We study ethnic segregation on the largest blogger platform of Bosnia and Herzegovina. Using Monte-Carlo simulations, we find strong evidence for ethnic segregation across the platform that cannot be explained by network features or sociodemographic characteristics of the bloggers. Moreover, in line with our expectations, political bloggers have indeed ethnically more segregated personal networks than other bloggers.

Overall, our results suggest at least two important conclusions. First, while geographical boundaries, social control and the visibility of ethnic markers are much lower on social

media than in the offline world, bloggers in the multi-ethnic society we study still self-select into mostly ethnically homogeneous environments. Expecting that a broad public exchange transcending ethnic categories will spontaneously develop online will mostly likely remain a vain hope. Second, the results shed light on how a context of ethnicized politics interacts with individuals' behavior. While we cannot tell whether a preoccupation with politics makes individuals more concerned about ethnicity, or whether those who care more about ethnicity start caring more about politics, we can conclude that those who currently dominate the online political debate exhibit a stronger discriminatory behavior along ethnic lines. This begs the question of who shapes online political debates. In the multi-ethnic, post-conflict context that we study, at least, it appears that the online political debate is not dominated by those who overcome ethnic categories, but by those who in their social interactions put more weight on ethnic categories than the average.

For future studies, it may be useful to examine whether the dynamics inside the blogger network are additionally impacted by political events, such as elections. For the offline context, existing studies have offered evidence that inter-ethnic relations become more tense around election times. Furthermore, it may be useful to examine whether the design, i.e. the algorithms of online portals (cf. Bozdag and van den Hoven, 2015) can mitigate the degree of online segregation in general, and the exacerbating impact of politics on online ethnic segregation in particular.

2.5. Conclusion

3

Do Political Elections Fragment Ethnic Interactions? Evidence from a Bosnian Blogger Network

Annerose Nisser

Abstract Existing research has shown that average citizens attach greater importance to their ethnic identity, and discriminate more along ethnic lines during times of elections. The current study is the first to examine whether political elections even impact the frequency of cross-ethnic interactions in the online world. The study focuses on the case of Bosnia and Herzegovina, a country that has experienced violent conflict between different ethnic groups in the past, and where ethnicity continues to play a vital role for political mobilization. Focusing on the Bosnian municipal elections of October 2016, the study tracks cross-ethnic interactions in Bosnia's largest blogger network over an extended period of time and finds that the frequency of interactions between bloggers of different ethnicities indeed decreases in the run-up to elections, but does not regain its pre-election levels in the aftermath of elections. Furthermore, the study examines whether the observed effect of elections on cross-ethnic interactions is greater in ethnically polarized municipalities, i.e. municipalities inhabited by two about equally sized ethnic groups. It is assumed that such municipalities experience fiercer electoral campaigns, although the findings offer only limited support for effects traceable in the blogger network. Overall, the findings signify that entirely apolitical relations in the on-

line world are shaped by the real-world political context. The findings have important implications for our understanding of the interrelation between politics and cross-ethnic relations in multi-ethnic societies in the digital age.

Keywords: cross-ethnic relations, interethnic relations, intergroup relations, elections, network analysis, blogs, Bosnia and Herzegovina, ethnicity

3.1 Introduction

Journalists have argued that the recent 2016 U.S. presidential elections created so-called online echo chambers, and that exchange beyond ideological divides nearly ceased to exist (e.g. Wong, Levin and Solon, 2016). Szep (2016) cites a 2016 survey suggesting that 15 percent of U.S. respondents had stopped talking to a family member or close friend as a result of the presidential election. This begs the question of how fierce electoral campaigns strain social interactions in the online world. Beyond journalistic accounts, there is to date little scientific evidence in this regard.

The present study focuses on the specific case of multi-ethnic societies in which political mobilization and political campaigning frequently take the shape of ethnic appeals. If elections are supposed to have strained social interactions in the U.S., a country with comparably high social cohesion, social relations should be far worse impacted in countries where society and politics are divided along lines of ethnic identity. Ethnic identity includes identities based on language, religion, phenotypical features and believes in a shared ancestry (Vogt, 2014), and is considered to be less fluid and more difficult to change than other types of identity (Chandra, 2006). In many multi-ethnic countries, voting and political behavior correlate with ethnicity (Huber, 2012), and political parties claim to speak for the interests of particular ethnic groups (Chandra, 2011, 155). Around times of elections, I argue, this close interrelation between political competition and ethnicity should make references to ethnicity more frequent, thereby render ethnicity more salient, and additionally augment negative sentiment between different ethnic groups. As a result, the frequency of cross-ethnic interactions even between those only marginally affected by politics or political campaigns should decrease. This should be specifically true when political competition between ethnic groups is high. I expect this to be the case when two about equally sized ethnic groups enter into direct political competition.

The present study centers on the case of online interactions between bloggers in Bosnia and Herzegovina, and examines how the frequency of cross-ethnic interactions is impacted by the closeness of the October 2016 municipal elections. Bosnia and Herzegovina is a post-conflict, multi-ethnic democracy in which ethnic divisions play an important role both for political competition and in society at large. I suggest that ethnicized

political appeals bring about a decrease in the frequency of cross-ethnic interactions in the run-up to elections, and that the frequency of cross-ethnic interactions only returns to its higher pre-election levels once the elections are over. Furthermore, I argue that the effect should be more pronounced in ethnically polarized municipalities. To test the arguments, I take advantage of the possibilities offered by modern communication technology, and use webscraping to automatically and continuously collect data on new connections between bloggers in the network. I deduct the ethnicity of bloggers by quantifying slight language differences between ethnic groups in texts authored by the bloggers. I moreover take advantage of geographic variations in the ethnic composition of the population to examine whether the impact of elections differs as a function of how ethnically polarized a municipality is. Municipalities in which two about equally sized ethnic groups enter into direct political competition are considered to be significantly more ethnically polarized than municipalities with a clear ethnic majority. In line with the expectations, I find that cross-ethnic interactions between bloggers indeed decrease in the run-up to the elections across all municipalities. Furthermore, there is some limited evidence that this trend may be more pronounced in ethnically polarized municipalities (though I find no statistically significant effect). However, contrary to the expectation, the level of cross-ethnic interactions does not return to its higher pre-election levels after the elections. This finding could either be explained by the fact that the impact of elections is permanent or that cross-ethnic interactions resume so slowly that the resumption falls outside the period of observation. In sum, the results suggest that entirely apolitical online interactions are indeed impacted by real-world political events, and that the size of this impact might be moderated by the presence of local ethnic polarization.

The remainder of this chapter is structured as follows. First, I give an overview of the existing literature on individual-level impacts of elections on ethnic interactions and ethnic identity, and on the presence of social divisions in the online sphere. Thereafter, I present theory and hypotheses. I continue with a presentation of the case, and outline research design and methodology. Hereafter, I present the results and discuss them critically, before concluding with some overall implications and policy recommendations.

3.2 Existing Literature

The current study relates to at least two important strands in the literature, which I shortly review in the following. First, the study relates to research showing that elections impact ethnic interactions and ethnic identity on the individual level. Second, it relates to the literature on divisions in social interactions in online networks.

3.2.1 Elections impact ethnic interactions and ethnic identity

Existing research has found that elections impact ethnic interactions both on the macro- and micro-level, and individual-level ethnic identity. With regard to macro-level ethnic interactions, Cederman, Gleditsch and Hug (2013) find an increased risk of ethnic civil wars after elections. According to the authors, one of the important mechanisms explaining this finding is the fact that political elites emphasize group differences as a way to gain support in the run-up to elections (so-called ethno-nationalist mobilization, see also Mansfield and Snyder, 1995). Coupled with so-called sore-loser effects after the elections, this could instigate post-election violence. In a similar line, Wilkinson (2004) finds that ethnic riots occur more often around election time. Wilkinson argues that this happens because politicians incite riots as a means produce ethnic divisions and mobilize people to vote along ethnic lines.

With regard to micro-level ethnic interactions, Michelitch (2015) finds that interethnic discrimination in taxi price negotiations is impacted by the temporal closeness of elections. More specifically, examining experimentally varied price negotiations between taxi drivers and their clients in Ghana, she finds that interethnic discrimination is exacerbated at elections times if both negotiation partners are partisans of different political parties. This signifies that elections can not only impact macro-level outcomes such as ethnic riots, but even the nature of commonplace, micro-level cross-ethnic interactions.

With regard to individual-level ethnic identity, Eifert, Miguel and Posner (2010) show that the relative importance of ethnic identity among average citizens in 10 African countries increases around times of elections. To be more precise, citizens are more likely to name ethnicity as their most important identity when elections are (1) closer and (2) more competitive.¹ Although Eifert, Miguel and Posner (2010) do not offer direct evidence that these changed levels of ethnic salience impact social interactions, social psychology offers good reasons to expect this to be the case. More specifically, social psychology suggests that changed levels of group identity impact how individuals relate to outgroup members (Hogg and Turner, 1987; Tajfel et al., 1971; Tajfel, 2010), be the outgroup ethnically or differently defined.

To summarize, the existing research suggests that elections are a phenomenon not exclusively confined to the political arena, but can have consequences for how cross-ethnic relations play out at the macro- and micro-level. Yet the existing research leaves us with two important gaps: (1) does only the valence, i.e. positivity and negativity of cross-ethnic interactions change around election times, or does even their frequency decrease? (2) How do elections impact cross-ethnic interactions in an online context? With regard to the second gap, it is necessary to first look more closely at existing findings on social divisions in online networks, which will be presented in the following

¹The authors measure electoral competitiveness by the margin of victory between the election's winner and their closest challenger.

paragraphs.

3.2.2 Divisions in social interactions in online networks

A number of recent studies have argued that social interactions in online spaces, specifically social networks, tend to be divided. This research can be separated into mostly theoretical approaches on the one hand and empirical ones on the other, both of which I shortly review in the following.

With regard to theoretical approaches, several researchers have early argued that the Internet creates a so-called “small world” (for the coining of this term, not necessarily with reference to the Internet, see Crossley, 2008; Milgram, 1967; Watts, 1999). In such a small world, Internet users interact almost exclusively with like-minded others, and become thereby blind to opposing opinions (Ebo, 1998; Garrett, 2009*a,b*; Morozov, 2012; Pariser, 2011). As a result, the Internet becomes a collection of “echo chambers” of homogeneous opinions, of “cyberghettos” (Ebo, 1998), or a “Splinternet” (Morozov, 2012). Note that these theorists mostly refer to *opinion-based* segregation.

A number of empirical studies have shown that such online clustering indeed exists, and have dealt mostly with the left-right or conservative-liberal divide. Along this line, Adamic and Glance (2005) examine the link structure between a large number of U.S. blogs and show that the blogosphere during the 2004 U.S. presidential election campaign was clearly divided between pro-Democrat and pro-Republican blogs: links were mainly set within one’s own ideological camp. Similarly, Tremayne et al. (2006) show a comparable pattern for U.S. blogs covering the Iraq war: again, the link structure in the blogosphere is divided between a liberal and a conservative half, although the authors also find an important share of blogs linking the two spheres. In a more recent study, Barberá et al. (2015) show that political issues (U.S. elections and the war in Syria, among others) lead to the formation of retweet segregation between right- and left-wing Twitter users. Put differently, only politically like-minded Twitter users tend to retweet each other. However, Barberá et al. (2015) also show that primarily political, but not other topics create segregated retweet patterns. Furthermore, Barberá et al. (2015, 1538) find evidence for the temporal formation of echo chambers: echo chambers take a few days to develop.

In a nutshell, existing research has established that online divisions exist. Nevertheless, it has almost exclusively focused on opinion-based political divisions, and has so far left aside identity-based divisions, such as divisions based on ethnic identity, although findings from offline contexts have clearly shown the relevance of ethnic identity for social interactions. Additionally, even though Barberá et al. (2015) have offered evidence for the temporal formation of online divisions, no existing research has examined which real-world events bring about or intensify online identity-based divisions. The present study aims at closing these gaps by concentrating on the impact of political elections

on ethnic divisions in the online sphere. It also examines the potential relevance of moderating factors, more precisely of local ethnic polarization. The following section introduces theory and hypotheses underlying the empirical part of this study.

3.3 Theory and Hypotheses

By their very definition, election campaigns in democracies are characterized by politicians' attempts to mobilize voters for political support (e.g. Lau and Redlawsk, 2006). During these campaigns, political actors try to influence (potential) voters via various channels: campaign rallies, election posters, television appearances, newspaper interviews and postings on social media, to name just the most obvious. In political systems characterized by ethnic divides, political mobilization often takes the shape of appeals to ethnicity (Bates, 1974; Eifert, Miguel and Posner, 2010; Posner, 2004, 2005; Sambanis and Shayo, 2013). Such appeals may include highlighting the value and virtues of the politicians' own ethnic group, but also emphasizing potential threats originating from other ethnic groups. In the following, I argue that being repeatedly and via various channels exposed to such messages influences how entirely normal, average citizens relate to one another in their daily social encounters. I expect that this influence plays out through three main interconnected channels: increased (i) ethnic salience, (ii) perceived threat, and (iii) negative sentiment.

First, through politicians' appeals to ethnicity, the salience or importance of ethnic identity among those hearing the messages increases. Voters become more aware of their own ethnic identity if they repeatedly hear politicians underlining the relevance of ethnicity. As outlined above, findings by Eifert, Miguel and Posner (2010) suggest that the importance of ethnic identity among entirely normal citizens indeed increases around election time, and more so if electoral campaigns are highly competitive and fierce. I develop their argument further and suggest that an increased awareness of ethnic categories shapes how individuals perceive themselves and their interaction partners. A changed perception of themselves and their interaction partners should subsequently influence the nature of their social relations (e.g. Stets and Burke, 2000). In fact, I believe that increased ethnic salience leads to ethnically more discriminatory behavior. By this type of behavior, I understand any social actions that systematically differ as a function of the coethnicity or non-coethnicity of the interaction partners. To understand how I expect this discriminatory behavior to play out, it is necessary to take a closer look at the two remaining channels, perceived threat and negative sentiment.

Portraying other ethnic groups as potential threats is a core ingredient of ethnic mobilization, as examples from real-world election campaigns and the scholarly literature suggest (Horowitz, 1985; Lake and Rothchild, 1996; Toe and Latal, 2016). For instance, so-called ethnic entrepreneurs may claim that an electoral victory of another ethnic

group would threaten their own group's access to important resources or might impede essential rights. To understand the consequences of such messages on cross-ethnic interactions, I draw upon social psychology literature, which points out that perceived outgroup threat, i.e. threat stemming from another group, results in higher outgroup avoidance (Fiske, 2002; Stephan and Stephan, 1985). To be more precise, I expect that people from different ethnic groups start avoiding each other when they are repeatedly exposed to threat messages by political actors. Such behavioral changes may happen entirely subtly, without the individuals concerned necessarily being conscious of it.²

Finally, I expect that politicians' appeals to ethnicity are coupled with an emphasis of the worth and values of their own ethnic group. An elevation of the value of their own group may implicitly or explicitly be combined with a devaluation of other ethnic groups. I expect that this increases positive sentiment towards individuals' own ethnic group, while increasing negative sentiment towards other ethnic groups. When combined with perceived outgroup threat, negative sentiment should become even more pronounced. I assume that people, when given a choice, spend preferably time and interact with people they like, i.e. towards whom they have positive sentiment. Therefore, I expect that ethnic campaign messages decrease cross-ethnic interactions additionally via increased negative sentiment towards non-coethnics.

In summary, I expect that three main interconnected pathways, (i) increased awareness of ethnic identity as a relevant social category, (ii) increased perceived outgroup threat, and (iii) augmented negative sentiment towards other ethnic groups, reduce cross-ethnic interactions among entirely normal, average citizens during election campaigns, i.e. in the run-up to elections. This constitutes my first hypothesis:

Hypothesis 1: In democracies with a highly ethnicized political system, the frequency of cross-ethnic interactions decreases in the run-up to elections.

But what happens once elections are over? With the election outcome being set, there remains little need for political actors to continuously mobilize voters along ethnic lines. At least, this is what we can expect if election outcomes are broadly accepted by the relevant political actors.³ If the election outcome is generally accepted by the relevant political actors, the aftermath of elections should constitute a return to "business as usual" for cross-ethnic relations. As the amount of appeals to ethnicity by political actors considerably decreases, the impact of these appeals should decrease as well. In people's

²It is essential to emphasize that not all politicians are "ethnic entrepreneurs" that mobilize along ethnic lines. We should not underestimate the number of politicians who try to appeal to voters across ethnic lines (e.g. Zuber, 2012, 2013), and work for cross-ethnic understanding even in ethnically highly divided societies. However, I believe that even just a few politicians can launch very powerful, negative appeals that subliminally impact not only the behavior of their supporters, but society at large. Unfortunately, such politicians are in many societies far more than just a negligible minority.

³The situation is different in contexts where the election outcome is contested by some actors. In fact, it has been shown that contested elections are an important factor explaining violence and ethnic conflict, see for example Wilkinson (2004) and Daxecker (2012).

3.3. Theory and Hypotheses

day-to-day interactions, awareness of ethnicity, fear and negative sentiment towards other ethnic groups may play only a limited role, so that the frequency of cross-ethnic interactions returns to its higher pre-election baseline levels. However, this expectation is more carefully pronounced than my first hypothesis: it is difficult to discern how long-lasting the negative impacts of ethnic appeals really are. Therefore, I expect the amount of cross-ethnic interactions to increase more slowly than they decreased before the elections. Despite this precaution, I formulate my second hypothesis as follows:

Hypothesis 2: In democracies with a highly ethnicized political system, the frequency of cross-ethnic interactions returns to its higher pre-election baseline levels in the aftermath of elections.

While I expect both of the preceding hypotheses to apply to all contexts with ethnicized political mobilization, existing research has shown that the impact of elections on the salience of ethnicity is more pronounced the fiercer the election campaign (Eifert, Miguel and Posner, 2010). In the following, I argue that the same is true for the impact of elections on cross-ethnic interactions: the impact should be stronger the fiercer and the more ethnically polarized the campaign. Such campaigns should occur specifically in contexts in which ethnic groups can enter into direct political competition (e.g. Bochsler, 2013). This context is defined (1) by the political system, and (2) by local ethnic geography. With regard to the latter point, I draw upon the common concept of ethnic polarization (especially Elbadawi and Sambanis, 2002; Montalvo and Reynal-Querol, 2005*a,b*). According to this concept, ethnic polarization is high if two or more ethnic groups are about equal in size in a given context. If elections are mostly decided along ethnic lines, their outcome is less certain in the presence of two about equally sized groups: it is not clear which ethnic group will form the post-election political majority. As a result, politicians can be less certain of their electoral victory, and will engage in a more radical campaign rhetoric. With regard to the political system, ethnic polarization as defined by local ethnic geography has especially pronounced effects in majoritarian voting systems (Bochsler, 2013; Reynal-Querol, 2002). My argument is in line with Dickson and Scheve (2006), who have shown in a theoretical model that politicians resort more strongly to group-based appeals when the electorate is made up of two about equally sized groups. I expect that stronger ethnic appeals by politicians in ethnically polarized contexts lead to greater perceived outgroup threat, ethnic salience and negative sentiment among the population. This constitutes my third hypothesis:

Hypothesis 3: The impact of elections on the frequency of cross-ethnic interactions is higher in ethnically polarized constituencies.

3.4 Case Selection

To test my hypotheses, I focus on cross-ethnic interactions among bloggers in Bosnia and Herzegovina. The rationale underlying the case selection — a political system characterized by ethnic voting, the October 2016 municipal elections, and a focus on bloggers — are described in the following paragraphs.

3.4.1 A political system built around ethnicity

Bosnia and Herzegovina’s political system is characterized by profound ethnic cleavages. To solve the violent conflict of the 1990s, the international community helped to bring about the 1995 Dayton Peace Agreement which established Bosnia’s current political system. This political system is built on the idea that power sharing between ethnic groups brings about stability and prevents conflict (Lijphart, 1977; McMahon and Western, 2009). To implement power sharing between ethnic groups, however, ethnic identity became a building block of the political system (cf. McMahon and Western, 2009). In this spirit, the existence of three ethnically defined so-called “constituent” people — ethnic Bosniaks, Serbs and Croats — is set out in the country’s constitution (Bochsler, 2012; Claridge, 2010; Milanovic, 2010). Furthermore, the state presidency of Bosnia is rotating between members of the three ethnic groups. Extensive veto rights for each ethnic group lead not only to regular political deadlock and hamper economic progress, but organize the entire political system around the concept of ethnicity. This has led researchers such as Belloni (2004) to argue that elections in Bosnia are detrimental for peacebuilding.

The current study is the first to examine how elections influence the frequency of cross-ethnic interactions in a multi-ethnic context with ethnicized politics. As this is a first test of the mechanism, I choose a typical or representative case (cf. Seawright and Gerring, 2008), in which ethnicized political mobilization is pervasive.

3.4.2 Electoral competition during the October 2016 elections

In the present study, I focus on the October 2016 municipal elections in Bosnia. In these elections, municipal councils and mayorships across the entire country were elected (BMI Research, 2016; Central Election Commission, 2016*a*). Mayors were directly elected by a simple majority first-past-the-post system, while municipal councils were elected via proportional vote (Congress of Local and Regional Authorities of the Council of Europe, 2017, 9). As the country is strongly decentralized, a considerable part of resource-allocation takes place at the regional level or below (McMahon and Western, 2009), signifying that the results of these elections mattered to both politicians and citizens. This has led to an “intensive and aggressive” election campaign during which “ethno-

politics and war-mongering” were important tactics to mobilize support (Pasic, 2016; see also BMI Research, 2016; Sito-Sucic and Katana, 2016; Congress of Local and Regional Authorities of the Council of Europe, 2017). According to Pasic (2016), ethno-nationalist parties can be considered to be the winners of the October 2016 elections. These factors imply that the run-up of the elections was indeed characterized by ethnicized political mobilization, whose impact on cross-ethnic interactions I want to test. – Focusing on the municipal level makes it additionally possible to take advantage of regionally distinct electoral campaigns and of regional differences in ethnic polarization. This allows me to test hypothesis 3.

3.4.3 Blogger platform

To evaluate the impact of elections and electoral competitiveness on individual-level cross-ethnic behavior, I focus on cross-ethnic interactions on a large blogger platform. The platform I study is the largest in Bosnia and Herzegovina (Džihana, Ćendić and Tahmaz, 2012). Focusing on cross-ethnic interactions as they play out in the online sphere has a number of advantages: first, I am able to collect data on people’s everyday behavior without them being aware of participating in a study. This increases the study’s external validity: the subjects of my study behave naturally, without desirability bias or Hawthorne effect⁴ influencing the measurement. Furthermore, the online sphere is one of the few places where people’s interactions leave traces that can be collected by social scientists. In other words, collecting *behavioral* data on cross-ethnic interactions would not be possible in the same way offline. Finally, and potentially most important, segregation on this platform cannot be explained by physical or geographic segregation, or by a lack of chances to interact. Physical boundaries are overcome online; if people still systematically cluster along group lines, this cannot be explained merely by a lack of opportunity. Hence, the way cross-ethnic interactions materialize on this platform is a more valid indicator of what people choose to do once they have a choice, since physical boundaries are absent and social control is much lower (cf. Rosenfeld and Thomas, 2012).

As mentioned, I focus on the biggest blogger platform of Bosnia, with more than 100,000 bloggers. The platform has a well-structured interface, including blogger profiles with valuable sociodemographic data on every blogger (gender, age, home town and country, interests etc.). Bloggers connect with one another by marking each other’s blogs as favorites. Adding a blog as one’s favorite makes this blog appear in the favorites list on one’s profile. As a result, it is possible to study the network structure of the blogger network and factors that increase the likelihood of links between the bloggers. In this study, I use newly added links between bloggers as an indicator of the level of interaction

⁴The Hawthorne effect designates the fact that individuals may change their behavior merely because they are aware of being observed. This change in behavior is not necessarily explained by desirability; the Hawthorne effect is thus a more general concept than desirability bias.

between bloggers. Importantly, the platform does not have any algorithm implemented that suggests new links and new friends (in this point, the platform differs significantly from other social media platforms such as Twitter or Facebook). Also, there is no news feed that influences what users see when logging into the platform. This implies that there is no algorithm that would influence and potentially explain segregation inside the platform (cf. Pariser, 2011; Bozdag and van den Hoven, 2015). The blogger platform is introduced and described in more detail in Chapter 2 of this dissertation; the following section focuses on research design and methodology.

3.5 Research Design and Methodology

In the following, I introduce the data collection procedure, the sample of bloggers, and the operationalization of three core variables: ethnic polarization of municipalities, the ethnicity of bloggers, and the frequency of cross-ethnic interactions.

3.5.1 Data collection

In the current study, I focus on a time window of ten weeks before and ten weeks after the October 2016 election.⁵ All data was collected using a Python script, which automatically stored all relevant new data entries in an SQLite database. The present study lays specific focus on the temporal development of cross-ethnic relations in the blogger network. It is thus necessary to know at which moment in time new connections between bloggers were established. However, this information is not provided by the blogger platform. Therefore, I continuously scraped the blogger platform during the relevant period of observation, each time calibrating new information with the information that was already stored. Due to technical constraints described in more detail in Section C.5 in the Appendix, data collection had to take place in so-called scraping rounds, which each took about 14 days. It is thus not possible to establish the *exact* date on which a new connection was established, but only a time window within which it was created. As a means of approximation, I define the middle day of each scraping round as the date of the establishment of all new links within a given round. Using this date, I calculate the temporal distance to elections (measured in weeks) of each scraping round. Thereby, I follow Eifert, Miguel and Posner (2010) who use the absolute temporal distance from the elections as independent variable. Additionally, I collected sociodemographic information on all bloggers at the beginning and the end of the observation

⁵The Appendix contains robustness checks using a 20-weeks interval, and the results hold. However, due to technical issue that occurred in the earlier phase of the data collection, I consider the data for a ten weeks window before and after the elections as more reliable. See Section C.6.2 in the Appendix for more detail.

period.⁶

3.5.2 Sample of bloggers

The original sample for which I collected sociodemographic and network information contained more than 82,000 bloggers and about 1.5 million favorite markings (see Chapter 2). As discussed in Chapter 2, it is necessary to restrict this original sample to obtain reliable measures of key variables. Many bloggers in the original sample have only very few or no connections with other bloggers, and have written no or only very few blog entries. In other words, many accounts are nearly inactive. However, my measures of network segregation and blogger ethnicity are calculated based on the connections of individual bloggers and on the language used in their blog texts. This signifies that I can obtain reliable measures only for bloggers with a certain level of activity. Therefore, I restrict my sample to bloggers who were active during the two years preceding the start of the data collection, who had written at least 10 blog posts, and who followed at least one other blogger at the start of the data collection. Furthermore, only bloggers with an indicated age over 10 at the start of the data collection were included. This results in a sample of 2,115 bloggers. Summary statistics of the sample are displayed in Table 3.1.

3.5.3 Determining the ethnicity of bloggers

To study interactions across ethnicities, it is necessary to determine the ethnicity of each blogger in the sample. As in the preceding chapter, I take to this end advantage of slight language differences between Bosnian, Serbian and Croatian, and of the fact that language boundaries are almost perfectly identical with ethnic boundaries in Bosnia and Herzegovina (see Tolimir-Hölzl, 2009, 2011*a,b*, 2013). In Section B.3 in the Appendix, I use data from the 2013 Bosnian census (Agency of Statistics of Bosnia and Herzegovina, 2016) to calculate the correlation between self-declared language and self-declared ethnicity, and I find a correlation of more than 99%. This justifies the use of language as a valid approximation of ethnicity in the Bosnian case.

I utilize the language used in blog posts to infer the ethnicity of their authors. The calculation relies on a dictionary of discriminatory words identified by Tiedemann and Ljubešić (2012) using machine learning on a large body of parallel texts, and developed exclusively to distinguish between Bosnian, Serbian and Croatian. The exact approach is presented in more detail in the preceding Chapter 2 of this dissertation. Regarding the reliability of this language classification, Tiedemann and Ljubešić (2012) find a 97% out-of-sample accuracy; in Chapter 2, we find an 80% overlap between this automatic

⁶I do not control for possible changes in self-reported sociodemographic information, such as a different home town at the beginning and end of the period of observation. I assume most sociodemographic variables, such as gender and year of birth, to be stable for most bloggers. In case of a mismatch, I rely on the information given at the end of the period of observation.

coding and a small set of texts hand-coded by a native research assistant. To increase the reliability of the language coding, I aggregate a large number of blog posts per blogger, which were mostly written over an extended period of time.⁷ As seen in Table 3.1, only 7.5% of all bloggers are ethnic Serbs, 78% are ethnic Bosniaks, and the rest are Croats. I discuss implications of this skewed distribution of the ethnic composition of the sample in the discussion section below.

3.5.4 Frequency of cross-ethnic interactions

To measure the frequency of cross-ethnic interactions, I rely on the outgroup percentage of newly added links.⁸ To calculate this measure, I divide the number of newly added links to non-coethnic bloggers by the total number of newly added links by a given blogger in a given scraping round. The concept is introduced in more detail in Chapter 2. A higher outgroup percentage signifies that non-coethnic connections are more frequent. As seen in Table 3.1, the mean outgroup percentage is rather low (27%).

Taking the outgroup *percentage* (instead of, for example, the absolute number of new links) helps to account for the fact that bloggers may have different patterns of activity at different points in time. In other words, I examine how the willingness to connect with non-coethnics changes *given* a blogger's overall willingness to connect with anyone in the network. Furthermore, I focus on newly added links, and not on the overall state of the network because I am interested in the impact of elections on bloggers' behavior, rather than in the effect on the overall composition of the network. By running models with blogger fixed effects, however, I am able to take into consideration the original level of ethnic segregation of each blogger.

3.5.5 Ethnically polarized municipalities

To test my third hypothesis, it is necessary to distinguish between ethnically polarized and ethnically not polarized constituencies. I follow the common approach in the literature to rely on the local ethnic composition as a measure of local ethnic polarization. This operationalization is justified by the fact – outlined in the theory section – that fiercer and more ethnicized election campaigns are expected to occur in municipalities where ethnic groups enter into direct political competition due to their equal size, and

⁷Even if we assume that language/ethnicity was coded incorrectly for some bloggers, this should not challenge the results of the current study. More specifically, it should introduce noise, but not bias. There is no reason to believe that any of the two explanatory variables (elections, ethnic polarization) are related to a miscoding of language, due to two reasons: (1) even if bloggers write on different topics and use different words around election time, the coding of their ethnicity relies on texts that were written during the entire period of observation, i.e. before, during and after the elections. (2) The dictionary of discriminatory words relies on a body of texts from a large number of topics, and should hence be independent from the interests and topics a blogger writes about.

⁸Although I also collected data on deleted connections, almost no connections were ever deleted, reason why it does not make sense to consider them in the analysis.

Table 3.1: Summary statistics (panel dataset).

Statistic	N	Mean	St. Dev.	Min	Max
Temp. distance	8,706	10.817	3.544	1	14
Out. percent.	8,706	0.268	0.393	0.000	1.000
Bosniak	8,706	0.782	0.413	0	1
Croat	8,706	0.143	0.350	0	1
Serb	8,706	0.075	0.263	0	1
Polarized municipality	3,059	0.040	0.196	0	1
Age	5,208	25.598	9.859	10	74
Female	5,979	0.737	0.440	0	1

where there is greater uncertainty with regard to which ethnic group will gain the post-election political majority.

To calculate ethnic polarization at the municipality level, I rely on data from the 2013 Bosnian census (Agency of Statistics of Bosnia and Herzegovina, 2016). The data includes the exact numbers of individuals self-declaring as members of each ethnic group in each of Bosnia’s 143 municipalities. From this data, I construct a dichotomous measure of ethnic polarization. Although other authors, most prominently Montalvo and Reynal-Querol (2005*a*, 301), have offered continuous indices of ethnic polarization, my theory does not assume a steady relationship between ethnic polarization and the fierceness of election campaigns. More specifically, while I believe that highly polarized contexts see fiercer election campaigns than very little polarized contexts, every increase in polarization does not necessarily lead to an increase in ethnicized political mobilization. Therefore, I only compare highly polarized municipalities with very little polarized municipalities. As a robustness check, however, Section C.6.3 in the Appendix contains additional models based on Montalvo and Reynal-Querol’s continuous index of polarization.

I define a municipality as ethnically highly polarized if the difference in the population share between the largest two ethnic groups is lower than 20%.⁹ I define a municipality as not polarized if one of the groups constitutes at least 75% of the total population. Municipalities which do not fall in any of these two categories are assigned to a residual category, and dropped from the analysis for hypothesis 3. Figure 3.1 visualizes differences in the ethnic composition between ethnically highly and not polarized municipalities using six sample scenarios. Using this definition, my sample contains 63 bloggers from polarized municipalities and 1,091 bloggers from not polarized municipalities. Put differently, only 5.5% of the bloggers for whom I can determine the home town are based in ethnically polarized municipalities. Sections C.2 and C.4 in the Appendix contain

⁹Additionally, I code one municipality, Glamoč, as polarized between three ethnic groups, since the maximum difference between any pair of groups in this municipality is lower than 20%. Excluding this municipality from the analysis does not change the results.

details on how I determine the home municipalities of bloggers, and additional analyses of Bosnia’s ethnic set-up.

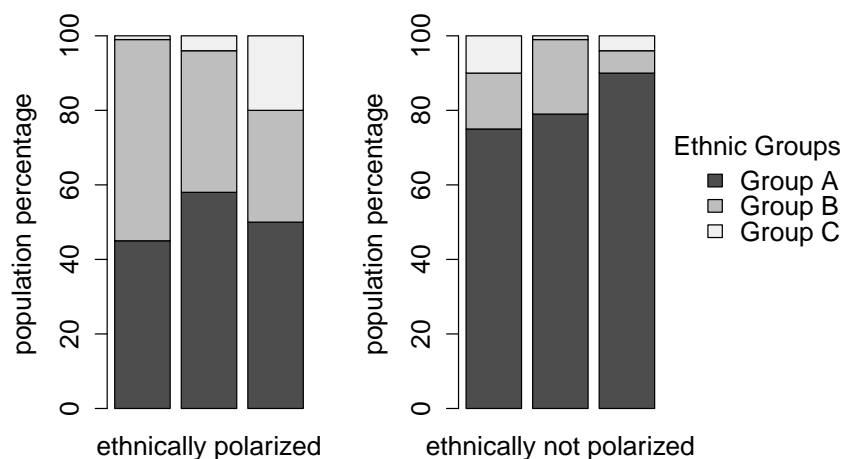


Figure 3.1: Visualization of differences in the ethnic composition between ethnically highly and not polarized municipalities, using six exemplary scenarios.

3.6 Analysis and Results

In the following section, I present and critically discuss findings for all three hypotheses.

3.6.1 Hypothesis 1 and 2: Effect before and after the elections

To test hypothesis 1 and 2 (impact of elections), I run regressions using the absolute number of weeks from the elections as the independent variable, combined with a before/after elections dummy.¹⁰ The dependent variable is the outgroup percentage of newly added links. The slope of the fitted regression line corresponds to an decreasing or increasing trend of the outgroup percentage over time.

Table 3.2 shows the results from different regression models using panel data. In models 1 and 2, I use OLS regressions with random effects, in models 3 and 4 logistic regressions with random effects, and in model 5 OLS regression with blogger fixed effects

¹⁰Using the number of weeks instead of the scraping rounds accounts for the fact that scraping rounds were not implemented in perfectly regular order. Furthermore, weeks are a substantively more meaningful measure of temporal distance than scraping rounds. For reasons of comparability, I focus on the same amount of weeks before and after the elections. Taking different time periods could lead to an over- or underestimation of the effects if there are constant time trends that start before the elections and continue afterwards.

(models 1, 2 and 5 without robust standard errors).¹¹ As seen in the table, the coefficient of *weeks from elections* is not significant in any of the models, suggesting that there is no clear time trend in the outgroup percentage when considering only how far away the elections are, without distinguishing between the run-up to and the aftermath of elections.¹² In other words, it signifies that hypothesis 1 and 2 are not both true. Furthermore, the coefficient of *before elections* is only significant in model 4, signifying that the outgroup percentage does not persistently differ before and after the elections. However, the interaction effect of *weeks from elections*before elections* is positive and significant in models 1, 2, and 5. Since I consider model 5 to be most conservative and adequate, Figure 3.2 displays the marginal effect of *weeks from elections* for model 5 (as there is no significant effect after the elections, I only plot the marginal effect before the elections). As the figure indicates, for every week before the elections, the marginal effect is significant and positive. These findings suggest that with every week further away from the elections, the outgroup percentage increases – but only before, not after the elections. This is consistent with hypothesis 1, but speaks against hypothesis 2: bloggers seem to connect less and less with non-coethnics in the run-up to the elections (hypothesis 1), but do not return to previous levels of cross-ethnic interactions once the elections are over (hypothesis 2).

There are two possible explanations for the null-finding with regard to hypothesis 2. The first possibility is that the overall level of cross-ethnic interactions decreases with each election a little, leading to more and more segregated online networks. This would mean that elections have long-lasting, enduring consequences for social interactions at large. Considering that the effect is repeated with each election, this would entail a dire outlook for long-term developments of cross-ethnic exchange. I believe that the second option is more convincing: cross-ethnic interactions return to higher baseline levels, but the return takes more time than the decline before the elections. This option would mean that civil society is to a certain extent resilient towards ethnic politics, and possesses self-healing capacities, although they take some time to kick in. At the end, distinguishing between these two options is an empirical question that only a longitudinal study running over a large number of years can answer.

¹¹A note about the control variables included in models 2 and 4 may be appropriate. These control variables are not to be considered confounders in the sense that they would impact both independent and dependent variables (to take just an example, it is unarguably impossible that the gender of a blogger impacts the temporal distance to elections). Instead, these variables are included to reduce variance, and to obtain a better model fit. For example, Croats and Serbs have by default a higher outgroup percentage as they constitute minorities in the blogger network and have therefore a higher likelihood of connecting with outgroup bloggers.

¹²See Brambor, Clark and Golder (2006) for the interpretation of interaction models.

Table 3.2: Regressions of the outgroup percentage/ratio of newly added links on the weeks from the elections. Unit-of-analysis is the blogger-scraping-round.

	<i>Dependent variable:</i>				
	outlink percentage		ratio #outlinks-#inlinks	outlink percentage	
	<i>OLS</i>		<i>logistic</i>	<i>OLS fixed effects</i>	
	(1)	(2)	(3)	(4)	(5)
Weeks from elections	0.055 (0.538)	-0.229 (0.326)	0.0003 (0.029)	-0.022 (0.052)	0.094 (0.381)
Before elections	0.592 (5.256)	0.142 (3.167)	0.283 (0.266)	0.836* (0.443)	4.096 (3.709)
Croat		80.810*** (2.079)		4.738*** (0.321)	
Serb		93.182*** (2.994)		7.187*** (1.030)	
Male		-2.292 (1.499)		-0.184 (0.233)	
Weeks fr. elec.*Bef. elec.	2.328*** (0.870)	2.642*** (0.525)	0.032 (0.042)	0.104 (0.067)	1.342** (0.614)
Constant	17.499*** (3.459)	5.392** (2.167)	-1.422*** (0.265)	-2.937*** (0.390)	
Robust standard errors	No	No	Yes	Yes	No
Observations	1,335	1,331	1,335	1,331	1,335
R ²	0.027	0.648			0.051
Adjusted R ²	0.025	0.647			0.027
Akaike Inf. Crit.			1,691.000	793.681	

Note:

*p<0.1; **p<0.05; ***p<0.01

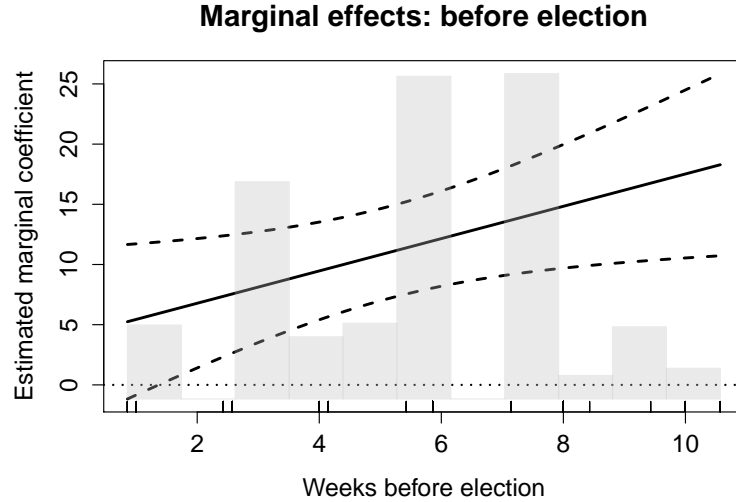


Figure 3.2: Marginal effects for model 5 in Table 3.2, for weeks before the elections. The dashed lines correspond to 95% confidence intervals. The shaded histogram in the background visualizes the distribution of observations.

3.6.2 Hypothesis 3: Effect of ethnic polarization

To test whether ethnic polarization in a given municipality influences how much elections impact the frequency of cross-ethnic interactions, I add a dummy variable for ethnically polarized municipalities as an additional interaction term to the models from Table 3.2. The results are displayed in Table 3.3. In these models, I only include bloggers who have indicated their home town in their profile. Furthermore, I only compare bloggers who live in either ethnically polarized or not polarized municipalities, and exclude those in a middle category. Especially the fact that many bloggers have not indicated a valid home town in their profile reduces the N as compared to the models in Table 3.2 by nearly 50%, which constitutes a clear limitation to the analysis.

As previously, the coefficients for *weeks from elections* are not significant in any of the models, nor are the coefficients for *ethnically polarized municipalities*. The latter signifies that the frequency of cross-ethnic interactions does not systematically differ between ethnically polarized and not polarized municipalities. Furthermore, the interaction term of *weeks from elections*ethnically polarized* is not significant in any of the models, as would have to be the case if both hypothesis 1 and 2 were supported by the data. However, the interaction term of *weeks from elections*before elections* is positive and significant in all models, corroborating again hypothesis 1: in the run-up to the elections, the relative frequency of cross-ethnic interactions seems to decrease. The interaction effect of *weeks from elections*before elections*ethnically polarized* is positive and significant only in model 5, offering slight support for hypothesis 3. As the interaction terms make it impossible to read the marginal effects from the regression table, Figure 3.3 displays

the marginal effects before the elections for bloggers from polarized and not polarized municipalities separately. As the effect after the elections is not significant (and can more easily be deducted from the regression table), I only display the marginal effects before the elections. Figure 3.3 suggests a positive effect for time distance from elections for bloggers from ethnically not polarized municipalities, while the effect for polarized municipalities is not significant.¹³ Although the slope of the coefficient for bloggers from ethnically polarized municipalities points in the expected direction, the low number of bloggers from such municipalities and the resulting high uncertainty associated with the effect make it difficult to draw definite conclusions from this finding.

Overall, the findings support the argument that political elections in multi-ethnic democracies with highly ethnicized political systems have an impact on individual-level cross-ethnic interactions. I argue that this is explained by the fact that political actors in such societies use appeals to ethnicity to mobilize voters, and that these appeals have consequences *beyond* the political behavior of voters. More specifically, the findings suggest that politicians' appeals have consequences for individual-level cross-ethnic interactions which are entirely disconnected from politics. Put differently, while politicians' primary aim is undoubtedly to mobilize voters *to change their political behavior*, the inadvertent consequence are *behavioral changes in individuals' day-to-day cross-ethnic interactions*. This conclusion has important consequences for our understanding of long-term and more macro-level ethnic divisions and segregation in multi-ethnic societies. It signifies that political mobilization does not happen in a vacuum, and that entirely apolitical social relations are shaped by the political context. It means that politics has not only consequences for the individual through legislation, but that immaterial political factors such as the nature of election campaigns influence how much and with whom individuals interact.

It is nevertheless important to address several shortcomings of the present research design. To start with, the study remains observational, which makes it impossible to conclusively exclude alternative channels of causation. To be more precise, the design of the study does not allow to fully exclude that other events, occurring simultaneously with the election campaign, may be the actual explaining factor. With the current design, this problem can only be addressed through theoretical argument and by fully acknowledging the existing limitation.¹⁴ To address the problem theoretically, I put forward that we have little reason to believe that other macro-factors impacting cross-ethnic relations occurred in the relevant time frame. For example, there is no evidence that nationwide

¹³For comparability, the limits of the y-axis are the same in the top and bottom panel. The size of the effect in the top panel is in fact about the same as the one in Figure 3.2. The confidence intervals are much larger in the bottom panel, as much fewer bloggers live in ethnically polarized municipalities.

¹⁴It is difficult to think of a design that could fully exclude this problem – it is impossible to assign elections and election campaigns randomly as an experimental design would require. An extended longitudinal study that repeatedly observes an effect around election times would probably constitute the best approximation.

economic developments occurred simultaneously with the election campaign and were potentially more pronounced in ethnically polarized municipalities.¹⁵

The second limitation regards the generalizability of the results based on the existing ethnic composition of the blogger sample, and the distribution of bloggers across municipalities. As mentioned earlier, the large majority of bloggers in the sample are ethnic Bosniak (78%), while Croats (14.5%) and Serbs (7.5%) constitute relatively small minorities. Additionally, only 5.5% of all bloggers come from ethnically polarized municipalities. This puts clear limitations to the generalizability of the results: although I have little theoretical reason to believe that my hypotheses are not equally true for all ethnic groups, the current design does not allow to offer empirical evidence for this claim.¹⁶

¹⁵Compare Agency of Statistics of Bosnia and Herzegovina (2017): there are seasonal trends in Bosnia's economic performance. In fact, economic performance measured by the gross domestic product seems to be seasonally higher during third quarters when Bosnian elections are traditionally held. However, I have little theoretical reason to believe that *better* economic performance decreases the frequency of cross-ethnic interactions.

¹⁶Of the 63 bloggers who live in ethnically polarized municipalities, 73% are ethnic Bosniak, 25% are Croat, and just one blogger is ethnic Serb. This signifies that the ethnic distribution of bloggers in ethnically polarized municipalities corresponds approximately to the distribution in the rest of the sample.

Table 3.3: Regressions of the outgroup percentage/ratio of newly added links on the time distance from the elections (in weeks from the elections), with interaction models. Unit of analysis is the blogger-scraping-round.

	<i>Dependent variable:</i>				
	outlink percentage		ratio #outlinks	#inlinks	outlink percentage
	<i>OLS</i>		<i>Logit</i>		<i>OLS fixed effects</i>
	(1)	(2)	(3)	(4)	(5)
Weeks from elections	-0.417 (0.695)	-0.486 (0.493)	-0.047 (0.055)	-0.111 (0.083)	-0.307 (0.573)
Ethnically polarized mun.	4.048 (26.751)	-2.354 (18.802)	0.279 (1.609)	-0.631 (1.028)	
Before	-3.997 (6.904)	-3.998 (4.848)	0.177 (0.402)	0.230 (0.570)	-3.423 (5.694)
Croat		78.026*** (3.423)		4.430*** (0.477)	
Serb		94.306*** (9.332)		19.572*** (0.596)	
Male		-0.720 (2.258)		-0.163 (0.312)	
Weeks fr. elec.*Eth. pol.	1.941 (4.205)	0.843 (2.953)	0.126 (0.193)	0.157 (0.132)	0.307 (4.291)
Weeks fr. elec.*Before	3.906*** (1.188)	4.042*** (0.837)	0.112* (0.067)	0.214** (0.097)	2.961*** (0.968)
Eth. pol.*Before	-66.037 (68.509)	-11.392 (48.120)	-3.817* (2.216)	-2.720 (4.227)	-91.492* (52.269)
Weeks fr. elec.*Eth. pol.*Before	9.954 (11.893)	-1.019 (8.359)	0.577 (0.495)	0.238 (1.681)	20.767** (10.415)
Constant	14.337*** (4.493)	6.394* (3.315)	-1.728*** (0.439)	-2.384*** (0.582)	
Robust standard errors	No	No	Yes	Yes	No
Observations	635	635	635	635	635
R ²	0.059	0.539			0.086
Adjusted R ²	0.048	0.532			0.043
Akaike Inf. Crit.			634.567	399.854	

Note:

*p<0.1; **p<0.05; ***p<0.01

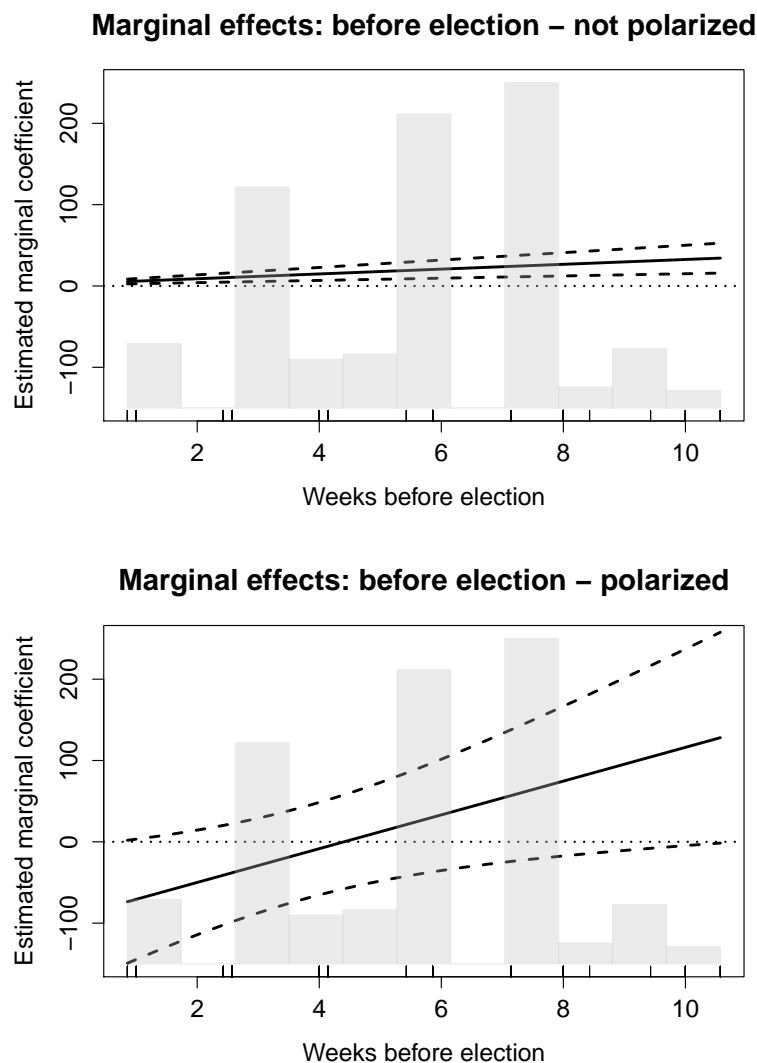


Figure 3.3: Marginal effects for model 5 in Table 3.3, for weeks before the elections, as a function of the type of municipality (ethnically polarized or not polarized) a blogger comes from. The dashed lines correspond to 90% confidence intervals. The shaded histogram in the background visualizes the distribution of observations.

3.7 Conclusion

The present study focuses on the case the 2016 municipal elections in Bosnia and Herzegovina, and examines how the frequency of cross-ethnic interactions among Bosnian bloggers is impacted by the temporal closeness to these elections. I argue that ethnicized election campaigns influence how entirely normal citizens – in this case bloggers – relate to one another, even when it comes to relations that are entirely detached from politics. In line with my hypotheses, I find that the frequency of cross-ethnic interactions among

bloggers indeed decreases in the run-up to the elections. Furthermore, I find some limited evidence that this effect might be more pronounced among bloggers from ethnically polarized municipalities, although definite conclusions remain difficult in this regard. Looking at what happens in the aftermath of elections, cross-ethnic interactions do not seem to return to their higher pre-election baseline levels, but stagnate instead at low levels. This finding could be explained by two alternative pathways. The first possible explanation is that elections strain cross-ethnic interactions with a long-lasting, persevering effect. Alternatively, cross-ethnic interactions eventually return to their higher pre-election baseline levels, but the resumption takes considerable time. As a result, it would not be possible to track this resumption within the current period of observation, which includes the same number of weeks before and after the elections.

In either way, the results give evidence that a macro-level political variable, namely electoral campaigns with ethnicized political mobilization, indeed seems to impact micro-level social interactions. This implies that ethnic politics trickles down to individual cross-ethnic interactions that are in their content entirely disconnected from politics.

Two main implications can be deduced from the findings, one regarding the online, the other regarding the offline sphere. With regard to the online sphere, it is important to note that lower frequencies of cross-ethnic interactions cannot be explained by the design of the platform, because the platform studied has not implemented any algorithms that suggest content or connections. Hence, any segregation found in the current case is the result of *self-selection* by the bloggers. However, if individuals' innate tendency is to choose more segregated networks around election times, suggestion algorithms could potentially be designed to *counter* this tendency (c.f. Bozdag and van den Hoven, 2015). More specifically, future research should investigate to which extent suggesting connections with individuals from opposing ethnicities has the potential to alleviate the ethnic fragmentation of social interactions around election times.

The second implication regards the offline world, and is potentially of even greater importance, because it more closely addresses not only the symptoms, but the roots of the issue. The second implication does not regard the architecture of social networking sites, but instead the architecture of political institutions. More specifically, as we have now evidence for their impact on social interactions at large, how can the incentives for using ethnicity as a mobilizing instrument be reduced? How can the incentives of politicians to employ radicalizing election campaigns be lowered? Reilly (2001) and others have suggested systems of alternative votes, where voters have to indicate an additional cross-ethnic second choice. This forces politicians to gain support across ethnic groups, and can contribute to more centripetal dynamics in politics (cf. Horowitz, 2004).

Simultaneously, it makes sense to strengthen the self-healing forces of civil society, for example by creating vast opportunities for cross-ethnic interactions in the real world. One concrete implication for Bosnia and Herzegovina would be to abolish the policy of

3.7. Conclusion

two schools under one roof, where pupils from different ethnic groups are taught in the same school building, but with non-overlapping timetables or in different classrooms (see e.g. Brkanic, 2017; Lowen, 2010; Torsti, 2009). Making daily cross-ethnic interactions more natural and frequent would surely constitute an important step in the direction of making civil society more immune against ethnically radicalizing appeals of politicians that in many societies occur in regular intervals around times of elections.

4

Ethnicity and Partisanship: A Field Experiment on MP Responsiveness in Bosnia

Annerose Nisser and Miriam Hänni

Abstract Political responsiveness is one of the most important features of democracy: it is equivalent with political actors responding to and acting on the needs of the represented. Previous research has mainly focused on responsiveness in advanced democracies. We contribute to this literature by focusing on responsiveness in the multi-ethnic society of Bosnia and Herzegovina. Using a field experiment, we examine to what extent copartisanship and coethnicity influence responsiveness among Bosnian MPs. We expect that both coethnicity and copartisanship increase responsiveness, but that ethnicity plays overall a more important role than partisanship in explaining responsiveness in the highly ethnicized political context we study. We send randomly varied emails to 200 Bosnian politicians from all three constituent ethnic groups, the entire party range, and three different administrative levels. In line with our expectations, we find a significant coethnic bias in responsiveness – however, only for politicians from one ethnic group. Furthermore, we find that copartisanship does not increase politicians’ responsiveness, and that ethnicity is not significantly more important than partisanship in explaining responsiveness. The findings shed an altogether positive light on MP responsiveness in Bosnia, although ethnicity seems to influence relations between representatives and represented under certain conditions.

4.1 Introduction

Political responsiveness is one of the main aspects of political representation and a central pillar of representative democracy (Dahl, 1971; Powell, 2000; Pitkin, 1967). Indeed, the very legitimacy of democracy depends on the responsiveness of political actors to their voters (Dahl, 1971; Golder and Stramski, 2010; Powell and Vanberg, 2000; Wlezien and Soroka, 2007). Responsiveness means that representatives are the agents who react and respond to the needs and demands of the citizens, who are their principals.

Existing research has found political actors in most democracies to be reasonably responsive to the median voter and their constituents (Golder and Stramski, 2010; Powell and Vanberg, 2000; Hobolt and Klemmensen, 2008). However, more recent studies have pointed to biases in MPs' responsiveness. The behavior of political actors, including their responsiveness, is influenced by multiple pressures inside and outside the political arena, as well as their own cognitive biases. In consequence, politicians are not equally responsive to all citizens. Instead, they tend to cater to influential groups in society (Gilens, 2012; Bartels, 2008), or to those with whom they share important personal characteristics (Broockman, 2013; Butler and Broockman, 2011; Childs, 2002; Cowell-Meyers and Langbein, 2009; Mansbridge, 1999; McClendon, 2016; Öhberg and Naurin, 2016). We contribute to this strand in the literature by focusing on political responsiveness in multi-ethnic societies. Multi-ethnic societies are societies in which citizens belong to several distinct ethnic groups, defined by a believed shared ancestry, language, religion or phenotypical features (Vogt, 2014). Many argue that political actors in multi-ethnic societies enhance ethnic divides, as they have an interest in mobilizing along ethnic lines as a means to gain public support (e.g. Brubaker, 2002; Bates, 1974; Ferree, 2006; Posner, 2005). As a result, political and ethnic divides often overlap (e.g. Birnir, 2007*a*; Huber, 2012), and may mutually reinforce each other. In this study, we hence ask how political and ethnic affiliation influence representation in multi-ethnic societies. Does coethnicity between representative and represented significantly increase how responsive politicians are? And is the same true for copartisanship? Finally, is coethnicity significantly more important than copartisanship?

Answering these questions has important implications for our understanding of democracy and representation in multi-ethnic societies. If coethnicity was more important than copartisanship in explaining politicians' responsiveness, it would have several undesirable consequences. First, it would imply that certain individuals are systematically less well represented. This regards individuals whose ethnic identity and political affiliation do not "overlap" in accordance with the traditional cleavages of society. Such is the case for individuals living in or offspring from mixed marriages (Matejčić, 2009; Zimonjic, 2006), or other individuals who do not or cannot identify along ethnic lines. Second, it would to a certain degree render superfluous a party-based political system: why hold regular party-based elections if what actually counts for representation is shared ethnic

identity and not partisanship?

To test the influence of coethnicity and copartisanship on politicians' responsiveness, we focus on the country of Bosnia and Herzegovina. Bosnia and Herzegovina is a multi-ethnic society in which ethnic divides play an important role in politics (cf. UNDP, 2009; Hulse, 2010; Richter and Gavrić, 2010). The majority of Bosnian political parties can be associated with mainly one ethnic group, and the state presidency of Bosnia is rotating between members of the three largest ethnic groups. At the same time, a growing share of the population refuses to identify along ethnic lines. For example, during the 2013 Bosnian census, a civic movement asked people not to state their ethnic identity to express refusal of ethnic categories.¹ This is indicative of an increasing number of voters for whom political and ethnic divides do not overlap. Indeed, according to a survey conducted in the Federation of Bosnia and Herzegovina, about 6% of the electorate does not identify with one of the ethnically defined constituent groups, and up to 11% vote for parties which are not directly linked to their ethnic identity (IPSOS, 2010). Given the highly ethnicized political context, these are considerable shares, which are large enough to change election outcomes. Hence, the question of the respective influence of ethnicity and partisanship on political responsiveness is clearly relevant in today's Bosnia and Herzegovina.

In our study, we send out experimentally varied emails to 200 Bosnian politicians from national, federal and cantonal parliaments, belonging to all three constituent ethnic groups and some minorities, and covering the entire party range. The emails are sent by a presumed citizen inquiring how to obtain child benefits (a guaranteed, but somewhat incoherently administrated public service). In these emails, we randomly vary coethnicity and copartisanship between inquiring citizen and contacted politician. We then examine which emails receive higher response rates, and how coethnicity and copartisanship impact the response rate.

We find that coethnicity has indeed a significant positive impact on the response rate, however, only for politicians from one ethnic group (Croats). For politicians from the other ethnic groups (Bosniaks and Serbs), the effect is not statistically significant, but goes in the opposite direction of what we expected (they respond slightly *more* to *non-coethnics*). We argue that this finding could be explained by variations in state support between Croat and Bosniak MPs.² Furthermore, while we do not find a significant effect of copartisanship on the response rate, coethnicity does not seem to be more important than copartisanship. This indicates that in the multi-ethnic context we study representation works better than some critics assume.

¹The 2013 population census was the first and to date only census after the Bosnian War. For a refusal to identify along ethnic lines, see the campaign *The Fourth Constituency* by a group of NGOs, e.g. <http://www.demdigest.net/a-civic-bosnia-zasto-ne/> [2016-11-23]. Advocates of the *The Fourth Constituency* want to establish a fourth, civic, not ethnically defined constituency as a supplement to the three constituent people (i.e. three ethnic groups) set out in the Bosnian Constitution.

²We would expect a similar finding for Serb MPs, but as we only have a limited number of Serb MPs in our sample, we refrain from drawing any conclusions here.

The remainder of this chapter is structured as follows. The next section presents previous research on responsiveness in representative democracies. We then present our own argument and hypotheses (Section 4.3). Section 4.4 presents the research design including case selection, experimental setup, statistical analysis, and ethical concerns. In Section 4.5, we present and discuss analysis and results, and outline remaining limitations, before concluding with Section 4.6.

4.2 Short Literature Overview on Representation and Responsiveness

Political responsiveness is one of the key characteristics of democracy. Responsive MPs are aware of the needs and preferences of the represented, and act accordingly. Many therefore see responsiveness as the most important dimension of representation (e.g. Pitkin, 1967). Over the last decades, the topic of responsiveness has attracted considerable scholarly attention, and many have found that, on the aggregate, politicians are reasonably responsive towards citizens' preferences (e.g. Golder and Stramski, 2010; Powell, 2000; Butler, 2014). However, even the most responsive MPs lack the necessary financial and time capacity to be responsive to all citizens at all times. More recently, the literature has therefore turned to study what explains variations in individual MPs' responsiveness. Representatives' motivation to be responsive to voters depends on multiple factors. Existing studies have found that MPs are responsive in order to enhance their re-election probability, out of group solidarity, or because they see responsiveness as part of their professional duties (Broockman, 2013; Butler, 2014).

If vote maximization is the driving factor behind politicians' responsiveness, they should be most responsive to those who constitute their electoral base, i.e. to those who vote for them. In parliamentary democracies, the electoral base is most often defined either geographically or by party affiliation, or a combination of the two. In majoritarian systems, politicians retain office by gaining the majority in a geographically confined constituency (election districts). In line with this argument, politicians in majoritarian voting systems have been found to be considerably more responsive to voters from their electoral district (e.g. Broockman, 2013; Jones and Hudson, 1998). In proportional voting systems, politicians retain office if their party gains enough votes. As a result, politicians in proportional systems (and to a certain, but lower degree also in majoritarian systems) are more responsive to their copartisans, i.e. people who vote for their party or share their party's political ideology (Öhberg and Naurin, 2016).

However, not only region and copartisanship have been found to increase representatives' responsiveness. In her seminal work on *The Concept of Representation*, Pitkin (1967) has coined the term "descriptive representation" for representation built on identity-based similarities between representative and represented. The idea is that

those who “think, feel, reason and act” (John Adams cited in Pitkin, 1967, 60) like the represented are best at representing their preferences. Responsiveness based on descriptive representation can normally not be explained by considerations of vote maximization (e.g. Broockman, 2013). In line with Pitkin’s argument, several authors have found that female representatives are more responsive to female voters (e.g. Childs, 2002; Cowell-Meyers and Langbein, 2009; Mansbridge, 1999), working class MPs more responsive to working class voters (Carnes and Lupu, 2015), and that shared ethnic identity increases responsiveness (e.g. Preuhs, 2007, 2006; Hänni, 2016). Recently, this area of research has turned to experimental approaches, which have consistently presented evidence for the importance of personal, ascriptive characteristics in explaining variations in responsiveness (Broockman, 2013; Butler and Broockman, 2011; McClendon, 2016; White, Nathan and Faller, 2015; Distelhorst and Hou, 2014). Consequently, descriptive representation is widely cited as being symbolically (Gay, 2002; Bernauer, 2015) or substantively (Broockman, 2013) valuable. Symbolically, descriptive representation is important because it generates a feeling of belonging and fosters political support among the represented. Substantively, descriptive representation matters because policies in line with the preferences of the represented are indeed more likely to be implemented when representatives and represented share important personal characteristics. As existing research has shown, descriptive representation thereby also helps to increase policy responsiveness for marginalized groups (e.g. Bird, Saalfeld and Wüst, 2011; Preuhs, 2007; Hänni, 2016).³

Besides geographical aspects, the literature discusses in sum two central explanations for responsiveness: copartisanship and shared identity. However, most of these studies focus only on one of these explanations, or on situations where copartisanship and shared identity are not at odds. Existing studies have not discussed what happens to voters who fall outside the typical dividing lines. What is more, an overwhelming majority of studies focus on the U.S. context with its highly personalized system, or on other advanced democracies. Whether the findings travel from these contexts to less developed and less personalized political systems remains largely unclear (for an exception see McClendon, 2016). Our study is one of the first to address these gaps. In the next section, we discuss our theory and expectations with regard to responsiveness in multi-ethnic societies with a highly ethnicized political system.

³By its very definition, descriptive representation also includes representation along ethnic lines. However, representation along ethnic lines can both have a positive and negative connotation. See especially Horowitz (1985) and Rabushka and Shepsle (1971, 1972) for a more critical evaluation of representation along ethnic lines: these authors argue that ethnic voting leads to so-called “ethnic outbidding” where political actors take on continuously more radical positions as a means to prove themselves the best representatives of their respective ethnic group. This results in radicalization and a drifting apart of ethnic groups, which in the most extreme cases may lead to armed ethnic conflict. We take a middle position on this issue: while we recognize that representation along ethnic lines can in certain contexts increase substantive representation, we believe it to be normatively undesirable that ethnicity consistently trumps partisanship in explaining political responsiveness (see theory section below).

4.3 Theory and Hypotheses

We focus on political responsiveness in multi-ethnic democracies with a highly ethnicized political system.⁴ In line with the above-cited literature, we expect that both copartisanship and shared identity (coethnicity) increase representatives' responsiveness in these contexts. However, we believe that the relationship is not as straightforward as the literature might suggest when considering the context of a multi-ethnic society. To be more precise, we argue that the interdependency between ethnic and political identity in multi-ethnic contexts with ethnicized political mobilization impacts the way in which coethnicity and copartisanship jointly influence responsiveness. In ethnicized political systems, MPs have two interdependent cues to assess (possible) voters: party membership and ethnicity. Consequently, we first discuss our expectations with regard to the individual influence of coethnicity, then with regard to the individual influence of copartisanship, and finally outline our expectations on the interrelation between coethnicity and copartisanship in explaining MP responsiveness.

First, to understand the impact of coethnicity on responsiveness in multi-ethnic societies, it is important to consider that the political party system, as well as many aspects of society are shaped around the concept of ethnicity. Since ethnicity constitutes a highly relevant social category, we believe it leads to a sense of group solidarity and makes politicians feel greater personal concern for the welfare of their coethnics (cf. Broockman, 2013, 523). Individuals in general have been found to attach more positive utility to the welfare of coethnics than of non-coethnics (Habyarimana et al., 2007, 710), and we expect this applies to politicians as well. Furthermore, shared experiences related to shared ethnicity may facilitate the understanding of and willingness to respond to citizens' preferences (cf. Bird, Saalfeld and Wüst, 2011; Broockman, 2013; Mansbridge, 1999; Zuber, 2015). In fact, while this effect has been found to exist in various political contexts, we expect it to be even more pronounced in multi-ethnic societies with a highly ethnicized political system.

Second, although explicit multi-ethnic parties may exist, the majority of parties in countries with highly ethnicized politics target one ethnic group primarily (see Figure 1.2 in Chapter 1 of this dissertation).⁵ In terms of party strategy, this fact vastly predetermines whom parties aim to appeal to. It is debatable whether parties target voters beyond their core supporters (Cox, 2010), but in ethnicized party systems it is uncommon that parties appeal to voters beyond their ethnic constituency. When parties consider targeting new voters, they focus on those who constitute their most likely future

⁴While one of our main contributions is the fact that we study responsiveness in societies which are divided along ethnic lines, it is important to keep in mind that this also limits possible generalizations to other ethnically divided democracies.

⁵This is particularly true for multi-ethnic countries in Europe and to some extent in Latin America and Asia. Especially in Subsaharan Africa, ethnic parties are often banned. As a result, many political parties in Subsaharan Africa – at least on paper – appeal to multiple ethnic groups (Boogards, 2008).

supporters, which in ethnicized party systems are coethnics.⁶ As a result from these two factors, the latter more strategic, the former more emotionally based, we derive our first hypothesis:

Hypothesis 1: MPs are more likely to be responsive to coethnics than to non-coethnics.

Turning to the effect of copartisanship on responsiveness, we consider again two factors. On the one hand, politicians may perceive a greater responsibility towards previous voters. Politicians who feel that they owe their position to past voters should be more responsive to them. Normatively, politicians are required to be accountable to those who voted for them and to represent their preferences in the democratic process. This should increase responsiveness towards past voters and copartisans. Second, we expect politicians to be loss-averse and more strongly motivated by fear of losing current and past supporters than by the hope to gain future ones (e.g. Kahneman and Tversky, 1979). Loss-averse MPs should see higher payoffs in being responsive to those who have already voted for them in the past. They might consider that responsiveness to past voters has a higher likelihood of leading to future support than responsiveness towards those who have never actually made the choice to vote for them. Again, we have one more emotionally, the other more strategy based reason to expect politicians to allocate their scarce resources to past voters. This leads to our second hypothesis:^{7,8}

Hypothesis 2: MPs are more likely to be responsive to copartisans than to non-copartisans.

While ethnicity and partisanship are often aligned in multi-ethnic societies with ethnicized politics, this is not necessarily the case. Ethnicity and partisanship may be at odds for offspring from mixed marriages or individuals who refuse to identify along ethnic lines. Recall, about 6% of the Bosnian electorate do not identify with one of the ethnic groups, and up to 11% vote for parties which are not openly linked to their ethnic identity (IPSOS, 2010). The question is whether such individuals are systematically disadvantaged with regard to their representatives' responsiveness: if coethnicity matters more than copartisanship, individuals with the "wrong" ethnicity (which is harder to change than partisanship) are systematically less well represented. In the ethnically divided societies we focus on, we expect this to be the case for several reasons.

⁶For an alternative argument see Kasara (2007). Focusing on tax policy, she argues that politicians favor non-coethnics over coethnics, because support from coethnics is already secure. In terms of responsiveness, this would imply that politicians might be *more* responsive to non-coethnics because their support is more uncertain. While support by coethnics may be taken for granted, support by non-coethnics first needs to be gained. However, this argument is only valid in systems where voting across ethnic lines is relatively common (compare Section 1.4.3 in Chapter 1 of this dissertation).

⁷We expect little differences for this hypothesis between multi-ethnic and other societies, though we are not able to test this difference in the current study.

⁸One might expect the effect of copartisanship to be moderated by ethnicity. This is not part of the focus of this study; empirically, we also find no support for this assumption.

As mentioned above, politicians in ethnicized political systems have two cues that inform the likelihood of political support: partisanship *and* ethnicity. This stems from the peculiarity that political competition mostly happens within ethnic segments.⁹ While there might be several parties targeting voters from the same ethnic group, parties rarely target voters across ethnic groups. This has consequences for MPs' responsiveness: when MPs are faced with two current supporters, one from the same and the other from a different ethnic group, we expect MPs to give preference to a coethnic supporter. The reason is (1) that coethnic supporters may be regarded as more stable, and hence more worth investing in from a longterm perspective, and (2) that MPs attach greater utility to the welfare of coethnics. When MPs are faced with current non-supporters (namely non-copartisans), we also expect them to be more responsive to coethnics, because they have a far greater likelihood of becoming future voters. This is again explained by the fact that parties mostly compete for voters within ethnic segments. Therefore, we postulate that MPs' responsiveness is more strongly influenced by ethnicity than by partisanship of current and potential future voters. This results in our third hypothesis:

Hypothesis 3: Overall, MPs are more likely to respond to coethnics than to copartisans.

4.4 Research Design

We test these hypotheses in a field experiment in Bosnia and Herzegovina, a country where ethnicity plays an important role both in politics (Bahtić-Kunrath, 2011; Belloni, 2004; Bochsler, 2012) and the daily life of citizens (Håkansson and Sjöholm, 2007; UNDP, 2009; Whitt and Wilson, 2007). This section first justifies the case selection, then presents the experimental setup and methodological approach, before addressing potential ethical concerns.

4.4.1 Case selection

The population of Bosnia and Herzegovina mainly belongs to three so-called constituent groups (Serbs, Croats, Bosniaks), but also includes minorities from other ethnicities such as Roma and Jews. The importance of ethnicity in politics is visible in many aspects of Bosnia's consociational political system,¹⁰ but most prominently in the setup of the presidency. The presidency consists of three presidents, each representing one of the constituent groups, with a rotating chairmanship. Members of ethnic minorities are not allowed to run for presidency. Importantly for our study, however, citizens can freely

⁹Again, this is of course only true for political systems which allow for ethnic parties. The picture looks different when ethnic parties are banned and/or electoral systems are in place which encourage voting across ethnic lines.

¹⁰A consociational system is a system built on power sharing between the elites of all relevant social groups in society, see Lijphart (1969).

choose within which ethnic caucus they want to vote in a given election. In other words, citizens can in principle freely choose their ethnic affiliation in the context of political elections.

Bosnia and Herzegovina is a federal country, with two main federal entities, the Republika Srpska (RS, mainly inhabited by ethnic Serbs), and the Federation of Bosnia and Herzegovina (FBiH, mainly inhabited by ethnic Bosniaks and Croats).¹¹ The legislative bodies both at the national and federal level have a bicameral system (Central Election Commission, 2016*b*). Ethnicity plays a clearly defined role in the second chambers: at both federal and national level, seats in the second chambers are distributed equally among the constituent ethnic groups (compare Table 4.1 for an overview of the legislative bodies included in our study). The purpose of this equal setup is to protect ethnic interests (Bahtić-Kunrath, 2011). In the first chambers, seats are distributed proportionally without regard to ethnicity (although reserved seats exist to guarantee minimal representation of each ethnic group). Nevertheless, even in the first chambers, most politicians belong to ethnic parties that represent one ethnic group (cf. data from Szöcsik and Zuber, 2015). MPs in the first chambers at national and federal level are partly elected inside geographically district constituencies, partly via compensatory mandates (Central Election Commission, 2016*b*, 51, 93*f*). MPs in the second chambers are elected indirectly. They are suggested and elected by the members of lower level legislative bodies (cf. Richter and Gavrić, 2010, 849). The Federation of Bosnia and Herzegovina is administratively divided into ten cantons, each of which has its own cantonal assembly and government (the RS is not subdivided into cantons). Within the cantonal assemblies, which only consist of one chamber, representation is proportional.

¹¹We disregard the smaller third federal entity, the Brčko District, in our experiment. Its institutional setup and size make it more comparable to other municipalities than to the two large federal entities.

Admin. level	Acronym	Legislative body	# of members	Ethnic setup	Web address
National	LO-BiH	House of Representatives of the Parliamentary Assembly of BiH	42	28 from FBiH, 14 from RS (proportional representation)	https://www.parlament.ba/?lang=en
National	UP-BiH	House of Peoples of the Parliamentary Assembly of BiH	15	5 Bosniaks; 5 Croats (both from FBiH); 5 Serbs (from RS)	https://www.parlament.ba/?lang=en
Federal (FBiH)	LO-FBiH	House of Representatives of the Parliament of the Federation of BiH	98	at least 4 seats for each constituent people (proportional representation)	https://predstavnickidom-pfbih.gov.ba/bs/
Federal (FBiH)	UP-FBiH	House of Peoples of the Parliament of the Federation of BiH	58	17 Bosniaks, 17 Croats, 17 Serbs, 7 Others	http://www.parlamentfbih.gov.ba/dom_naroda/v2/bs/
Cantonal	CANT-HBZ	Cantonal Assembly of Canton 10	19	proportional representation	http://www.skupstinahbz.com/show_page/3/zastupnici
Cantonal	CANT-HNZ	Assembly of the Herzegovina-Neretva Canton	23	proportional representation	http://www.skupstina.org/hr/representative
Cantonal	CANT-ZDK	Assembly of the Zenica-Doboj Canton	27	proportional representation	http://www.zdk.ba/component/k2/itemlist/category/192-demokratska-fronta
Total			282		

Table 4.1: Overview of the legislative bodies of Bosnia and Herzegovina included in the current study.

4.4.2 Experimental design

To study the influence of ethnicity and partisanship on responsiveness, we run a field experiment. We send experimentally varied emails to national, federal and cantonal Bosnian politicians, and use response rates to these emails as indicators of responsiveness. As names are ethnic markers in Bosnia and Herzegovina, we vary the ethnicity of the email senders by varying their names. Our experimental design builds on approaches developed by Butler and Broockman (2011), Butler (2014), Broockman (2013) and Putnam, Leonardi and Nanetti (1994), who all study political responsiveness by examining to which extent politicians react to citizen requests. While being only one dimension of responsiveness (e.g. Eulau and Karps, 1977), constituency work is certainly a crucial aspect of the legislator-voter relationship, a valid indicator of other types of representation, and one which is directly observable using an experimental design.

Including MPs from three different legislative levels increases generalizability: our findings are not specific to a given parliamentary level in Bosnia. Furthermore, including several levels has the practical effect of increasing the N of our study. A greater N helps us identify any existing effect with greater certainty. We include politicians from the two chambers of the national parliament, from the two chambers for the federal parliament of one part of the country (FBiH), and from the cantonal assemblies of three cantons in the FBiH. Due to the lacking availability of MP email addresses, we can unfortunately not include politicians from the two chambers of the federal assembly of the Republika Srpska, and cannot include politicians of all cantonal assemblies.¹² We discuss possible implications of these restrictions at the end of the result section below.

Note that in line with other field experiments we treat email addresses and not individual politicians – in theory, responses might therefore have come from staff members. However, this does not seem to have been the case.¹³

4.4.2.1 Treatment

To test how politicians' responsiveness is influenced by coethnicity and copartisanship, we experimentally vary both coethnicity and copartisanship in our email inquiries. To manipulate coethnicity, we proceed in the following manner. First, we identify the ethnicity of each politician. For politicians from the second chambers, we collect information

¹²We only contact politicians from three cantonal assemblies for which contact information of politicians was available online. The other seven cantons do not offer any options to contact their representatives via direct inquiry (!). Hence, the selection of the three cantons is non-random. Furthermore, politicians from the two chambers of the federal assembly of the Republika Srpska do not have personal emails. We contacted the information office of the parliament multiple times (both via phone with the help of a native research assistant, and via email), but all that exists are email addresses for each political party.

¹³We deduct this, among others, from the content of the responses we received. Only in one case did the respondent not identify as politician, but as staff member. Furthermore, many responses convey the credible impression to be written by politicians themselves: for example, one politician excused herself to be in a meeting, and sent a more detailed response a few hours later. Another politician suggested we call him, and attached his phone number.

on their ethnicity from the official webpages (ethnicities are listed without exception, as the ethnic setup is fixed by law for the second chambers). For politicians from the first chambers, we identify the ethnicity of politicians using a combination of their names, their parties and personal information they offer online. In our sample, all politicians from ethnic parties have the ethnicity that their party would suggest, while politicians from multi-ethnic parties are ethnically diverse.

We then create three treatment names, one for each ethnic group. As mentioned above, names are markers of ethnic identity in Bosnia and Herzegovina. For the given names, we build on the results from a survey described in Nisser and Weidmann (2016). In this survey, Bosnian respondents were asked to guess the ethnicity from persons' first names. From the results, we choose names where all respondents (1) were sure and (2) agreed about the ethnicity. For the last names, we rely on information from online name databases which we validated with the help of country experts.¹⁴ We choose names where all country experts (1) were sure and (2) agreed on the persons' ethnicity. This procedure gives us three (male) names: **Emir Hodžić** (Bosniak), **Marin Jurić** (Croat), and **Nemanja Nikolić** (Serb).

To manipulate copartisanship, we vary whether a voter claims to have voted for an MP's party in the last election or not. In the copartisanship treatment, the email sender claims to have voted for an MP's party, whereas the voter claims to have *not* voted for an MP's party in the non-copartisanship treatment. The email does not indicate for which *other* party a voter has voted to avoid contamination of the treatment.¹⁵ Alternatively, we could simply have left out any reference to party support for the non-copartisanship treatment. However, we expected the treatment to be stronger if we make non-support explicit (see treatment texts in Figure 4.1).

We then assign each MP to one of the following four treatments levels (using block random assignment, see below): copartisan coethnic, copartisan non-coethnic, non-copartisan coethnic, and non-copartisan non-coethnic.

Content of the emails Existing studies using response experiments have underlined the importance of sending short, easy-to-answer inquiries. For example, Broockman (2013) sent out three-sentence inquiries about how to obtain unemployment benefits; Butler and Broockman (2011) sent out 3- to 4-sentence inquiries about how to register to vote. Helping with such problems can be done quickly and with little effort, and relates to politicians' obligation to engage in constituency service.

The fact that we study responsiveness in an ethnically divided society slightly complicates things. Apart from being easy-to-answer and politically relevant, our requests must not be related to ethnically segmented services. Namely, we need to ask about a

¹⁴We asked them to guess the ethnicity from the names.

¹⁵Some parties might be in very high competition while others are more sympathetic towards one another. This could have influenced the response rate beyond our control.

From: [treatment name]
 To: [politician's email address]
 Subject: family support in [largest town in politician's constituency]

Dear [politician's name],

[Since I have voted for [politician's party] / Although I have not voted for [politician's party]] in the last elections, I hope that you can help me find out about family support in [largest town in politician's constituency]. My wife is pregnant and our first baby will be born next month. I am trying to understand which financial support is available in [largest town in politician's constituency] and what the rules are. Can you tell me whom I should contact?

Thank you,
 [treatment name]

Figure 4.1: Text of the emails sent to the politicians.

service which is delivered through the same offices irrespective of ethnicity.¹⁶ As a result, we formulated four conditions for the content of the inquiry: it should (1) be credible, (2) easy to answer, (3) related to politics, and (4) not be allocated along ethnic lines or by an ethnically defined agency.

We believe that inquiries about child benefits fulfill these criteria. First, while available in all parts of Bosnia and Herzegovina, the extent and provision procedures of child benefits differ by administrative unit (Analitika, 2015). Hence, while most parents know that they are eligible for some benefits, it is credible that they have difficulties understanding how to receive them. Second, while the issue is complicated for many new parents, there are relatively clear rules within each administrative unit (Analitika, 2015). Legislators are therefore likely to know who is responsible for the implementation and can simply respond with contact details (address, phone number) or an Internet website. Hence, enquiring about child benefits fulfills the easy-to-answer criterion. Third, child benefits policy has been on the political agenda in recent years, and constitutes thus a salient political issue (Analitika, 2015). Finally, the allocation depends exclusively on the parents' place of residence and not on their ethnicity (Analitika, 2015). – The exact wording of the emails is displayed in Figure 2. To increase the credibility of the emails, we additionally mention the sender's home town, which we place inside each politician's constituency (for details, see Section D.1 in the Appendix).

¹⁶Services which are divided along ethnic lines would constitute a confounder, because the actual explanation for ethnically discriminatory behavior might not be genuine unwillingness to help or represent the other group (which we want to explain), but a lack of competence or knowledge resulting from the ethnically divided institutional setup of the country and its public agencies.

4.4.2.2 Randomization and covariates

We control for potential confounders in two ways: block random assignment and control variables. For block random assignment, all subjects are first partitioned into subgroups (blocks) defined by potential confounders, and random assignment is then implemented within each block (Gerber and Green, 2012, 71). Block random assignment has two important advantages: (1) it reduces sampling variability, making the estimate of the treatment effect more precise, and (2) guarantees that subgroups can be analyzed separately (Moore, 2012; Gerber and Green, 2012, 72 ff.).

We block on five variables which could potentially influence the response behavior of Bosnian MPs. We block on politicians' *ethnicity* (Bosniak, Serb, Croat, other/unknown ethnic group). It could very well be that politicians react differently to the treatment depending on their ethnicity. We moreover block on *party membership*, because politicians from some parties might be more prone to respond to specific voter requests than others. We block on politicians' *gender*; and on *parliament* (chamber) because national MPs might have a more professional work attitude, bigger staff etc., which could influence their response behavior. Additionally, by blocking on parliament, we indirectly block on office type, i.e. whether politicians were directly elected, quota elected or appointed. The reason for this is that the type of office only differs between, but not within parliamentary bodies. To implement block random assignment, we use the R packages `blockTools` (Moore and Schnakenberg, 2016) and `randomizr` (Coppock, 2016). As expected given blocked randomization, the balance between covariates is satisfactory (see Table D.1 in the Appendix).

In a second step, we add several control variables to our regression analyses to check for additional robustness. First, we code whether MPs belong to the majority ethnic group in their constituency. More precisely, we code MPs as belonging to the majority ethnic group if their ethnic group constitutes the largest ethnic group within the entire constituency from which MPs in the relevant parliament were elected. For example, in the two chambers at the national level, we code Bosniak MPs as majority MPs (and all others as minority), since Bosniaks are the largest ethnic group within the overall national constituency. As a second control variable, we distinguish between MPs from multi-ethnic and ethnic parties. Based on case knowledge and Szöcsik and Zuber (2015), we code the DF, SDP BiH, NS, NSRB and the coalition "Pravaško-seljački savez" as multi-ethnic parties. Finally, we control for the age of politicians. Age could influence response behavior through the socialization of MPs. As not all MPs provide public information about their age, this variable encounters a small number of missing values, and we therefore run model specifications with and without age.

We collect data on all control and block variables from party, parliamentary and the politicians' personal websites. Details on the technical implementation of sending the emails are found in Section D.3 of the Appendix.

4.4.3 Statistical analysis of the data

We use two primary ways of analyzing the results: randomization inference and logistic regressions. For both types of analysis, our outcome is dichotomous and indicates whether or not we receive a response to the email. We code responses as 1, and non-responses as 0. All emails to which we had not received any response within four weeks of sending them out are regarded as non-responses.¹⁷

Randomization inference involves the simulation of a considerable number of all possible randomizations to treatment and control group, keeping the actual outcomes (response or non-response) constant. In other words, the assignment to treatment groups is repeatedly permuted or shuffled around, using the same procedure of randomization as used for the actual assignment of the treatment (block random assignment). By then calculating the percentage of permuted randomizations for which the treatment effect is at least as high as the actually observed treatment effect, we obtain the exact p -value of the treatment effect. This p -value corresponds to the percentage by which the observed treatment effect could have occurred by chance, given that there was no treatment effect. As Gerber and Green (2012, 115) point out, randomization inference works better than parametric methods for small N s, as it does not rely on a specific distribution of the treatment effect which is only achieved asymptotically. Furthermore, randomization inference is easily implemented when the treatment was assigned with block random assignment (Gerber and Green, 2012, 115).

We run randomization inference to estimate the individual effects of each factor (co-ethnicity and copartisanship), but also to analyze how the two factors relate to each other. To estimate the effect of coethnicity, we calculate the percentage of permuted randomizations for which the response rate for the permuted levels ep and ep' (see Table 4.2 for the treatment labels) is at least as high as the one of the actual treatment levels ep and ep' . To estimate the effect of copartisanship, we compute the percentage of simulated randomizations for which the response rate in the permuted levels ep and $e'p$ is at least as large as the one of the actual treatment levels ep and $e'p$. To test hypothesis 3, we calculate the percentage of simulated randomizations for which the following difference

$$\frac{(ep - e'p) + (ep' - e'p')}{2} - \frac{(ep - ep') + (e'p - e'p')}{2} \quad (4.1)$$

is at least as high as in the actual data. The percentages then correspond to the exact p -values of the respective treatment effect. — To present the effect of covariates, we use logistic regressions similar to Butler and Broockman (2011) and Broockman (2013).

¹⁷We received most of the answers within the first few days; for an analysis of the response time see Section D.10 of the Appendix.

		copartisan	
		Yes: p	No: p'
coethnic	Yes: e	ep	ep'
	No: e'	$e'p$	$e'p'$

Table 4.2: Treatment groups used in the experiment.

4.4.4 Ethical considerations

We have requested approval for the experiment from our university’s internal review board (IRB). Our IRB considers the project to fall outside the range of projects requiring an IRB statement. It found the study to be non-invasive, and stated that no other obvious issues concerning a threat to human health, well-being or dignity had been identified. Nevertheless, we discuss in the following possible ethical concerns that might arise from our field experiment, and the precautionary steps we have taken to address them.

To start, any use of deception is generally regarded as ethically problematic. While we agree that deception should be avoided whenever possible, our experiment requires the use of fake email aliases instead of real voters. Only fake aliases allow us to experimentally vary coethnicity and copartisanship, and to thereby establish true causality. Especially selecting real voters with clearly identifiable ethnic names would be associated with considerable time and monetary expenses, and would force these voters to send non-genuine requests to politicians.

We believe that the use of deception is commensurate with the benefits of an experimental design, specifically as we apply several strategies to minimize potential harm. First, we ask a very simple question which can be straightforwardly answered by most MPs.¹⁸ We are confident that writing these answers took most MPs not more than a few minutes, thereby only negligibly impacting the amount of time MPs can spend on real citizen requests and other aspects of their professional duties. Second, in order to avoid harming individual MPs, we refrain from reporting individual responses in a way that would allow to identify individual MPs’ identity. Not harming individual MPs is also important in order to avoid costs for future researchers or the field of political science in general. As politicians are not only a subject of research themselves, but also control research budget to some extent, this double role needs to be considered before experimenting on public officials (McClendon, 2012). Last but not least, we take care to respond to all emails we received from MPs, thanking the MPs for their helpful response and assuring them that we (the sender) now knew how to proceed. By responding, we hope to give positive feedback to MPs and try to avoid negative emotions MPs might

¹⁸The responses we received indicate that this was indeed the case: most responses are concise and just mention an office, website or phone number to contact.

experience if they do not see the fruits of their helpfulness.

4.5 Results

We collected responses from May to June 2017 over a period of four weeks.¹⁹ Overall, 24.5% of all politicians responded to our emails (see Figure D.2 in the Appendix for the response rates by treatment group). Most MPs responded within the first three days after having received our email. Since political responsiveness in Bosnia and Herzegovina has not been experimentally studied before, our only point of reference are findings on responsiveness in other countries. While we find overall responsiveness to be lower in Bosnia and Herzegovina than in the United States, it is comparable to response rates in similarly little personalized systems such as South Africa, France and many countries in Central Europe and the Balkans (e.g. Croatia, Hungary, Romania, Bulgaria; cf. McClendon, 2016; de Vries, Dinas and Solaz, 2016). Given the widespread criticism about the functioning of democracy and representation in Bosnia and Herzegovina (e.g. Chandler, 2006; UNDP, 2009), the overall response rate appears higher than one might expect. At least in terms of citizen-legislator contact, responsiveness seems to work as well as in other European democracies.²⁰

During our experiment, we experienced an issue of non-compliance since about one third of all email addresses for the Parliament of the Federation of Bosnia and Herzegovina were not working properly (including MPs from both chambers). However, we have strong reasons to believe that these errors occurred randomly. Given that the characteristics of the MPs with working email addresses do not differ from those without working addresses, we are confident that this problem does not challenge the validity of our results (for a detailed analysis see Section D.5 in the Appendix).

In the next paragraphs, we first analyze whether the level of responsiveness varies with the ethnicity of the sender (H1). We then examine the effect of copartisanship (H2). Finally, we investigate whether coethnicity has a stronger effect than copartisanship (H3), and estimate the effect of other covariates which might impact responsiveness.

¹⁹We sent the emails outside any main election period. Federal and national elections were last held in October 2014, and will be held next in October 2018. Our emails thus reached the representatives about a year before the election campaigns properly start, but still towards the end of the legislative cycle. Reaching them towards the end of the legislative cycle made sure that they might indeed care about being reelected, while they were not yet busy (and thereby prevented from responding) with the proper election campaign.

²⁰Of course, one might debate whether responsiveness is achieved if only one out of four politicians responds to simple email requests. However, this question applies to many (including more established) democracies in Europe and not exclusively to Bosnia and Herzegovina. Our point here is that the response rate is comparable to other more developed democracies.

4.5.1 Effect of coethnicity on responsiveness

To recapitulate, we expect that MPs are more responsive towards coethnics than towards non-coethnics. The rationale behind this expectation is that political mobilization in Bosnia and Herzegovina is highly ethnicized, and that ethnicity works as a mental shortcut for political support. On the aggregate, however, we do not find evidence for this assumption. Although the effect is not statistically significant, MPs in our sample are even slightly less responsive to members of their own ethnic group: while the probability of receiving a response is about 23% for coethnic senders, it raises to 24% for non-coethnic senders ($p = 0.516$). The results are visualized in the left panel of Figure 4.2. In this figure, each histogram shows the distribution of the simulated treatment effects in 10,000 permuted randomizations; the red lines show the actual treatment effects. The p -value corresponds to the percentage of simulated treatment effects being at least as high as the actual treatment effect, or to the area on the right side of the red line. In sum, we find no empirical support for our first hypothesis, meaning that coethnicity between politicians and citizens does not seem to increase politicians' responsiveness.

When we study the response behavior by ethnicity of the politician, however, we find important differences (Table 4.3 and Figure 4.3). As on the aggregate level, the effects are not significant for Bosniak and Serb MPs, but point in the opposite direction of what we expected: Bosniak MPs are by about 5.5 percentage points *less* responsive towards Bosniak than towards other citizens (not statistically significant, $p = 0.275$). For Serbian MPs, the coethnic responsiveness bias is also negative, and amounts to -3.5% (not statistically significant, $p = 0.462$). Croat politicians, by contrast, are considerably *more* responsive towards coethnics – the coethnic responsiveness bias amounts to 16% and is significant at the 10%-level ($p = 0.091$). In other words, *only* Croat politicians exhibit a coethnic responsiveness bias in the direction that we expected. In fact, the coethnic bias we find among Croat MPs is twice as high as the coethnic bias McClendon (2016) finds in South Africa (8%). Put in this context, the coethnic responsiveness bias among Croat MPs is considerable.

The finding that the effect of coethnicity is strong and significant for Croat, but not other politicians demands further explanation. We suggest that this fact might be explained by varying levels of support among Bosniak and Croat politicians for the state of Bosnia and Herzegovina in its current form. Bosniaks are the most supportive group of the state, whereas many Croats and Serbs still have aspirations of re-unification with their ethnic kins in Croatia and Serbia (Palermo, 2008). From this point of view, the differing behavior of Croat and Bosniak politicians makes sense: Bosniak politicians who attempt to keep the state together reach out to all voters, whereas Croat politicians, striving for more power for their ethnic group or even a new state order, focus on their

coethnics.²¹

We also examine whether the effect of coethnicity differs as a function of MPs' parties. More specifically, we expect MPs from multi-ethnic parties to have a lower coethnic bias than MPs from explicitly ethnic parties. Parties with a clear multi-ethnic electorate have an explicit agenda of representing voters regardless of their ethnicity, and we would expect their MPs to act accordingly. However, we do not find evidence for this expectation (for more detail, see Section D.9 in the Appendix).

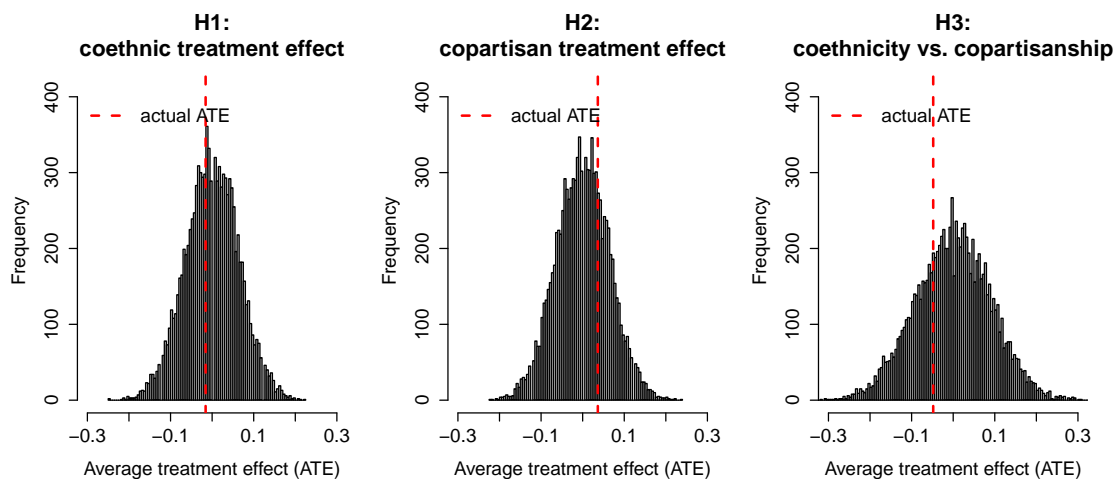


Figure 4.2: Randomization inference for hypotheses 1 to 3, with each 10,000 simulations. The red lines show the actual treatment effects.

Table 4.3: Size of coethnic responsiveness bias by ethnic group.

	Coethnic	Non-Coethnic	Difference	p -value
Croatian MPs	0.321	0.161	0.161	0.091
Serbian MPs	0.231	0.267	-0.035	0.462
Bosniak MPs	0.212	0.267	-0.055	0.275

Note: p -values are taken from randomization inference.

For all three hypotheses, we additionally analyse whether the response time differs as a function of the assigned treatment. More specifically, we examine whether MPs take longer to respond to non-coethnics and non-copartisans. If such a pattern existed, it could be an additional sign of bias in responsiveness among MPs. However, our data does not allow for such an interpretation: we find no significant differences in response time between the four treatments (cf. Section D.10 in the Appendix).

²¹We run additional robustness checks in Section D.8 of the Appendix to show that opposing directions of the effect cannot be explained by the Croat treatment name simply being more popular.

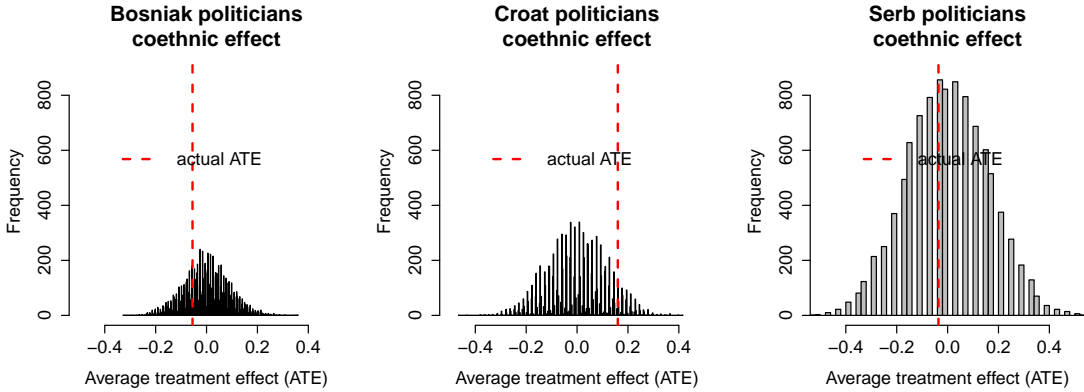


Figure 4.3: Randomization inference for hypothesis 1, by ethnicity of the politician, with 10,000 simulations. The red lines show the actual treatment effects.

4.5.2 Effect of copartisanship on responsiveness

Our second hypothesis suggests that copartisanship between citizens and politicians increases MPs' responsiveness. Due to Bosnia and Herzegovina's proportional election system, parties play a stronger role than for instance in the United States, and partisanship might therefore be an important cue influencing how MPs react to citizen requests. The results point in the expected direction (23.1% response rate for non-copartisans vs. 25.7% response rate for copartisans), but are not statistically significant ($p = 0.350$, see middle panel of Figure 4.2). Furthermore, we find no difference between politicians from multi-ethnic and ethnic parties with regard to a copartisan responsiveness bias (see Section D.6 in the Appendix). In total, this suggests that copartisanship plays a less important role than we expected.

4.5.3 Comparing the effect of coethnicity and copartisanship

Turning to our third and final hypothesis, we examine how coethnicity and copartisanship relate to one another. We hypothesize that coethnicity plays a more important role than copartisanship in Bosnia and Herzegovina's highly ethnicized political system. To test this, we examine the difference between the coethnic and copartisan treatment effect as spelled out in Section 4.4.3 above. While the effect is not significant ($p = 0.298$), it points in the other direction of what we expected: in our sample, the effect of coethnicity is 4.7 percentage points *lower* than the effect of copartisanship. As a consequence from the important differences between ethnicities for the coethnic treatment, we also run analyses separate by politicians' ethnicity. We do not find significant results for any of the ethnic groups (for more detail, see Section D.7 of the Appendix).

Although a larger sample might still produce significant results, we can at least conclude that coethnicity does not seem to be highly more important than copartisanship in explaining politicians' responsiveness. If coethnicity was highly more important than

copartisanship, we would with high likelihood have found significant results even with the relatively small sample we have (see section on limitations below).

4.5.4 Other factors explaining responsiveness in Bosnia and Herzegovina

Finally, we take a closer look at the effect of covariates that could influence responsiveness. We test for direct effects of belonging to a multi-ethnic party and the ethnic majority, partisanship, age, and gender.

We only find a significant effect for multi-ethnic parties: MPs from multi-ethnic parties respond significantly more often to the emails than MPs from ethnic parties. This effect cannot be explained by a higher responsiveness towards coethnics (see Section 4.5.1 above and Section D.9 in the Appendix). Instead, MPs from multi-ethnic parties are more responsive *to everyone*, be they coethnics, copartisans or neither of the two. This finding might be related to the fact that multi-ethnic parties present themselves as a fresh and better alternative to ethnic parties, and make special efforts to engage with citizens who are disillusioned about the functioning of politics in the country (e.g. Efendic, 2013).

Table 4.4 summarizes the results for all covariates. Besides our treatment variables, model 1 includes a dummy for multi-ethnic parties, gender, and majority status. Model 2 adds age, whereas model 3 compares the effect of partisanship between multi-ethnic, Bosniak (reference), Serb, and Croat ethnic parties. We do not find any significant differences with regard to gender, age or the level of parliament in which an MP is elected. Also, minority status does not seem to matter.²²

4.5.5 Limitations

Before concluding, we evaluate limitations of our study. Thereby, we pay specific attention to the power of our experiment, to the sensitivity of the findings to small changes in response behavior, and to the selection of parliamentary bodies.

First, with not more than 200 MPs in the experiment, the statistical power remains rather low. As mentioned earlier, this low number is explained by the fact that not all legislative bodies in Bosnia provide email addresses for individual MPs. The fact that most of our results are statistically insignificant may stem partly from this low N . Given our sample size, the treatment effect would need to be much larger in order to be significant. For example, given an average response rate of 24%, differences between treatment levels would need to exceed 15 percentage points in order to reach significance (given a statistical power of 80%). Therefore, it is not surprising that the rather small treatment effects we find remain insignificant.

²²Due to missing values in age and the exclusion of independent candidates in the categorical party variable, the N is reduced in models 2 and 3.

Table 4.4: Logistic Regression Results

	<i>Dependent variable:</i>		
	Response received		
	(1)	(2)	(3)
Coethnic	-0.11 (0.36)	-0.27 (0.40)	-0.34 (0.40)
Coparty	0.19 (0.37)	0.14 (0.39)	0.14 (0.40)
Multi-ethnic Party	1.56*** (0.40)	1.77*** (0.44)	1.52*** -1.10
Male	-0.14 (0.45)	-0.13 (0.47)	-0.17 (0.49)
Majority MP	-0.13 (0.46)	-0.07 (0.48)	0.30 (0.66)
Age		-0.01 (0.02)	-0.01 (0.02)
Croatian Party			-0.36 (0.81)
Serbian Party			-1.10 (1.05)
Parliament		included	
Constant	-0.90 (0.72)	-0.51 (1.58)	-0.26 (1.80)
Observations	192	173	168
Log Likelihood	-95.35	-83.61	-80.72
Akaike Inf. Crit.	214.70	193.22	191.44

Note:

*p<0.1; **p<0.05; ***p<0.01

A second limitation related to the small N is the sensitivity of our results to small changes in the data. To quantify this sensitivity, we run several simulations. Given the sample size ($N = 192$), and the total number of responses ($n = 49$), how many additional responses, possibly contradicting our findings, would change our results? To destroy the positive, significant effect of coethnicity among Croat politicians, only one Croat politician would have needed not to answer a coethnic, keeping everything else constant (out of nine Croats who received a coethnic treatment and did in fact answer; the treatment effect would be 12.4%, $p = 0.141$). To find on the contrary a negative, significant effect of coethnicity among Croat politicians, however, eight out of the existing nine Croat politicians would have needed not to answer their coethnics, keeping everything else constant (the treatment effect would then be -12.6%, $p = 0.072$). These simulations indicate that the statistical significance of our results is quite sensitive to small changes in the data, but that considerably larger changes would be necessary to find treatment effects going in the opposite direction of what we find (this holds equally for the findings regarding Bosniak politicians).

Finally, we consider limitations stemming from the selection of parliamentary bodies. More specifically, our experiment includes no politicians from the federal parliament of the Republika Srpska (RS), and only from a selected number of cantons. We discuss in the following what this signifies for the generalizability of our results. First, we can say only little about politicians of Serb ethnicity, as only few are included in our sample. Furthermore, although we have no specific theoretical reason to expect so, MP behavior could possibly differ in the RS, which we cannot evaluate empirically here. Second, the cantons included in the sample are not chosen randomly, but for reasons related to the availability of MP email addresses. This could imply that politicians from the other remaining seven cantonal assemblies behave differently. Especially, they might be less responsive overall (if the culture in their canton does not even force the assembly to publish MP email addresses). However, we are in our study specifically interested in the *variation* in the response rate, and not the overall response rate itself. We have little reason to believe that the *variation* in the response rate as a function of the treatment differs in the other remaining seven cantons. Especially, the three cantons that we include in our analysis vary strongly in their ethnic composition: The Zenica-Doboj Canton has a Bosniak majority, with Croats being the second largest group. Canton 10 has a Croat majority, with Serbs being the second largest group. Herzegovina-Neretva Canton, finally, is ethnically mixed with slightly more ethnic Croats than Bosniaks. Therefore, the three cantons that we include in our study give us a good cross-section through different types of ethnic compositions in Bosnia and Herzegovina, which could impact *variations* in the response rate.

In sum, we are overall confident that our findings are robust and to some extent generalizable. While the small N reduces the power of our analysis, it does less influence the *direction* of the effects.

4.6 Conclusion

Responsiveness towards the preferences and demands of citizens is a key aspect of democracy. Nevertheless, it has recently been argued that politicians frequently live disconnected from their constituents (e.g. King, 2017; Latham, 2014). In this paper, we studied responsiveness under particularly difficult circumstances, namely in the multi-ethnic and post-conflict society of Bosnia and Herzegovina. Bosnia and Herzegovina is characterized by a highly ethnicized political system and the codification of ethnicity through its consociational peace agreement and constitution. Consequently, ethnicity plays an important role in many aspects of citizens' life and in politics. Over the last years, however, a growing number of people have started to identify with the country-wide *Bosnian* identity or other non-constituent identities. In this study, we were particularly interested in examining how these citizens are represented in such a highly ethnicized system. We, therefore, studied the individual and joint effects of coethnicity and copartisanship on MP responsiveness in Bosnia and Herzegovina. We expected MPs to be more likely to respond to copartisan and coethnic voters than to non-coethnic and non-copartisan voters. Due to the high ethnicization of politics in Bosnia and Herzegovina, we expected the strongest effect for coethnic voters.

We tested these hypotheses with a field experiment. We sent emails to 200 cantonal, regional, and national MPs, and randomly varied the senders' coethnicity and copartisanship with the respective politician. Our findings reveal little support for a coethnic response bias, except for Croat MPs who are significantly more likely to respond to members of their own ethnic group. Furthermore, we find neither support for the expectation that copartisanship increases responsiveness, nor for the expectation that ethnicity is more important than partisanship in explaining responsiveness.

Especially the relatively small number of MPs in our sample reduces the precision of our findings and associates them with high uncertainty. Despite this limitation, however, the findings have important implications for the understanding of political responsiveness in Bosnia and Herzegovina in particular, and in multi-ethnic democracies more generally. Regarding Bosnia and Herzegovina, we argue that a response rate comparably high as in other European democracies implies that MPs adhere to their duties and respond to citizens, at least if it concerns direct and easy-to-answer requests. While many may understand this as a prerequisite of every democratic (and democratising) society, it is more than most critics of Bosnia's politics would have expected. Second, the fact that we do not find a strong coethnic bias in responsiveness with the exception of Croat MPs can, normatively, be interpreted as a positive sign as well. It shows that the democratic system works relatively well and that people are represented not exclusively based on their ethnic identity.

More generally, our findings might suggest that political cleavages are less frozen than one would typically assume. Representation along ethnic lines does not appear to be

the only or even main mechanism when it comes to direct interactions between citizens and politicians. Furthermore, if our findings travel to other post-conflict contexts and new democracies, they suggest that representation works similar in these societies and other, more established democracies. Of course, future studies are needed to validate our findings. Especially, more field experiments in post-conflict, transitioning democracies are necessary in order to understand to what extent the findings of predominantly U.S. studies can be generalized to other contexts. Moreover, future studies could validate our findings by examining legislative behavior in parliament to better understand if our findings are even applicable to policy-making.

Finally, one of our key finding points to the difference between Croat and Bosniak MPs. We suggested that the lacking coethnic response bias among Bosniaks can be explained by their close connection with the national state. In other words, Bosniaks are often seen as the underpinning group of the Bosnian state, whereas some Croats still flirt with alternative political solutions, such as bigger autonomy or joining Croatia (e.g. Keil and Perry, 2015, 86). Bosniaks might, therefore, be less inclined to favor their own ethnic group. Whether this explanation is valid should be studied in future work, for instance by repeating the same field experiment in Belgium to see whether Walloons (as the ethnic group supporting the Belgian state) show a smaller coethnic response bias than the Flemish, who tend to be in favor of a split-up of the state.

4.6. Conclusion

5

Conclusion

It has repeatedly been argued that citizens and politicians alike tend to live more and more disconnected in their own realities, where they interact little with those who are different. This issue gains specific importance when discussed in the context of a multi-ethnic society, where divides between those who are different are often specifically pronounced. Additionally, it is often argued that politics enhances cross-ethnic divides in such contexts. Existing research, however, has to date not paid attention to cross-ethnic interactions in a multi-ethnic context and the influence that politics has on them. The present dissertation closes this gap by examining cross-ethnic interactions on a large blogger platform and in a field experiment in Bosnia and Herzegovina. In this concluding chapter, I first critically discuss the contributions made in this dissertation, and thereby refer back to an outline of these contributions presented in Chapter 1. I then derive policy implications from the findings, and conclude by presenting avenues for future research.

5.1 Contributions and Significance of Findings

5.1.1 Theoretical and empirical contributions

Identity-based online segregation in a multi-ethnic society In this dissertation, I offer a first estimation of the existence and extent of online ethnic segregation in a multi-ethnic society. Although existing research has established that online spaces tend to be segregated along lines of opinion, such as the political left-right and a religious secular-reformist divide, it is to date the first study that examines explicitly the level of

identity-based segregation in the personal networks of bloggers in a multi-ethnic society. I find that the large Bosnian blogger platform I examine is indeed highly segregated along ethnic lines, and that the level of segregation cannot be explained by network attributes such as relative group sizes, other background characteristics of bloggers, or algorithms implemented on the platform. This finding has important consequences for our understanding of how cross-ethnic interactions play out in the online sphere: if offline society is characterized by ethnic divides, these divides are not overcome spontaneously once physical and geographical boundaries are torn down by the Internet, and once individuals are transferred to the different social context they find online. In essence, this means that either deliberate efforts have to be made to enable an overcoming of ethnic divisions in the online sphere, or efforts have to be made in the offline sphere to change the nature of cross-ethnic relations. I outline policy implications along both avenues below.

Micro-mechanisms of ethnic politics Another key contribution of this dissertation is the finding that individual-level cross-ethnic interactions are indeed influenced by external, real-world political events such as political elections. I thereby show how factors of the political system trickle down to individual-level interactions, and thereby shape the social fabric of society. What happens in the political arena cannot be considered as disconnected from the rest of society; in fact, macro-level events seem to be able to intensify the formation of social segregation inside society. In a nutshell, this signifies that what happens in the political arena also impacts social relations more largely, and that the type of political climate therefore matters even for individual-level interactions.

While this is true with regard to blogger interactions, the picture looks different when considering interactions between politicians and citizens. In fact, interactions between politicians and citizens seem to be shaped far less by ethnic identity than is the case for interactions between bloggers. This finding sheds new light on the idea that politicians constitute the driving force behind the ethnicization of politics. While this might still be true for many of their explicit campaign messages, it does not seem to apply to all their interactions with citizens. In fact, only politicians from one ethnic group (Croats) clearly discriminate along lines of ethnicity when interacting with citizens. As I argue in the empirical part of this dissertation, this divergence in politicians' coethnic responsiveness bias can potentially be explained by how politicians relate to the multi-ethnic state. If they belong to an ethnic group that is in favor of the multi-ethnic state, they might be more likely to see themselves as representatives of all citizens regardless of ethnicity. However, this interpretation necessitates additional research, as I lay out in Section 5.3 below.

5.1.2 Methodological contributions

Fine-grained behavioral data on cross-ethnic interactions In this dissertation, I use ICT-based methods of data collection for both observational and an experimental study. I thereby collect data on individuals' behavior in their natural environment. This is possible because ICT has today permeated everyday life: many aspects of social interactions that just some decades ago took place in the offline world now manifest themselves in online spaces. For example, it is natural that citizens today write emails to their representatives, instead of sending letters as they would have done previously. What earlier were conversations over the garden fence, now incorporates itself on blog platforms and chat forums. Social behavior thereby leaves traces that could hardly have been observed before the digital revolution. The methods of data collection I use in this dissertation allow to dig deep into the social reality of Bosnia and Herzegovina with little more technical equipment than a server, a running script, standard email tools, and a working Internet connection. In the light of the unprecedented possibilities that ICT-based methods of data collection offer to the social scientist, I hope the procedures described here will inspire many future research endeavors.

Additionally, this allows me to offer new behavioral data on cross-ethnic interactions. In contrast to existing approaches of measuring cross-ethnic social interactions, this data does not rely on self-reporting, and includes a large number of individuals and their interconnections. Because individuals are observed in their natural environment and in their day-to-day interactions, problems such as social desirability bias or Hawthorne bias do not occur. The data provided here could prove of great value for future research enquiries, and demonstrates the great potential such type of data has for advancing our understanding of social interactions.

Simulation for inference in diverse contexts I use different simulation-based methods to estimate and quantify the effect ethnicity and other variables have on the initiation of social interactions. In contrast to parametric approaches such as regression, simulation does not assume a specific underlying distribution of the data that may be violated in certain use cases, such as when sample sizes are small or the data is in non-standard format. Simulation signifies in this context that values of the variables of interest are permuted. I extend existing approaches from the fields of network analysis and field experiments, and show that such approaches can indeed be used for various types of non-standard enquiries. To be more precise, I present a procedure of simulation-based inference for block random treatment assignment in experiments, and a procedure for testing for heterogeneous effects between different groups in a network. Given that simulation-based approaches are especially useful in contexts where data structures do not easily fit parametric assumptions, and that such contexts will occur more often as the amount and thereby the types of data available skyrocket with the advancement of

the digital revolution, I am convinced that the methods introduced here will prove useful to future researchers.

5.2 Policy Implications

A number of policy implications can be derived from the findings of this dissertation. One part of the implications regards the online sphere. Yet the findings of this dissertation exactly give evidence of a close interrelatedness between online and offline social reality. In consequence, I also discuss policy implications for the offline sphere.

5.2.1 Policy implications for the online sphere

The findings in this dissertation suggest that online social interactions in a multi-ethnic society are highly segregated along ethnic lines, even though geographical and other physical barriers do not exist online, and no algorithm that could bring about segregation is implemented in the context examined here. Furthermore, the findings propose curiously that interactions between Bosnian politicians and citizens might be less ethnically segregated than interactions between Bosnian bloggers. This has important consequences for policies around the architecture of digital media, and social media specifically.

As just mentioned, ethnic segregation on the blogger platform I examine cannot be explained by filter algorithms or suggestion mechanisms. We can therefore deduct that individuals build ethnically segregated online networks when given the choice. In other words, explicit measures would be necessary to counter an inherent tendency towards ethnic segregation. One important option to counter this tendency are policies of “positive discrimination” on social media. Should algorithms be developed that can explicitly lower online ethnic segregation, and should they preferentially be employed in times when they are needed most, such as times of elections? Some research has already been conducted in this area, though not with an explicit focus on cross-ethnic interactions. For example, Bozdag and van den Hoven (2015) suggest different types of software design to “break the filter bubble”. Graells-Garrido, Lalmas and Quercia (2013) developed an algorithm that connects people of opposing views. More specifically, they show that negative emotions occur if people are exposed to opposing views without further measures. However, when they are first confronted with their own position on a specific topic (with the help of a visualization tool presented in the paper), and then introduced to opposing views, these negative emotions do not occur. According to the authors, people need to be nudged into reading content from people with opposing views (cf. MIT Technology Review, 2013). Similar mechanisms could be employed in multi-ethnic contexts to bring together individuals from different ethnic backgrounds. While the existing dissertation gives evidence that ethnic online segregation will most probably not be completely overcome without such explicit measures, additional research is needed

to evaluate how exactly such measures could be implemented (see Section 5.3 below). Although compulsory measures in this regard would be too early and may never be desirable, policy makers, opinion leaders as well as the international community should take stronger interest in the topic, and actively seek dialogue with users and providers of social media in multi-ethnic societies to discuss this option.

5.2.2 Policy implications for the offline sphere

The results from this dissertation point to the fact that online social interactions are influenced by the offline context: political elections and active engagement with politics influence the level of online ethnic segregation in individuals' personal networks. At the same time, it appears that politicians discriminate less along ethnic lines than expected, at least in private citizen-politician interactions with little social control. This suggests that politicians may not be intrinsically motivated to promote ethnic divides. If they were, they would exhibit ethnically discriminatory behavior even in situations with little social control as the one studied in Chapter 4. As a result, we can assume that not all politicians are intrinsically motivated to engage in ethnicized political campaigns, but that the political systems shapes their incentives to do so. Consequently, the discussion on the political system of Bosnia and Herzegovina (and other multi-ethnic countries) needs to continue. Many researchers and policy-makers, including from the European Union and OSCE, have long pointed out that the current political system of Bosnia and Herzegovina institutionalizes ethnicity, thereby hampering greater interethnic reconciliation and unfairly excluding those who do not fit into fixed ethnic categories (e.g. Bieber, 2004, 2017; Claridge, 2010; European Commission, 2016; International Crisis Group, 2012; Keil and Perry, 2015). Findings from this dissertation suggest that structural reform in the political system could do much to lower politicians' incentives to resort to ethnicity as a means of political mobilization, since not all politicians appear to be intrinsically motivated to exhibit ethnically discriminatory behavior.

5.3 Future Research

Three main avenues of future research can be derived from the findings in this dissertation: research on the consequences of online ethnic segregation, on the design of digital media in multi-ethnic contexts, and on the connection between politicians' cross-ethnic responsiveness and their relation to the state. I outline each of those in the following.

Consequences of online ethnic segregation This dissertation has offered extensive evidence of the existence of online ethnic clustering. However, it goes beyond the limits of this dissertation to establish and quantify the political and individual-level *impacts* of online ethnic segregation. Does online ethnic segregation only withhold the positive effects that cross-ethnic interactions would bring about, or is it originally detrimental

in itself, as some theorists and journalists have suggested for other types of online segregation (El-Bermawy, 2016; Pariser, 2011)? Under which conditions and for whom is online ethnic segregation detrimental, and leads for example to ethnic polarization and radicalization? Are there certain conditions under which it is not detrimental, but potentially positive? Some researchers have argued that politically segregated personal networks might help increase political participation, especially turnout (Bond and Messing, 2015; Jang, 2009). While this does not contradict the suggestion that online segregation leads to radicalization (radicalized individuals are more likely to participate politically, however understood), it demands further empirical research that distinguishes between different contexts, individual background variables, and network characteristics that are most prone to lead to individual radicalization in segregated online contexts. This question gains additional topicality in the light of other types of online radicalization, especially radical Islamism.

Although this research avenue is extremely promising and of extraordinary importance for policy-making, two interconnected issues will need to be taken into consideration. First, identifying a truly causal effect will be challenging. It is difficult to think of how online segregation can be exogenously varied. This is connected to the second issue, namely ethical concerns. Even if algorithms could exogenously influence the level of segregation in individuals' personal networks, ethical justifications of such an approach are tricky. One related example is the Facebook study by Kramer, Guillory and Hancock (2014). The corresponding author was part of Facebook's Data Science Team, and the researchers could thus experimentally vary the content that some 700,000 Facebook users were exposed to. The study received a massive backlash, including from international newspaper outlets (for an overview see Puschmann and Bozdag, 2014). Law professors Grimmelman and Henry (2014) asked for a retraction of the article, because the study violated in their view the principle of informed consent. A possible solution to these issues will be a combination of small- N experimental (laboratory), and large- N observational studies. With regard to cross-ethnic interactions in a multi-ethnic context, future research should specifically examine whether online ethnic segregation enhances offline and online ethnic divides and ethnic polarization.

Design of digital media in multi-ethnic contexts Another practical research agenda relating to the policy implications discussed above concerns the question of how social networks and online media more generally can and should be designed in a way that is normatively desirable, while acceptable to users. We can assume that users do not want to be continuously "educated" by online media about which social relations they should form. In other words, users should and want to be treated as mature citizens. In fact, while normative challenges in machine learning and algorithms have gained importance among researchers recently (cf. Introna and Nissenbaum, 2000; Jagadish, 2016; Joseph et al., 2016; Kraemer, Van Overveld and Peterson, 2011; Mittelstadt et al., 2016;

Mittelstadt, 2016), this research agenda has to date not incorporated the issue of *user acceptance*. If social media are supposed to make a real change in social relations in difficult contexts, these two strands urgently need to be combined, and equally have to take into consideration the *real-world consequences* that any design of digital media can have (see preceding paragraph). With regard to a multi-ethnic context, this signifies that future research should investigate under which circumstances users accept social media features that alleviate online ethnic segregation, and how such features influence cross-ethnic interactions and other relevant factors both online and offline.

Cross-ethnic responsiveness and politicians' relation to the state In this dissertation, I establish together with my coauthor Miriam Hänni that only politicians from one ethnic group in Bosnia and Herzegovina exhibit a coethnic responsiveness bias, namely Croat politicians. We hypothesize that this difference between groups can be explained by the different relation each ethnic group has with the state. While ethnic Bosniaks favor a stronger central state, ethnic Croats wish for further decentralization along ethnic lines (cf. Keil and Perry, 2015, 86). A possibility to test this explanation would be to run a comparable study in Belgium. In Belgium, Walloons support and want to keep the Belgian state, while an important share of the Flemish population either wants to split up Belgium or join the Netherlands. Hence, Belgium presents a similar situation as Bosnia and Herzegovina: both Bosniaks and Walloons want to keep their multi-ethnic state, while both Croats and Flemish think of either breaking up the country or becoming part of another state. Finding similar results in Belgium would be equivalent with Walloon politicians being equally responsive to requests by Walloon and Flemish citizens, while Flemish politicians should be more responsive to requests from Flemish citizens. Finding comparable results in a different context would give additional leverage to our interpretation of the findings, and would add an entirely new angle to research on responsiveness. To be more precise, it would signify that politicians' responsiveness is dependent upon their relation to the central political institutions of their country.

5.3. Future Research



Declaration of Authorship

I, Annerose Nisser, declare that this thesis entitled “Cross-Ethnic Interactions and the Influence of Politics: Evidence from Online Spaces and a Field Experiment in Bosnia and Herzegovina” and the work presented are my own, with the exception given below. I have mentioned all used sources and correctly cited them when quoting the work of others. – Chapter 2 is co-authored work with my supervisor Nils B. Weidmann; Chapter 4 is co-authored work with Miriam Hänni. The declaration on the division of work for these chapters is below.

Chapter 2 – Online Interethnic Divisions I, Annerose Nisser, confirm that my contributions to this paper are the following:

- data collection, data cleaning;
- data analysis;
- literature review;
- drafting the paper;
- supervision of the research assistant;
- presentation of the paper at the 2015 ENCoRe Workshop in Barcelona, the 2015 GESIS Workshop on Computational Social Science in Cologne, and at the 2016 EPSA Convention in Brussels.

The following is joint work with Nils B. Weidmann: development of the research design, especially development of the simulations; critical revision of the paper.

Chapter 4 – Ethnicity and Partisanship: A Field Experiment on MP Responsiveness in Bosnia I, Annerose Nisser, confirm that my contributions to this paper are the following:

- power analysis;
- randomization inference;
- simulation analysis on the sensitivity of the findings;
- administration and supervision of the research assistant;
- presenting the paper at conferences, including the 3rd Barcelona-Gothenburg-Bergen Workshop on Experimental Political Science 2017 in Bergen, the 2017 EPSA convention in Milan, and the 2017 Scientific Retreat “Theoretical and Methodological Progress in the Study of Violence and Contention”.

The following contributions were made by my coauthor Miriam Hänni: introduction of the literature on representation; identification of control variables; technical set-up of the emails using Mail Merge by Thunderbird; creation of *Gmail* accounts; coding incoming emails; logistic regressions.

The following work was done in close cooperation between the two coauthors: development of hypotheses and theory section; development of the research design; descriptive data analysis; sending out and answering the emails; drafting the paper; critical revision of the paper.

B

Supplementary Material for Chapter 2

B.1 Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Intra-ethnic link share	5,223	0.69	0.28	0.01	1.00
Political Blogger	5,376	0.02	0.15	0	1
Age	4,937	25.00	9.08	10	74
# of blog posts	5,383	123.71	370.47	10	13,113
# of links	5,383	140.29	255.69	10	3,481
Ethnic Bosniak	5,383	0.76	0.43	0	1
Ethnic Serb	5,383	0.07	0.25	0	1
Ethnic Croat	5,383	0.17	0.38	0	1
Female	5,165	0.66	0.47	0	1

Table B.1: Summary statistics at the level of bloggers.

B.2 Sample Size

Figure B.1 shows the size of the sample as a function of the threshold of the minimum number of followers, favorites and posts of bloggers being included in the sample. As Figure B.1 shows, choosing a lower threshold would leave us with a bigger sample. However, as mentioned in the main text, we have to restrict the sample to included only bloggers who (1) have written enough texts to determine their ethnicity from their

B.3. Ethnicity and Language

language, (2) have marked enough others to calculate their intra-ethnic link, and (3) who do not run spam blogs.

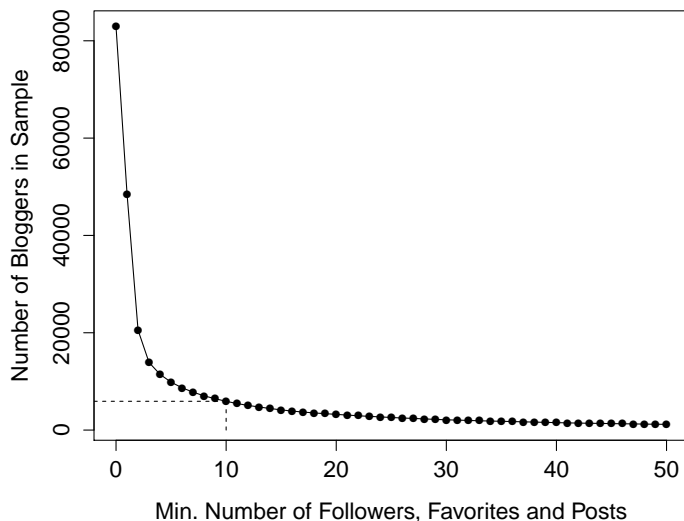


Figure B.1: Sample size as a function of blogger activity. The x-axis shows the minimum number of followers, favorites and posts a blogger has to have in order to be included in the sample. The dashed line shows the threshold chosen in Chapter 2.

B.3 Ethnicity and Language

In Bosnia and Herzegovina, ethnic differences largely correspond to linguistic differences. In other words, the three main ethnic groups (Bosniaks, Croats and Serbs) speak slightly different languages (Bosnian, Croatian and Serbian). This justifies the use of language as an indicator of ethnicity as implemented in Chapters 2 and 3 of this dissertation. The differences consist mostly of small differences in grammar and word use. Differences in grammar concern the forming of questions (“Jeste li ...” in Bosnian/Croatian and “Da li ste ...” in Serbian), and the form of the infinitive, among others. As an example of differing words, “coffee” is “kahva” in Bosnian, “kava” in Croatian and “kafa” in Serbian; “grandma” is “nena” in Bosnian, and “baba” or “baka” in Croatian and Serbian (Tolimir-Hölzl, 2009, 155). As becomes clear from this, language differences are too small to hinder communication between speakers of the different language variants. At the same time, differences are large enough to enable average people from Bosnia and Herzegovina to intuitively identify the language and thereby the ethnicity of their interaction partners. In the following, I offer a short historic overview of the role these language differences have long played in politics, and a assessment of the relationship between politics and today’s language differences. Therefore, I examine the correlation between ethnicity and language using data from the 2013 Bosnian census.

B.3.1 History of language differences

In this paragraph, I only name a few indicative events that exemplify the highly disputed character and political role of language differences in the Balkans. Greenberg (2004), Busch and Schick (2006) and Okuka (1998) contain further historic details.

A first “language planning conference” for the Balkans was held as early as in 1850 in Vienna (Greenberg, 2004, 24). At the time, today’s territory of Bosnia and Herzegovina still formed part of the Austrian Empire (from 1867 onwards the Austro-Hungarian Empire, see Greenberg, 2004). The language conference concluded in the signing of the Vienna Literary Agreement (1850) that affirmed that there should be only one unified language standard for Serbian and Croatian (Greenberg, 2004, 24). This agreement can be understood as a political move against the Serbian elite, that was at the time writing in an artificial, strongly Russian-influenced dialect that was “incomprehensible to ordinary people” (Greenberg, 2004, 25).

Later on, the territory of today’s Bosnia and Herzegovina formed part of the Kingdom of Serbs, Croats and Slovenes (1918-1929) and the Kingdom of Yugoslavia (1929-1941, Greenberg, 2004, 16). During that time, only one official language existed (called “Serbo-Croato-Slovenian”, Bugarski, 2012, 225), but language constituted a contested issue leading to ethnic tensions between Serbs and Croats (Greenberg, 2004, 16). In 1941, Croatia, then a Nazi satellite state, proclaimed a “pure Croatian language, cleansed of any Serbian influence” (Greenberg, 2004, 16). When the Yugoslav Republic of Macedonia was formed in 1944, a new language, Macedonian, was officially recognized (Busch and Schick, 2006, 217). According to Busch and Schick (2006, 217), the official recognition of Macedonian can be explained by a compromise between Serbs, who claimed the Macedonian variant to be Serbian, and Bulgarians, who insisted it was Bulgarian. In 1954, the Bosnian, Croatian, Serbian and Montenegrin member republics of the Socialist Federal Republic of Yugoslavia signed the Novi Sad Agreement which established Serbo-Croatian as the only official language in these republics (Busch and Schick, 2006; Greenberg, 2004; Okuka, 1998). At the same time, the Novi Sad Agreement specified a Croatian and a Serbian variant, which both were “allowed” (Busch and Schick, 2006, 217; cf. Greenberg, 2004, 29ff; Okuka, 1998, 78). These historic to-and-fros show the long history of language as a highly salient political issue connected to ethnic identity and ethnic self-determination.

During the break-up of Yugoslavia in the 1990s, language played again an important role. Croatia declared Croatian as its official language shortly before declaring independence; in Bosnia and Herzegovina, three official languages (Bosnian, Serbian, Croatian) were declared in 1993 (cf. Busch and Schick, 2006, 219). In 1993, decision makers in the Republika Srpska implemented a language cleansing by prescribing a specific variant of Serbo-Croatian (the ekavian variant) for public use, including schools and the media (Busch and Schick, 2006, 220; Okuka, 1998, 112).

B.3.2 Politics and today's language differences

Today, the Constitution of Bosnia and Herzegovina does not specify any official languages, although it recognizes three “constituent” ethnic groups (Constitutional Court of Bosnia and Herzegovina, 2016). Footitt and Kelly (2012) note that the Dayton Peace Agreement was written (besides the English version) in Bosnian, Serbian, and Croatian, which could be understood as a de facto recognition of the three languages (cf. UN Peacemaker Database, 2017 for the original agreement). At the same time, some linguists specialized in the region refuse to speak of different languages, but use the term “dialects” instead (e.g. Kordić, 2008).

In today's Bosnia, language differences are enhanced by the education system. Education is the responsibility of the federal entities, i.e. the Republika Srpska, the Federation of Bosnia and Herzegovina, and the Brčko District (Busch and Schick, 2006, 223). As a result, three different curricula and three different sets of textbooks are in use (Busch and Schick, 2006, 224). In the Republika Srpska, children are taught in Serbian or Bosnian, while pupils in the Federation of Bosnia and Herzegovina are educated either in Bosnian or Croatian, depending on the ethnic majority in a given municipality (Busch and Schick, 2006, 224). This sometimes means that minority children are educated in the curriculum of the local majority, however, often “two schools under one roof” are put in place (Brkanic, 2017; Lowen, 2010; Torsti, 2009). “Two schools under one roof” refers to the policy that children from different ethnic groups are taught in the same school building, albeit in different parts of the same building or with non-overlapping timetables. Also, some children are bussed to mono-ethnic schools outside their area of residence (Busch and Schick, 2006, 224).

While the previous paragraphs only increase the plausibility that language differences in today's Bosnia are substantial and socially highly relevant, Tolimir-Hözl (2011*a*) actually measures these language differences empirically. By taking samples of speakers from the three ethnic groups, she finds that language differences indeed correlate with ethnic identity, even in cities where ethnic groups are more likely to mix (Tolimir-Hözl, 2011*a*, 323, 325). To quantify this correlation within the population, I analyse in the following data from the 2013 Bosnian census on self-declared language and ethnicity.

B.3.3 Statistical correlation between ethnicity and language

In the following, I systematically analyze the correlation between self-declared ethnicity and self-declared language use, using data from the 2013 Bosnian census (Agency of Statistics of Bosnia and Herzegovina, 2016). The 2013 Bosnian census is the first and only census after the Bosnian War, and its publication was a politically highly disputed issue, especially its data on the ethnic composition of the country (European Parliamentary Research Service, 2014). In fact, the publication of the results took three years, because several political actors could not agree on the terms of the publication (Jukic, 2015).

This again exemplifies the pivotal role ethnic identity plays for politics. By showing the extremely high correlation between ethnicity and language, I justify my approach of using language as a proxy for ethnicity, as done in Chapters 2 and 3 of this dissertation.

The census data is available at municipality level. More specifically, the data contains the exact number of persons identifying with each ethnic and linguistic group in each municipality. In Figure B.2, I plot the relationship between self-declared language and self-declared ethnicity, for all three ethnic groups, as well as ethnic “Others” and “Other” language speakers. The four panels show a correlation close to perfect: 0.9984 for ethnic Bosniaks and Bosnian language speakers, 0.9968 for ethnic Croats and Croatian language speakers, and 0.9999 for ethnic Serbs and Serbian language speaker. In linear regressions of ethnicity on language, the regression coefficients are significant at a 1⁻¹⁸%-level for each of the three coefficients. The correlation between the language category “Other” and the ethnicity category “Other” is lower (0.824); this is probably partly explained by the fact that the ethnic category “Other” includes respondents from ethnic and language minorities, but also respondents who explicitly refuse to identify in ethnic terms.¹

As mentioned above, the 2013 census data is unfortunately not available at individual level, but only at the aggregated municipality level. It could thus mathematically be possible to find a perfect correlation between language and ethnicity even if *there are only few Bosniaks who speak Bosnian and only few Serbs speaking Serbian etc.*² This could be the case in a municipality equally split between two ethnicities, let us assume between Bosniaks and Serbs. If in this case Serbs only spoke Bosnian and Bosniaks only spoke Serbian, we would still find a perfect positive correlation at municipality level (although the correlation would be perfect negative at individual level). This problem is related to the problem of ecological inference (King, Rosen and Tanner, 2004). However, combining the evidence from the 2013 census data with case knowledge about Bosnia and Herzegovina, and examining the correlation between ethnic and linguistic groups in municipalities with one large majority, it is fair to say that we have all reason to exclude this possibility.

Critics may raise one remaining concern: the 2013 Bosnian census relies on self-declared language. When I use language as an indicator of ethnicity (Chapters 2 and 3), on the other hand, I observe actually spoken language. There could potentially be a mismatch between self-declared and actually spoken language. Put differently, the correlation between ethnicity and self-declared language might be higher than the correlation between ethnicity and actually spoken language. Although this may to some

¹See for example the campaign “The Fourth Constituency” by some NGOs, e.g. <http://www.demidigest.net/a-civic-bosnia-zasto-ne/> [2016-11-23]. Advocates of the “Fourth Constituency” want to establish a fourth, civic, not ethnically defined constituency as a supplement to the three constituent people (three ethnic groups) set out in the Bosnian Constitution.

²In municipalities where one ethnic and one language group form a large majority, for example over 90% of the population, the correlation at municipality level does by necessity imply a large correlation at individual level. This is different for municipalities which are about equally split between two or three ethnic and language groups.

extent be the case, I have two reasons to believe that this does not compromise the validity of my procedure. First, as mentioned in the preceding paragraphs, Tolimir-Hölzl (2011*a*) offers individual-level evidence that objective (not self-declared) language and ethnicity overlap. Second, I argue that the Bosnian context, where language differences are highly politicized, makes individuals highly aware of their own and others' language use. As a result, I consider it unlikely that individuals have incorrect beliefs about their own language use. In other words, we can assume that they are able to tell their own language correctly, if they want so. What is more probable are social desirability effects, where individuals might "align" their language to their ethnicity. For example, ethnic Serbs, who typically use Croatian words in their daily conversations, may wrongly indicate in the census that they (still) speak Serbian. I assume that this may especially happen for local minorities, who identify strongly in ethnic terms, but have assimilated their language to the local majority. This factor could lead to an overestimation of the correlation between language and ethnicity specifically among local minorities. However, since this should happen primarily for minorities, it touches by definition only a limited set of individuals. There is therefore little reason to believe that such complications could jeopardize the overall empirical approach in Chapters 2 and 3 of this dissertation.

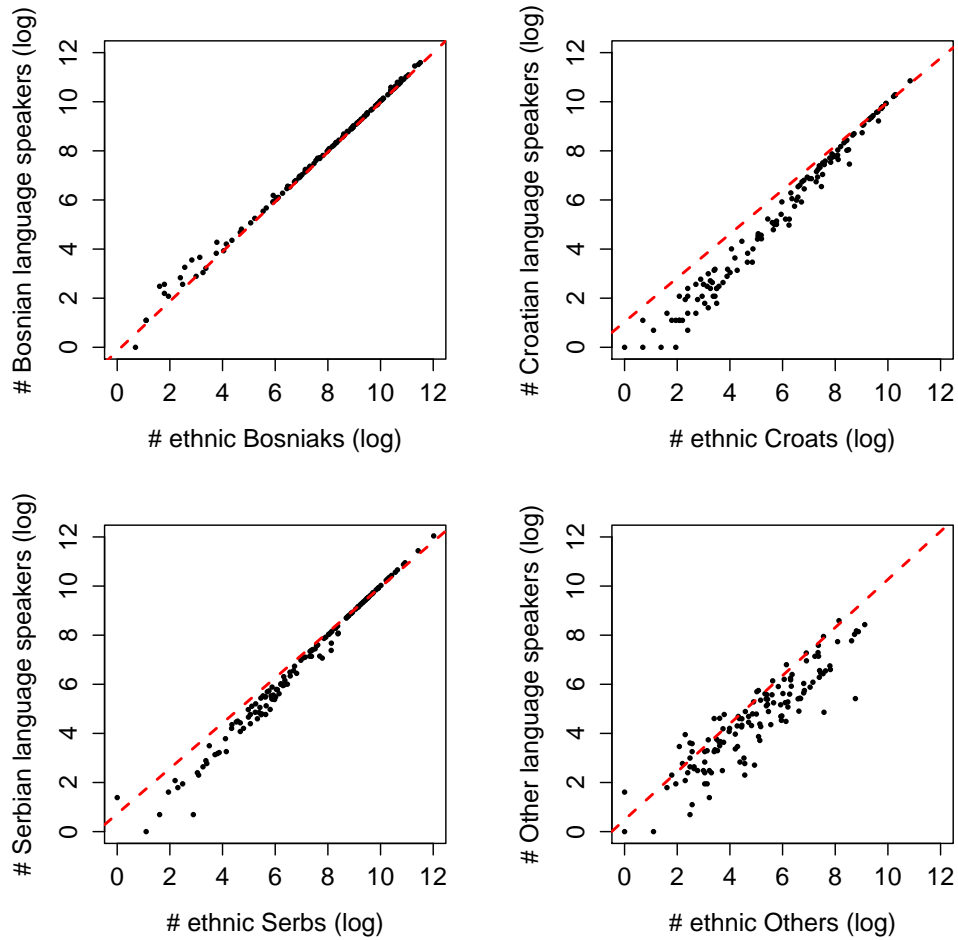


Figure B.2: Relationship between language use and ethnic identity: relationship between the number of Bosnian, Croatian and Serbian language speakers and the number of ethnic Bosniaks, Croats and Serbs, as well as the correlation between the number of people speaking some other language and indicating some other than the three main ethnicities across all 143 Bosnian municipalities (data from the Agency of Statistics of Bosnia and Herzegovina 2016).

B.4 Implications of Group Size for Ethnic Segregation

“When differences in group size are very great, most members of the majority have no social contact with the minority.” (Blau, 1977b, 35)

Various authors, first of all Blau (1977*a,b*), have pointed out that the rate of intergroup associations is dependent on *opportunities*, i.e. the *availability* of ingroup and outgroup ties. In other words, the observed frequency of social associations depends on existing opportunities for contact (Blau, 1977*b*, 42; McPherson, Smith-Lovin and Cook 2001). When one group forms a large majority, members of this group have far more opportunities for ingroup contact than members of a tiny minority. Put differently, minority members simply have more outgroup interaction partners to choose from. As a consequence, members of a large majority generally have less intergroup contact than members of a small minority. This signifies in terms of network analysis that node attributes (=majority or minority membership) at least partly explain network characteristics (e.g. amount of observed intergroup ties, level of observed segregation).

From this, an important consequence arises for researchers interested in intergroup ties, segregation and cross-ethnic interactions: it is crucial to focus on the relative frequency of ingroup and outgroup ties *given* the availability of these links, i.e. given relative group sizes (McPherson, Smith-Lovin and Cook, 2001, 419). In that sense, McPherson, Smith-Lovin and Cook (2001) distinguish between a baseline homophily that is exclusively explained by relative group sizes, and an “inbreeding” homophily going beyond this baseline.

This issue clearly applies to the Bosnian blogger network studied in Chapter 2 and 3. As seen in Figure B.7 below, there is one clear ethnic majority (Bosniaks), while the others two groups (Serbs and Croats) are far smaller. Figure B.3 visualizes the coethnic degree distribution (indegree, outdegree and total) by ethnicity of bloggers. By coethnic degree, I mean the number of edges with bloggers of the same ethnicity divided by the total number of edges a given blogger has. Coethnic degrees hence range from 0 to 1. As seen in the figure, there are many Bosniak bloggers with high coethnic degrees, and only few with low coethnic degrees. For Croat and Serb bloggers, the distribution is reversed: only few bloggers have a high coethnic degree, while many have a very low one. In Chapter 2 of this dissertation, I offer an approach of distinguishing between this baseline distribution of the network and ethnic segregation that is not explained by network characteristics.

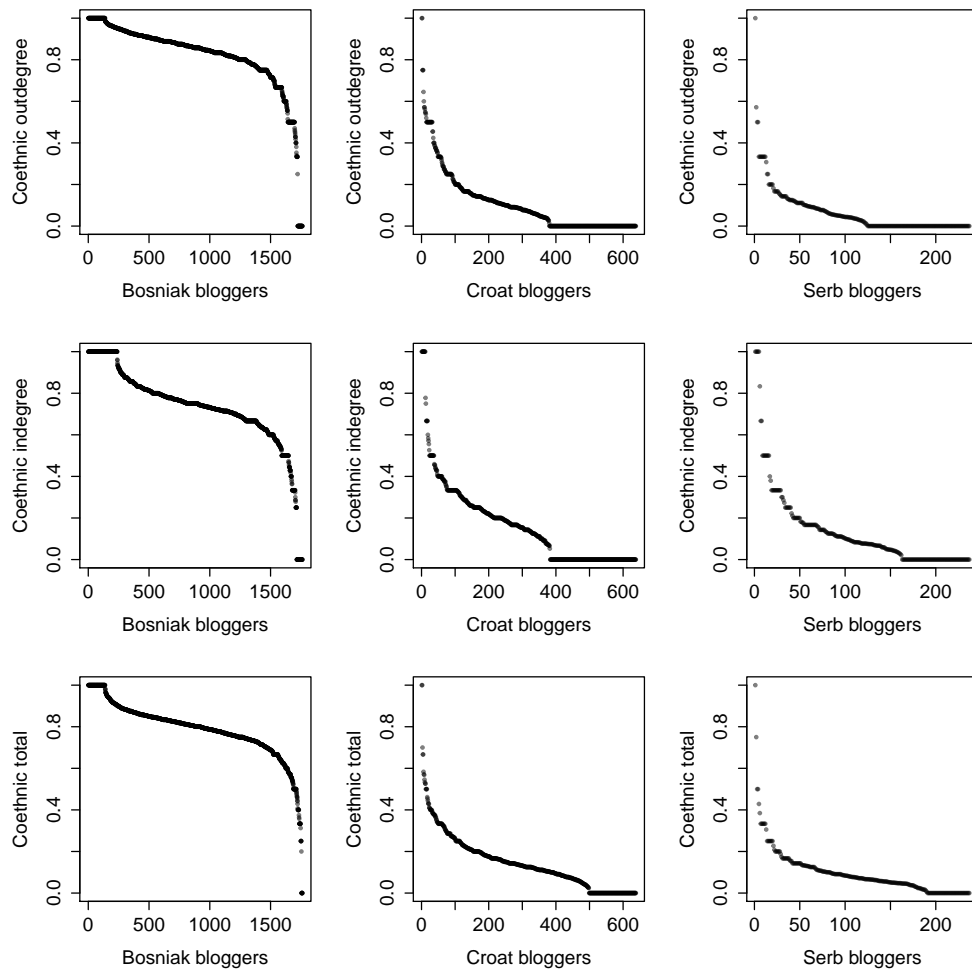


Figure B.3: Coethnic degree distribution among bloggers, by ethnicity and type of degree (total, indegree, outdegree). Bloggers are ranked by decreasing values of their coethnic degree (i.e. the x-axis displays the rank of the respective blogger).

B.5 Network Parameters

In the following, I offer a descriptive analysis of network parameters of the blogger network, including quantitative network parameters and a visual analysis of the network. I base my analysis on the state of the network on October 1, 2016 (just one day before the 2016 municipal elections). I consider a network of 3,895 *nodes* (bloggers) and 162,591 *edges* (favorite markings between bloggers). In the current case, I only include bloggers with at least 5 favorite markings, who are the favorites of 5 others, and who have written at least 10 blogposts.³

B.5.1 Quantitative network parameters

The most relevant quantitative network parameters are displayed in Table B.2 (calculated using the `igraph` package for R, Csárdi and Nepusz, 2006). For a non-expert audience, I present each concept in the following. *Reciprocity* refers to the total number of reciprocated edges divided by the total number of edges (Kolaczyk and Csárdi, 2014, 56), and is 13%. Put in less technical terms, 13% of all bloggers follow their followers, or reciprocate favorite markings. In an early Twitter study, Java et al. (2007) find a reciprocity of 58% on Twitter in 2007, Watanabe and Suzumura (2013) find a reciprocity of 22% on Twitter in 2009 and of 19.5% in 2012. Compared to these numbers, reciprocity on the blogger network can be considered to be relatively low.

The average *degree* is 83.5, i.e. bloggers have on average 84 connections with other bloggers. The maximum *in-degree* is 1,044, the maximum *out-degree* is 3,477. This signifies that the blogger with the largest number of followers had 1,044 followers; the blogger with the most favorites had 3,477 favorites (i.e. almost the entire network). The average *in-degree*, as well as the average *out-degree* is 42 (it is correct that average in-degree and average out-degree have the exact same values). Figure B.4 visualizes the distribution of the total degrees (in- and out-degrees, logged). As seen in the figure, the distribution follows a lognormal distribution. This is in line with findings of other authors, such as Farrell and Drezner (2008), who show that incoming links to political weblogs in the U.S. follow a lognormal distribution. Such a distribution signifies that a small number of nodes are highly connected (have a large degree), but that the large majority of nodes are only connected with few others, i.e. have a small degree (cf. Watanabe and Suzumura, 2013, 533).

There are no *dangling nodes* (= nodes with zero links) in the sample. However, this explained by (i) the data collection, and (ii) by the sample selection procedure. With regard to data collection, I used a snowball procedure, signifying that I scraped recursively through the friendship lists of all bloggers already in my database. As a

³The selection criteria in Chapters 2 and 3 differ slightly – they are stricter in Chapter 2, and laxer in Chapter 3. This is explained by other restrictions in the respective research designs, and the respective focus of each research question.

Table B.2: Central network parameters of the blogger network.

Parameter	Value
# nodes	3,895
# edges	162,560
% reciprocal edges	12.847
average degree	83.471
average in-degree	41.736
average out-degree	41.736
maximum in-degree	1,044
maximum out-degree	3,477
mean distance	2.891
longest path	8
transitivity	0.187

supplement, I also scraped the list of “new bloggers” on the front page of `blogger.ba`. This second procedure could have potentially resulted in dangling nodes. However, when selecting the sample, I only included bloggers with a certain level of activity. This signifies that the sampling restriction excludes dangling nodes. With regard to *connected components*, it signifies that all bloggers form part of one connected component, i.e. all edges are connected to the main graph.

The *longest path* inside the network is 8. In other words, all bloggers are connected to one another by a maximum of seven intermediaries. Comparing this to the famous small world study by Milgram (1967), who argued that everyone in the U.S. is just five intermediaries away from one another, this number is inside the range of what one might expect for a real-world network, or is slightly higher. – Network *transitivity* is a little more than 18%, signifying that 18% of all triangles are transitive, i.e. closed (Kolaczyk and Csárdi, 2014, 56). Figure B.5 displays the degree distribution by out-degree and in-degree; Figure B.6 displays the degree distribution by ethnicity of bloggers. As can be seen from Figure B.6, while there are more Bosniak than Croat or Serb bloggers, the distribution of the degrees is quite comparable. The degree distributions indicate that there are only few bloggers from all ethnicities that are highly connected, and that the large minority of bloggers across all ethnicities has only a relatively small network.

B.5.2 Visual analysis of the network

In the following, I visually display the blogger network. For this end, I plot the network using Visone (Brandes and Wagner, 2004), a program for the analysis and visualization of social networks.⁴ Each dot in the following figures represents one blogger, each line represents one link (favorite marking) between bloggers. I do not take into consideration

⁴Many thanks to Arlind Nocaj from the Algorithmics Group at University of Konstanz for help with this program.

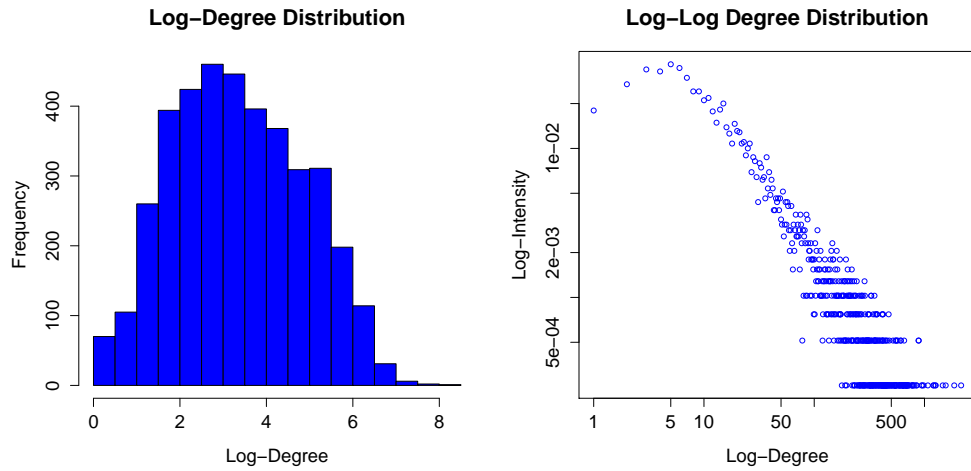


Figure B.4: Total degree distribution among bloggers (inspired from Kolaczyk and Csárdi 2014, 46).

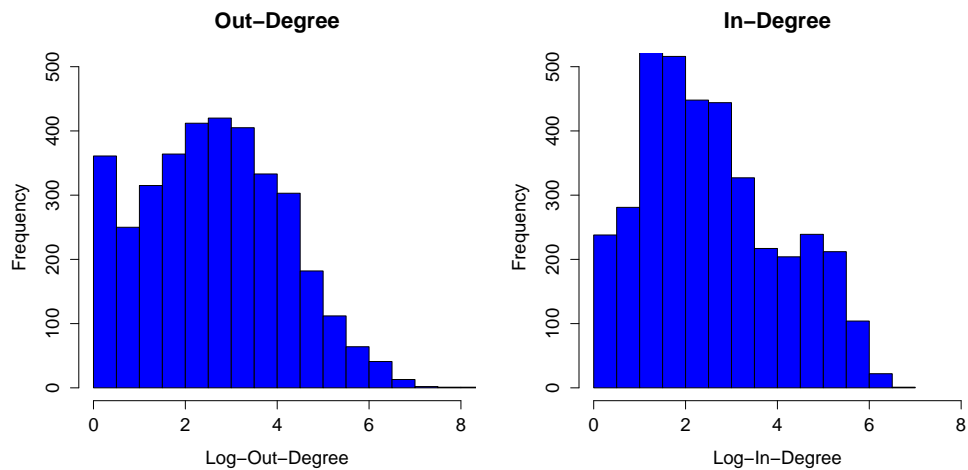


Figure B.5: Frequency distribution of the degrees among bloggers, separated by out-degree and in-degree.

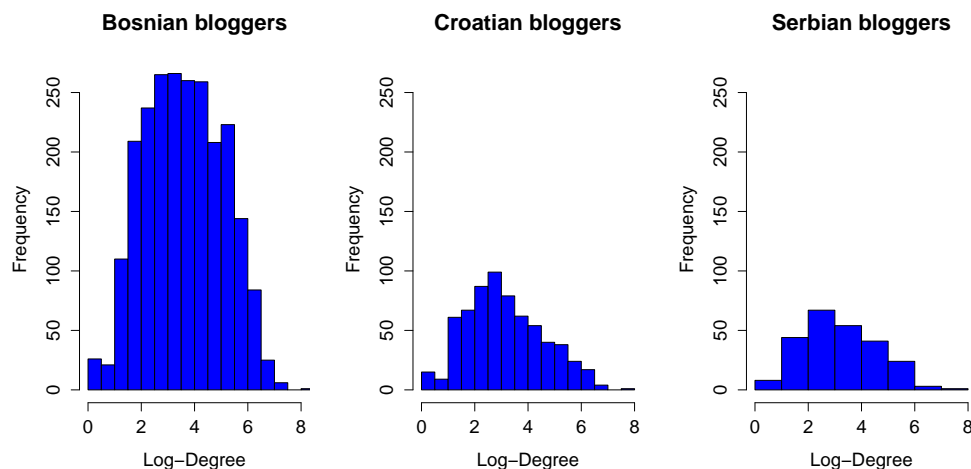


Figure B.6: Total degree distribution (out-degree and in-degree) among bloggers, separated by ethnicity.

the direction of links in this visual analysis, i.e. reciprocated links are treated the same as unidirectional links. As the blogger network is highly connected (has a high number of links), I employ a (quadrilateral Simmelian) backbone algorithm that deletes less representative links (in the current case, only 5% of all links are kept). The procedure is described in Nocaj, Ortman and Brandes (2015), and allows to keep links that hold subcommunities together. It has been specifically developed for online social networks.

A central aspect in studying cross-ethnic interactions between bloggers is the ethnicity of these bloggers. Therefore, I display the network by ethnicity (Figure B.7): Bosniak bloggers are marked in blue, Croats in green and ethnic Serbs in dark red. To increase the visibility of the minority bloggers in the network plot, nodes for these bloggers are displayed at a larger size. As seen in the figure, Bosniaks form a clear majority, but there is also an important number of ethnic Croats. The figure gives some indication that there may be some tighter clustering among Bosniaks and Croats, and that Serbs (the minority) are spread out across the entire network.

In Chapter 2, I also analyse differences between political and non-political bloggers in their level of ethnic clustering. To give a visual impression, Figure B.8 displays bloggers by the categories of their owned blogs: political bloggers are displayed in red, and all other bloggers in blue.⁵ Again, I display political bloggers with larger node sizes to increase their visibility in the network. The figure indicates that political bloggers are located with higher frequency in one half of the network. This indicates that there might be subcommunities in the network with a higher frequency of political bloggers (though the overall number of political bloggers remains quite low). Still, there is no clear clustering between political bloggers, which is a good sign: it allows to a greater

⁵For bloggers who own more than one blog, one political blog is sufficient for them to be coded as political bloggers.

extent to observe each political blogger independently.

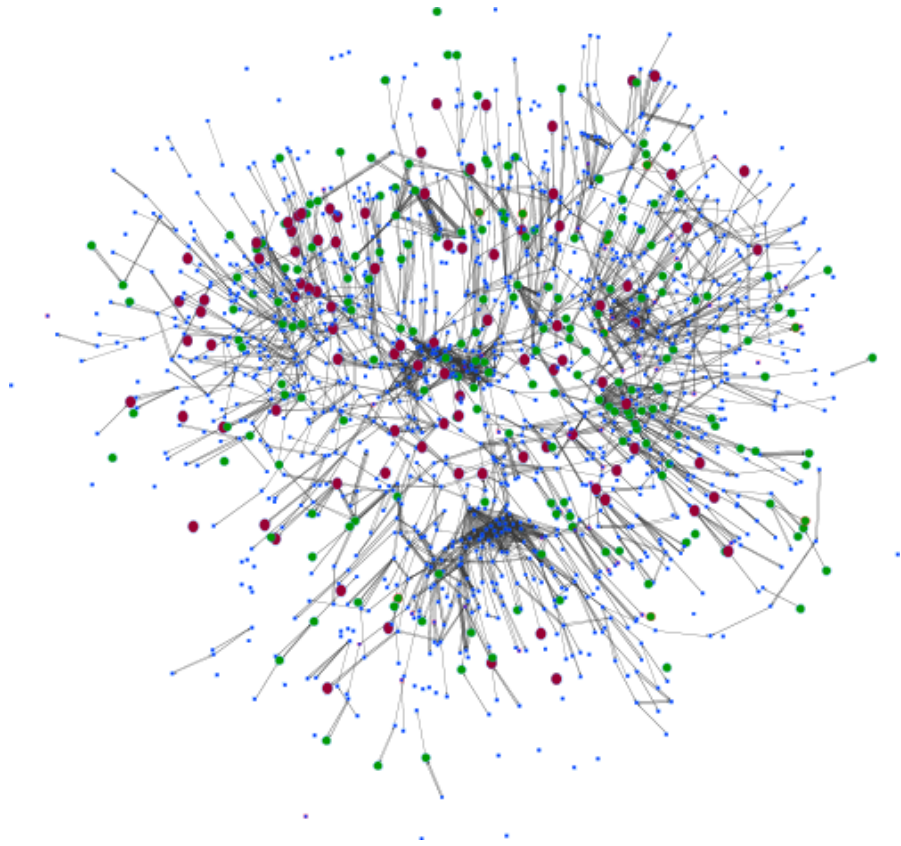


Figure B.7: Blogger network showing the bloggers' ethnicities (blue: Bosniak; green: Croat; dark red: Serb). Only bloggers for which the ethnicity is certain are included. Layout, including quadrilateral Simmelian backbone deletion with 5% kept, created with Visone (Brandes and Wagner, 2004). The minorities in the network (Serbs and Croats) have a larger node color to make them easier detectable in the network.

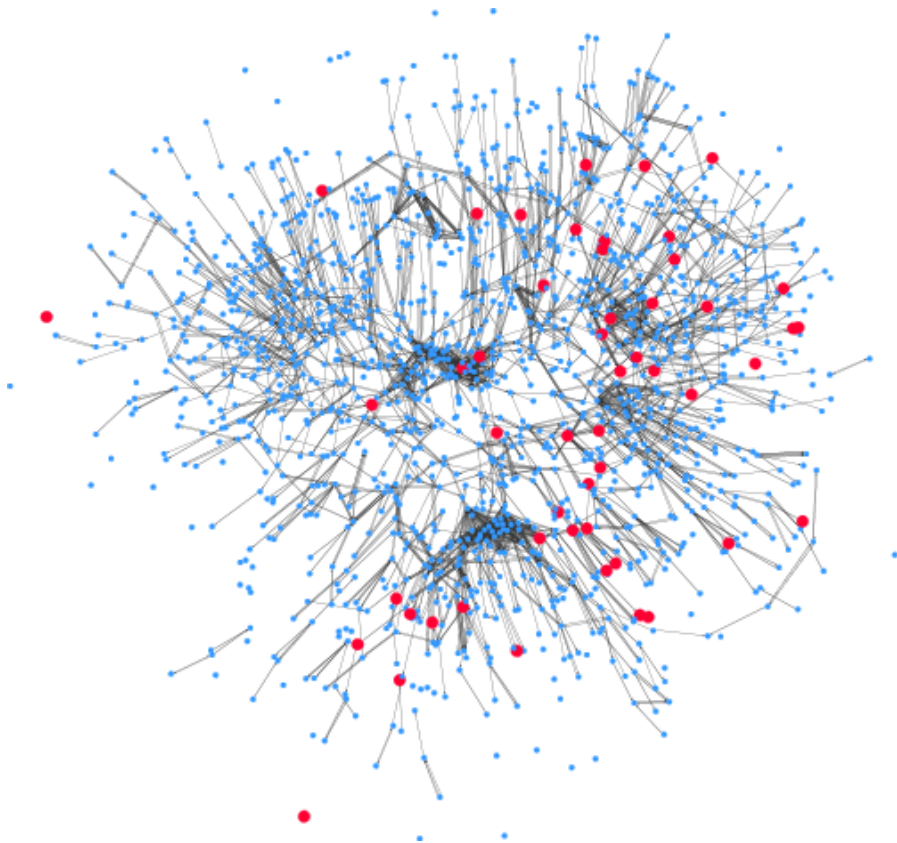


Figure B.8: Blogger network showing the blog categories (red: politics; lightblue: any other category). Only bloggers for which the ethnicity is certain are included. Layout, including quadrilateral Simmelian backbone deletion with 5% kept, created with Visone (Brandes and Wagner, 2004).



Supplementary Material for Chapter 3

C.1 “Spot-the-Difference” Exercise of Data Collection

As outlined in Chapter 3, I had to scrape the website continuously to establish whether bloggers had added new links or deleted old ones. I compare each time the information on the website with the information in the database and am thereby able to tell whether connections are new, still existing or deleted. The exercise resembles a “spot-the-difference” game readers may remember from their childhood days. As each page does not list more than 10 connections, but the blogger network contains about 2 million connections, it signifies that I had to scrape at least 200,000 pages each time I took a snapshot of the platform. Given the fact that I had to add a pause of at least 6 seconds between each request to the site (otherwise, the scraper would have become blocked by the website), each scraping round took about 14 days.

Figures C.1 and C.2 illustrate the “spot-the-difference” procedure of data collection. Between March 2015 and May 2016, blogger *SOKO*’s number of favorites had increased from originally 352 to 358. This is all a first look at the webpage tells us. We do not know whether all of the 352 favorites from March 2015 have remained in the list, or whether some of those original favorites were deleted. This signifies that the 358 favorites of March 2016 may contain more than 6 new favorites, as well as an undetermined number of deleted favorites. How many of those links are new ones, and how many were deleted becomes only discernible when comparing the March 2015 with the May 2016 list inside my database. The Python script takes over this effort automatically, and adds to each blogger connection a “lifetime” indicating its start and end.

C.1. “Spot-the-Difference” Exercise of Data Collection

The screenshot shows the Blogger profile page for SOKO. The profile information is as follows:

Name and surname:	Emir Nišić
(S) pole:	male
Year:	1987
Country:	Bosnia and Herzegovina
City / Town:	Tuzla
Occupation:	Head on TV ELEPHANT, B.Sc., lawyer
Interests:	art
Date:	10/12/2004
The last time was online:	1 hour 14 minutes
Profile last reviewed / la:	Zena_vojnik

The 'Favorites (10/352)' section is circled in red and contains the following list of favorite blogs:

122	SOKO artTV soko.blogger.ba refresh / la SOKO 3 hours 7 minutes
18	Cafe Concept Art cafeartconcept.blogger.ba refresh / la cafeartconcept before 44 minutes 48 seconds
739	spagosmail spagosmail.blogger.ba refresh / la spagosmail 1 hour 18 minutes
21	Metaphysics double helix tragovivremenu.blogger.ba refresh / la Lovica 2 hours 10 minutes
50	Sketches of eternal protagonist.blogger.ba refresh / la gost227 2 hours 11 minutes
581	CRIME IN GOVERNMENT kriminaluvijesti.blogger.ba refresh / la zdenkobaig 2 hours 30 minutes

Figure C.1: Screenshot of meta-information provided by one example blogger on blogger.ba (automized translation by Google; original URL <http://www.blogger.ba/profil/SOKO>). Screenshot obtained on 2015-03-16.

The screenshot shows the Blogger profile page for SOKO. The profile information is as follows:

Name and surname:	Emir Nišić
(S) terminals:	male
Year:	1987
Country:	Bosnia and Herzegovina
City / Town:	Tuzla
Occupation:	presenter on TV ELEPHANT, BSc. lawyer
Interests:	art
Date:	10/12/2004
Last time online:	3 days ago 19 hours
Profile last reviewed / la:	AnnaMalina

The 'Favorites (10/358)' section is circled in red and contains the following list of favorite blogs:

6	JNA Airport Tuzla jnatuzla.blogger.ba refresh / la SOKO before 12 days 4 hours
527	He loves me and he loves me. katniss.blogger.ba refresh / la RozaBelikova before 28 minutes 52 seconds
44	story nuraura.blogger.ba refresh / la nuraura before 35 minutes 31 seconds
1101	be yourself caro.blogger.ba refresh / la Carolinae 4 hours ago
616	UvijekSlugaNikadGospodar hajjenezir.blogger.ba refresh / la hajjenezir 4 hours 3 minutes ago
25	I live to love you. ajadevojicakojausveveruje.blogger.ba refresh / la non-pustajime 4 hours 18 minutes

Figure C.2: Same screenshot as above, obtained on 2016-05-30.

C.2 Coding of Home Town/Municipality of Bloggers

To test my third hypothesis, I compare the change in segregation around election times for bloggers in municipalities with different levels of ethnic polarization. This analysis requires information about the home town or home municipality of bloggers. For this end, I use information bloggers provide in their public profiles. The vast majority of bloggers provide indeed such information (98% percent in the restricted sample I use in the analysis). As this is self-reported information, there are certainly some errors in this measure. For example, bloggers may indicate their *wished-for*, instead of their *actual* home town. However, there is no reason to expect that the error goes beyond noise to create bias. If anything, individuals may indicate a town they once have lived in, but now have left, or a town they would wish to live in. This decreases or increases their exposure to the actual treatment (ethnic polarization in a given municipality), and therefore creates noise, but not bias. Wrong self-reporting therefore makes it more difficult, not easier for me to detect the effect of interest.¹

The blogger platform suggests a list of 50 Bosnian home towns to newly registering bloggers.² Bloggers have always the additional option to indicate some other home town, or even a fantasy location. However, distinguishing between bloggers who have indicated an existing, but not proposed location and bloggers who have indicated fantasy names (such as “the moon”) is a tedious enterprise. Therefore, I first only use home towns indicated by the website or included as municipality names in the GADM database of Global Administrative Areas (short GADM), and then manually research home towns for all remaining bloggers. In fact, 61% percent of the bloggers have chosen a home town suggested by the website; another 6% have indicated home towns that literally correspond to municipalities from the GADM dataset (Hijmans, Garcia and Wieczorek, 2011). To figure out in which GADM municipality any home town suggested by the platform lies, I first automatically geocode each home town using the *geocode* function from the *ggmap* package for R (Kahle and Wickham, 2013). In a second step, I assign those geocodes to municipalities using the *over* function from the *sp* package for R (Pebesma, 2014).

Figure C.3 displays the spatial distribution of bloggers. The darker the color of a given municipality, the more bloggers indicate coming from this municipality. As the figure illustrates, a majority (about 30%) of all bloggers indicates being based in Sarajevo. However, larger blogger populations also exist in and around the remaining five largest

¹One possibility where wrong self-reporting of home town could still lead to an overestimation of the effect is the case where bloggers systematically wish and indicate to live in more polarized municipalities. This could for example be the case if more urban (and thereby more popular) municipalities are generally characterized by ethnically more polarized elections. If elections alone have a strong effect, but not polarization, this type of wrong self-reporting would lead me to overestimate the effect of polarization.

²If bloggers indicate that they come from another country than Bosnia, the platform will suggest a different set of towns based on the choice of home country. In the relevant analysis, I exclude bloggers located outside Bosnia.

C.2. Coding of Home Town/Municipality of Bloggers

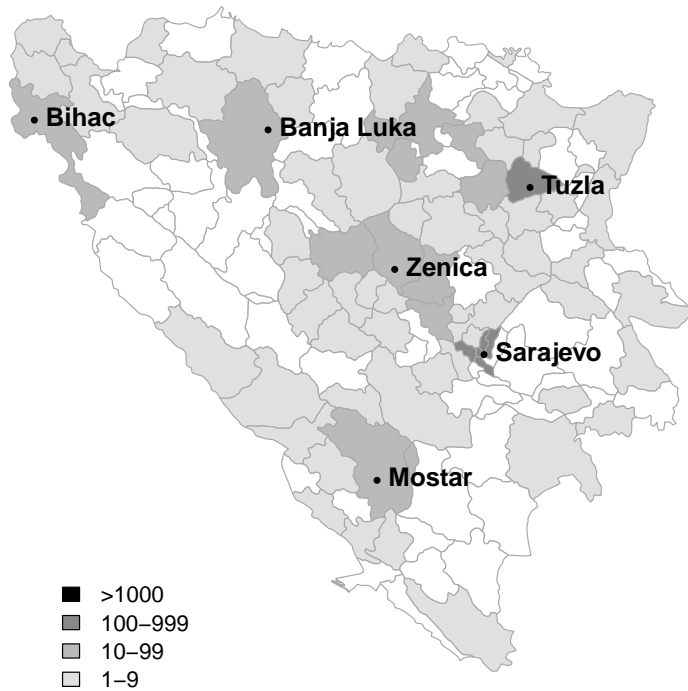


Figure C.3: Blogger distribution over the different municipalities of Bosnia. Darker colors indicate that more bloggers are located in a given municipality (the map uses geospatial data from GADM, see Hijmans, Garcia and Wieczorek 2011).

cities of Bosnia, namely Bihać, Mostar, Banja Luka, Tuzla and Zenica.

C.3 Number of Bloggers per Municipality

Figure C.4 displays the distribution of the number of bloggers per municipality. The figure indicates that the distribution follows a power law: there are many bloggers in a few number of municipalities, and a long tail of municipalities with only very few bloggers.

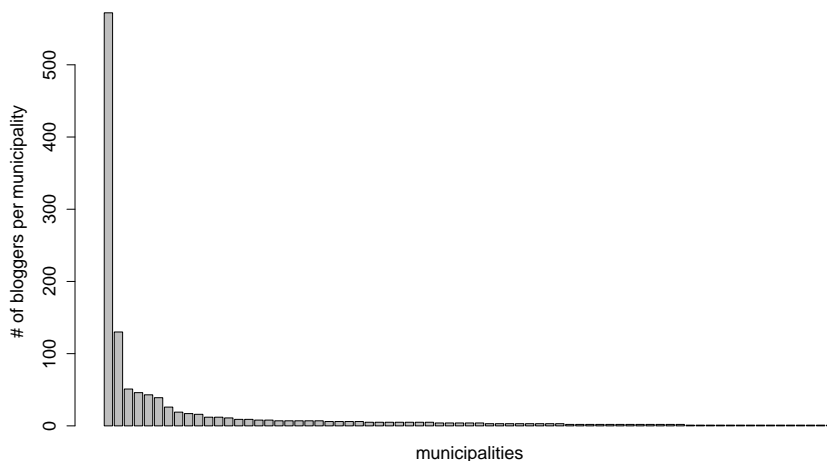


Figure C.4: Distribution of the number of bloggers per municipality.

C.4 Ethnically Split Municipalities

Table C.1 displays municipalities in Bosnia and Herzegovina that are about evenly split between two ethnic groups. Two evenly split groups are here defined in the way that the difference in their respective share is lower or equal of 0.2. As the table indicates, there are only municipalities which are evenly split between Croats and Bosniaks, and between Bosniaks and Serbs, but no municipalities evenly split between Croats and Serbs.

Table C.2 displays one municipality whose population is equally split between three groups (Glamoč). The threshold for the difference between the smallest and the largest ethnic group is 0.20.

C.4. Ethnically Split Municipalities

Municipality	Identifier	Bosniaks	Croats	Serbs	Difference
Busovača	12	0.489	0.500	0.012	0.011
Jajce	17	0.504	0.477	0.019	0.027
Osmaci	138	0.483	0.002	0.516	0.033
Grad Mostar	27	0.457	0.500	0.043	0.044
Novi Travnik	20	0.515	0.469	0.016	0.045
Novo Goražde	117	0.474	0.001	0.525	0.052
Srebrenica	139	0.545	0.001	0.454	0.092
Bosanski Petrovac	59	0.441	0.004	0.555	0.113
Vukosavlje	113	0.487	0.174	0.339	0.148
Vitez	22	0.417	0.570	0.013	0.152
Gornji Vakuf-Uskoplje	16	0.580	0.418	0.001	0.162
Trnovo - RS	127	0.412	0.007	0.580	0.168
Kiseljak	18	0.391	0.589	0.020	0.199

Table C.1: Municipalities with two evenly split ethnic groups. The last column shows the difference between the largest and the second largest group in the respective municipality (ordered in increasing order of magnitude). The two groups between which each municipality is split are marked in bold.

Municipality	Identifier	Bosniaks	Croats	Serbs	Difference
Glamoč	7	0.326	0.236	0.438	0.202

Table C.2: Municipality with three evenly split ethnic groups. The last column shows the difference between the largest and the smallest group in this municipality.

C.4.1 Relation between ethnicity and type of municipality

The table below shows the relation between blogger ethnicity and type of municipality. As seen in the table, there are percentagewise somewhat more Croat bloggers in ethnically polarized municipalities. However, the correlation between a Croat dummy and a polarized municipality dummy is just 11%, so this does not question the validity of the results from the regressions.

	absolute majority	split
Bosniak	0.95	0.05
Croat	0.88	0.12
Serb	0.96	0.04

C.4.2 Overview of the ethnic distribution of municipalities

Figure C.5 visualizes the distribution of the three ethnic groups in the two administrative part of Bosnia and Herzegovina, the Federation of Bosnia and Herzegovina and the Republika Srpska. To indicate from which municipalities bloggers in my sample are blogging, I add a cross below each relevant municipality in the bar charts in this figure. As the figure indicates, bloggers come from a large set of different municipali-

ties. Furthermore, the figure illustrates that the majority of municipalities is ethnically homogeneous with one clear ethnic majority, i.e. where one ethnic group constitutes more than 75% of the population (marked with a green triangle below the respective bar). The majority of municipalities in the Federation has a Bosniak majority, while the majority of municipalities in the Republika Srpska has a Serb majority. There are only few ethnically mixed municipalities (marked with a red dot below the respective bar). Table C.1 and C.2 contain the names and the detailed ethnic setup of ethnically polarized municipalities.

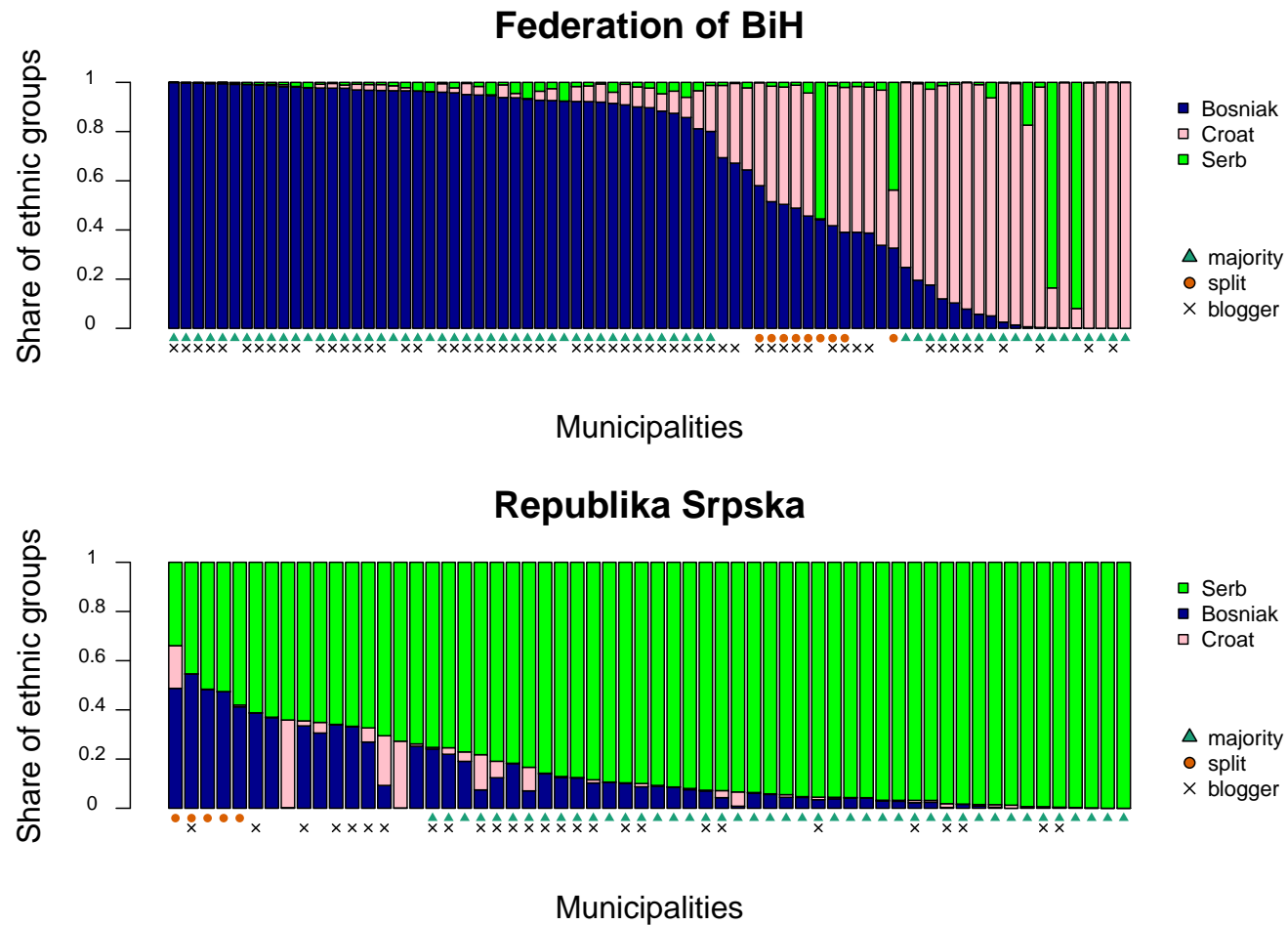


Figure C.5: Distribution of the three ethnic groups in the municipalities of the Federation of BiH ($N = 79$) and the Republika Srpska ($N = 60$). The figure also indicates whether a municipality has a clear ethnic majority (marked with a green triangle below the bar), or whether ethnic groups are equally split (marked with red dot). The small crosses below each bar mark whether there is at least one blogger in the sample indicating this municipality as his/her home municipality.

C.5 Descriptive Analysis of Scraping Rounds

Table C.3 displays the number of newly added connections per scraping round. Note that throughout rounds 1 to 6, the scraping algorithm did not yet work perfectly in the sense that it was not able to reboot at exactly the place where it stopped when the crawler or server broke down for some reason (which happened several times during that interval). In other words, rounds 1 to 6 contain valid data (each new connection is saved with the respective date on which it was first observed). Still, those rounds contain more newly added connections than other rounds because some bloggers were scraped *more than once* during each round (therefore, those rounds also took more time than later rounds). As a result, we could think of rounds 1 through 6 as aggregated rounds. In the main analysis using a 10-weeks interval, only rounds 7 till 20 are included. In the additional robustness check presented in this appendix and using a 20-weeks interval, rounds 5 till 24 are included.

startround	total new links	ingroup	outgroup	outgroup percentage	begin	end
1	131626	89988	41638	0.32	2015-08-10	2015-08-20
2	3591	2815	776	0.22	2015-12-18	2016-01-15
3	5395	4003	1392	0.26	2016-01-15	2016-04-01
4	1111	830	281	0.25	2016-04-05	2016-05-03
5	1122	753	369	0.33	2016-05-03	2016-07-01
6	1502	1086	416	0.28	2016-07-01	2016-07-14
7	88	74	14	0.16	2016-07-16	2016-07-24
8	46	41	5	0.11	2016-07-25	2016-08-01
9	43	30	13	0.30	2016-08-01	2016-08-08
10	89	40	49	0.55	2016-08-08	2016-08-19
11	63	36	27	0.43	2016-08-19	2016-08-31
12	119	88	31	0.26	2016-08-31	2016-09-09
13	135	118	17	0.13	2016-09-09	2016-09-21
14	85	66	19	0.22	2016-09-21	2016-10-01
15	100	82	18	0.18	2016-10-05	2016-10-14
16	200	156	44	0.22	2016-10-15	2016-10-25
17	131	102	29	0.22	2016-10-26	2016-11-05
18	398	330	68	0.17	2016-11-07	2016-11-18
19	412	307	105	0.25	2016-11-19	2016-12-06
20	124	102	22	0.18	2016-12-07	2016-12-15
21	43	32	11	0.26	2016-12-16	2017-01-10
22	260	204	56	0.22	2017-01-11	2017-01-22
23	224	166	58	0.26	2017-01-23	2017-02-01
24	870	691	179	0.21	2017-02-02	2017-02-12

Table C.3: Overview of scraping rounds.

C.6 Additional Models

C.6.1 Hypotheses 1 and 2: Models with different time frame

The main models in Chapter 3 consider a time frame of ten weeks before and after the elections. But do the effects hold even when looking into a another time frame? Examining this increases the confidence we can have that an effect actually exists, and that it is not caused by chance or the exact choice of time frame. Therefore, I run the same models as in the main paper, using a 20-weeks interval. As seen in Table C.4, the results hold when using this alternative time frame. Figure C.6 shows the marginal effects for *weeks before elections* in model 5 in Table C.4.

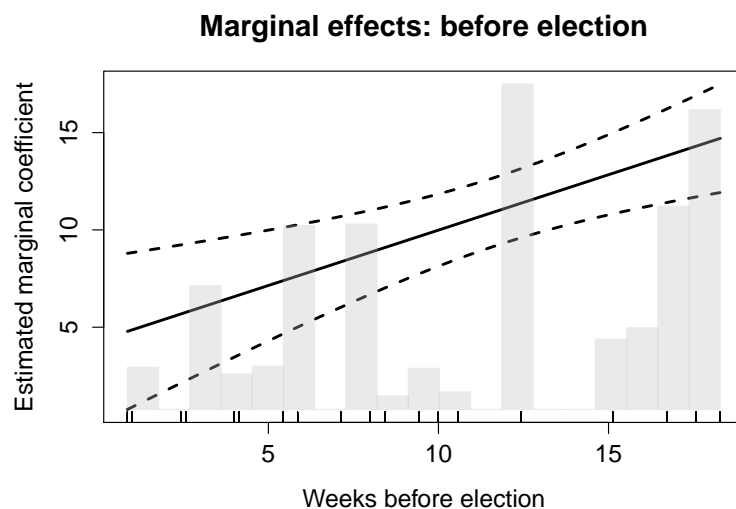


Figure C.6: Marginal effects for model 5 in Table C.4, for weeks before the elections. The dashed lines correspond to the 95% confidence intervals.

Table C.4: Regressions of the outgroup percentage/ratio of newly added links on the weeks from the elections, using a 20-weeks interval. Unit-of-analysis is the blogger-scraping-round.

	<i>Dependent variable:</i>				
	<i>OLS</i>		<i>coefficient test</i>		<i>panel linear</i>
	(1)	(2)	(3)	(4)	(5)
Weeks from elections	0.187 (0.154)	-0.041 (0.092)	-0.002 (0.010)	-0.013 (0.010)	0.025 (0.094)
Before elections	3.999 (3.452)	4.648** (2.046)	0.211 (0.207)	0.754*** (0.247)	4.297** (2.177)
Croat		79.432*** (1.342)		4.423*** (0.237)	
Serb		90.647*** (1.657)		7.149*** (0.719)	
Male		-0.029 (0.971)		0.150 (0.179)	
Weeks fr. elec.*Bef. elec.	0.640** (0.267)	0.595*** (0.158)	0.023* (0.014)	0.047*** (0.017)	0.569*** (0.169)
Constant	16.793*** (2.004)	4.081*** (1.224)	-1.396*** (0.213)	-2.946*** (0.177)	
Robust standard errors	No	No	Yes	Yes	No
Observations	3,245	3,238			3,245
R ²	0.025	0.659			0.070
Adjusted R ²	0.024	0.659			-0.341

Note:

*p<0.1; **p<0.05; ***p<0.01

C.6.2 Hypothesis 3: Models with different time frame

Table C.5 contains the same models as in Table 3.3 in the main paper, using a 20-weeks interval. As can be seen from the table, the results principally hold using this alternative time frame. Figure C.7 shows the marginal effects.

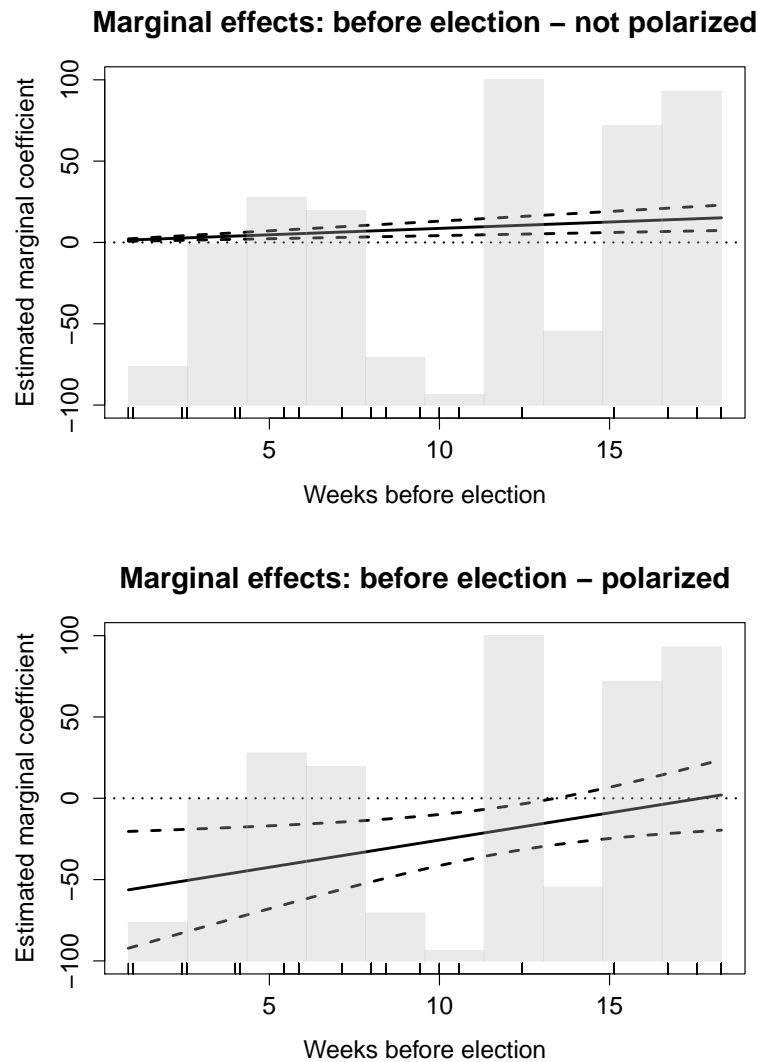


Figure C.7: Marginal effects for model 5 in Table C.5, for weeks before the elections, as a function of the type of municipality (ethnically polarized or ethnically not polarized) a blogger comes from, using a 20-weeks intervals. The dashed lines correspond to the 90% confidence intervals.

Table C.5: Regressions of the outgroup percentage/ratio of newly added links on the time distance from the elections (in weeks from the elections), with interaction models, using a 20-weeks interval. Unit of analysis is the blogger-scraping-round.

	<i>Dependent variable:</i>				
	outlink percentage		ratio #outlinks	#inlinks	outlink percentage
	<i>OLS</i>		<i>coefficient test</i>		<i>panel linear</i>
	(1)	(2)	(3)	(4)	(5)
Weeks from elections	0.024 (0.195)	-0.071 (0.131)	0.003 (0.014)	-0.017 (0.018)	-0.003 (0.138)
Ethnically pol. mun.	7.847 (16.233)	0.290 (10.933)	0.624 (1.171)	0.008 (0.692)	
Before	4.470 (4.450)	5.037* (2.997)	0.416 (0.279)	0.593 (0.380)	1.508 (3.193)
Croat		79.598*** (2.039)		4.359*** (0.334)	
Serb		91.636*** (4.796)		19.315*** (0.460)	
Male		0.591 (1.372)		0.177 (0.216)	
Weeks fr. elec.*Eth. pol.	0.968 (1.192)	0.267 (0.803)	0.052 (0.068)	0.045 (0.042)	0.699 (0.872)
Weeks fr. elec.*Before	0.536 (0.343)	0.544** (0.231)	0.023 (0.021)	0.058** (0.027)	0.785*** (0.246)
Eth. pol.*Before	3.740 (26.548)	3.635 (17.873)	0.519 (1.412)	0.636 (4.741)	-59.155** (23.190)
Weeks fr. elec.*Eth. pol.*Before	-0.889 (1.988)	-1.442 (1.339)	-0.094 (0.090)	-0.176 (0.310)	3.346* (1.726)
Constant	12.002*** (2.558)	3.701** (1.776)	-1.953*** (0.285)	-2.938*** (0.290)	
Robust standard errors	No	No	Yes	Yes	No
Observations	1,590	1,590	1,590	1,590	1,590
R ²	0.032	0.562			0.079
Adjusted R ²	0.028	0.559			-0.371
Akaike Inf. Crit.			1,868.086	1,106.282	

Note:

*p<0.1; **p<0.05; ***p<0.01

C.6.3 Hypothesis 3: Continuous measure of ethnic polarization

Table C.6 contains a robustness check for hypothesis 3 using Montalvo and Reynal-Querol's (2005a, 301) continuous measure of ethnic polarization. This measure of polarization ranges between 0 and 1, and is calculated as follows:

$$Q = 1 - \sum_{i=1}^N \left(\frac{0.5 - \pi_i}{0.5} \right)^2 \pi_i \quad (\text{C.1})$$

where π_i designates the share of each ethnic group in a given municipality. I calculate the level of ethnic polarization for each municipality using this measure based on data provided by the Bosnian 2013 census (Agency of Statistics of Bosnia and Herzegovina, 2016). As seen in Table C.6 below, there is no significant effect of polarization using this measure. Figure C.8 visualizes the relationship between my dichotomous measure and Montalvo and Reynal-Querol's continuous measure of polarization.

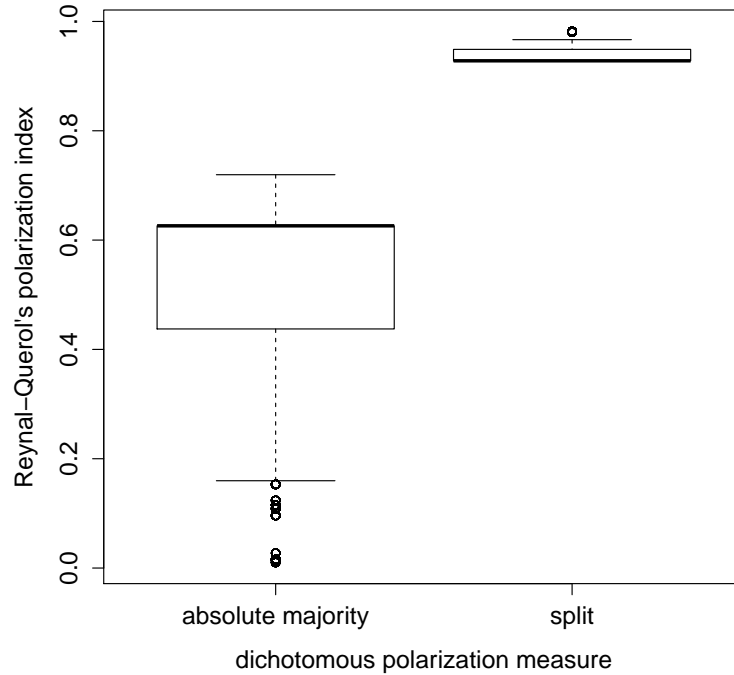


Figure C.8: Relationship between my dichotomous and Montalvo and Reynal-Querol's continuous measure of ethnic polarization.

Table C.6: Regressions of the outgroup percentage/ratio of newly added links on the time distance from the elections (in weeks from the elections), with interaction models, using an alternative (continuous) measure of polarization. Unit of analysis is the blogger-scraping-round.

	<i>Dependent variable:</i>				
	outlink percentage		ratio #outlinks	#inlinks	outlink percentage
	<i>OLS</i>		<i>logistic</i>		<i>panel linear</i>
	(1)	(2)	(3)	(4)	(5)
Weeks from elections	-1.570 (2.399)	-1.478 (1.616)	-0.011 (0.187)	-0.299 (0.183)	0.321 (2.031)
Ethnic polarization	-10.879 (26.584)	-8.045 (17.897)	0.444 (2.538)	-1.565 (2.153)	
Before	-16.079 (27.548)	-18.881 (18.527)	0.386 (1.015)	-1.769 (1.139)	-7.875 (21.898)
Croat		79.215*** (3.209)		4.635*** (0.535)	
Serb		93.936*** (7.731)		19.577*** (0.519)	
Male		-0.258 (2.202)		-0.191 (0.315)	
Weeks fr. elec.*Eth. pol.	1.921 (4.133)	1.849 (2.780)	-0.071 (0.326)	0.365 (0.356)	-1.141 (3.540)
Weeks fr. elec.*Before	6.904 (4.661)	6.354** (3.144)	0.154 (0.214)	0.679*** (0.262)	0.537 (3.733)
Eth. pol.*Before	21.026 (46.992)	25.663 (31.597)	-0.479 (2.097)	3.752 (2.578)	5.429 (37.537)
Weeks fr. elec.*Eth. pol.*Before	-5.305 (8.077)	-4.269 (5.442)	-0.076 (0.409)	-0.860* (0.521)	4.840 (6.515)
Constant	22.343 (15.507)	10.629 (10.534)	-1.847 (1.433)	-1.627 (1.072)	
Robust standard errors	No	No	Yes	Yes	No
Observations	653	653	653	653	653
R ²	0.051	0.574			0.080
Adjusted R ²	0.041	0.567			-0.846
Akaike Inf. Crit.			676.737	401.222	

Note:

*p<0.1; **p<0.05; ***p<0.01

D

Supplementary Material for Chapter 4

D.1 Determining the Home Town of Email Senders

In order to increase the credibility of the emails, and to establish a personal link with the contacted politician, we mention the senders' home town in the email. Indicating the home town of the presumed sender signals that emails are not sent at random, but targeted to a specific politician. This is intended to increase the overall response rate. For each politician, the stated home town of the sender is located inside a politician's constituency. In general, we chose the largest town in a politician's constituency as home town to make the email as plausible as possible: in smaller towns, we would risk that few people with the treatment name exist, and that MPs know many of their voters personally. For politicians from the national and federal level, we take the largest town from the canton within which the politician was elected. For cantonal politicians, we try to figure out the home town (which is often indicated on the parliaments' websites). If there is no information on a politician's home town, we take instead the largest town in the canton.

D.2 Balance Test for Block Random Assignment

Table D.1 shows that there is balance between the four treatment levels on all relevant covariates.

D.3. Technical Implementation

Table D.1: Balance among Covariates

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Women	0.19	0.21	0.24	0.19
Men	0.81	0.79	0.76	0.81
Age	46.21	51.64	51.37	50.90
Bosniak	0.57	0.56	0.55	0.57
Croat	0.26	0.27	0.30	0.30
Serbian	0.12	0.14	0.14	0.13
Other	0.04	0.03	0.01	0.00
Parliamentary Tier				
LO-BIH	0.12	0.17	0.14	0.17
LO-FBIH	0.37	0.33	0.35	0.35
UP-BIH	0.04	0.06	0.06	0.06
UP-FBIH	0.22	0.19	0.20	0.17
CANT-HBZ	0.09	0.06	0.06	0.07
CANT-HNZ	0.06	0.11	0.08	0.09
CANT-ZDK	0.10	0.09	0.11	0.09
Major Parties				
DF	0.06	0.09	0.11	0.07
HDZ BiH	0.19	0.19	0.16	0.15
SBB	0.12	0.10	0.13	0.12
SDA	0.25	0.27	0.21	0.26
SDP BiH	0.09	0.09	0.11	0.07
N	68	70	71	69

D.3 Technical Implementation

We used the Thunderbird add-on *Mail Merge* for creating the emails, but were logged into the Gmail webbrowser to send out each email. We did not use any add-on (such as *Mailtrack*) to track whether an email was actually opened. The rationale behind not using a tracking add-on was that depending on the email client used by the receiver of the email, the receiver first has to either accept external contents to view the email or to enable the tracking add-on. We believe that this could have appeared suspicious and might have kept politicians from actually opening, reading and answering emails.

We used three Gmail accounts with our treatment names (see the main chapter, emir.hodzic1986@gmail.com, marin.juric1990@gmail.com, and nikolic.a.nemanja@gmail.com). According to our experts in Bosnia and Herzegovina, Gmail is a very common mail provider throughout the country. For sending the emails, we intended to use a VPN with a Bosnian IP-address (in case any of the receiver of the emails checks the IP-address of the email sender in the email header).¹ However, due to technical errors occurring when using the VPN, we decided against the use of a VPN. Since we were

¹For more information on how the IP-address of the sender can be found in the email header, see <http://whatismyipaddress.com/trace-email>.

logged into the Gmail webbrowser to send out the emails, the email header did not contain any suspicious information (it only showed that the email was sent from a Google server located in the US).

To avoid detection we sent the emails in multiple blocks in early May. We checked for spillover effects (namely detection of the experiment) by analyzing whether the day the email was sent significantly influenced the probability of receiving a response. We do not find any empirical evidence that the response pattern differs as a function of the time of sending. Furthermore, none of the responses we received included any hints that the experiment was detected.

D.4 Response Rates

Figures D.1 and D.2 visualize the response rates by treatment level. Table D.2 below shows the absolute number of responses by treatment and covariates.

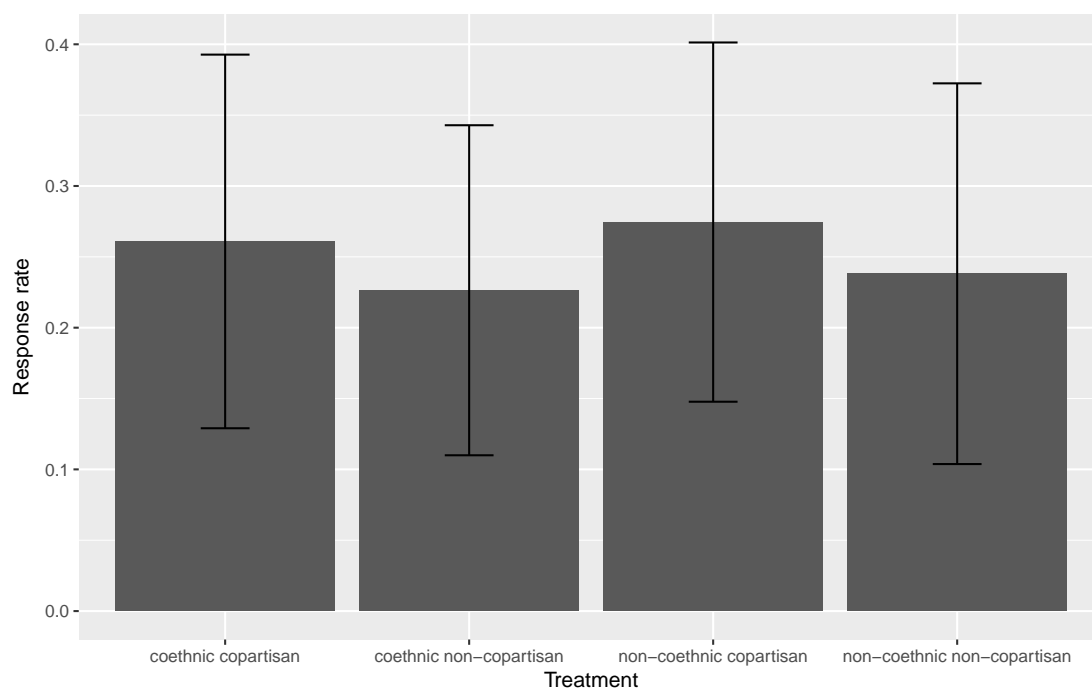


Figure D.1: Response rates by treatment levels with 95 percent confidence intervals.

D.4. Response Rates

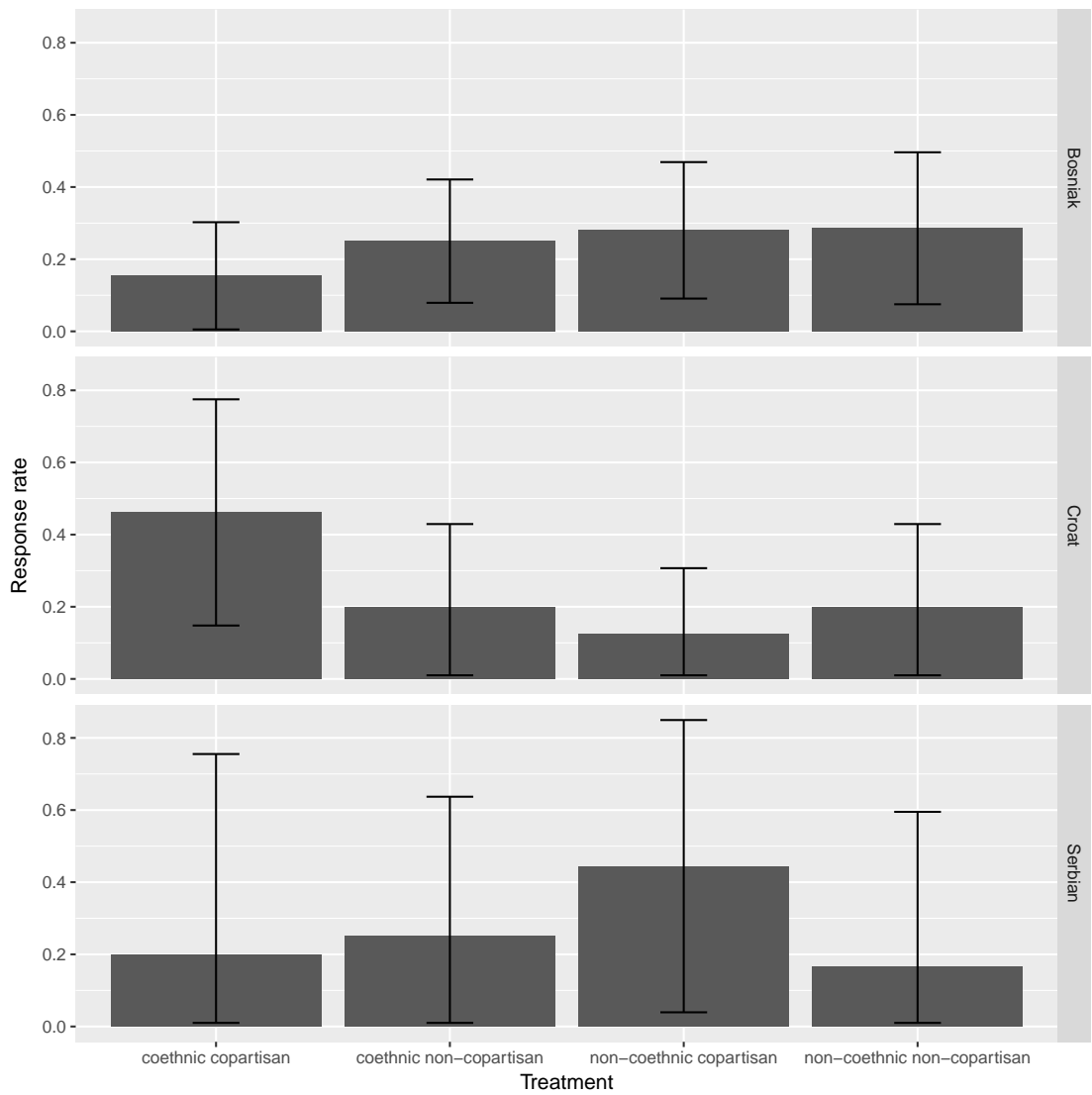


Figure D.2: Response rates by treatment levels by ethnicity of the treated politician with 95 percent confidence intervals.

Table D.2: Number of Responses per Treatment

	coethnic copartisan	coethnic non-copartisan	non-coethnic copartisan	non-coethnic non-copartisan	Total in study
Bosniak	5	7	7	6	100
Croat	6	3	2	3	59
other	1	0	1	0	5
Serbian	1	2	3	1	28
Female	2	1	4	3	39
Male	11	11	9	7	153
Bosniak Party	3	5	3	5	80
Croat Party	6	2	0	1	46
Multi-ethnic Party	3	5	8	3	39
Serb Party	0	0	1	1	21
N	13	12	13	10	192

D.5 Issue of Non-Compliance

As seen in Table 4.1 in Chapter 4, we intended originally to contact a total of 282 legislators. However, we were only able to successfully contact 192 legislators, because of technical issues outlined in the following. Gerber and Green (2012, 131 ff.) use the term “compliance” to describe this problem. Non-compliance occurs if some subjects in the treatment or control group do not receive any treatment or do receive the wrong treatment. In our case, the main source of non-compliance were invalid email addresses: non-compliance occurred if we intended to treat subjects (=sent them an email), but they never received the email. To rule this out, we sent out one insignificant email (say: spam) prior to the field experiment to check that all email addresses were valid. If this test had shown that any email address was invalid and had we been unable to retrieve the correct email address, we would have excluded the respective politician from our sample and from the randomization procedure.

Despite this cautionary measure, a considerable number of emails bounced unexpectedly back during the main experiment with an error message saying that the receiver’s mailbox was full. In fact, almost one third of all MPs were not treated because emails bounced back. The problem seems to be related to the fact that the parliament of the FBiH was rebuilding its website at the time we sent out the emails. We exclude untreated politicians (whose emails bounced back) from the analysis. As a result, what we depict as the average treatment effect is actually the average treatment effect on the treated (ATT). We do not believe that this bouncing back is in any way correlated with the assigned treatment level or with any other background characteristics of politicians, since the bouncing back seems to be a merely technical issue not caused by the politicians themselves. This assumption is supported by evidence provided in Table D.3 below. The non-treated MPs are comparable to the treated MPs on all individual-level

D.6. Copartisan Effect by Ethnicity of Politician

characteristics (no significant differences on common levels of significance).² Apart from reducing the N , the exclusion of those MPs should, therefore, not affect our findings.

Table D.3: Difference between compliers (email went through) and non-compliers (email bounced back), among politicians from the upper and lower house of FBiH. There were no non-compliers among the other legislative bodies.

	Non-Compliers	Compliers	p -value
Sociodemographics			
Male	0.78	0.76	0.79
Bosniak	0.66	0.53	0.11
Croat	0.22	0.26	0.63
Serbian	0.11	0.14	0.58
other ethnicity	0.01	0.08	0.07
Age	51.04	48.14	0.11
Parties membership			
DF	0.12	0.11	0.82
HDZ BiH	0.15	0.18	0.64
SBB	0.12	0.14	0.74
SDA	0.26	0.26	0.99
SDP BiH	0.16	0.12	0.45
N	85	66	

D.6 Copartisan Effect by Ethnicity of Politician

As seen in Figure D.3, there is no significant treatment effect of copartisanship for any of the ethnic groups. The effect sizes are -9% ($p = 0.182$) for Bosniak, 11% ($p = 0.183$) for Croat, and 7% for Serb politicians ($p = 0.376$).

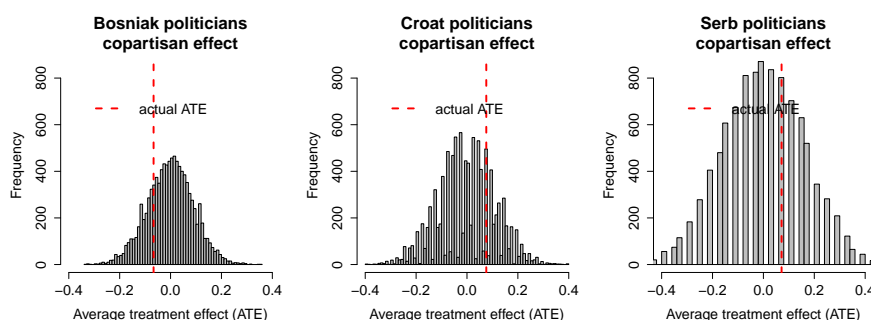


Figure D.3: Randomization inference for the effect of a copartisan treatment vs. a non-copartisan treatment, by ethnicity of the politician, with 10,000 simulations. The red lines show the actual treatment effects.

²Except for the very small group of MPs with “other ethnicity” – but they are so few that their influence is negligible.

D.7 Coethnicity vs. Copartisanship by Ethnicity of Politician

As seen in Figure D.4, there is no significant difference between the treatment effect of coethnicity and copartisanship in any of the ethnic groups: 0.9 percentage points ($p = 0.476$) for Bosniak, 7.5 percentage points ($p = 0.328$) for Croat, and -1.9 percentage points ($p = 0.222$) for Serb politicians.

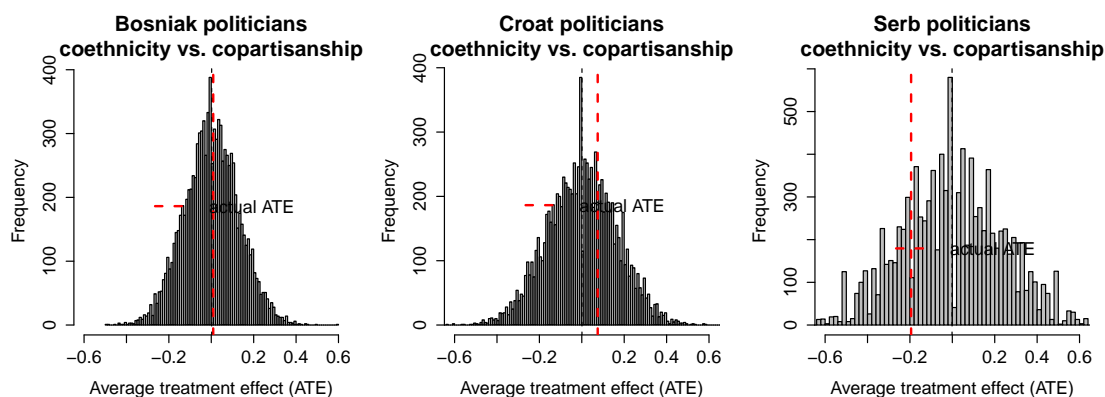


Figure D.4: Randomization inference for the difference between the effect of a coethnic vs. a copartisan treatment, by ethnicity of the politician, with 10,000 simulations. The red lines show the actual treatment effects.

D.8 Impact of Croat Treatment Name

Although we can provide a substantive explanation for the difference between Croat and Bosniak politicians, the question remains whether there is indeed something specific about Croat MPs that explains their response behavior, or whether the Croat treatment worked differently. Can the higher coethnic response rate for Croat politicians and the lower coethnic response rate for Bosniak politicians be explained by the Croat treatment name just being more popular (remember, most Bosniak politicians received as a non-coethnic treatment the Croat treatment name)? In other words, is the effect not due to the names signaling a certain ethnicity, but due to idiosyncratic features of the names? To answer to these concerns we first, using *Google*, checked whether there are any popular individuals with our treatment names in the region. We found Marin Jurić (our Croat treatment name) to be a Croatian soccer player and singer, Emir Hadžić to be a Bosnian soccer player who had appearances in the national team of Bosnia and Herzegovina (Emir Hodžić is our Bosniak treatment name), and Nemanja Nikolić (our Serbian treatment name) to be a Montenegrin soccer player born in Serbia. Although we can here of course not assess the potentially diverging popularity of those individuals, there is, nevertheless, little reason for us to believe that one of our treatment names is better known or has a

D.8. Impact of Croat Treatment Name

more positive connotation. Second, we tested empirically whether our Croat treatment name received more responses than other treatment names using randomization inference (see Figure D.5 below). Specifically, we tested for a significant effect of treatment name instead of coethnicity (Croat, Serb, Bosniak treatment name). If one of our treatment names (specifically, the Croat treatment name) had a significant effect on the response rate independent from the receiver’s ethnicity, this would question the validity of our research design. However, we find only a significant effect of the Croat treatment name for Croat politicians, but not for Bosniak politicians. We, therefore, argue that the *negative* (though not significant) treatment effect of coethnicity for Bosniak politicians, and the *positive* and significant treatment effect of coethnicity for Croat politicians is not simply an artifact of the Croat treatment name, but caused by the behavior of Croat politicians.³

Over all ethnicities, the effect of the Croat treatment name was 4.5% ($p = 0.204$). In other words, the Croat treatment name received 4.5 percentage points more responses than the other treatment names, though the effect is not significant. As seen in Figure D.5, there is no significant effect for all politicians with an effect size of 4.5 percentage points ($p = 0.204$). However, the effect is significant for Croat (effect size 16%, $p = 0.091$), but not Bosniak politicians (effect size 4.6%, $p = 0.337$). For Croat politicians, the effect of the Croat treatment name is in fact equivalent with the effect of a coethnic treatment. — The effect for Serbian politicians cannot be calculated, as there are no Serbs receiving a Croat treatment name with our randomization procedure.

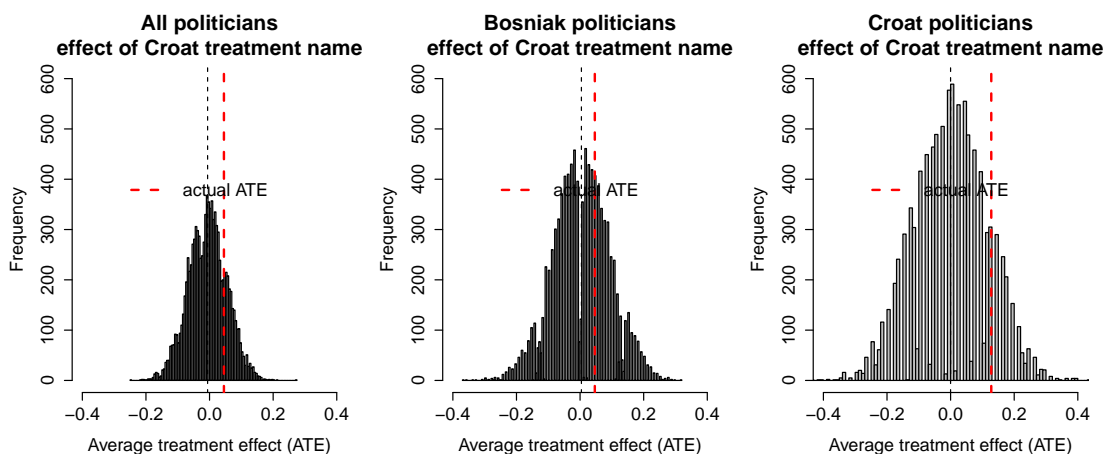


Figure D.5: Randomization inference for the effect of a Croat treatment name, by ethnicity of the politician, with 10,000 simulations. The red lines show the actual treatment effects.

³If our explanation is correct, we would expect a similar effect among Serbian politicians. However, due to the exclusion of the RS we have an insufficient number to interpret the effect for Serbian politicians.

D.9 Heterogeneous Treatment Effects

As seen in Figure D.6 and Table D.4, there is no significant treatment effect of copartisanship, neither for politicians from multi-ethnic nor for politicians from ethnic parties. Importantly, there is also no interaction effect between the type of party (ethnic/multi-ethnic) and the effect of the coethnic treatment. The effect size is 15% ($p = 0.221$) for politicians from multi-ethnic parties, and 0.5% ($p = 0.476$) for politicians from ethnic parties.

Table D.4: Heterogenous treatment effect over multi-ethnic party

	<i>Dependent variable:</i>
	response
Coethnic	0.152 (0.391)
Multi-ethnic Party	1.739*** (0.612)
Coethnic*Multi-ethnic Party	-1.132 (0.863)
Constant	-1.451*** (0.287)
Observations	192
Log Likelihood	-101.150
Akaike Inf. Crit.	210.300
<i>Note:</i>	* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

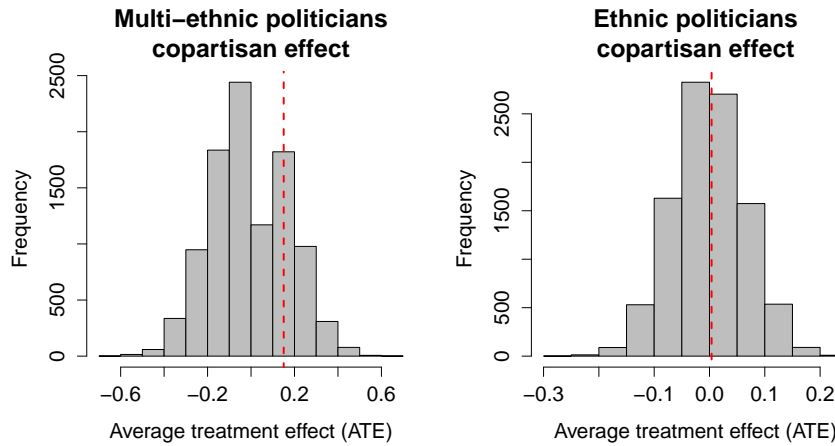


Figure D.6: Randomization inference for the effect of a copartisan treatment vs. a non-copartisan treatment, by party type of the politician (multi-ethnic vs. ethnic party), with 10,000 simulations. The red lines show the actual treatment effects.

D.10 Response Time

Figure D.7 shows the density distribution of the response time (in days) by treatment. As we outline in the main chapter, there are no significant differences between treatments with regard to the response time.

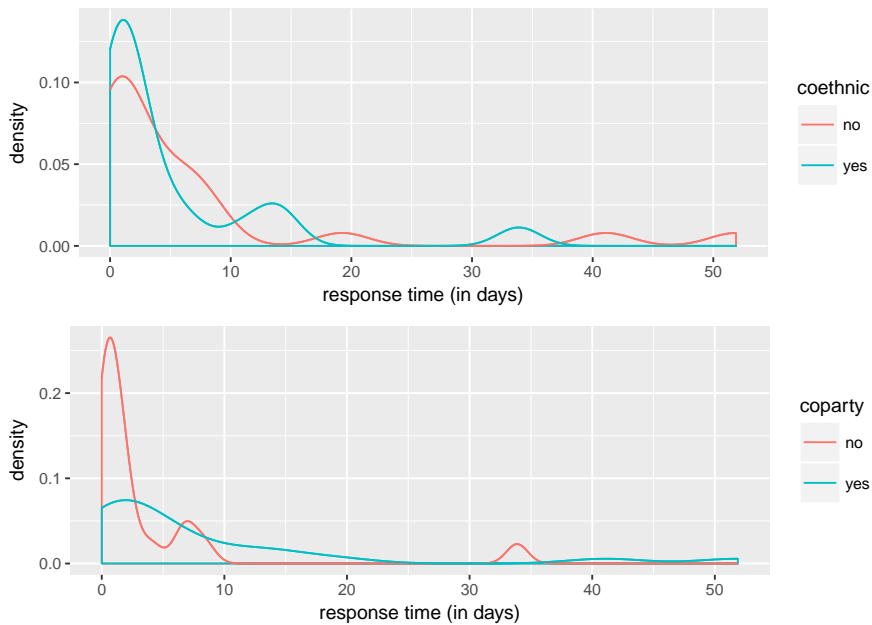


Figure D.7: Response time (in days) by treatment.

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