Them against Us
Dynamics of intergroup conflict during the European refugee crisis

Arun Frey

St Catherine's College

University of Oxford

A thesis submitted for the degree of

Doctor of Philosophy

Michaelmas 2021

To Mum, Dad, and Surina.

Acknowledgements

I could not have written this thesis had it not been for the support and guidance of numerous friends, mentors, and colleagues. First and foremost, I am grateful for Michael Biggs, my supervisor, who helped me find my bearings when I first arrived in Oxford and who has shaped me into the scholar I am today. I thank David Kirk for encouraging me to think through my research, question my data, and believe in my work. Joscha Legewie welcomed me warmly during my stay at Harvard. I have benefited greatly from his insightful comments, and his work has shaped all chapters of this thesis. I am indebted to Ridhi Kashyap and Rafaela Dancygier for agreeing to review this thesis and for providing such thoughtful feedback. I also want to thank Stathis Kalyvas, who brought me together with like-minded researchers as part of the T.E. Lawrence programme on the study of conflict, where some of the ideas in this thesis first took on their shape. Within a span of two-weeks, Taylor Whitten Brown managed to ignite my passion for computational social science—for this I am very grateful. I owe a great debt of gratitude to my fellow colleagues and friends, especially to Chris Barrie, Mark Verhagen, Henry Balme, Lukas Clark-Memler, Matteo Tiratelli, Luka Boeskens, and Jamie Shenk for reading through earlier iterations of my work and for distracting me with other projects whenever I needed distracting. I promise I will return to those projects once I have caught my breath. I am also indebted to Matthias Dilling, Federico Varese, and Andrea Ruggieri, for acting as reviewers during previous assessments of this thesis. Bernard and Liang fed and housed me amidst a pandemic. I am very thankful I got to spend so much more time with you. I am indebted to my sister Surina and to my parents Lorenz and Shubhu for their loud encouragement and for their quiet compromises. Most of all, I want to thank my partner Lyra, for her love and relentless support.

Abstract

This thesis focuses on the expansion of conflict between natives and refugees during the European refugee crisis in Germany. While connected by the common theme, each chapter explores a different manifestation of conflict in the form of a stand-alone article. The first article investigates the spatial and temporal clustering of anti-refugee attacks to illustrate why some places and some moments in time are more prone to violence than others. Results underline the role that threatening events play in reshaping the ecologies of intergroup conflict. Events that are seen as particularly threatening, such as the New Year's Eve sexual assaults, can increase the amount and change the distribution of subsequent attacks—mobilising new, previously peaceful communities to behave aggressively towards local refugee populations. The second article also explores the corrosive impact of threatening events, but focuses instead on how such events shape the everyday lives of majority and minority groups. Studying attitudinal changes among both the German and the resident refugee population, the article finds that exposure to terrorism exacerbates anti-refugee sentiment among German respondents, while increasing experiences of discrimination and mental distress among refugees. These results highlight a crucial but often overlooked aspect of intergroup conflict: how the lives of blamed minority groups—against which much of the increase in vitriol, discrimination, and violence is directed—are impacted by threatening events. The third article examines what happens when refugees and Germans live side-by-side, sharing the same neighbourhood. The study combines real-estate listings with information on when new refugee shelters opened throughout Munich—a city disproportionately exposed to the refugee crisis—to scrutinise whether the arrival of refugees affects a hosting neighbourhood's perceived desirability. Results from the difference-in-difference design find no evidence that a refugee shelter opening decreases the prices of nearby properties. Although most Germans, when asked, prefer not to have a refugee as their neighbour, such attitudes do not seem strong enough to affect actual decisions over where to live. The process of occupying the same space and thus encountering refugees on an daily basis may even sensitise residents to the precarious situation of refugees and therefore reduce anti-refugee sentiment.

Contents

List of Figures

List of Tables

CHAPTER 1

Introduction

In 2015, more than one million asylum seekers crossed the Mediterranean Sea into Europe, fleeing escalating conflict in their diverse countries of origin. This unprecedented immigration became known as the "European refugee crisis", and it represents one of the largest humanitarian crises of the 21st century. The sudden influx of refugees left countries across Europe struggling with how to respond to the calamity alongside their borders. Germany, in particular, received the highest number of refugee applications across Europe—in large part because of the country's "welcome culture" and perceived openness to refugees. But as immigration to Germany surged, so too did xenophobia. Anti-immigrant demonstrations flared up across the country and in all of Europe, growing from only a few dozen to several thousand participants in a matter of weeks (Vorländer, Herold and Schäller 2016). Far-right parties, which had hitherto been sidelined in domestic politics, received a groundswell of unprecedented electoral support (Halla, Wagner and Zweimüller 2017; Dustmann, Vasiljeva and Piil Damm 2019; Dinas et al. 2019). And in parallel to the political resistance to the influx of asylum seekers, a new wave of hostility and violence emerged. Official statistics recorded more than 1,000 attacks against refugee housing in Germany, up from only 58 two years prior (Bundesamt für Migration und Flüchtlinge 2017).

The sudden arrival of refugees in Germany during the European refugee crisis, and the expansion of intergroup conflict that followed, forms the basis of this doctoral research. Each chapter, while connected by this common theme, will focus

on different a set of dynamics between the native and the refugee population, each taking the form of a separate research article.

In Chapter 2, I begin with conflict in its most direct form—violent attacks against refugee communities—and examine the role that threatening events played in stoking this hostility. I show that when sudden events occur that are viewed as particularly threatening to the native population, as was the case with the 2015 New Year's Eve sexual assaults in Germany, it can trigger a wave of xenophobic backlash that lasts for months and far outweighs the impact of other determinants of violence, including the social context of a given locality. Such events, I find, change not only when, but also where subsequent conflict occurs. Although anti-immigrant violence increased everywhere following the New Year's Eve sexual assaults, it did so particularly in places that had exhibited little to no prior enmity towards the local refugee population. Threatening events can thus spark episodes of contention that increase the level, as well as change the very distribution, of violence—inciting xenophobic aggression in areas with no prior history of anti-immigrant opposition.

While anti-immigrant violence is, of course, condemnatory, it is in fact comparatively rare: the large majority of the population never engages in outright attacks against refugees or asylum seekers. In Chapter 3, I turn to study the more mundane changes in attitude, to see how threatening events affect the everyday lives of majority and minority groups. I show that following a series of terrorist attacks that occurred in Germany and France in July 2016, the level of anti-immigrant sentiment among the German population drastically increased. Attacks of such nature led German nationals to feel more negatively towards refugees and to consider refugee immigration as a greater threat to the future of the country. The main contribution of the chapter, however, lies in examining whether such changes in native sentiment are also perceived by refugees, the group portrayed as responsible for the attacks. Corresponding to the intensification of anti-refugee attitudes among German nationals, refugees reported a considerable increase in discrimination and the feeling of being less welcome than at their first arrival to the country. Ultimately, refugees' amplified exposure to hostility seems to not only

impact their lived experiences, but also deteriorate their mental wellbeing. In the days following the terrorist attacks, refugees and asylum seekers experienced the highest levels of discrimination and concurrently suffered a substantial and clinically relevant decline in mental health. In line with the previous chapter, these findings highlight the corrosive impact that threatening events can have on intergroup relations, particularly for those groups that are deemed responsible for the events.

Whereas Chapters 2 and 3 focus on how threatening events shape intergroup conflict and prejudice, the impact of such prejudice is known to extend far beyond the domains in which it has an immediate effect. Chapter 4 focuses on these more indirect effects, and examines the extent to which anti-refugee sentiment maps onto natives' more removed, everyday behaviour. A by-product of the refugee crisis was that some German residents experienced the immigration of refugees at the very local level: insufficient existing accommodation sites and the abrupt influx of refugees meant that new shelters to house the arrivals had to be built at a rapid pace. As a result, neighbourhoods that had previously been occupied by an ethnically-homogeneous population were suddenly home to both natives and refugees, with the former group often opposed to the arrival of the latter. While many Germans, when asked, prefer not to have a refugee as their neighbour, in Chapter 4 I explore whether these preferences have any behavioural implications. Do residents who live next to a refugee shelter move elsewhere, segregating themselves from their new neighbours? Do prospective property buyers who are looking for a new home favour areas without a refugee shelter in the vicinity? And do these dynamics ultimately impact the property value of buildings located near such a site? In Munich, a city disproportionately exposed to the influx of refugees during the crisis, I find that refugee shelters had no impact on the attractiveness of surrounding properties. Although neighbours are often opposed to the opening of a nearby accommodation site in principle, such opposition does not seem strong enough to influence actual decisions over where to move. Survey evidence supports these results, and showcases that the experience of living close to a refugee shelter does not leave a lasting negative impression. In fact, such proximity may even have positive

long-term effects for the local neighbourhood: refugee shelters facilitate casual encounters between natives and refugees, which may reduce fears and stereotypes and therefore ease residents' previously held hostility towards the new arrivals.

To study these different manifestations of intergroup conflict, this thesis draws from a broad range of data sources, including conventional surveys, administrative material, as well as event, web-scraped, and digital trace data. Some of the information I rely on was not collected with the explicit purpose of conducting academic research, but, when repurposed, provides useful insights into the unbiased, "on-the-ground" behaviour of study subjects. In Chapter 4, for example, I combine property sales data collected by *Immobilienscout24*, Germany's largest online real estate broker, with web-scraped information on the location and opening date of all asylum shelters in Munich, in order to estimate the local cost of hosting refugees. While falling home values are cited as residents' primary concerns when opposing a planned refugee shelter opening, data on property prices reveals that these fears do not align with buyers' actual behaviour. Although digital trace data can clarify whether or not fears are rooted in reality, countering such sentiment cannot be based on behavioural data alone. To interpret emotions and events within the social context within which they occur, I have therefore made efforts to combine disparate data sources on both attitudes and behaviours in my analyses, and to point the reader to complementary work whenever appropriate.

In all studies, I have selected research designs that allow me to move beyond correlational findings to identify causal effects. To assess how intergroup dynamics change over time, each of the analyses focuses on a different temporal bandwidth: from short-term changes in attitude in Chapter 3, to medium-term changes in rates of violence in Chapter 2, to long-term changes in settlement behaviour in Chapter 4. Across the studies, some of the identified causal effects last for more than a year, while others dissipate after a few weeks. Chapter 3, for example, shows that terrorist attacks had a substantial impact on how natives and refugees felt towards one another, but the study period spans only two-months, with some effects fading after around three weeks. By contrast, Chapter 2 studies a multi-year

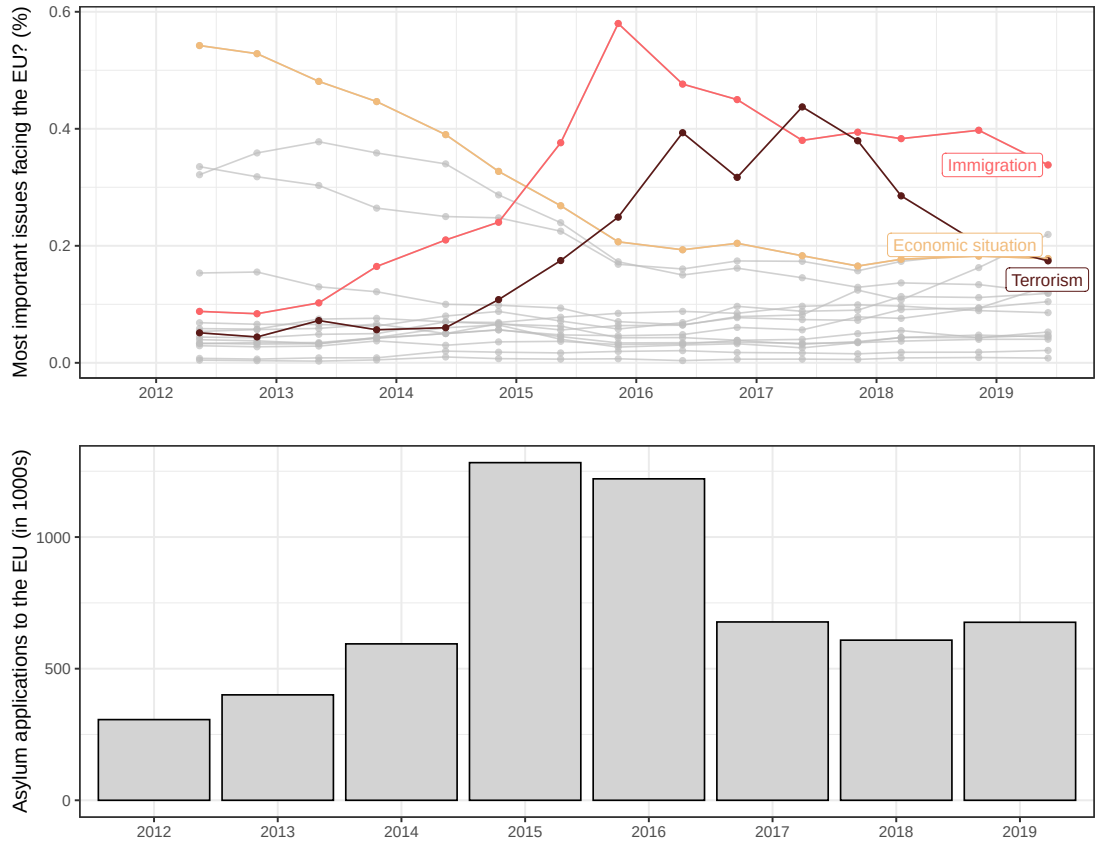
period, and finds that some threatening events can have more lasting effects and increase violence against refugees for the entire subsequent year. Part of these differences stem from the fact that the two studies each focus on different sets of events, with the New Year's Eve sexual assaults in Chapter 2 likely leaving a more lasting impression on the native population compared to the terrorist attacks in Nice, Ansbach, and Würzburg, which are the focus of the third Chapter. Differences in sample composition may also account for some of these differences: while findings in Chapter 2 provide insight into how a small, extreme subset of the German population reacts to a threatening event, Chapter 3 focuses on changes among the population as a whole. Notwithstanding these particularities, this juxtaposition of effect sizes nonetheless identifies the need to better understand the process by which changes in anti-immigrant attitudes map onto changes in anti-immigrant behaviour; a question which I return to throughout the chapters.

While the thesis focuses on the unravelling of the European refugee crisis in Germany, I believe that the cases described are exemplary of the much wider dynamic of what occurs when relations between an established native population and a rapidly expanding immigrant population are put to the test. They are also emblematic of the more general increase in hostility that followed the European refugee crisis, where all across Europe, anti-immigrant sentiment solidified, far-right parties gained unheralded electoral ground, and immigration policies became more restrictive (Bansak, Hainmueller and Hangartner 2016; Dinas et al. 2019; Hangartner et al. 2019). Even today, despite falling asylum application rates, the issue of immigration continues to be a high priority for many Europeans (see Figure 1.1).

Together, the chapters contained in this thesis strive to improve the sociological understanding of intergroup conflict by closely examining *where*, *when*, and *under which conditions* conflict emerges, as well as what such conflict entails for marginalised communities. Today, some 80 million people around the world have been displaced by conflict or persecution, with many seeking refuge abroad. In light of accelerating climate change, growing global instability, and persisting economic inequality, forced displacement and the transnational migration that

follows will continue to be serious challenges in the years ahead. Understanding the consequences of immigration—both for host countries and for migrants themselves—is a prerequisite to analysing societal changes in the 21st century. This thesis strives to add to this understanding.

Figure 1.1: Sentiment in the European Union and monthly number of asylum applications, 2012–2019



Note: Own calculations based on data from the European Commissions' Eurobarometer Survey and annually-published asylum statistics.

Defining a threatening event

On the evening of December 19th, 2016, as people were running their final errands ahead of the holidays, a 25-ton truck was driven directly into a crowded Christmas market in central Berlin, crushing stalls and shoppers in the process. The attack, which resulted in 12 deaths and dozens of injuries, was already the third instance of Islamist terrorism that had occurred in Germany that year, and the 16thacross all of Europe. It was also not the first act of terror involving a large truck: one year earlier, a lorry had ploughed through a crowd of spectators at Bastille Day celebrations in the southern French city of Nice, killing 84 and wounding hundreds.

The question that the first two studies of this thesis deal with is what comes after such events. How does a terrorist attack, and other similar acts, shape individuals' relations towards one another? Does it change the way people see themselves and the groups with which they identify? Does it affect how people view those who belong to groups other than their own, including those who are perceived as responsible for the event? If attitudes do change, do they actually lead to concrete action, or are attitudinal changes so subtle that they are not even noticed by the group that is vilified? Put differently, these chapters aim to understand how events that antagonise change the way groups of people think about and act towards one another.

Thus far, the impact of such events has received only scant attention in the study of intergroup conflict, though their importance has been long recognised. In writing on *Race Prejudice as a Sense of Group Position*, Blumer (1958: 6) lays out his view on how the abstract image of a racial group is formed. In it he points to the importance of "big events" in shaping the perception of a subordinate group:

> The definitions that are forged in the public arena centre, obviously, about matters that are felt to be of major importance. Thus, we are led to recognise the crucial role of the "big event" in developing a conception

> of the subordinate racial group. The happening that seems momentous, that touches deep sentiments, that seems to raise fundamental questions about relations, and that awakens strong feelings of identification with one's racial group is the kind of event that is central in the formation of the racial image. Here, again, we note the relative unimportance of the huge bulk of experiences coming from daily contact with individuals of the subordinate group. It is the events seemingly loaded with great collective significance that are the focal points of the public discussion. The definition of these events is chiefly responsible for the development of a racial image and of the sense of group position. When this public discussion takes the form of a denunciation of the subordinate racial group, signifying that it is unfit and a threat, the discussion becomes particularly potent in shaping the sense of social position.

In his theory on group conflict, Blumer emphasises the role that big events play in shaping attitudes towards subordinate groups, especially compared to everyday interactions with out-group members, to which he attributes only minor importance. Yet, while the effect of habitual group contact has been frequently studied, we still know little of how big events affect perceptions towards outgroups and shape subsequent encounters between majority and minority populations.

As Blumer also notes, such events are particularly successful in influencing perceptions of a group's social position if they are interpreted negatively in the eyes of the public. This is in line with findings in cognitive psychology, which demonstrate that negative events, especially those that evoke feelings of existential threat, provoke stronger physiological, affective, cognitive, and behavioural activity compared to neutral or positive events (Taylor 1991: 67). In the remainder of the thesis, I therefore focus on how such negative, threatening events shape subsequent intergroup dynamics.

I consider threatening events to be *highly visible acts of aggression that harm fellow members of the majority population, which are either committed by, or blamed on, individual members of a particular minority group.* To be classified as a threatening event, an event must:

1. involve some degree of harm or damage directed against a majority group member or against a core group symbol (such as a nation's flag or a religious item),

2. be known by a significant proportion of the public, either due to its immediate impact or due to the media attention it generates, and

3. be instigated by, or become affiliated with, individual members of a minority group.

Although there are cases where even non-violent or innocuous actions by minorities suffice to provoke violent backlash, I do not consider such instances to be examples of threatening event, as it is unclear what constitutes the initial source of threat provoking the negative response in the first place. Retrospectively classifying certain non-violent acts as threatening events risks selecting cases on the dependent variable, where only those events that were interpreted as being threatening by the public are included in the definition. Harmful events on the other hand, interpreted as they may be, always hold the potential to be perceived as threatening in the eyes of the public.

For an event to be classified as a threatening event, it also has to enjoy some level of notoriety. In comparison to local crimes (which only few individuals may be aware of), threatening events are known by the general public, and thus have the potential to shape a group's social standing among the majority population as a whole.

I also consider only those acts of aggression as threatening events if they occur between the members of a majority and minority population. Conflict between two minority groups (such as between Afghani and Syrian refugees), or within the majority population (such as the assassination attempt of Henriette Reker, the major of Cologne, by a far-right extremist) do not fall under this definition. Instances where minority group members are targeted by members of the majority population also do not classify as a threatening event. This includes, for example the tragic shootings in Hanau in 2020, where a right-wing extremist targeted two bars frequented by Turkish immigrants, and killed 11 individuals. I do not include such events because causal processes are generally asymmetrical; it is fallacious to assume that '[i]f a change in X makes Y change in a certain direction, then surely the opposite change in X would generate an opposite change in Y' (Lieberson

1985: 69). The impact of events where minority groups are harmed by the majority population deserves separate theorising.

Finally, I consider threatening events to have occurred exogenously to a studied group encounter, in that neither the majority nor the minority group under study were directly involved in the original act of aggression. Restricting threatening events to events that occur exogenously of a studied interaction has theoretical and methodological advantages. From a theoretical perspective, threatening events that occur outside of a given situation increase intergroup tensions primarily by increasing the salience of group identities: for in-group members, these events are threatening not because of a direct threat to personal safety, but primarily because of the harm they inflicted on a fellow in-group member.[1] Out-group members, on the other hand, are associated with the event not because of a direct involvement in the original act of aggression, but because they share the same group identity as the perpetrator. From a methodological perspective, it is easier to attribute a causal effect to a particular event if that event has occurred exogenously to a given encounter. If a threat arises endogenously out of a given situation, subsequent actions may either occur in response to this new threat, or as a result of the underlying processes that gave rise to the threat in the first place.

I keep these inclusion criteria purposefully minimal, so as to include a broad range of event types. This allows me to compare, for instance, the impact of lethal terrorist attacks, such as the 2015 attacks in Nice or Berlin, with that of non-lethal events that harmed members of the majority population and garnered considerable media attention, such as the 2016 New Year's Eve sexual assaults.

It is important to note that this definition does not depend on how an event is interpreted in the eyes of the public, so as to not select cases on the dependent variable. Scholars interested in studying how events impact natives' threat perceptions of immigrants, for example, would inadvertently introduce bias into

[1] In practice, it is often difficult to disentangle real from perceived threats to personal safety and security. Still, fears over the impact of terrorism do not match the risk of being directly affected by such an event: Figure 1.1 shows that fear of terror ranks among the highest concerns among Europeans, although the probability of falling victim to such an attack is minimal.

their case selection if they were to only including those events that are (assumed) to provoke such a reaction in the first place. Instead, according to the current definition, a threatening event is only threatening *in principle*, in that it may or may not be construed in ways that increases the salience of group identities. In cases where a threatening event is not perceived to foreground a perpetrator's group membership and amplify the threat from the individual to the group at large, then it is not expected to increase intergroup conflict. Instead, if a threatening event is interpreted as being relevant to a particular intergroup relationship, it can generate profound grievances against the group to which responsibility is attributed. As I will show in subsequent chapters, in such situations the out-group as a whole can be held collectively liable for the actions of some of its members, and can undergo severe punishment for the perceived social harm by the native population.

CHAPTER 2

"Cologne changed everything"

The effect of threatening events on the frequency and distribution of intergroup conflict in Germany

A version of this chapter was published at the European Sociological Review

2.1 Introduction

In the midst of the refugee crisis in 2015, German chancellor Angela Merkel proclaimed: *Wir schaffen das!* (We can do it!). Her message was directed at the German public, amidst increasing opposition to the sudden surge of immigration. By the end of that year, an estimated 890,000 asylum seekers had made their way into the country—marking the largest influx in the history of the Federal Republic (BMI, 2016). Though some viewed this as evidence of the country's "Willkommenskultur,"[1] domestic resentment against the new arrivals formed quickly. Most notably, violence escalated alongside the immigration, with attacks against refugee shelters increasing 18–fold between 2013 and 2015 (Bundesamt für Migration und Flüchtlinge 2017).

This hostility culminated in the aftermath of the 2015/16 New Year's Eve (NYE) celebrations, during which hundreds of individuals were robbed, harassed, and sexually assaulted by perpetrators later described as individuals of 'North African and Middle Eastern' origin (Frank 2017; Shuster 2016). The event sparked an outcry among the public: anti-immigrant protest groups took to the streets, blaming the recent refugees for the assaults, while politicians from both sides of the political spectrum came forward demanding a rethinking of Germany's immigration policy. Yet, despite this public outrage and seeming increase in anti-immigrant hostility following the event, the question of whether the New Year's Eve sexual assaults fuelled violence against refugees and asylum seekers has yet to be examined.

More generally, while the structural determinants of intergroup violence have frequently been analysed (e.g. Braun and Koopmans 2010; Dancygier 2010; Dhattiwala and Biggs 2012; Falk, Kuhn and Zweimüller 2011; Jäckle and König 2016; Koopmans 1996; Koopmans and Olzak 2004; Kriesi 2012; Krueger and Pischke 1997; Marbach, Hainmueller and Hangartner 2018; Müller and Schwarz 2021; Olzak 1990, 1994; Piopiunik and Ruhose 2017; Ziller and Goodman 2020), less attention has been payed to the effect that threatening events, such as the New Year's Eve sexual assaults, have on such violence. Recent studies have begun addressing this

[1] welcome culture

gap by examining whether threatening events spark periods of increased aggression (e.g. Disha, Cavendish and King 2011; Jäckle and König 2018; King and Sutton 2013) but they often focus only on one singular event and do not examine how subsequent violence is distributed.

In this paper, I examine the extent to which the New Year's Eve sexual assaults triggered anti-refugee attacks in Germany by comparing its impact to those of all domestic and European terrorist attacks of the same period, and examining where this resulting backlash violence occurred. Notably, while previous studies generally assume that the impact of threatening events is homogeneous, equally affecting violence throughout the country, I explore whether the New Year's Eve event had a bigger impact in some areas in Germany over others.

Results of the multi-level logistic regression reveal that, net of structural determinants, contagion dynamics, and seasonal fluctuations, violence increased most following the New Year's Eve sexual assaults. The NYE event incited a wave of xenophobic violence in its immediate aftermath, more than tripling a district's probability of experiencing an attack in the first week alone. The effect of domestic and European terrorist attacks, by comparison, is much more short-lived, with most having no discernible impact on anti-refugee aggression.

Importantly, the study also shows that the New Year's Eve event changed the geographic distribution of subsequent violence. Following NYE, attacks against refugees increased disproportionately in districts with low prior levels of hostility and far-right support. In other words, although violence increased everywhere, it did so especially in communities that previously exhibited little to no enmity towards immigrants.

Together, these findings suggest that the New Year's Eve event not only led to a surge in the absolute number of attacks, but also mobilised new, previously peaceful communities to become violent towards local refugee populations. While previous studies generally assume that events equally affect intergroup hostility throughout the country, this paper argues that reactions may differ, depending in part on a community's history of intergroup violence.

2.2 The New Year's Eve sexual assaults

During the course of New Year's Eve 2015/16 in Cologne, groups of young men gathered on the square between Cologne Cathedral and the central train station and began throwing fireworks into the crowds, leading to chaos among the celebrators nearby. Over the course of the next few hours, victims were robbed and intimidated, and numerous bystanders were sexually assaulted (Baumgärtner et al. 2016; Eddy 2016*a*). This event was particularly notable because of the number of people involved, with initial crowd estimates ranging anywhere between 1,000 to 2,000[2], (NRW Landtag 2017; Staudenmaier 2016) and the unprecedented number of crimes committed. By September 2016, the police had registered more than 1,200 criminal complaints in Cologne for that day alone, of which close to half were sexual offences (NRW Landtag 2017; Staudenmaier 2016).

In the days following the event, many victims came forward describing assailants as being of 'North African and Middle Eastern appearance' (Baumgärtner et al. 2016; Eddy 2016*a*). This sparked an outcry among the general population, and dominated subsequent political and public discourse: attacks were immediately blamed on refugees who had entered the country during the recent migration influx. Within days, anti-immigrant groups took to the streets and transformed *Refugees Welcome* signs, thitherto symbols of the country's 'Willkommenskultur,' into banners reading *Rapefugees Not Welcome*. Negative reactions, however, extended far beyond the fringes of the extreme right (Bielicki 2019). Local politicians referred to the NYE sexual assaults as a 'completely new dimension of crime' (Connolly 2016*b*), while the event itself initiated an EU emergency meeting on the 'Recent attacks against women in European cities' at the Council of Europe (Gunnarsson 2016). Despite its resonance within public discourse and the outrage that followed, the impact of the New Year's Eve sexual assaults on intergroup relations in Germany is still poorly understood.

[2]It is important to note that the number of perpetrators is likely considerably lower than this—by September 21st, 2016, 299 individuals were suspected by the Cologne police of having committed a criminal offence during the NYE event (NRW Landtag 2017). However, most sources in the immediate aftermath of the event referred to these inflated crowd estimates.

2.3 Threatening events and intergroup conflict

The idea that intergroup tensions rise in the wake of threatening events is nothing new. Already in 1958, Herbert Blumer (1958: 6) argues that events which lead to the perception of an out-group as a threat are crucial to forming ethnic prejudice, so that '[t]he definition of these events is chiefly responsible for the development of a racial image and of the sense of group position.' This theoretical conjecture has been underlined by studies on the effect of terrorist attacks on attitudinal change, showing that threats heighten in-group solidarity while increasing bias towards out-group members. Hopkins (2010) uses panel data to demonstrate that perceptions of immigrants in the United States worsened in the immediate aftermath of September 11 (see also Kam and Kinder 2007). Similar work on Israel has found that terrorist attacks decrease political tolerance (Peffley, Hutchison and Shamir 2015) and increase negative perceptions of minority groups (Bar-Tal and Labin 2001). Others suggest that the impact of terrorism can even transcend national boundaries. Schüller (2016) applies a difference-in-differences approach to survey data to show that anti-immigrant attitudes in Germany flourished following 9/11. Legewie (2013) focuses on the impact of the 2002 Bali bombings and, using a natural experiment, similarly finds that the event negatively affected individuals' attitudes towards immigrants across several European countries.

Such survey and experimental research designs provide convincing causal evidence of the attitudinal impact of terrorist attacks, but do not explore how 'the effect of events on attitudes may propagate to actual behavioural outcomes' (Legewie 2013: 1233).[3] Concretely, increasing negative sentiment towards a particular out-group does not necessarily translate into more violent behaviour. Threats, however, not only incite intolerance, but also motivate retaliation against the threatening group. Lickel et al. (2006) propose a set of mechanisms through which threatening events also provoke the desire for violent retribution: following initial acts of

[3]More recently, findings by Castanho Silva (2018) and Larsen, Cutts and Goodwin (2019) also suggest that the terrorist attacks in Paris in 2015 and in Berlin in 2016 had no impact on anti-immigrant attitudes, and argue that the effect of events may be declining in recent years.

aggression by individual out-group members that instil threat, fear, and harm among the in-group, an out-group as a whole can become the target of retributive attacks. Such triggering events increase hostility and aggression by priming individuals on the potential threats and prior sources of conflict associated with the threatening group. Events that are highly publicised, harm in-group pride and are easily attributable to a specific community are therefore particularly potent triggers of retributive conflict. Despite this broad definition of what constitutes a triggering event, studies that measure a behavioural impact usually examine only terrorist attacks, showing for instance that hate crimes against Arabs and Muslims in the United States increase following September 11 (Disha, Cavendish and King 2011; King and Sutton 2013).

The New Year's Eve event, however, also fits this definition of a threatening event: refugees and asylum seekers were blamed for (or at least brought in connection with) the incident within the media, while the event itself generated nationwide outrage and political debate. Yet, its impact on violence and intergroup relations remains understudied. Focusing on attitudinal change, Czymara and Schmidt-Catran (2017) find that public acceptance of immigrants in Germany decreased somewhat between two survey waves in April 2015 and January 2016, and suggest that the sexual assaults on New Year's Eve may have contributed to this decline.[4] However, the substantial nine-month gap between both samples, during which the country experienced the largest increase in refugee immigration, does not allow the authors to conclusively attribute this decrease to any event in particular. Jäckle and König (2018: 5) attempt to take the impact of the New Year's Eve sexual assaults into account by grouping it into a broad category consisting of 58 acts of 'violence committed by refugees and asylum seekers'. Grouping the event together into a single variable with 57 much more minor and less reported crimes, however, does not account for the unique public and political uproar following the sexual assaults.

Despite the lack of systematic analyses, there is reason to believe that the New Year's Eve event influenced anti-refugee violence in Germany, and that its effect supersedes that of other, more frequently-studied terrorist attacks that occurred

[4]The overall decline refers to 0.24 points on a seven-point Likert scale.

during the same time period (including attacks in Paris, Berlin, Brussels and other cities). Firstly, subsequent media reporting and political debates associated the NYE event with the asylum-seeking population in Germany, thus increasing threat perceptions against this group in particular.[5] Islamist terrorist attacks, on the other hand, may increase threat perceptions of Muslim communities more generally, but are often not as directly tied to a specific out-group (but see Legewie 2013). Secondly, while the immediate threat following a terrorist attack is often resolved—with perpetrators committing suicide or being captured by the police—the New Year's Eve event involved dozens of perpetrators and led to only few convictions.[6] This sense that multiple culprits may have "gotten away" with the offences could further heighten threat perceptions against the refugee community, whose members, in the absence of known perpetrators, would all fall under general suspicion. Lastly, government and police officials were heavily criticised for their slow and uncoordinated response following the NYE event, leading to a loss of trust in the police's capabilities to curb criminality. The slow response and the initial downplaying of the events even prompted rumours that local authorities were hoping to cover up the incident to avoid public embarrassment (Bielicki 2019). While some terrorist attacks have been shown to induce a 'rally round the flag' effect, temporarily increasing support for government and security forces (Hetherington and Nelson 2003; Mueller 1970), the NYE event thus likely had the opposite effect and signalled shortcomings of the state and police to the German public. In situations where citizens believe the government to be incapable of or unwilling to resolve the threat itself, natives may feel emboldened to "take matters into their own hands." Such a context is ripe for the emergence of vigilante violence.

Accordingly, in order to assess the relative importance of each threatening event, the first question this study explores is whether the New Year's Eve sexual

[5]Figure A.1 in the appendix illustrates this by visualising the number of newspaper articles in Spiegel Online, one of Germany's most widely-read news websites, mentioning both the German words for 'crime' and 'refugee'. The Figure shows that refugees were immediately brought in connection with the events on New Year's Eve.

[6]As of December 2017, there have been 36 convictions related to the New Year's Eve event (Lauter 2017).

assaults led to an increase in xenophobic violence in Germany and how this effect compares to the more frequently-studied impact of domestic and European terrorist attacks of the same period.

2.3.1 The distributional impact of a threatening event

In addition to this comparative examination, the study also places specific attention on *where* retaliatory violence occurs. Although research on the impact of threatening events on ethnic conflict is growing, such studies assume that the effect of events is homogeneous, only changing the amount but not the distribution of attacks. Disha, Cavendish and King (2011: 21) lend credence to this assumption: finding no difference in the structural determinants of hate crime in the year before and year after 9/11, they conclude that while threatening events may 'incite retaliation and set off a wave of hate crime offending, (...) the location of these crimes is likely to remain consistent.'

However, a threatening event may affect certain communities more so than others, depending on the extent to which that community was originally predisposed to feeling threatened. Research within social psychology underlines this hypothesis, showing that individuals' reactions to acts of aggression depend on their previous beliefs about minority groups. Sniderman, Hagendoorn and Prior (2004: 36) examine how 'predisposing factors and situational triggers in combination shape reactions to ethnic minorities,' and suggest that threatening events may have a *galvanising effect*, disproportionately affecting those already concerned about a particular problem by reinforcing these existing fears and local tensions. In this vein, studies have shown that attitudes change disproportionately among right-wing voters and those with pre-existing grievances towards a particular out-group following a terrorist attack (Jungkunz, Helbling and Schwemmer 2019; Peffley, Hutchison and Shamir 2015).

On the other hand, threatening events may primarily provoke violence among less hostile areas, *mobilising* new communities to lash out against immigrant populations. In line with this, the terrorist attacks in France and the UK seem to have primarily increased anti-immigrant attitudes among left-leaning and educated individuals,

and most strongly in countries with more positive views on immigration (Brouard, Vasilopoulos and Foucault 2018; Ferrín, Mancosu and Cappiali 2019; Van de Vyver et al. 2016). Ferrín, Mancosu and Cappiali (2019) follow a Bayesian-like rationale and hypothesise that the process of "disconfirmation" evokes these sudden attitudinal and behavioural shifts: while individuals with pre-existing negative views about out-groups see their views simply confirmed by a sudden threat, those with no strong or positive prior beliefs are more shocked by the event, evoking new feelings of threat and thus leading to stronger reactions.[7]

By studying where subsequent violence occurs, one can also glean useful insights into the mechanism by which threatening events spark waves of hostility. This point is echoed by Dancygier and Green (2010), who, in discussing the role of the media in inciting hate crime, highlight the difficulty of causally relating media coverage to actual changes in perpetrator behaviour. Although research has demonstrated that coverage of xenophobic attacks can increase the amount of violence and incite similar acts elsewhere (e.g. Esser and Brosius 1996), it is unclear whether media reporting 'leads to an overall increase in prejudice in the general population, thereby expanding the pool of potential offenders, or whether such coverage provide the necessary trigger to turn already prejudiced individuals into perpetrators of bigoted violence' (Dancygier and Green 2010: 301).

To provide insight into the mechanism underlying the effect of events, this paper explicitly examines where backlash violence in response to the New Year's Eve sexual assaults occurred. Following the hypothesis of a *galvanising* effect, the NYE event should primarily intensify violence among communities that, prior to the event, already exhibited high levels of hostility and intergroup contention. According to a *mobilising* effect, however, the event should disproportionately spark conflict in areas with little prior violence. Together, this paper thus explores the impact of the New Year's Eve sexual assaults on both the amount and the distribution of anti-refugee attacks in Germany.

[7] A similar argument is made by Brouard, Vasilopoulos and Foucault (2018).

2.4 Data

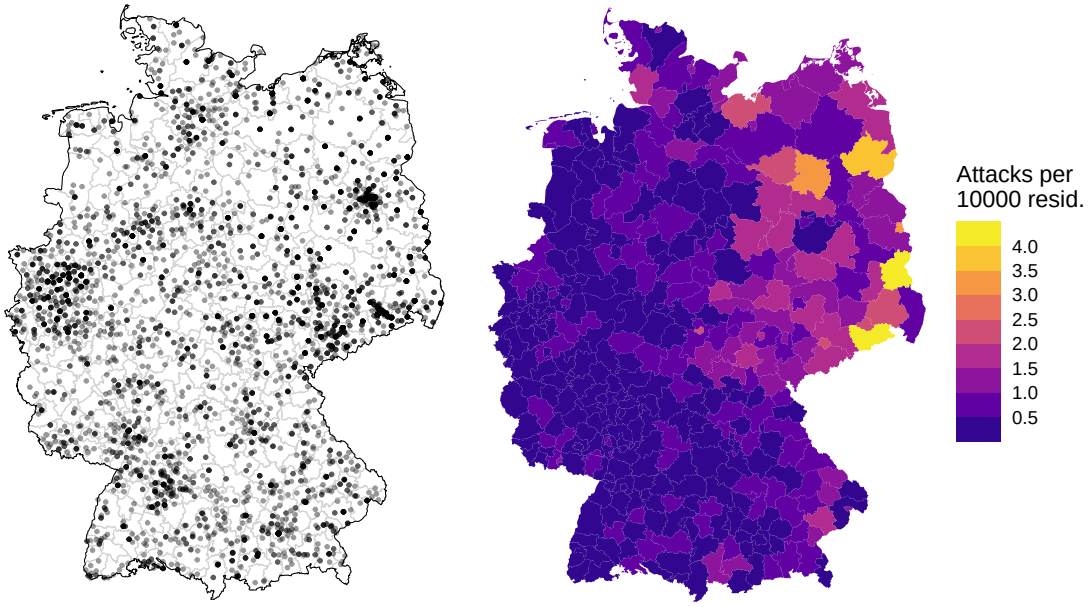
To analyse the factors influencing intergroup violence in Germany, I make use of a list of all attacks against asylum seekers and their housing between 2014 and 2016, jointly collected by two NGOs (the Amadeu Antonio Foundation and PRO ASYL) and consolidated into a user-friendly and well-maintained dataset by Benček and Strasheim (2016). I update this dataset by web-scraping the Amadeu-Antonio-Foundation's 'chronicle of anti-immigrant attacks in Germany,' and include all retrospectively added cases.[8] Information on each attack is based on parliamentary inquiries, official statistics, newspaper articles, and police reports, and was classified into four groups according to the type of offence: anti-immigrant demonstrations, arson attacks, miscellaneous attacks against refugee shelters, or assaults. Demonstrations were excluded from the analysis, leaving a total of 5,333 attacks over a period of three years. Since immigration to Germany increased steadily starting in 2014, escalated mid-2015, and was reduced back to a low constant rate in early 2016 (Bundeszentrale für politische Bildung 2018), the period of analysis captures intergroup hostility before, during, and after the large migration influx. While German police statistics on violence against refugees and asylum seekers are aggregated at state-level and reported annually, the geo-referenced dataset I employ offers information on the precise location and exact date of each incident. This allows for a detailed assessment of how attacks fluctuate both across space and over time.

Figure 2.1 visualises the geographic distribution of all attacks against refugees and their shelters between 2014 and 2016. Attacks cluster around the Eastern and Western parts of the country, and occur more frequently in big cities such as Berlin, Hamburg, Munich, or Frankfurt. A clear difference between East and West Germany emerges when weighting the number of attacks by the local population. District located in what used to be the German Democratic Republic feature a considerably higher rate of violence compared to areas elsewhere. In the two most hostile districts

[8] I webscraped the chronicle on November 12th, 2018. The Amadeu-Antonio Foundation confirmed via email that it is unlikely that new data points will be retrospectively added to the list for the years 2014 to 2016 after that date, given that police statistics have already been published for these years and additional clarifying inquiries have been made.

of Spree-Neiße (including Cottbus) and Sächsische Schweiz-Osterzgebirge, more than 4 anti-refugee attacks occurred per 10,000 residents between 2014 and 2016. Concretely, this amounts to 94 and 107 attacks in each of the two districts, or to around 1 anti-refugee attack every 10 days.

Figure 2.1: Map of anti-refugee attacks, 2014–2016

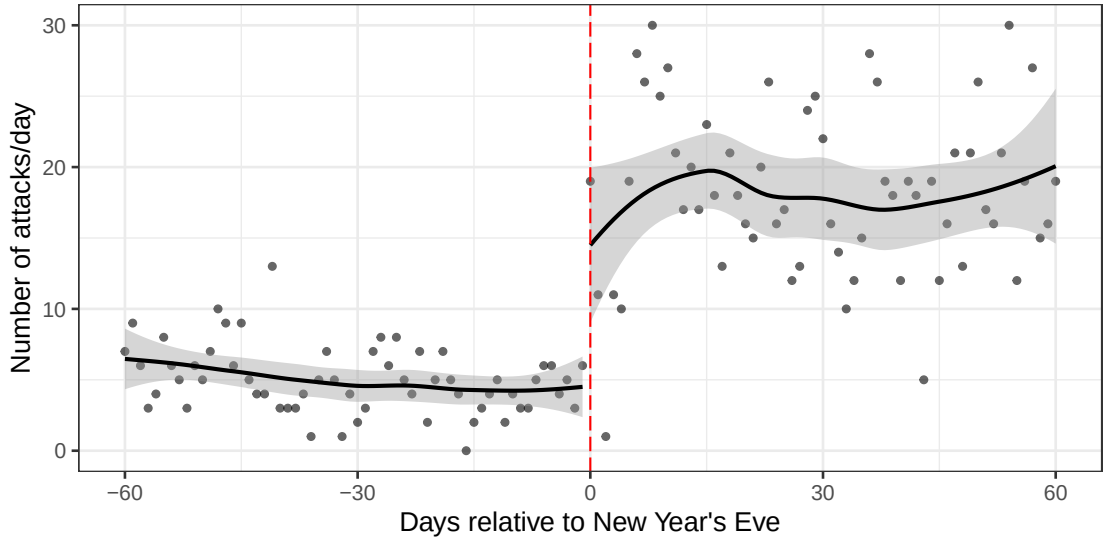


Note: Left: location of each attack. Right: number of attacks per 10,000 residents.

To illustrate the importance of the New Year's Eve event in stoking anti-refugee hostility, Figure 2.2 displays the number of anti-refugee attacks across Germany in the two months before and after the sexual assaults. Following the event, violence increased drastically and instantaneously, surging from four to more than 18 attacks per day on average. This rise in violence is astonishing, especially considering that in the years 2014 and 2015, the daily rate averaged at only 0.9 and 3.4 attacks. While this is a profound increase in hostility, Figure 2.2 does not elucidate how this

impact compares to terrorist attacks of the same period, net of underlying temporal dynamics, and whether its effect is homogeneous or impacted some localities more than others. To answer these questions, this study makes use of a series of logistic regression models at the district-day level. These models take into account the effect of structural determinants, temporal dynamics, and different threatening events on the probability of anti-refugee violence.

Figure 2.2: Daily anti-refugee attacks in Germany in the two months before and after January 1st, 2016



Note: Local regression estimates with 95% confidence intervals.

2.5 Methods

Germany is comprised of 401 districts. In two cases, the data does not differentiate between adjacent counties, leaving 399 districts across three years.[9] As it is in this paper's interest to closely examine temporal fluctuations in anti-refugee violence, the unit of analysis is district-days, amounting to 437,304 observations.[10] In only

[9]Observations were merged for districts Kassel Stadt and Kassel Landkreis, as well as Spree-Neiße Landkreis and Cottbus Stadt.

[10]Using daily over weekly fluctuations in anti-refugee attacks is preferable, since it allows for the most granular examination of the impact of events. More specifically, using district-week as the unit of analysis would not allow me to differentiate between a situation where a threatening event occurred on the first, third, or 6th day within a given week. If district-week were the unit of analysis, a week would constitute as being treated, regardless of whether it had been treated for

very few cases did more than one attack occur in the same district on the same day, with the maximum number of attacks in a single day being six. A dichotomous dependent variable was therefore chosen, coded one if a district experiences one or more attacks on a given day, and zero otherwise, leaving 4,873 non-zero units.

2.5.1 New Year's Eve Assaults & Terrorist Attacks

The first component of this paper is to examine the impact of the New Year's Eve sexual assaults on subsequent anti-refugee violence and to compare its effect to European terrorist attacks of the same period. I include terrorist attacks that were committed by Muslim- or jihadi-inspired extremists (or were otherwise brought in connection with Islamist terrorist groups) that were listed by both the Global Terrorism Database (START 2018) and the German Federal Office for the Protection of the Constitution (2019). To ensure media visibility, only events that claimed at least one victim were included in the analysis, reducing the number of fatal European terrorist attacks to 11 cases.[11]

I estimate the probability of at least one anti-refugee attack occurring in a district on a given day using the following formula:

$$\ln\left(\frac{Pr(Y_{it}=1)}{1-Pr(Y_{it}=1)}\right) = \alpha + \boldsymbol{X}_i'\beta + \boldsymbol{Z}_t'\gamma + \boldsymbol{D}_t'\delta + \zeta_i + \epsilon_{it} \tag{2.1}$$

where Y_{it} indicates whether a district experiences an attack on a given day, $\boldsymbol{X}_i$ a set of district-level structural determinants, $\boldsymbol{Z}_t$ a set of time-variant country-level variables, and ζ_i represents district-level random intercepts. To estimate the impact of different threatening events, I include a list of weekly binary variables

anywhere between only 1 and already 7 days.

[11] The following attacks were included in the analysis: Brussels (May 24th, 2014; March 22nd, 2016), Paris (January 7th-9th, 2015; April 19th, 2015; November 13th, 2015), Copenhagen (February 14th, 2015), Saint-Quentin-Fallavier (June 26th, 2015), Glasgow (March 24th, 2016), Magnanville (June 13th, 2016), Nice (July 14th, 2016), Saint-Étienne-du-Rouvray (July 26th, 2016), and Berlin (December 19th, 2016). The incidents in Brussels, Belgium, and Glasgow, UK, occurred within two days from each other. The weekly dummy variable estimating the impact of the Brussels event therefore captures the effect of both the terrorist attacks in Brussels and Glasgow on subsequent anti-refugee violence. I exclude non-fatal terrorist attacks from the analysis after examining the media coverage of these attacks. Non-fatal terrorist attacks generally attract far less media attention compared to fatal attacks, unless these non-fatal events occurred in the country in which the newspaper is located.

($\boldsymbol{D}_t$), which examine whether the probability of an attack increases in the 7 days following each event, and, if it does, for how many weeks this effect lasts for. Accordingly, δ_{NYE} identifies the effect of the NYE sexual assaults on the probability of anti-refugee violence in subsequent weeks.

2.5.2 Time-variant controls

To isolate the effect of events from other underlying temporal dynamics, I control for the impact of time-variant factors that may be associated with anti-refugee violence: the number of asylum registrations, potential diffusion processes and systematic daily fluctuations in the probability of attacks.

To control for changes in the inflow of asylum seekers to the country over time, I use the logged number of monthly asylum registrations within Germany, and linearly interpolate these to obtain daily rates.[12] Upon arrival, asylum seekers are generally placed in short-term facilities, where they are registered into a central system before being transferred to a federal state and corresponding district.[13] The rate of refugee arrivals varies drastically between 2014 and 2016; in line with theories of intergroup threat, violence is assumed to be more likely during periods of heightened immigration.

I also add two variables to account for potential diffusion dynamics within the previous month: the number of anti-refugee attacks in all other districts and the number of previous attacks in the same district. The resulting distribution of the first variable is highly skewed, and so the square-root is taken.[14] The assumption is that previous attacks can act as positive feedback for potential

[12] Results are robust to using monthly rates instead.

[13] See Chapter 4 for an elaborate explanation of the registration process.

[14] The two diffusion variables are specified as:

$$D_{1it} = \sqrt{\sum_{k=t-28}^{t-8} a_{ik}} \quad \texttt{and} \quad D_{2it} = \sum_{k=t-28}^{t-8} \sum_{j=1}^{J} a_{jk}$$

where a_{ik} (a_{jk}) is a dichotomous variable coded one if there was an attack in district i (j) at time k, and zero otherwise. Thus, D_1 identifies attacks in the same district in the previous month, and D_2 identifies previous attacks in all other districts.

future events, despite no apparent exogenous changes (see Biggs 2005; Braun 2011; Granovetter 1978; Hedström 1994).

Lastly, to capture systematic temporal variation in the probability of violence, I include a set of dummy variables identifying the day of the week and add a linear time-trend.

2.5.3 Structural determinants

An abundance of research has shown that the distribution of ethnic conflict depends in part on structural determinants (e.g. Braun and Koopmans 2010; Dancygier 2010; Dhattiwala and Biggs 2012; Falk, Kuhn and Zweimüller 2011; Jäckle and König 2016; Koopmans 1996; Koopmans and Olzak 2004; Kriesi 2012; Krueger and Pischke 1997; Marbach, Hainmueller and Hangartner 2018; Müller and Schwarz 2021; Olzak 1990, 1994; Piopiunik and Ruhose 2017; Ziller and Goodman 2020). In accordance with this body of work, this study takes the local variation of minority group size, economic instability, and political opportunity into account. To do this, district-level data on structural determinants was collected and combined from the German Federal Ministry of Statistics, the Federal Office for Migration and Refugees, the Federal Employment Office, the Federal Ministry of the Interior, the Yearly Police report, and the Bundeswahlleiter (see Table A.1 in the appendix for summary statistics).[15] By incorporating the structural determinants of violence, it is also possible to examine how the interplay between local conditions and xenophobic attacks changes in the aftermath of the NYE event.

Studies on the relationship between minority group size and intergroup conflict build primarily on the two theories of contact and threat, which postulate opposite effects. Threat theory, proposed by Blumer (1958), argues that minority group size is positively associated with violence: as an ethnic group gains more members it threatens the dominant position of the majority population, increasing the probability of violent clashes. Contact theory, on the other hand, argues that

[15]Data from 2015 was used for all structural determinants with the exception of election data (2014) and the share of local refugee presence, which varies considerably between 2014 and 2016 and was therefore linearly interpolated.

violence is rooted in racial prejudice, so that sustained interaction with out-group members reduces intergroup hostility (Allport 1958; Pettigrew 1998). To disentangle both theories, I differentiate between the effect of a district's share of asylum seekers and foreign population, and expect opposite dynamics. The German refugee crisis led to a sudden expansion in local refugee presence, which, I argue, intensified perceptions of threat while not allowing for group contact.[16] Meanwhile, the local foreign population grew more gradually, providing opportunities for regular intergroup exchange. Therefore, while I expect the local share of asylum seekers to be positively associated with violence, a district's share of non-EU foreigners should be negatively correlated with its probability of experiencing an attack.[17]

To examine the association between a district's far-right electoral support and its rate of xenophobic attacks, local strength of both the extreme-right NPD as well as the right-populist AfD was included in the model. The AfD drastically changed its political agenda since its inception in 2013, from being a single-issue Eurosceptic party to becoming the main right-populist anti-immigrant force in German politics. While I have attempted to account for this shift by using 2014 European Parliamentary election results rather than the 2013 federal vote share, local AfD votes in 2014 do not align strongly with its current support base and may therefore not adequately capture local anti-immigrant sentiment.[18] Electoral strength of the neo-fascist NPD is therefore a more robust indicator of far-right electoral support and local levels of xenophobia more generally. Neo-fascist parties are also traditionally more anti-democratic and prone to promoting violence than their right-populist counterparts (Golder 2003; Merkl 1993).

Finally, to operationalise economic threat and social anomie, I include districts' native unemployment rate and voting turnout in the 2014 European Parliament elections. Economic uncertainty can cause frustrations among the native population, which in turn can trigger aggressive behaviour and violence (Dancygier 2010), while

[16] In Chapter 4 I examine the impact of sustained interactions between refugees and natives at the neighbourhood level, and show that this contact does seem to reduce intergroup tensions.

[17] Results remain the same when using the share of all foreigners.

[18] See Appendix Section A.3 for an illustration of the correlation of votes within and across parties between the 2013, 2014, and 2017 elections.

voting turnout serves as a proxy for general political engagement and is expected to decrease levels of violence, indicating more confidence in existing institutional structures (Braun and Koopmans 2010). Next to these factors, I also control for contextual variables that have been shown to be correlated with ethnic conflict. These are logged population size, homicide rate, logged income per capita, male-female ratio, and a dummy variable differentiating between city and rural districts. I also control for location in East Germany, in line with previous studies that have observed higher levels of xenophobia in the Eastern part of the country. This may be due to historical (Adam 2015), socialisation (Alesina and Fuchs-Schündeln 2007), or economic differences (Krueger and Pischke 1997), or due to the long history of ethnic homogeneity in East Germany during the Soviet Union (Jäckle and König 2016).

2.6 Results

Results of the logistic regression analyses are presented in Tables 2.1 and 2.2. For ease of interpretation, all continuous variables are divided by two standard deviations[19], which allows for a comparison of the magnitude of continuous with binary coefficients (Gelman 2008), and are reported in odds ratios alongside robust standard errors. Since the probability of violence in a district on a given day is so low, odds ratios indicate by how much a one-unit increase in the independent variable would multiply the probability of an anti-refugee attack on a given district-day.

2.6.1 Comparing the effect of NYE to Terrorist Attacks

Model 1 depicts the impact of threatening events on inciting anti-refugee violence, controlling for structural determinants and temporal variation. Specifically, it examines how the probability of violence changes in the first week after the New Year's Eve sexual assaults, and how this effect compares to the impact of domestic and European terrorist attacks.

[19]With the exception of the time variables in Models 3–5, which are unstandardized and centred around the NYE event.

Among the structural determinants, population size, location in East Germany, unemployment rate, and electoral support for the NPD and AfD are all positively associated with anti-refugee attacks, though the latter two coefficients do not reach conventional levels of statistical significance. The coefficients for foreign population and voting turnout point in the opposite direction, in line with contact and social anomie arguments. There is also considerable temporal variation in anti-refugee violence: the diffusion parameters show that attacks in other districts as well as a district's own experience of violence strongly influence the probability of future attacks. Violence is also more likely during months of heightened refugee influx to Germany, generally increases over time, and occurs most frequently on weekends.

Model 1 reveals considerable heterogeneity in the impact of threatening events on rates of xenophobic violence. Of the twelve events included in the model, only two lead to a statistically significant increase in attacks in the following week: the New Year's Eve sexual assaults and the terrorist attacks in France in January 2015, during which 17 people were killed.[20] All other terrorist incidents, meanwhile, cause no significant uptake in violence in the following 7 days. The size of the effect also differs substantially between the two events: in the first week following New Year's Eve, a district's probability of experiencing an attack triples, compared to a more modest increase of 66% following the attacks in France.

To examine the extent to which these impacts persist over time, Model 2 includes 7-day dummy variables for each additional week during which a statistically significant effect was observed. Note that the two diffusion parameters absorb a considerable amount of the increase in violence following an event, particularly in later weeks. The coefficients of the weekly dummy variables will therefore, by design, provide only a conservative estimate of the total growth in violence following an event. Despite this, the NYE event leads to a significant and strongly positive increase in anti-refugee aggression during the subsequent four weeks, while the positive effect of the Paris attacks abates after only two. In addition to the length of the effect, the magnitude of the NYE event also far exceeds that of all terrorist

[20] $p<.001$ (NYE 2015, week 1) and $p<0.1$ (Paris 2015, week 1), respectively.

attacks: in the first four weeks of January, the probability of violence is multiplied by 3.3, 5.4, 2.3, and 1.2 respectively. In fact, the impact of the New Year's Eve event not only dwarfs the effect of terrorist attacks, but is also greater than all other parameters in the model, including structural determinants of intergroup conflict.

Previous work suggests that the effect of threatening events can vary, depending on whether an event occurs domestically or abroad (e.g. Davis 2007). Thus, perhaps it is the location in Germany more generally, rather than the sexual assaults on New Year's Eve in particular, that explain the jump in violence following the event. Although Table 2.1 already includes the impact of the Berlin 2016 terrorist attacks on levels of violence, I test for this further by including domestic terrorist attacks that led to no fatality. I also test whether the large increase in violence following New Year's Eve is due to unobserved time trends by including a dummy variable for the week leading up to the NYE event. Accordingly, if it is not the event itself but a more general increase in hostility that is driving the results, one would already expect higher rates of violence in the week prior to New Year's Eve.

Figure 2.3 reports the estimated coefficients for all threatening events, including the newly added domestic terrorist attacks.[21] Two out of the four domestic incidents, namely a bombing attack in Essen and two terrorist incidents within the same week in Würzburg and in Ansbach lead to an increase in the probability of violence in the following week. Both effects, however, abate within one to two weeks and have a notably smaller impact than the NYE event. Meanwhile, the point estimate of the pre-NYE variable is close to zero and statistically insignificant. Thus, the probability of anti-refugee violence only increases once the event has occurred, strengthening the causal argument that the drastic surge in violence in the first weeks of January follows in direct response to the New Year's Eve sexual assaults.

I run various additional robustness checks to examine the validity of these findings. I first repeat the analysis above using district fixed effects (see Table

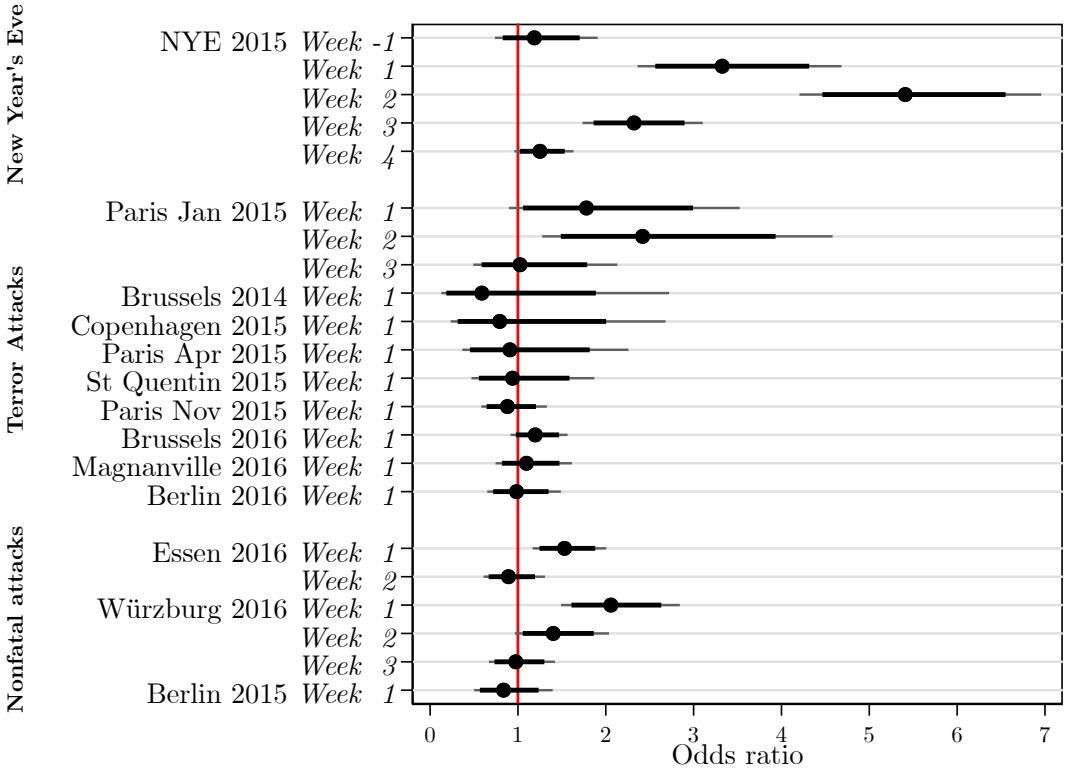
[21]The attacks in Nice and Saint-Étienne-du-Rouvray occurred only a few days before and after the terrorist attacks in Würzburg and Ansbach, and were therefore excluded to avoid overlapping weekly dummy variables.

	Model 1		Model 2	
	OR	Rob.SE	OR	Rob.SE
Refugee share	1.06	0.12	1.11	0.11
Monthly arrivals	1.48***	0.06	1.43***	0.06
East	1.60**	0.26	1.59**	0.26
Unemployment rate	1.23*	0.12	1.22*	0.12
Non-EU Foreign pop.	0.49***	0.06	0.47***	0.06
Voting turnout	0.80**	0.06	0.80**	0.06
AfD Strength	1.11	0.08	1.12	0.09
NPD Strength	1.20	0.13	1.21+	0.13
Attacks in district (4 weeks)	1.09**	0.03	1.09**	0.03
Attacks elsewhere (4 weeks)	2.74***	0.11	2.79***	0.11
log(Population)	3.91***	0.31	3.93***	0.31
NYE 2015 (W1)	3.05***	0.40	3.29***	0.44
NYE 2015 (W2)			5.35***	0.52
NYE 2015 (W3)			2.30***	0.26
NYE 2015 (W4)			1.24*	0.13
Paris Jan 2015 (W1)	1.66+	0.44	1.76*	0.47
Paris Jan 2015 (W2)			2.39***	0.59
Paris Jan 2015 (W3)			1.01	0.29
Brussels 2014 (W1)	0.56	0.33	0.59	0.35
Copenhagen 2015 (W1)	0.74	0.35	0.78	0.37
Paris Apr 2015 (W1)	0.84	0.30	0.90	0.32
St Quentin 2015 (W1)	0.86	0.23	0.93	0.25
Paris Nov 2015 (W1)	0.81	0.13	0.89	0.14
Brussels/Glasgow 2016 (W1)	1.14	0.12	1.18	0.12
Magnanville 2016 (W1)	1.03	0.15	1.07	0.16
Nice 2016 (W1)	1.17	0.18	1.22	0.19
St Étienne 2016 (W1)	1.25	0.18	1.30+	0.19
Berlin 2016 (W1)	0.91	0.15	0.95	0.15
sd(district)	0.42***	0.03	0.42***	0.03
Controls	✓		✓	
Observations	426132		426132	
AIC	44772		44487	

Table 2.1: The effect of the NYE event and terrorist attacks on anti-refugee violence. *Note:* OR: Odds Ratios, Rob. SE: Robust Standard Errors. +p<0.1, *p<0.05, **p<0.01, ***p<0.001.

A.5), in order to control for all time-invariant differences in the prevalence of anti-refugee violence at the district level. Violence against refugees is comparatively rare, meaning that, on most days, most districts do not actually witness an attack.

Figure 2.3: Coefficient plot of the effect of threatening events on anti-refugee violence



Note: Point estimates with 95% and 99% confidence intervals.

King and Zeng (2003) demonstrate that logistic regressions can underestimate the occurrence of such "rare events."[22] Re-estimating the regressions following King and Zeng's suggestions does not, however, alter the above results. In Table A.7, I alternatively use district-weeks as the unit-of-analysis, which also considerably decreases the number of zero cases on the dependent variable. In other model specifications I exclude Berlin from the analysis, include only significant events, and control for the rate of violence in the two two weeks leading up to each event. Across all models, however, the impact of the NYE sexual assaults continues to far exceed that of all other events.

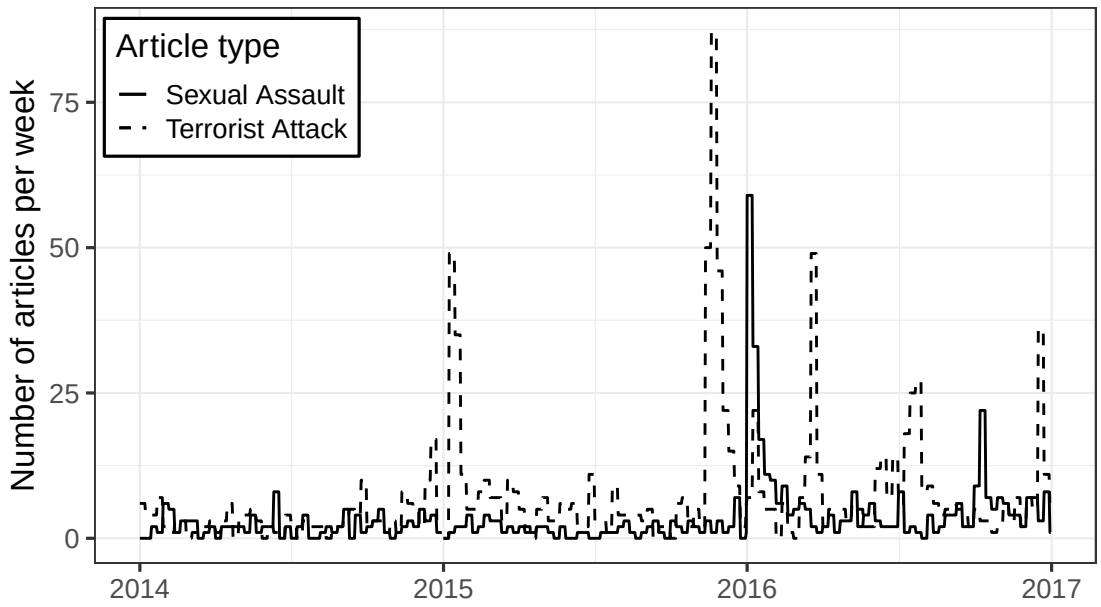
Discrepancies in violent backlash also do not seem to stem from differences in the amount of media coverage each event received. In Figure 2.4, I web-scrape the

[22] In fact, this issue mainly applies to situations where researchers only have a few dozen or few hundred non-zero cases paired with a relatively small total sample size at their disposal, and is less problematic in the current case.

number of newspaper articles in *Spiegel Online*, one of the most widely read news websites in Germany, which mentioned either "sexual assault" or "terrorist attack" in their main text. As Figure 2.4 shows, terrorist attacks attracted at least as much, if not more, media attention compared to the New Year's Eve sexual assaults.

Finally, I run a series of separate country-level regression discontinuity models for each threatening event across varying bandwidths (21, 28, and 35 days), where I calculate the immediate impact of each event on the daily rate of anti-refugee attacks. Results in Table A.4 in the Appendix again confirm the findings above: of all threatening events, the NYE sexual assaults causes the biggest increase in anti-refugee attacks.[23]

Figure 2.4: Weekly number of newspaper articles in *Spiegel Online* mentioning either "sexual assault" or "terrorist attack" in their main text



Note: Web-scraped number of articles in *Spiegel Online* that contain the words "sexual assault" or "terrorist attack" in their main text. Own calculations.

Together, these findings highlight the dramatic and unprecedented impact of the NYE event on anti-refugee violence: while some few domestic and European terrorist attacks also lead to a brief increase in hostility, their effect pales in comparison to the intense native backlash following the New Year's Eve sexual assaults.

[23]See Appendix Section A.5 for a summary of the methodology and results.

2.6.2 The effect of the NYE event on the distribution of violence

Thus far, however, the analysis has treated the effect of the NYE event as homogeneous, where the underlying assumption of each model is that news of the New Year's Eve sexual assaults provoked similar levels of outrage and violence all across the country. Having established the unique impact of the event, the second part of the analysis focuses more closely on examining *where* this increase in violence occurs. I begin by extending equation 1, including a binary variable NYE_t and interacting it with time trend t, where NYE_t differentiates between the period before and after New Year's Eve 2015. This yields the following equation:

$$\ln\left(\frac{Pr(Y_{it}=1)}{1-Pr(Y_{it}=1)}\right) = \alpha+\boldsymbol{X}_i'\beta+\boldsymbol{Z}_t'\gamma+\delta_1 t+\delta_2 NYE_t+\delta_3(NYE_t*t)+\zeta_i+\epsilon_{it} \quad (2.2)$$

where δ_2 signifies the immediate impact of the NYE sexual assaults on the level change in a district's probability of violence, and δ_3 indicates a change in time slope in the period after the event.[24]

To test whether the impact of the NYE event varies across areas in Germany—depending on the area's history of intergroup violence—I differentiate between 'hostile' and 'not hostile' districts, with hostile districts defined as exhibiting a rate of violence within the top 10th percentile prior to 2016.[25] I include this binary variable in equation 2 and interact it with the time trends and the NYE dummy. Following the hypothesis of a *galvanising effect*, this interaction is expected to be positive, indicating that backlash violence is especially pronounced in communities with strong prior anti-refugee aggression. According to the *mobilising* hypothesis, on the other hand, the interaction should be negative, where violence increases most strongly among previously peaceful areas. Finally, to ensure that it is the district's violent past and not geographic proximity to Cologne that is driving

[24]The time trend t is centred around the NYE event, so that $t = 0$ on January 1st, 2016.

[25]The number of attacks differs considerably between both types: in the years 2014 and 2015, a hostile district witnesses 21 anti-refugee attacks on average, compared to only 2 for not hostile districts.

these results, the analysis controls for each of the district's distance to Cologne before and after the event.

	Model 3		Model 4		Model 5	
	OR	Rob.SE	OR	Rob.SE	OR	Rob.SE
Days before	1.00***	0.00	1.00***	0.00	1.00***	0.00
NYE	4.59***	0.52	5.85***	0.64	4.85***	0.50
Days after	1.00***	0.00	0.99***	0.00	0.99***	0.00
Hostile			2.85***	0.31		
Hostile x Days before			1.00	0.00		
Hostile x NYE			0.43***	0.06		
Hostile x Days after			1.00	0.00		
NPD Strength	1.21+	0.13	1.16	0.12	1.82***	0.26
NPD Strength x Days before					1.00	0.00
NPD Strength x NYE					0.51***	0.05
NPD Strength x Days after					1.00	0.00
sd(district)	0.42***	0.03	0.33***	0.03	0.39***	0.03
Controls	✓		✓		✓	
Observations	426132		426132		426132	
AIC	44411		44159		44269	

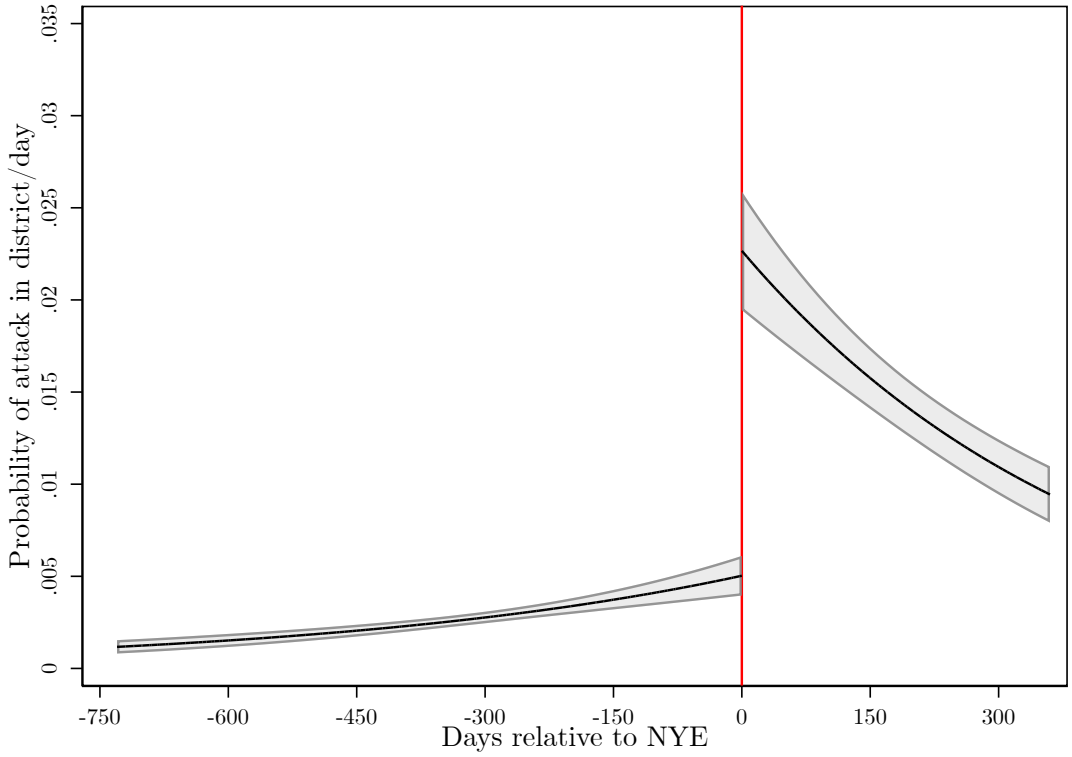
Table 2.2: The impact of the NYE event on the distribution of attacks.
Note: OR: Odds Ratios, Rob. SE: Robust Standard Errors. $^{+}$p<0.1, *p<0.05, **p<0.01, ***p<0.001.

Model 3 in Table 2.2 begins by estimating the overall effect. In accordance with the findings above, the impact of the NYE event is strongly positive, more than quintupling a district's probability of an attack in its aftermath. Figure 2.5 illustrates this effect, plotting a district's predicted probability of experiencing an anti-refugee attack before and after the event.[26] While the likelihood of an attack increases marginally in the period leading up the New Year's Eve sexual assaults, from 0.1 to 0.5 per cent, it surges to 2.3 in the immediate aftermath of New Year's Eve.

Model 4 then includes the interaction term to assess whether this positive effect is especially pronounced among previously hostile or peaceful districts. Results support the hypothesis of a mobilising effect: whereas violence is, as expected,

[26]For the purposes of generating the predicted probabilities, all other independent variables are set to their mean value.

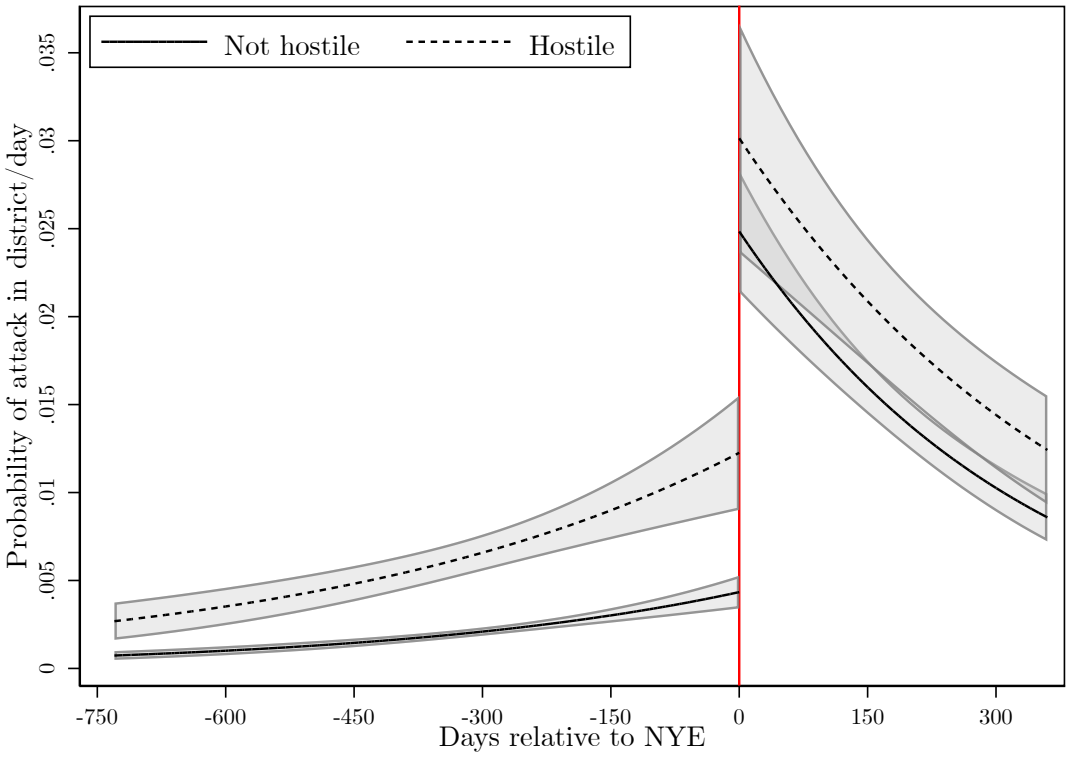
Figure 2.5: Predicted probability of violence before and after NYE



Note: Point estimates and 95% confidence intervals.

more likely in hostile areas in the period leading up to New Year's Eve 2015, the interaction effect is *negative*, suggesting that anti-refugee attacks in response to NYE occur disproportionately among *previously peaceful* districts. Concretely, the impact of the NYE event leads to close to a 6–fold increase in the probability of violence across non-hostile districts, compared to a 2.5–fold increase in hostile areas. Figure 2.6 visualises these stark differences: while violence is significantly more likely in hostile districts in the period before the NYE event, the event has the strongest effect among peaceful communities. In fact, initial baseline differences in the rate of attacks between hostile and peaceful districts disappear for the entire subsequent year following the 2015/16 New Year's Eve event, with both becoming similarly aggressive towards resident refugee populations for the remainder of 2016. These results remain unchanged when using the 80^{th}or 50^{th}percentile as alternative cut-off points (see Figure A.3 in Appendix).

Figure 2.6: Predicted effect of NYE on violence in hostile and peaceful districts



Note: Point estimates and 95% confidence intervals.

Model 5 scrutinises the consistency of this finding by examining whether the effect of the event also differs by far-right electoral support—another indicator of pre-existing local anti-immigrant tensions. Following the galvanising hypothesis, the impact should be strongest among communities with higher levels of out-group threat, and thus higher far-right sympathies. However, results once again run counter to this hypothesis: while anti-refugee attacks are more likely in districts with higher NPD presence in the period prior to the event, backlash violence following NYE is strongest in areas with the *least* NPD support. Figure 2.7 shows that the probability of an anti-refugee attack following New Year's Eve decreases with higher local far-right party presence. Although the NYE event increases the probability of an attack by more than 2% in districts with no far-right support, it has virtually no effect on violence in NPD strongholds.[27]

[27]I repeat these analyses using district fixed effects (see Table A.6), using district-week as the

Together, these findings suggest that the NYE event not only led to a drastic surge in criminality against asylum seekers, but also *mobilised* new communities to act aggressively towards local refugee populations. The New Year's Eve sexual assaults thus had a *heterogeneous* effect, increasing anti-immigrant violence in some parts of the country more so than in others. In particular, its effect was felt most strongly in previously peaceful districts. Areas which, in the absence of the event would have exhibited little enmity towards refugees and asylum seekers, reacted most aggressively and became just as violent as hostile districts for the entire subsequent year.

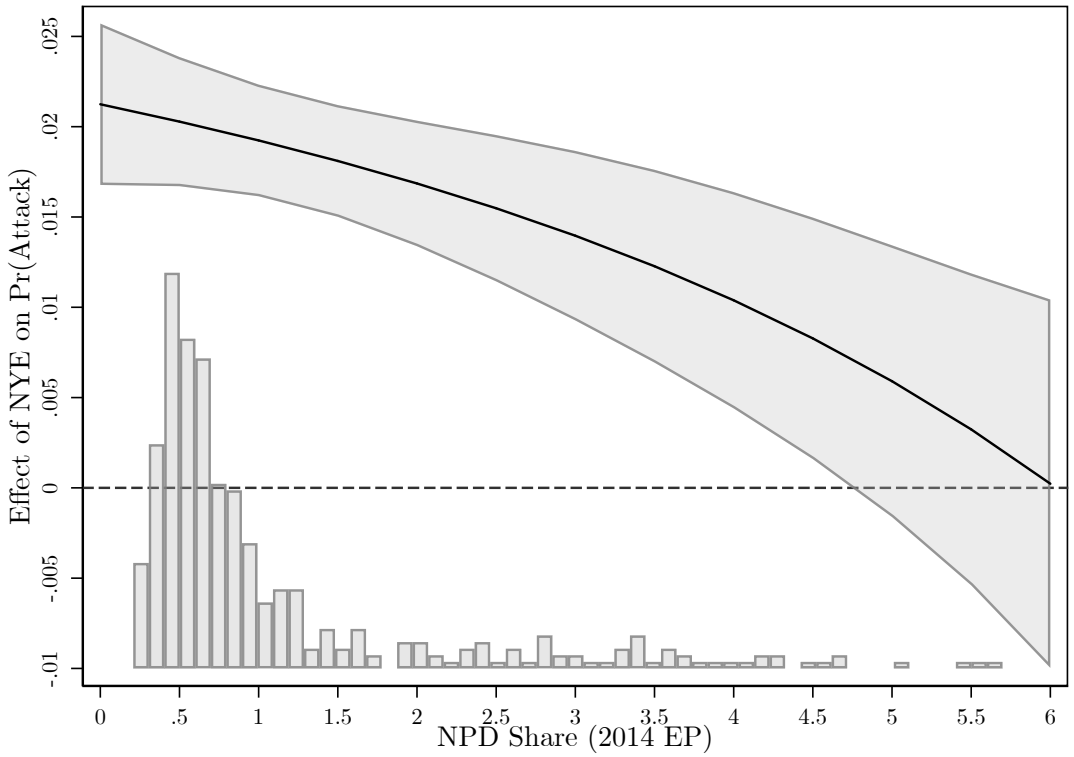
2.7 Conclusion

The New Year's Eve sexual assaults were a shocking and widely-covered incident, during which hundreds of victims were robbed, intimidated, and sexually assaulted. Despite the apparent shock to German society, little work has been done to understand its impact on native-refugee interaction and conflict. This analysis has shown that the New Year's Eve event led to drastic and long-term consequences regarding refugees' and asylum seekers' safety in Germany. Following descriptions of perpetrators as men of 'North African and Middle Eastern' appearance, refugees throughout the country were blamed for the event and subsequently became targets for violent retribution. As a result, anti-refugee violence sky-rocketed to unprecedented heights, with the rate of attacks not returning to pre-NYE levels for the remainder of 2016.

Whereas previous research has focused on terrorism as the main driver of inter-group conflict, this paper conducts a comparative analysis and clearly demonstrates

unit of analysis (see Table A.8), and using 2013 federal election results. I also reestimate the results using votes for the AfD, which yields insignificant results, though point estimates are also negative. As indicated in the methods section, this is likely because the AfD considerably changed its electoral strategy, from being a single-issue Eurosceptic party to becoming the main right-populist party in German politics. This change becomes evident when looking at the correlation in party support across election years in Figure A.2. As Figure A.2 shows, the geography of AfD's support base changed considerably between the elections in 2013 and 2017. In fact, the party's district vote share in 2017 correlates more strongly with the success of the far-right NPD in the 2013 (0.88) and 2014 (0.86) elections, while the correlation to previous AfD success in 2013 (0.61) and 2014 (0.49) is considerably lower.

Figure 2.7: Predicted immediate effect of NYE by local far-right party strength



Note: Point estimates and 95% confidence intervals, distribution of local far-right vote share. To predict the effect of the NYE dummy variable, all other independent variables are set to their mean value, and the time trend is set to zero

that the New Year's Eve sexual assaults had by far the strongest impact on anti-refugee violence in Germany. While some domestic and European terrorist attacks also led to short-term increases in aggression, their effect pales in both magnitude and duration compared to the NYE sexual assaults. The paper has pointed to some unique features of the New Year's Eve event that may explain these differences, including the extent to which the refugee population was held responsible for the event, the perceived persistence of threat in its aftermath, and the strong criticism of governmental and police responses that followed. These insights can help guide future research on what to expect when assessing the impact of other 'non-terrorist' threatening events on intergroup conflict.

However, the extent to which NYE affected anti-immigrant hostility suggests that other factors may have contributed to its dramatic impact that are more unique

to this particular event. Notably, the sexual nature of the threat and the framing of the event as a specific threat to women emanating from Muslim men may have mobilised stronger anti-immigrant hostility. Already long before NYE, questions over the compatibility between Islam and modern principles of gender equality had dominated discussions over the integration of Muslim immigrants (Lewis and Kashyap 2013: 617). Radical right parties have capitalised on this debate, and have, despite endorsing policies that prioritise conservative family values and women's caregiving roles, begun instrumentalising 'gender equality as a key strategy to differentiate the "modern majority" from the "backwards, patriarchal" minority' (Dancygier 2020: 65). More generally, men with migrant or minority backgrounds are more often seen as a danger to women (Navarrete et al. 2010) and more often characterised as such in the media (Grover and Soothill 1996). Accordingly, actual instances of sexual violence perpetrated by individual Muslim or immigrant men may be held up as examples for the inherent incompatibility between Islam and liberal Western values, and thus effectively weaponised by anti-immigrant actors to cast a shadow on the immigrant population as a whole. According to Köttig and Sigl (2020: 79), far-right arguments that construe foreign men as being more prone to sexual violence and that instrumentalise certain elements of gender equality to restrict immigration also enjoy considerable mass appeal among the general public. This may also be why events that involve a sexual threat are more successful at mobilising large, and previously less hostile swaths of the population (Köttig and Sigl 2020). Czymara and Schmidt-Catran (2017), for example, demonstrate that while women were generally more open to male immigration than men, these differences disappear following the New Year's Eve sexual assaults, and attribute this change to increased personal safety considerations. Dancygier et al. (2021), meanwhile, show that already in the absence of a threatening event, fears over mate competition can be a strong driver of support for anti-refugee violence among German men. Although outside the scope of this analysis, future individual-level research should aim to identify which factors contributed most to the increase in xenophobic attitudes and

behaviour following the New Year's Eve event, and should explore whether events that are framed as a sexual threat are particularly potent triggers of native backlash.

Beyond pointing to the absolute effect of the NYE event, however, the paper makes a more important contribution. Comparing the distribution of violence before and after New Year's Eve, it shows that while NYE increased violence throughout Germany, its impact was felt most strongly in areas where anti-refugee aggression was, until then, far less present. Firstly, this finding challenges the current assumption that threatening events lead to a uniform increase of violence throughout the country, changing the overall amount but not the location of attacks. Instead, the NYE event not only caused a sudden surge in anti-refugee violence, but also altered the very structural conditions under which such violence emerges in the first place.

Secondly, this finding suggests that threatening events can not only intensify hostility, but do so by mobilising new communities to turn against out-groups: following the New Year's Eve sexual assaults, violence increased disproportionately in peaceful areas that, prior to the event, exhibited little or no enmity towards local refugee populations. This effect persists for the entire subsequent year, with the rate of violence between previously hostile and peaceful districts becoming indistinguishable following the sexual assaults. Following a Bayesian rationale, such a pattern can arise because individuals' prior beliefs matter in determining their reactions to threatening events: while those with pre-existing negative views about refugees and asylum seekers see those confirmed by new damaging information (and therefore do not drastically change their behaviour), those with no strong priors are shocked by news of a threatening event, leading to drastic behavioural change among more moderate communities. Such ecological findings will have to be corroborated by future individual-level analysis, and qualitative research on perpetrator motivations would be particularly relevant.

More generally, the results in this paper underline the need to firmly incorporate threatening events into the study of intergroup conflict, given that such events not only incite waves of backlash that can overshadow other determinants of violence, but can also alter the importance of such structural determinants in predicting

conflict occurrence in the first place. Research on why conflict between natives and refugees emerges should therefore pay attention to both the place and the timing of conflict, as well as to the interaction of the two.

On January 9th 2016, CDU politician Volker Bouffier announced that 'Cologne has changed everything' (Hewitt 2016). As this paper has demonstrated, this was not just political rhetoric. While some terrorist attacks provoked short spikes in anti-refugee violence between 2014 and 2016, it was the New Year's Eve sexual assaults in Cologne that entailed lasting change—igniting a wave of hate against refugees and asylum seekers throughout the country that continued for months and, more notably, radicalised areas with little prior anti-refugee hostility.

CHAPTER 3

Getting under the skin

The impact of terrorist attacks on native and immigrant sentiment

A version of this chapter was published in Social Forces

3.1 Introduction

How does terrorism alter intergroup relations? A number of studies have shown that terrorist attacks generate higher levels of anti-immigrant sentiment among the native population, increase natives' discrimination against minorities in the housing and labour market, and in some cases even provoke xenophobic violence (e.g. Böhmelt, Bove and Nussio 2020; Frey 2020; Legewie 2013; Rabby and Rogers 2010). To what extent, however, do such hostile reactions among the majority population impact the lived experiences of minority groups? Do increasing anti-immigrant attitudes among natives actually affect their behaviour towards, and interactions with, immigrant communities, and even if they do, are such changes even felt by the communities against which this vitriol is directed?

To answer such questions, one of the principal steps in examining how a terrorist attack alters intergroup relations should be to study its impact on both the in-group and the out-group at the same time. Yet, current research on attitudinal change in response to terrorism focuses exclusively on the hardening of attitudes among the majority population, without discussing how these same events may impact the targeted minority group. This is a grave oversight, particularly when considering that minority groups blamed for the occurrence of an attack likely suffer the brunt of backlash in its aftermath.

In this article I set out to address this gap by examining how a series of terrorist attacks impacted the sentiment of both natives and refugee communities in Germany. Within the span of only 10 days in mid-July 2016, three terrorist attacks occurred in Nice, Würzburg, and Ansbach, during which dozens of people were killed and hundreds wounded. Together, the events reignited tensions over immigration policies in Germany, with many drawing parallels between the incidents and the recent influx of refugees into the country. Coincidentally, two surveys—one of the German and one of the asylum seeking population—were in the midst of gathering survey responses at the time of the events. The fact that the fieldwork periods of both surveys coincide with the timing of the attacks presents a unique opportunity to

1) examine whether terrorism increases anti-refugee sentiment among the native population, while also 2) assessing how these changes in native sentiment affect the targeted refugee population.

Results of the natural experiment provide rare causal insight into how terrorist attacks affect the experiences of both native and immigrant populations. On the one hand, the attacks increased anti-refugee attitudes among Germans: respondents interviewed after the attacks expressed more negative feelings towards refugees and asylum seekers and associated greater risks with their presence in Germany. This increased hostility is mirrored by refugees' own experiences: following the July attacks, refugees reported higher rates of discrimination and felt less welcome than when they had first arrived. Alarmingly, the terrorist attacks not only increased reports of exposure to discrimination, but also deteriorated mental well-being among refugees. In the immediate aftermath of the events, when reported discrimination was at it highest, refugees also suffered clinically-relevant declines in mental health. Given that the risk of mental health disorders is already far more prevalent among refugee and asylum-seeking communities compared to the general population, and given that even momentary shocks to wellbeing can give rise to secondary stressors with lasting negative mental health consequences, this latter finding is of particular concern.

This paper makes three contributions to the literature on the effect of events on intergroup relations. First, while some work suggests that terror attacks in more recent years no longer have an effect on xenophobia and anti-immigrant sentiment (Castanho Silva 2018; Larsen, Cutts and Goodwin 2019), this article demonstrates that even a series of remote (Nice) and comparably 'small' and non-deadly (Würzburg and Ansbach) terrorist attacks still led to a substantial increase in anti-refugee hostility among the native population. In distinguishing between different immigrant groups, the study shows that this hostility was directed specifically against refugees and asylum seekers—the group blamed for the attacks—but not against other minorities. Second, by relying on information on both Germans and refugees, the study demonstrates that increasing hostility among the majority

population does correspond with actual changes in the living experiences of targeted minority groups. In doing so, these findings complement existing research that only focuses on attitudinal change among the majority population by also illuminating how those minority groups perceived to be responsible react to a terrorist attack, and to the increasing hostility and vitriol it generates. They also highlight some of the additional challenges such attacks can pose to refugees amidst an already laborious integration process. Finally, the analysis offers causal evidence that terrorist attacks not only erode intergroup relations, but also adversely affect the mental health and well-being of immigrant communities.

3.2 Background and theory

In July 2016, three Islamist terrorist attacks occurred in close succession and shocked the German public. On July 14$^{\text{th}}$, a cargo truck was launched into a crowd during Bastille Day celebrations in Nice, France, killing 86 people and wounding hundreds others. Four days later, a 17-year-old asylum seeker severely injured five people with a knife and hatchet on a train near Würzburg, Germany. Finally, on July 24$^{\text{th}}$, a Syrian asylum seeker detonated a bomb outside a wine bar in Ansbach, Germany, killing himself and injuring 15 others.

These attacks occurred at a time when immigration to Germany was reaching unforeseen heights: between 2014 and 2016, more than 1.3 million applications for asylum were submitted in the country, exceeding the cumulative number of applications in the previous two decades (see Figure B.1 in the Appendix). Though worries over the influx of refugees to Germany were already widespread, the three terrorist attacks further intensified public concerns. Many linked the increased threat of terror to the recent surge in refugee immigration, particularly since both domestic attacks were perpetrated by individuals who had been seeking asylum in Germany.[1]

[1]Though the attack in Nice was perpetrated by a Tunisian citizen and French resident, media reporting still discussed the event alongside the two subsequent terrorist attacks in Germany. For example, in the day after the Ansbach bombing, the New York Times reported that 'the language used was nearly identical to that used by the Islamic State after the attacks in Würzburg [and] in Nice, France' (Eddy 2016*b*). Other outlets referred to the three events more broadly as the "summer of terror" or the "summer of fear" in subsequent reporting (e.g. Connolly and Willsher

In the weeks following the events, attacks against refugees and their accommodation sites increased across the country (Frey 2020). While the government warned residents against placing all asylum seekers under general suspicion because of the actions of two individuals, others were quick to perceive the terrorist attacks as a result of the increase in domestic refugee presence. "We were right in all our prophecies," Horst Seehofer, the then minister president of Bavaria and vocal critic of chancellor Angela Merkel's refugee policy, proclaimed in a statement following the attacks (der Spiegel 2016). According to him and other like-minded commentators, Islamist terrorists had finally arrived in Germany—disguised as asylum seekers and aided by the country's liberal immigration policy (Connolly 2016*a*).

3.2.1 Terrorism and native attitudes

One of the first public reactions after a collective threat is to try and identify who is to blame for its occurrence (Carlin, Love and Zechmeister 2014). Following terrorist attacks that are committed by individual members of a subordinate social group, that group as a whole can be held "collectively liable" for the conduct of their peers (Black 1983). In addition to the individual threat to safety and security, such events therefore also hold the potential to deteriorate intergroup relations more generally, by increasing the salience of group identities and evoking feelings of anxiety, fear, and anger among the majority population (Sniderman, Hagendoorn and Prior 2004; Lickel et al. 2006), particularly when perpetrators are part of an already stigmatised social group (Van Hauwaert and Huber 2020).

Ample evidence demonstrates that the experience of domestic terrorism amplifies the majority's negative sentiment towards those minority groups perceived to be associated with the perpetrators. Using a series of panel surveys in the United States, Hopkins (2010) finds that natives' attitudes towards immigration became more restrictive in the weeks following the September 11 attacks, though such sentiment was short-lived. In Europe, the 2004 Madrid and 2005 London bombings increased negative prejudice against Muslim and Arab minorities, respectively

2016).

(Echebarria-Echabe and Fernández-Guede 2006; Van de Vyver et al. 2016). Similarly, when Dutch film maker Theo van Gogh was assassinated in 2004 by a Muslim extremist, Muslim immigrants were more likely to be perceived as a threat to Dutch culture and to national security by those interviewed in the days after the killing (Boomgaarden and de Vreese 2007).

Such attitudinal reactions are not only confined to the targeted country, but also affect intergroup relations abroad. Using a natural experiment, Legewie (2013) finds that the 2002 terror attacks in Indonesia had a far-reaching impact by deteriorating attitudes towards immigrants across several European countries. The terrorist attacks on September 11th, 2001 not only increased xenophobia within the United States, but also affected anti-immigrant sentiment throughout Europe (Åslund and Rooth 2005; Schüller 2016). While such distant events may contribute to deteriorating intergroup relations abroad, however, Böhmelt, Bove and Nussio (2020) show that the effect is strongest when the event occurs in neighbouring states. Attitudinal spill-overs propagate most strongly in nearby countries because individual threats to safety and security are felt more urgently if an event occurs close by, and because local media disproportionately covers more proximate events.

Whereas the findings above suggest that terrorist attacks at home and in neighbouring countries consistently exacerbate intergroup conflict, there is some ambiguity as to whether more recent attacks elicit similar reactions. Measuring changes in public sentiment across Europe following the Paris terrorist attacks in January and November 2015, Castanho Silva (2018: 838) finds mostly no effect, concluding that 'views on immigration and immigrants have, to a certain extent, stabilised across Europe and are less susceptible to shifts from dramatic events.' Larsen, Cutts and Goodwin (2019) examine anti-refugee sentiment following the 2016 Berlin attacks and also find no evidence of a populist or xenophobic response among German and European residents. The authors conclude that 'at least in the short term, the European public do not react strongly to terrorist attacks that are perpetrated in other countries' (Larsen, Cutts and Goodwin 2019: 199).[2]

[2]Another question that has not received much attention is how durable the effect of terrorism on anti-immigrant attitudes is. The majority of the aforementioned studies focus on the immediate

Considering the ambiguity surrounding the attitudinal consequences of more recent terrorist attacks, it is important to begin the analysis by establishing whether the July 2016 attacks actually increased anti-refugee sentiment among the German population. Since the attacks were primarily associated with the immigration of refugees to Germany, with both domestic attacks being perpetrated by recently arrived asylum seekers, the events should primarily stoke anti-refugee and islamophobic sentiment rather than deteriorating attitudes towards all foreigners more generally.[3] Previous research, however, rarely distinguishes between different minority groups when examining the effect of terrorism on attitudinal change, assuming instead that such events affect natives' attitudes towards the immigrant population as a whole.[4] Instead, this article compares changes in Germans' attitudes towards asylum seekers to those towards other immigrant and minority groups (people of Polish, Turkish, Italian or Jewish heritage).

3.2.2 Terrorism and immigrant attitudes

Although terrorist attacks may incite fear and anger among the majority population, the effects are likely more consequential for those local minority groups who become associated with the event, and against whom the resulting increase in vitriol is thus directed. This is because such groups are "doubly exposed" to the detrimental consequences of a terrorist attack. Akin to the rest of the population, out-group

unravelling of native hostility following terrorist attacks (e.g. Böhmelt, Bove and Nussio 2020; Castanho Silva 2018; Legewie 2013), primarily due to methodological considerations: as the time between a terrorist attack and a survey response increases, so does the risk of confounding. Because of this singular focus, it is less clear how terrorism contributes to the formation of attitudes over time. Do attitudes revert back to a common baseline, or is there a cumulative effect, so that hostility increases alongside exposure to terrorism? Panel studies in the U.S. suggest that though there was a strong initial reaction to the September 11 terrorist attacks, this effect quickly subsided (Hopkins 2010).

[3]Since the large majority of refugees arriving in Germany during the European refugee crisis came from Muslim-majority countries, many associated their arrival with an increase in the threat of Islamic terrorism in the country. These fears were echoed by political speeches in the immediate aftermath of the attacks, where politicians claimed that terrorists were using refugee travelling routes to enter the country, and thus called for an upper limit to immigration, a strict inspections of refugee shelters, as well as for the deportation of suspects back into their home countries following the attacks (Connolly 2016*a*).

[4]For exceptions, see Bar-Tal and Labin (2001), Castanho Silva (2018), and Echebarria-Echabe and Fernández-Guede (2006).

members suffer the direct emotional repercussions that follow from a terrorist attack, such as increased levels of anxiety, fear, and sadness. In addition to this direct emotional toll, however, terrorist attacks also indirectly increase the emotional burden by potentially subjecting minority groups to higher levels of hostility and discrimination in subsequent encounters with the majority population. These two sets of worries were palpable during several interviews with refugees in the days after the terrorist attack in Ansbach, where the interviewees, while expressing their sorrow and disgust over the attack, also feared hostile reactions from the native population: many had not walked down the street by themselves since the bombing for fear of being accosted (Zeit Online 2016). Yet, while the effects on the native population have been well-documented, we know surprisingly little about how terrorist attacks impact the attitudes and living experiences of blamed immigrant communities.

This oversight is problematic for three reasons: First, a narrow focus on only the reactions of the native population fails to identify unique challenges such events pose for targeted immigrant groups. Second, research that aims to study how terrorism alters intergroup relations but that only examines attitudinal change among the native population has to assume, rather than measure, that this attitudinal change actually translates into an observable increase in discrimination, and that this change is in turn felt by the targeted immigrant group. This deduction is not obvious, however, given that some events can trigger changes in anti-immigrant attitudes without altering discriminatory behaviour (see Birkelund et al. 2018). Finally, any holistic understanding of how a disruptive event affects intergroup relations necessitates examining its effect on both native and immigrant communities at the same time.

Despite the relative absence of research on attitudinal change among minority groups, there is good reason to believe that terrorist attacks have a considerable negative impact on their living experiences. Most directly, such events hold the potential to drastically increase individual exposure to hostility and physical violence. In the week after the terrorist attacks on September 11, 2001, hate crimes against Arab and Muslim minorities in the United States escalated from less than 1 to

more than 200 reported cases (Byers and Jones 2007). In Germany, news of the 2015/16 New Year's Eve sexual assaults—where groups of young men, many of whom were refugees and asylum seekers, groped and sexually assaulted participants during the New Year's Eve celebrations in Cologne—caused an unprecedented wave of backlash violence targeting refugees throughout the country (Frey 2020).

In addition to these direct detrimental effects, such events also indirectly corrode minority group members' experiences by spilling over into various other aspects of everyday life. Islamist terrorist attacks have been shown to increase the discrimination against Muslims in the housing, labour, and online rental markets, for example (Rabby and Rogers 2010; Wagner and Petev 2019). Law enforcement and the judicial system are also more prone to bias following perceived threats by a minority group. Legewie (2016) shows that police officers in New York City are quicker to use force during pedestrian stops of African Americans following the homicide of fellow officers by Black suspects. Such aggressive policing not only impacts those minorities directly involved in the confrontation, but also damages surrounding communities by for instance impacting the educational performance of local minority youth (Legewie and Fagan 2019) or reducing crime reporting rates (Desmond, Papachristos and Kirk 2016). Even court rulings are susceptible to shifts in public sentiment: non-US citizens tried in local courts in New York City and Washington, DC, received harsher sentences following the September 11 terrorist attacks (Light, Dinsmore and Massoglia 2019).

The criminalisation of immigration at institutional level also accelerates in the aftermath of terrorist attacks. Governments respond to attacks by implementing more restrictive immigration policies under the guise of establishing counter-terrorism strategies (Neumayer 2006). Following the attacks in Würzburg and Ansbach, for example, German chancellor Angela Merkel promised to expedite the deportation of asylum seekers with little chance of remaining in Germany, while other politicians demanded even stronger measures (Peters and Mayr 2016).

Terrorist attacks can thus introduce more hardship, physical violence, and institutional discrimination into the everyday life of immigrant groups. Among

those immigrants, refugees and asylum seekers—whose future prospects in a host country are heavily dependent on government policies and the current socio-political climate—are at highest risk of suffering from sudden shocks that corrode intergroup relations. After examining the impact of the terrorist attacks in Nice, Würzburg, and Ansbach on Germans' attitudes towards refugees, this study therefore explores to what extent these changes in native attitudes correspond to refugees' own experiences of hostility and discrimination.

3.2.3 Discrimination and mental health

Increasing intergroup hostility in the aftermath of terrorism may not only impede the integration of minority groups, but also affect their mental well-being. Already among natives, catastrophic events have been found to leave a considerable mark on mental health, especially when such events occur closeby. In interviews with city residents in the days following the terrorist attacks in New York City (Schuster et al. 2001) and London (Rubin et al. 2005), some 45% and 30% claimed to suffer from substantial stress. At the same time, minority groups report such symptoms at considerably higher rates (Whalley and Brewin 2007), though the reasons for these differences have been left unexplored. In London, for example, Muslim respondents were twice as likely to experience stress in the days after the 2005 London bombings compared to the rest of the local population (Rubin et al. 2005).

I argue that this may be because, in addition to elevating psychological distress among the population as a whole, terrorist attacks also adversely affect the mental health of minority group members by increasing their exposure to discrimination. Literature on the relationship between racism and mental health treats discrimination as a stressor that negatively affects health outcomes by (1) evoking psychological distress, and (2) encouraging unhealthy stress-induced behaviour such as increased substance abuse or sleep deprivation (Williams and Mohammed 2009). Accordingly, a range of studies demonstrate that the experience of discrimination is associated with several adverse health outcomes, including depression, anxiety, or psychological and physiological distress, as well as with unhealthy coping strategies (e.g. Burt,

Simons and Gibbons 2012; Johnston and Lordan 2012; Monk 2015; Williams and Mohammed 2009). Discrimination need not be personally experienced to have such detrimental effects: vicarious exposure through others and even the mere anticipation of exposure to discrimination itself can suffice to lower individuals' subjective well-being (Williams, Lawrence and Davis 2019; Sawyer et al. 2012).

Such mental health repercussions of domestic terrorism would be particularly problematic for refugee communities, where mental health disorders are disproportionately high: in a meta-study of articles assessing the prevalence of depression and anxiety disorders in adult refugees, Bogic, Njoku and Priebe (2015: 35) conclude that 'refugees may be up to 14 times more likely to have depression and 15 times more likely to have [post-traumatic stress disorder]' compared to the general Western adult population. This elevated vulnerability is not only due to differences in exposure to traumatic events *prior* to migration, but continues to be shaped by experiences *upon arrival* in the host country, possibly due to experiences of discrimination, disillusionment, or precarity (see Bogic, Njoku and Priebe 2015; Walther et al. 2019). Thus far, however, no research has systematically examined how these "post-migratory" experiences shape refugee well-being, and whether terrorist attacks and the backlash that ensues add to the mental health burden that refugees and asylum seekers have to bare.

Methodologically speaking, this research design also provides a unique opportunity to causally assess the impact of discrimination on well-being. In a systematic review of 115 peer-reviewed articles, Williams and Mohammed (2009: 4) note that while, 'almost without exception, studies of discrimination and mental health find that higher levels of discrimination are associated with poorer mental health status (...), almost all studies are cross-sectional, leaving open the possibility that perceptions of discrimination are a consequence [rather than a cause] of mental health status.' Since perceived discrimination is 'reported by subjects without verification of actual events', differences in perceptions may themselves be endogenous to mental health disparities (Pascoe and Richman 2009: 3). Thus, while the inverse relationship between discrimination and mental health is well established, its causal direction

is often ambiguous. A rare exception is Bor et al. (2018), who use instances of police killings of unarmed African Americans to demonstrate how rapid increases in perceived injustice corrode mental health among the Black community in the United States. In a similar vein, this research provides first causal evidence of how a terrorist attack affects the mental health of refugees.

3.3 Data and methods

Given the country's sudden surge in refugee presence, with 1.2 million registered asylum applications in 2015 and 2016 alone (Bundeszentrale für politische Bildung 2018), Germany constitutes a unique case to explore how terrorist attacks deteriorate everyday interactions between an established native and a rapidly-expanding immigrant population. To do this, the study makes use of two surveys: the ALLBUS German General Social Survey and the IAB-BAMF-SOEP Survey of Refugees in Germany. While the ALLBUS survey comprises a biennial cross-sectional survey which, since 1980, has provided information on the attitudes and behaviours of German residents, the Refugee panel was only recently introduced in 2016 following a joint effort to survey the increasing number of persons seeking protection from violence and political prosecution in Germany (DIW Berlin 2019).[5] Due to the extensive care put into the sampling and fieldwork design, the Refugee survey is representative of all refugees and asylum seekers who arrived in Germany between 2013 and 2016 (Kühne et al. 2019).[6]

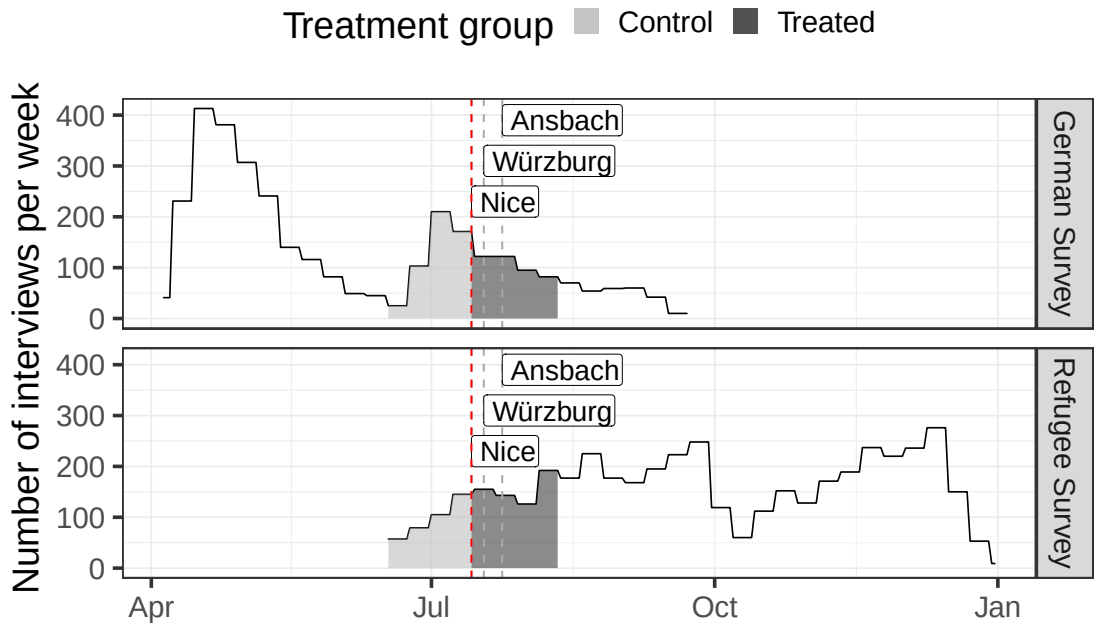
In late July, 2016, the fieldwork period of both surveys overlapped with the terrorist attacks in Nice, Würzburg, and Ansbach (see Figure 3.1). This constitutes a

[5]The survey was first introduced by the following organisations: The Institute for Employment Research (IAB), the Socio-Economic Panel (SOEP) at the German Institute for Economic Research (DIW Berlin), and the Research Centre on Migration, Integration, and Asylum of the Federal Office of Migration and Refugees (BAMF-FZ) (DIW Berlin 2019).

[6]Many steps were taken to address the challenges when surveying refugees and asylum seekers, including drastically reducing the time between initial contact and sampling, extensive interviewer training, and translating all survey materials into seven different languages, among others. Generating a random sample of refugees and asylum seekers in Germany is possible since all foreign residents are registered in the *Ausländerzentralregister*, an administrative list of all foreign residents in Germany. See Kühne et al. (2019) for a list of all steps taken to ensure sample representativeness.

unique opportunity for a natural experiment: given exogenous variation in exposure to the events, it is possible to examine whether the terror attacks had an impact on the sentiment of Germans and refugees by comparing responses in prior weeks (control group) to those in the aftermath (treated group).[7] To balance the number of cases against the plausibility of the experimental design, the study only considers respondents who were interviewed in the four weeks leading up to and following the first terrorist attack in Nice, on July 14th, 2016 (see shaded areas in Figure 3.1).

Figure 3.1: Fieldwork and sample periods of the German and Refugee surveys



Note: Respondents interviewed in the four weeks prior to July 14th, 2016, are part of the control group, while respondents interviewed in the four weeks after July 14th, 2016, are part of the treatment group. Respondents who were interviewed on the day of the first attack itself were removed from the analysis.

3.3.1 Estimation strategy

The paper's estimation strategy is akin to an event study where, given the exogenous shock of the terrorist attacks, respondents should be assigned to treatment and control groups as good as randomly, depending only on the timing of their interview. Two assumptions are needed to establish a causal effect (Muñoz, Falcó-Gimeno

[7] Responses from the day of the first attack (July 14th, 2016) were excluded from the analysis.

and Hernández 2019): *excludability* (i.e. differences in attitudes between those interviewed before and after the treatment are solely due to the treatment effect) and *temporal ignorability* (i.e. the timing of the interview should be independent from the potential outcomes of Y).

The *excludability* criterion posits that the timing of the interview should not affect the outcome through any other channel but the treatment. Since individuals are split into treatment and control groups based on the date of their interview, other time-varying variables that are systematically related to the outcome may bias the effect estimates. To reduce such potential biases, I have selected the short window of analysis of only four weeks on each side of the treatment, and further vary that treatment bandwidth in Section B.15 of the Appendix. During the treatment period, one other mass shooting occurred at a mall in Munich on July 21st, killing nine people and wounding thirty-six others. Unlike with the cases considered here, however, the event was classified as a revenge crime, following the alleged bullying of the 17-year-old German-Iranian perpetrator at school. Since this event was not blamed on or brought in connection with the resident refugee population, I therefore do not expect it to have impacted intergroup relations between Germans and asylum seekers. To scrutinise this expectation, I also run a separate robustness check where I further differentiate between individuals who were interviewed before and after the shootings in Munich on July 21st. Treatment coefficients estimated before and after these attacks do not differ systematically, increasing my confidence in the assumption that the Munich events did not bias the estimated results (see Section B.4 in the Appendix).

The *temporal ignorability* assumption holds that the potential outcomes in Y are independent of treatment assignment. Survey fieldwork designs (where some groups are interviewed at earlier points than others) and differences in reachability (where some groups are harder to reach than others) can violate this assumption and introduce systematic differences between treatment and control groups. Fortuitously, both the German citizen and the Refugee surveys contain information on the number

of prior interview attempts for each participant.[8] Controlling for the number of times each respondent was contacted thus accounts for differences in reachability. In addition to this, I also examine whether respondents who are in the treatment and control groups differ in terms of age, sex, and geographic location, as well as in terms of education, employment status, and marital status (for German respondents). For the refugee sample, differences in legal status and the high housing mobility during the refugee crisis may have affected response rates among hard-to-reach population groups (see Kühne et al. 2019). I therefore also include information on respondents' refugee status, country of origin, and type of accommodation. Whereas language barriers are usually another source of bias, the Refugee survey went to great lengths to ease such concerns by providing all interview materials in seven different languages: German, English, Arabic, Farsi, Pashto, Urdu, and Kurmanji (Kühne et al. 2019).

Figure 3.2 suggest that balance on covariates is already very high for both samples. However, the matched sample—where observations are matched using entropy balancing (Hainmueller 2012)—further improves the balance across both samples. In addition to conditioning on these set of variables in the main regression analysis, I therefore also repeat all estimations using the entropy re-balanced sample in Section B.9 of the Appendix, and results are robust to this change.[9]

Following the conditional ignorability assumption ($Y_i(0) \perp Y_i(1) \mid X_i$), I estimate the causal effect of the terrorist attacks on attitudinal change using the equation:

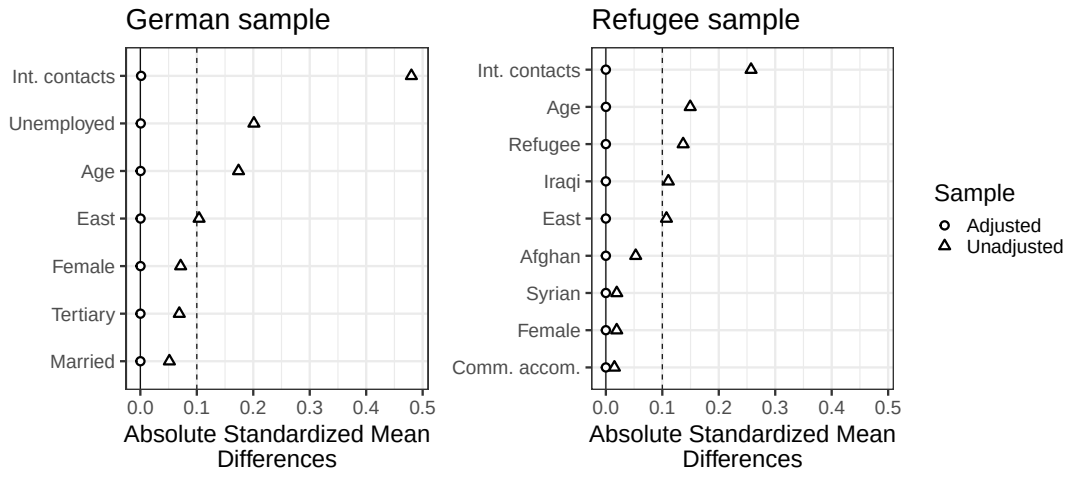
$$Y_i = \alpha + \boldsymbol{X}_i'\beta + \delta T_i + \epsilon_i$$

Where T_i is a binary variable that differentiates between respondents interviewed prior to the attacks (control group) and those interviewed in the aftermath

[8] I square this variable to account for its right-skewed distribution.

[9] Given the considerable differences in reachability between control and treatment groups, I do not include this variable in the re-balancing process, since resulting weights may be unrealistic and distort the estimated results (Muñoz, Falcó-Gimeno and Hernández 2019). For ease of interpretability and for completeness, I therefore present the treatment coefficient from the linear probability model, where I condition on all pre-treatment covariates, in the main specfication (though results are unaffected by this change). Alternatively, in Section B.14, I instead only limit the treatment group to respondents who were easy to reach, which also does not affect the interpretation of the results. See Section B.9 for more information on the re-balancing process.

Figure 3.2: Covariate balance across treatment and control groups in the Refugee and German citizen surveys.



Note: Entries report the standardised mean covariate differences between the treatment and the control groups. The adjusted sample was preprocessed using entropy re-balancing.

(treatment group), so that δ identifies the estimated effect of the terrorist events on attitudinal change, conditional on pre-treatment covariates $\boldsymbol{X}_i$. Note that this design considers exposure to all events together, and so only distinguishes between those who were not exposed to a recent attack, and those who were exposed to one or more attacks. This is due to restrictions in sample size: since all attacks occurred within very close proximity, there are only few respondents who witnessed only one but not two or three attacks. Still, in Appendix Section B.10 I further differentiate between exposure to each individual event, and the resulting point estimates are similar in size and magnitude. Alternatively, in Section B.11, I exclude all respondents who were only exposed to Nice from the analysis, given that the attack occurred outside of Germany and, while rhetorically linked to the refugee crisis in the German media, was not itself perpetrated by a refugee or asylum seeker. Results also remain robust to this change.

3.3.2 Dependent variables

To paint as broad a picture of the impact of the terrorist attacks on the two populations as possible, the study assesses their effect on a range of dependent

variables. For German respondents, the analysis explores whether the events heightened negative emotions toward, risk assessments of, and perceived social distance to asylum seekers. Conversely, for refugee respondents the analysis assesses whether the attacks increased refugees' negative living experiences in Germany and adversely impacted mental health and well-being. Since most of the missingness occurs at the level of the dependent variables, missing values were imputed using random forests to maximise the number of observations across regressions and to improve comparability (Stekhofen and Bühlmann 2012).[10] Re-running the analysis using pairwise or listwise deletion of missing values instead, however, does not affect the results (see Section B.13).

Survey of German citizens

Among other items, the ALLBUS survey includes an array of questions concerning respondents' attitudes towards refugees and asylum seekers. These items are used as dependent variables to examine how Germans' (1) feelings towards, (2) risk perceptions of, and (3) perceived social and cultural distance from refugees change following the terrorist attacks.

A set of survey questions required respondents to describe their feelings towards different minority groups, including asylum seekers. Interviewees were asked to what extent they agree or disagree with four different emotional positions towards minorities: pity, fear, anger, and affection. I summarised these responses in a single factor variable measuring overall negative sentiment towards asylum seekers (using principal component analysis), and also converted each emotion into a separate binary dependent variable to illustrate whether the attacks had a stronger impact

[10]Random forest imputation was performed separately for the German and the Refugee survey, each run with 100 decision trees and a maximum of 20 iterations. In addition to including all variables but the treatment, other measures were added as auxiliary variables to improve the quality of the imputation.

on some emotional states over others.[11]

The questionnaire also contained a set of items gauging the extent to which respondents associate refugees with risks to public safety, social cohesion, as well as to the welfare state and economy. For each of these topics, interviewees were asked to rate on a five-point scale whether refugees constitute a risk (1) or an opportunity (5) for the future of Germany. As before, each of these items was recoded into a separate binary variable as well as summarised into a single factor variable, which captures the extent to which citizens perceive refugees and asylum seekers as a general risk for the future of Germany.[12]

Finally, two questions were used to estimate the effect of the attacks on perceived social distance: (1) the extent to which interviewees were uncomfortable with having a refugee as their neighbour, and (2) the degree of perceived difference between the lifestyle of refugees and Germans (both ranging from 1 to 7). Both variables were reordered so that higher values indicate more perceived social distance. Table 3.1 includes the summary statistics for all variables for the German sample.[13]

Fortuitously, the German survey also required respondents to rate their emotions and perceived social distance towards other minority groups. To check the robustness of my estimates, I can thus compare changes in anti-refugee sentiment following the terrorist attacks to changes in perceptions of Italian, Polish, Jewish, and Turkish groups. This comparison will also reveal whether the July 2016 attacks increased anti-refugee sentiment specifically, or fuelled more general anti-immigrant attitudes.

[11] Variables were recoded so that "applies completely" and "applies somewhat" were coded as 1, and "does not apply at all" and "does not apply somewhat" were coded as 0. For constructing the factor variable using PCA, the complete variable ranges were used. Figure B.4a in the Appendix visualises the amount of variance explained by each of the components. The first principal component, which is used here, explains 57% of the variance in the variables. See section B.5 for the full set of survey questions used in the analysis.

[12] Variables were recoded so that "considerably more risks" and "somewhat more risks" were coded as 1, and "neither risks nor opportunities", "somewhat more opportunities", and "considerably more opportunities" were coded as 0. For constructing the factor variable using PCA, the complete variable ranges were used. Figure B.4b in the Appendix demonstrates that the first principal component explains 74% of the variance in the variables.

[13] See Section B.2 in the Appendix for correlations between all variables.

Table 3.1: Summary statistics (German sample)

	Control			Treatment		
	N	Mean	SD	N	Mean	SD
Emotions						
Neg. emotions (factor)	521	-0.14	1.53	438	0.08	1.46
Anger	521	0.23	0.42	438	0.29	0.45
Fear	521	0.30	0.46	438	0.37	0.48
Pity	521	0.78	0.41	438	0.77	0.42
Affection	521	0.46	0.50	438	0.40	0.49
Risk						
Risk (factor)	521	-0.11	1.67	438	0.00	1.58
Welfare state	521	0.62	0.48	438	0.64	0.48
Social cohesion	521	0.45	0.50	438	0.51	0.50
Safety	521	0.68	0.47	438	0.74	0.44
Economy	521	0.38	0.49	438	0.40	0.49
Social distance						
Cultural difference	521	5.64	1.25	438	5.65	1.26
Neighbour	521	4.55	1.48	438	4.67	1.44
Independent variables						
Female	521	0.50	0.50	438	0.47	0.50
Age	521	53.24	17.76	438	50.27	17.64
East	521	0.31	0.46	438	0.35	0.48
Int. contacts	521	1.58	0.49	438	1.81	0.51
Tertiary	521	0.37	0.48	438	0.39	0.49
Married	521	0.57	0.50	438	0.56	0.50
Unemployed	521	0.45	0.50	438	0.35	0.48

Survey of Refugees

In 2016, the IAB-BAMF-SOEP Survey of Refugees interviewed 4,817 refugees and asylum seekers to obtain information on the integration efforts and living conditions of the recent arrivals in Germany. I use this dataset to examine whether changes in xenophobic sentiment among the German population actually translated into heightened perceived hostility and mental distress among refugees and asylum seekers.

Hostility Three items from the survey questionnaire were used to examine changes in refugees' exposure to hostility following the July 2016 attacks: first, refugees were

asked whether they had recently experienced any discrimination on the basis of their origin. I recode this item from a three-level to a binary variable, where 0 indicates no experience of discrimination, and 1 some or frequent discrimination. Note that this variable is self-reported and so may capture increases in both observed and perceived discrimination; a point that I will return to at the end of this chapter. Second, respondents were asked about a list of concerns, including their worry about the level of anti-immigrant sentiment in Germany. Following the same approach as above, I transform this item into a binary variable, where 0 indicates no concerns about anti-immigrant sentiment and 1 indicates some or strong concerns. Third, I construct a variable measuring whether respondents felt more or less welcome now than at their arrival. For many refugees and asylum seekers, the feeling of being welcome played an important role in their decision to migrate to Germany. Of all survey respondents, 44% listed Germany's "welcome culture" as one of the main reasons for migrating to the country, second only to concerns over human rights protection. The survey includes two questions on how welcome respondents feel, both when they first arrived in the country and at the time of the interview. Using these two items, I construct a continuous variable that measures each individual's change in feeling welcome, where 0 indicates no change and negative scores imply that the respondent feels less welcome now than at her arrival.

Well-Being Finally, to examine whether the attacks also affected refugees' and asylum seekers' mental well-being, I make use of two indices: the 4-item Patient Health Questionnaire for Depression and Anxiety (PHQ-4) and the 12-item Mental Health Component Summary score. The PHQ-4 is a short and reliable measure of mental distress that has been repeatedly used and validated (Kroenke et al. 2009; Löwe et al. 2010), including most recently in a study of the German refugee population (Walther et al. 2019). The variable consists of four measures that cover the core symptoms of depression and anxiety, yielding a single estimate of mental distress that ranges from 0 (no distress) to 12 (severe distress). The MCS score is obtained from the frequently-used 12-item Short Form Health Survey measure of

mental health. Individual scores are generated using exploratory factor analysis and then transformed to range from 0 to 100, with higher scores indicating higher levels of mental health (for a detailed summary of the computation process, see Nübling et al. (2007)). The average MCS score for the German population is 50, with a standard deviation of 10. Table 3.2 includes the summary statistics for each of the variables used from the refugee survey.[14]

Table 3.2: Summary statistics (Refugee sample)

	Control			Treatment		
	N	Mean	SD	N	Mean	SD
Hostility						
Discrimination	386	0.34	0.47	647	0.42	0.49
Anti-immig. worries	386	0.28	0.45	647	0.30	0.46
Feeling welcome	386	0.02	0.81	647	-0.09	0.86
Well-being						
Mental health	386	47.87	12.09	647	47.08	11.55
Mental distress	386	3.20	3.09	647	3.33	2.92
Independent variables						
Female	386	0.34	0.47	647	0.35	0.48
Age	386	33.34	11.30	647	32.15	10.58
East	386	0.18	0.38	647	0.22	0.41
Int. contacts	386	1.61	0.41	647	1.72	0.44
Refugee	386	0.33	0.47	647	0.38	0.49
Syrian	386	0.51	0.50	647	0.49	0.50
Iraqi	386	0.08	0.26	647	0.11	0.31
Afghan	386	0.11	0.32	647	0.09	0.29
Comm. accom.	386	0.37	0.48	647	0.35	0.48

3.4 Results

Results of the regression analyses are presented below. The figures display the estimated coefficients and confidence intervals (90% and 95%) of the treatment effect across all models, conditioning on all other independent variables. The corresponding regression tables are listed in Section B.6 of the Appendix, alongside

[14] See Section B.2 in the Appendix for correlations between all variables.

a series of robustness checks in Sections B.9 to B.22. The reported estimates are derived using OLS with heteroskedasticity-consistent robust standard errors.[15] To facilitate a comparison between continuous and binary outcomes, all continuous dependent variables are standardised by dividing by two standard deviations of the control group (Gelman 2008).

3.4.1 Anti-refugee attitudes

The study begins by examining the impact of the terrorist attacks on native Germans' negative attitudes towards refugees and asylum seekers.

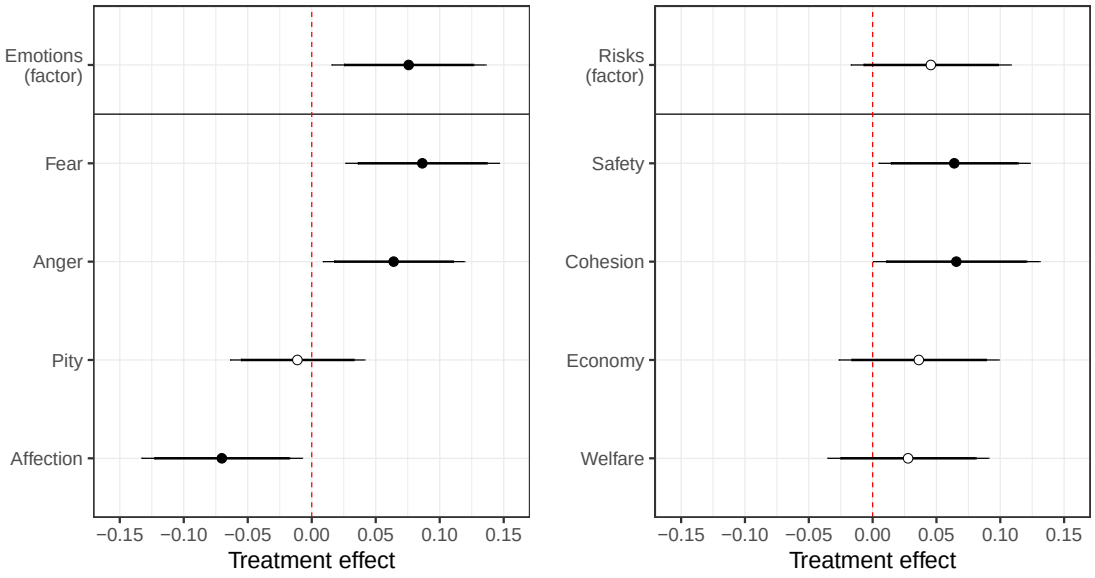
Figure 3.3a visualises to what extent respondents' anger, fear, pity, and affection towards refugees changed in the aftermath of the terror attacks, and shows that the events substantially increased respondents' fear of and anger toward refugees, while also decreasing feelings of affection. Specifically, respondents who were interviewed in the month after the attacks are 9 percentage points more likely to fear and 6 percentage points more likely to be aggravated by refugees, a substantial 30% and 26% increase from the control group mean. While affection towards refugee groups drops by about 7 percentage points (15%), pity seems to have not been affected by the attacks.

Does this change in sentiment towards refugees reflect a more general increase in xenophobia, irrespective of country origin? In addition to being asked about their emotions towards refugees, respondents were also asked to rate their emotions towards other minority groups in Germany, namely Polish Jewish, Italian, and Turkish residents. Figure B.9 in the Appendix reveals that while resentment of refugees strongly increases in the aftermath of the attacks, feelings towards each of the other groups remain largely unaffected. Rather than causing an undifferentiated increase in xenophobia, the July 2016 attacks seem to primarily spur negative emotions towards refugees—the group deemed to be responsible for the events.

[15]Robust standard errors account for the fact that OLS imposes heteroskedasticity for binary dependent variables. See Friedman (2012) and Pischke (2012) for arguments in favour of using Linear Probability Models as an alternative to Logit or Probit regressions. I also repeat all estimations of binary dependent variables using logistic regression models in Appendix Section B.12, and the relative size and direction of estimates does not change.

In addition to these emotive reactions, German respondents also associate greater risks with refugees in the weeks following the attacks (see Figure 3.3b). In line with the perceived nature of the threat, German interviewees are particularly concerned about the threats that refugees pose to safety and social cohesion, while being somewhat less worried about their impact on the German welfare state or the economy. These substantial effects are particularly striking given that, even prior to the July attacks, respondents were very worried about threats to safety and cohesion. Already in the control group, some 68% of respondents report to be concerned about the safety threat that refugees pose, yet this share increases by an additional 7 percentage points in the aftermath of the attacks.

Figure 3.3: Impact of the July 2016 terrorist attacks on feelings toward refugees and risk perceptions.



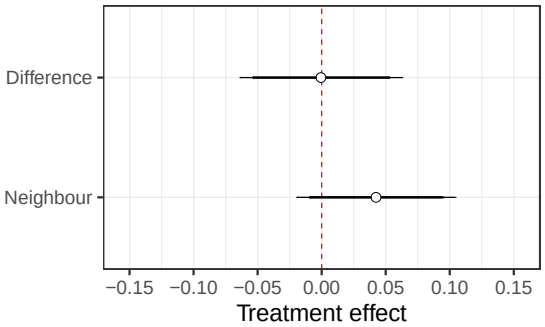
(a) Emotions towards asylum seekers **(b)** Risks associated with asylum seekers

Note: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

Whereas the July 2016 terrorist attacks have a considerable impact on anti-refugee sentiment and risk perceptions, their effect on perceived social distance is more ambiguous. Theoretical insights suggest that while events that pit one group

against the other can spark immediate hostility, anger, and aggression (Lickel et al. 2006), social boundaries develop over longer periods and may thus be less sensitive to sudden shocks (Qian and Lichter 2007). In line with this, Figure 3.4 showcases that the July 2016 terrorist attacks had less of an effect on perceived social and cultural distance: while Germans' discomfort with having an asylum seeker as their neighbour increases by 0.09 standard deviations, this effect is statistically insignificant. Perceived differences between Germans and asylum seekers are also not affected by the July 2016 events. Respondents in the control group already perceive refugee communities as very different from their own, even when compared to other minority groups. The mean "social difference" score (which ranges from 1 to 7) is 5.6 for refugees in the control group—compared to 2.7 for Jewish, 2.8 for Polish, 3.0 for Italian, and 4.5 for Turkish communities. This large initial gap does not, however, further increase following the terrorist attacks.

Figure 3.4: Impact of the July 2016 terrorist attacks on perceived social distance between Germans and Asylum Seekers



Note: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

Taken together, results of the German sample demonstrate that the terror attacks in Nice, Würzburg, and Ansbach lead to a substantial increase in anti-refugee attitudes, increasing negative emotions toward and heightening risk perceptions of refugees and asylum seekers throughout Germany. These results are particularly striking given that for many of the dependent variables used, the baseline rate

in the period prior to the events is already very high. In the control group, some 68% of respondents already view refugees as a risk to their personal safety, 63% as a risk to the state, and 45% as a threat to social cohesion. Yet, despite high pre-existing antipathy towards refugees (and potentially dampening ceiling effects), negative sentiment still further increases in the aftermath of the attacks: following the attacks, some 3 in 4 respondents view refugees as a threat to public safety in Germany. Results also indicate that attacks did not cause a broad and indiscriminate increase in xenophobia, but primarily stirred up anti-refugee sentiment among the native population. While recent findings suggest that the impact of terrorism may have subsided, these results clearly showcase that refugees—the group blamed for the attacks—were viewed more negatively by the German public in the weeks that followed.

3.4.2 Refugees' experiences of hostility

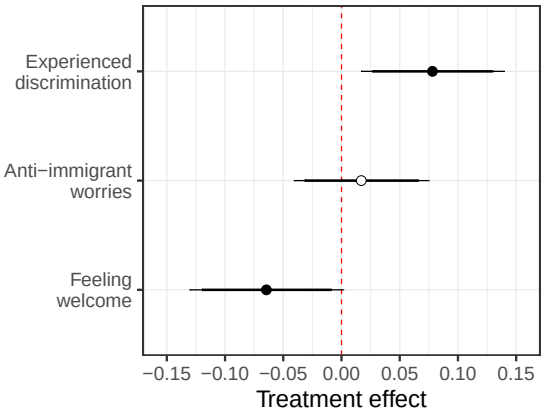
Having established that the July 2016 terror attacks did stoke anti-refugee sentiment, the analysis now turns to examining whether such change in sentiment was in fact felt by the resident refugee population in Germany.

Figure 3.5 visualises the impact of the terror attacks on refugees' experiences of discrimination, worry over anti-immigrant sentiment, and feelings of being welcome in Germany. As the positive coefficient indicates, refugees interviewed in the period after the attacks were significantly more likely to report to have experienced discrimination than those interviewed prior to the events: more specifically, while some 34% of refugees claim to have been discriminated against in the control group, this share increases by 8 percentage points to 43% among respondents in the treatment period. This represents a substantial 24% increase, highlighting the considerable impact of the July attacks on refugees' reported exposure to discrimination in Germany.

Mirroring this increase in discrimination, refugees also feel less welcome in the aftermath of the terror attacks. On average, each respondents' feeling of being welcome drops by 0.12 points (or 0.15 standard deviations) in the treatment period.

In fact, there is no observed difference in the extent to which refugees feel welcome between arrival and the interview if the interview was conducted prior to the first attack; it is only after the terrorist attacks that respondents report a relative decline in feeling welcome. Further controlling for refugees' year of arrival in Germany does not affect these results—suggesting that this decrease is not due to differences in the timing of entry into the country. Together with the increased experiences of discrimination, these findings clearly indicate that the surge in anti-refugee sentiment among the majority population match refugees' own experiences of being exposed to more discrimination and hostility in the aftermath of the attacks.

Figure 3.5: Impact of the July 2016 terrorist attacks on refugee sentiment.



Note: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

As Figure 3.5 also suggests, however, this increased hostility does not seem to translate into an elevated concern over anti-immigrant attitudes. Despite the documented increase in negative sentiment towards refugees and a self-reported increase in discrimination, interviewees are not more likely to worry about anti-immigrant attitudes following the July attacks. A closer examination of the complete set of worries listed in the survey reveals that refugees are not nearly as troubled by xenophobic sentiment as they are by other issues. In fact, Figure B.11 in the Appendix visualises that concern over anti-immigrant attitudes ranks last

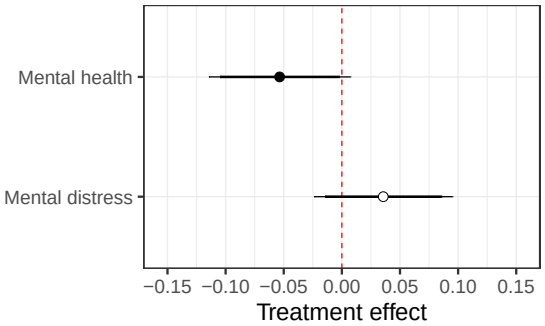
among all listed worries in both treatment and control group, with only about 30% of respondents being somewhat or very concerned about xenophobia. Instead, most refugees seem to have much more immediate concerns: the large majority worry about their dire economic situation, followed by their future prospects in Germany and in their countries of origin. These worries reflect the precarious position of refugees and asylum seekers in Germany in 2016. At the time of the survey, as few as 3% of respondents report to be in full employment, with many still awaiting a decision over their asylum status. In the presence of other, more pressing problems, such as finding employment, securing permanent residency, or worrying about the precarious situation in their home country, respondents may not have the time or energy to also agonise over less tangible issues like the level of latent xenophobia within the host country.

3.4.3 Refugees' mental health and well-being

To what extent, then, does the observed increase in anti-refugee sentiment among German citizens and the elevated reported levels of discrimination affect refugees' mental well-being? Figure 3.6 visualises the effect of the events on asylum seekers' mental health and emotional distress, and indicates that the attacks had an effect on mental well-being. Refugees who were interviewed during the treatment period report significantly lower levels of mental health, with the MCS score dropping by about 0.10 standard deviations among respondents in the treatment period.

The reported coefficient measuring refugees' mental distress is only slightly positive and statistically insignificant. The emotional toll of terrorism has, however, been shown to be strongest in the immediate aftermath of an attack (Whalley and Brewin 2007). A treatment period of four weeks could in such case conceal stronger short-term effects that abate over time. To explore whether the terrorist attacks had an abrupt but less durable impact on refugees' mental health, I therefore repeat the analysis above but vary the treatment period to range between 5 and 35 days. Figure 3.7 visualises the treatment coefficients for each of these regression models and, indeed, provides evidence of a drastic short-term effect. Refugees' mental

Figure 3.6: Impact of the July 2016 terrorist attacks on the well-being of refugees



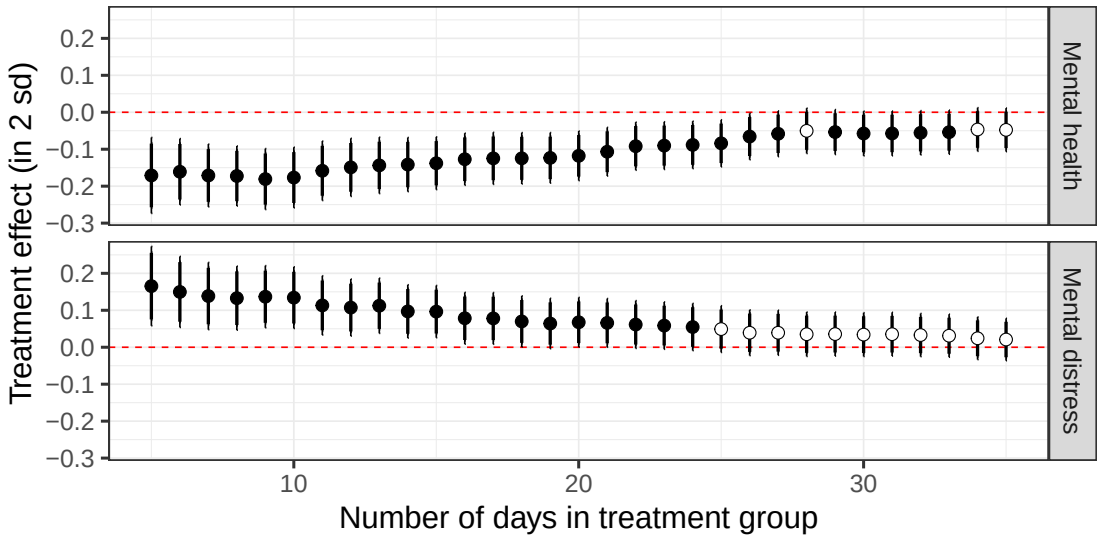
Note: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

health and distress suffer most directly following the attacks: in the first five days of the treatment period, respondents report a 0.35 standard deviation decrease in mental health and 0.33 standard deviation increase in mental distress. These changes are not only statistically significant, but also of clinical relevance: two studies in Europe (Vilagut et al. 2013) and Australia (Gill et al. 2007) identify a mental health component score of 45 or less as the screening threshold for detecting depressive disorders. After exposure to the terrorist attacks, refugees' MCS score drops by 4.8 points to 42.1, well below this recommended threshold. While both effects diminish over time, with the coefficient for mental distress becoming statistically insignificant (at $p < 0.1$) after 24 days, the effect on mental health remains statistically significant through most of the treatment period.

These results provide rare evidence that terrorist attacks which are blamed on refugees not only exacerbate hostility among the majority population and increase refugees' experiences of discrimination, but also considerably deteriorate refugees' mental well-being. Terrorist are distressing events, however, and so may affect the mental health of all residents in Germany, refugee or otherwise. The question that remains is whether refugees' mental health was disproportionately affected by the attacks, given the additional exposure to the hostility that followed. To compare the observed effect on mental health among refugees to that of the majority population,

I return to the German survey, where respondents were asked to rate their overall wellbeing on a five-point scale. Contrary to the findings above that report a considerable drop in refugee wellbeing, however, Section B.21 in the Appendix shows that Germans' subjective health assessment does not change following the attacks, with effect estimates remaining close to zero and statistically insignificant throughout the entire period. This comparison suggests that the mental health toll of domestic terrorism may be more pronounced among those groups that are blamed for the events and thus bare the brunt of backlash that follows. It has to be interpreted cautiously, however, given the differences between the two survey items.[16]

Figure 3.7: Dynamic effect of the July 2016 terrorist attacks on wellbeing



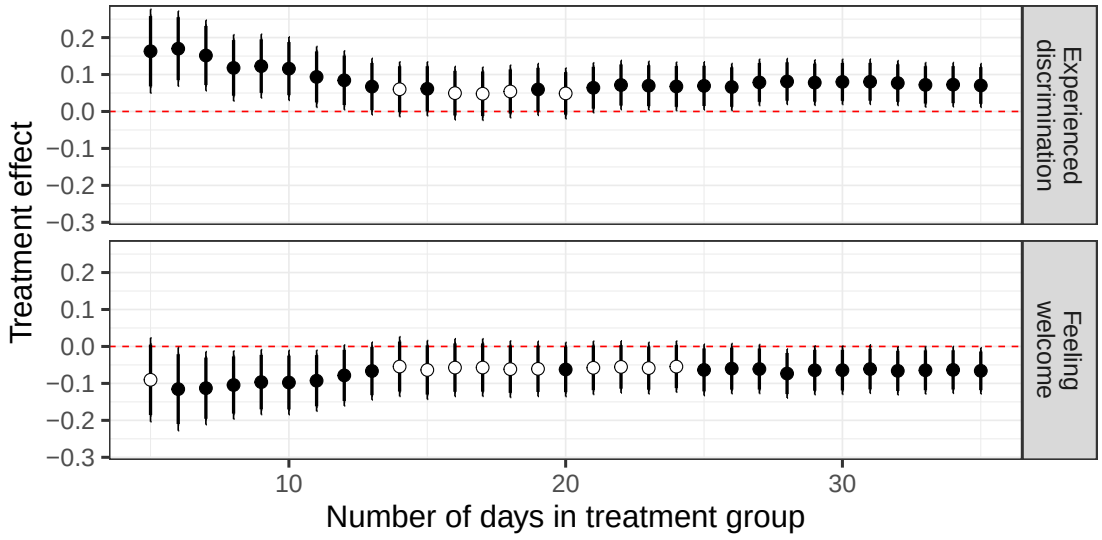
Note: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

While the negative impact of the terrorist attacks on mental health occurs at a time when refugees report higher levels of discrimination, such simultaneous developments do not necessarily imply a causal relation. The experience of terrorism

[16]Whereas the Refugee survey includes a range of questions aimed explicitly at measuring respondents' mental health and wellbeing, the German survey only includes a question which asks respondents to rate their overall wellbeing on a five-point scale. The German survey item therefore arguably captures changes in mental and physical wellbeing, and may therefore be a less precise measure of mental health.

may be particularly traumatic for refugees and asylum seekers—many of whom will have fled ongoing war in their home countries—so that the renewed exposure to terrorism may rip open past trauma irrespective of the level of hostility. One way to assess the plausibility of the argument, that terrorist attacks disproportionately impact refugees' mental health by increasing their exposure to hostility, is to examine whether changes in mental health over time coincide with refugees' experiences of discrimination over that same period. In Figure 3.8 I show that when refugees report the lowest levels of mental health in the immediate aftermath of the attacks, they also claim to be most exposed to discrimination. In the first week following the attacks, when refugees' mental wellbeing is at the lowest level, exposure to discrimination is also at its highest: more than half of all respondents report to have been recently discriminated against. These simultaneous developments underscore the plausibility of the argument that the mental health toll terrorism takes on refugee communities is in part driven by the discrimination such an attack generates.

Figure 3.8: Dynamic impact of the July 2016 terrorist attacks on refugees' exposure to hostility



Note: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

3.4.4 Robustness checks and further analyses

I conduct a variety of robustness checks and additional analyses to scrutinise the stability of the estimates. In Section B.9 I begin by re-estimating the results using an entropy-balanced sample, where treatment and control groups are balanced on observable characteristics (Hainmueller 2012). In Sections B.10 and B.11 I propose different operationalisations of the treatment, taking the compound nature of the treatment and the fact that one of the attacks occurred outside of Germany into account. I also re-estimate a series of logistic regression models in Section B.12 for each of the binary dependent variables used. While I impute missing values in the main analysis, Section B.13 discusses alternative strategies on how to deal with missing observations. Respondents in the treatment group were, on average, somewhat harder to reach, and controlling for the number of contact attempts may not suffice to account for these differences in reachability. In Section B.14, I instead restrict the sample to only those respondents who were relatively easy to reach. Finally, Section B.16 assesses the stability of the results in a more exhaustive manner through a series of specification curves. Across all model specifications, however, the estimated coefficients remain highly similar to those reported above.

While results remain robust to the various specifications, estimates may still be biased if temporal dynamics other than the terrorist attacks are driving the effects. If prior unobserved events already influenced natives' and refugees' attitudes, or if attitudes worsened over time irrespective of the terrorist attacks, then estimated effects would be biased since interviews for units in the treatment group were conducted at a later stage than those in the control group. I explore these issues in two ways: first, in Section B.15, I vary the temporal bandwidth used to classify units into control and treatment groups from 4 weeks to 21 and 35 days to see whether estimates are dependent on the chosen cutoff period, but results are robust to this variation. To more exhaustively account for the possibility that prior events or general time trends influenced the results, I generate a series of fictitious events for the period prior to the terrorist attacks and separately re-estimate the models

on each of these placebo samples.[17] In Section B.17 I plot the coefficients from all placebo models against the estimated effects from the main analysis and show that, across all dependent variables, the estimated effects from the main regressions are larger in magnitude than the placebo coefficients. This increases my confidence in the assumption that the observed changes in sentiment occurred in response to the July 2016 terrorist attacks, and not in response to other temporal dynamics.[18]

While recent scholarship has found that natives' attitudes towards immigrants worsens in the aftermath of terrorist attacks, other research argues that such events can also produce momentary surges in solidarity (Collins 2004), which may extend beyond race or ethnicity and so unify rather divide the populace. This sense of "coming together" in the aftermath of an attack could curtail some of the negative reactions that would otherwise follow. In Section B.19 I show that this did not seem to occur following the attacks in Nice, Würzburg, and Ansbach. Respondents interviewed after the attacks felt as close and connected to other Germans and to other Europeans as those who were interviewed prior to the attacks.[19]

Public discourse surrounding the refugee crisis often distinguishes between "genuine" refugees, who flee their country due to war or political persecution, and those who travel to Germany in hopes of better economic prospects, with the public being more inclined to accept the immigration of the former over the latter groups (Bansak, Hainmueller and Hangartner 2016; Czymara and Schmidt-Catran 2017). Thus, while the above results demonstrate that refugees were viewed less favourably after the July 2016 attacks, such negative attitudes may only pertain to those immigrants that are already deemed less deserving of asylum in the first place. In Section B.20 in the Appendix I show that this is not the

[17]Since this strategy relies on a sufficiently large time window in the period prior to the treatment event, this placebo analysis was only possible for respondents from the German survey.

[18]In Section B.18 I also explicitly examine whether the 2016 Brexit referendum, which occurred on June 23rd, 2016, may have temporarily improved Germans' attitudes towards refugees, but find no evidence of such an effect.

[19]In a discourse analysis of presidential speeches in the aftermath of the two 2015 terrorist attacks in France, Bogain (2019) notes that the political discourse shifted from one characterised by unity following the first attack, to one characterised by military action and retaliation following the second. Though outside the focus of this study, comparative research should assess to what extent public reactions to an event are able to mitigate the occurrence of subsequent intergroup hostility.

case: respondents interviewed after the attacks are more inclined to oppose the immigration of asylum seekers, regardless of whether they were fleeing war, political persecution, or dire economic situations.

3.4.5 Alternative mechanisms

Before discussing the implications of the study, it is important to consider whether mechanisms other than the ones described above may be driving these findings. Firstly, given that information on refugees' exposure to discrimination is derived off of survey responses (as opposed to actual instances), changes in reported levels of discrimination may reflect changes in refugees' alertness to or perceptions of discriminatory acts, despite no change in actual discriminatory behaviour. Indeed, changes in behaviour do not necessarily follow from changes in attitude (see Birkelund et al. 2018; LaPiere 1934), while perceptions of discrimination have been found to be affected by both objective experiences and by expectations of equity and disadvantage (Banerjee 2008). However, because prior research has shown that the attacks in Nice, Würzburg, and Ansbach did lead to an increase in anti-refugee violence across Germany (Frey 2020), and because I observe a simultaneous increase in both Germans' anti-refugee attitudes as well as in refugees' perceptions of discrimination, I am confident that the increase in reported discrimination reflects refugees' actual exposure to (as opposed to only intensified perceptions of) discriminatory acts. Still, only research that has information on natives' and refugees' attitudes *and* behaviour can fully explore the extent to which changes in anti-refugee sentiment translate into anti-refugee behaviour, and how such behaviour in turn affects refugees' exposure to and experiences of discrimination.

Secondly, while this study argues that the July 2016 terrorist attacks increased anti-refugee hostility which culminated in the worsening of refugees' mental wellbeing, changes in perceived discrimination and mental health may instead both be a symptom of another omitted process. If terrorist attacks (are perceived to) decrease asylum seekers' chances of obtaining refugee status, then refugees' mental health may not have deteriorated because of increased exposure to hostility *per se*, but

because of pragmatic fears over obtaining asylum. Such anxieties over the outcome of the asylum application should be primarily concentrated among those who have not yet received a decision regarding their asylum application, or who have had their initial claim rejected, while respondents with an already approved refugee status should remain largely unaffected. However, Section B.22 of the Appendix shows that the mental health toll of the July 2016 attacks is equally as pronounced among asylum seekers with and without formal refugee status, casting doubt on the plausibility of the argument that increases in mental distress following the July 2016 attacks were mainly caused by practical and legal considerations.

Still, exposure to terrorism may also spark internal identity conflicts, feelings of guilt or shame, or loss of institutional trust among migrant communities (Colombo, Rotondi and Stanca 2019), all of which can influence perceptions of discrimination and affect personal wellbeing. Given data limitations, I am unable to assess the validity of each of these channels in driving the reductions in refugees' mental health. Indeed, the effect of terrorism on mental health is likely multi-factorial, and efforts should be put into identifying the main drivers of aggravating mental health struggles among blamed minority groups in the aftermath of terrorist attacks. Studies that consider the impact of multiple events, and that account for variation in perpetrator characteristics, government response, and native backlash, would be particularly well-suited to assess the relative importance of each of these processes.

3.5 Conclusion

The literature on intergroup relations is increasingly embracing the use of natural experiments to explore how exogenous shocks fuel between-group aggression and stoke conflict. This is a welcome development that sheds more light on the conditions under which events such as terrorist attacks provoke intergroup contention. Current research, however, is still heavily skewed toward only studying how such events affect out-group resentment among the majority population, whereas the recipients of this resentment have received scant scholarly attention. In this study I have argued that this is a problematic oversight, not only because it obscures the unique

challenges that targeted groups face, but also because any holistic examination of the impact of terrorism on intergroup dynamics necessitates examining its effect on both groups at the same time.

This article leveraged the coincidental overlap of a series of terrorist attacks with the fieldwork period of two surveys to examine how these events impacted the sentiment of in- and out-group members. Focusing on attitudinal changes among both the native and the resident refugee population in Germany, the study finds that exposure to terrorism exacerbated anti-refugee sentiment among German respondents, while increasing experiences of discrimination and mental distress among refugees and asylum seekers. German participants interviewed in the aftermath of the attacks felt more negatively toward refugees (exhibiting higher levels of anger and fear, and lower levels of affection) but not towards other minority groups, considered refugees as a greater risk to safety and social cohesion, and were more opposed to their immigration. Mirroring this increase in hostility, refugees reported a substantial 8 percentage point (or 24%) increase in discrimination after the attacks, and felt less welcome than when they had first arrived in the country. This exposure to hostility ultimately seems to have resulted in a marked decrease in psychological well-being among refugee communities, who suffered clinically-relevant declines in mental health in the immediate aftermath of the terrorist attacks, when exposure to hostility was at its highest.

These findings highlight a crucial but often overlooked aspect of intergroup conflict: how blamed minority groups—against which much of the resulting increase in vitriol, discrimination, and violence is directed—react to terrorist attacks. Discrimination can hamper labour market access, impede the search for adequate housing, or decrease interactions between the native and refugee population, and, in doing so, complicate the already laborious integration process that immigrants face upon their arrival. For refugees, whose future prospects in a host country rest on the socio-political climate at the time, such changes in sentiment are likely particularly consequential. Efforts to support integration efforts must prioritise reducing ethnic prejudice among the native population, especially given that immigrants have

little sway in counteracting discrimination in the labour or housing markets by themselves (see Vernby and Dancygier 2019).

At the same time, the focus of this study was how intergroup relations change directly after the unravelling of the attacks. Research on anti-refugee violence demonstrates that similar events that pit one social group against another can have more lasting effects on anti-refugee attacks, and change the level and distribution of violence for the entire subsequent year (Frey 2020). It remains unclear, however, whether changes in everyday interactions between natives and refugees follow similar patterns, or else slowly revert back to a common baseline as news of the event subsides. The slow ebbing off of the effect of the July 2016 terrorist attacks on refugees' mental health suggests that at least some of the effect may only be temporary; but further research to assess this process in greater detail is needed.

Given that terrorist attacks seem to have a severe but only temporary effect on mental health, to what extent should policy makers be concerned with such repercussions? While their direct effect may only be temporary, distressing events can give rise to chronic stressors with more lasting negative mental health consequences, including unhealthy coping behaviour or social isolation (Pearlin 1999). And even when most recover from the immediate negative consequences, a significant minority will likely continue displaying markedly lower levels of mental health for months after the event (Galea et al. 2002). Since, even in the absence of a terrorist attack, refugees and asylum seekers already display markedly lower rates of subjective well-being compared to the general population, policy makers should be keenly aware of any factors that further aggravate the existing disparities in health status.

Unlike with traumatic experiences that occurred prior to arrival, concrete policy measures can be taken to reduce the impact of post-migratory stressors on refugees' well-being, through increased mental health support for refugees following terrorist attacks, and through efforts to reduce the hostility that follows, for example. Since most of the negative impacts stem from the biases attacks generate among the native population, programs that make the native population more aware of their implicit biases in their interactions with refugees could also lower the brunt of backlash.

Ultimately, however, any lasting effort to reduce the detrimental impact of terrorism on intergroup relations has to focus on disrupting the process by which an entire minority group—by simple way of association—is held collectively responsible and vilified for the conduct of a few of its members.

CHAPTER 4

Shelter in place

The impact of refugee accommodation on nearby property prices

4.1 Introduction

Faced with a sudden increase in asylum seekers at the onset of the European refugee crisis in 2015, local governments throughout Germany scrambled to build additional accommodation sites to house the new arrivals. Within weeks, existing capacities were exhausted and hundreds of facilities across the country were built or repurposed at short notice, in an effort to stem the sudden demand for government-run housing. Decisions over where to accommodate refugees and asylum seekers, however, are regularly met with fierce opposition from local residents. Such opposition is generally driven by the fear that the presence of refugees will devalue the local community, either because of a concrete decrease in the quality of local amenities and public life, or because of neighbours' and prospective residents' preferences for ethnic homogeneity within the neighbourhood, or some combination thereof. While other manifestations of anti-immigrant mobilisation tend to cluster in areas with disproportionate far-right support, resistance to local settlement locations is ubiquitous, and even features among those who support the need for more refugee housing in principle (Ferwerda, Flynn and Horiuchi 2017).

It is unclear, however, to what extent protests by individual residents reflect the preferences of an entire community: while refugee shelters are generally opposed by some, they are often also supported and welcomed by others. And even if concerns over the arrival of refugees are widespread, it is unclear whether such concerns are held strongly enough to affect residents' concrete economic decisions over where to live. Settlement decisions are influenced by a multitude of factors, so that proximity to refugees may not rank highly enough to influence actual settlement behaviour.

Accordingly, this paper explores the extent to which ethnic prejudice shapes "on-the-ground" economic decisions over where to live. By combining detailed information on property listings in Munich, Germany, between 2012 and 2019, with data on the exact time and place of each refugee shelter opening in the city, this study examines whether the sudden presence refugees impacts the attractiveness of

the hosting neighbourhood. More specifically, this chapter asks: does the opening of a refugee shelter decrease the listing price of properties located in the vicinity?

Using a difference-in-differences design, the study compares real estate listings in hosting neighbourhoods before and after the opening of a refugee shelter to properties in areas without a shelter to examine whether the presence of refugees impacts a neighbourhood's perceived desirability, decreasing local property prices compared to listings elsewhere. Results from the estimation reveal that the opening of a refugee accommodation has no discernible impact on the property market of hosting neighbourhoods. This null effect persists when differentiating between house and apartment sales, accounting for possible anticipation effects, limiting the control group to properties from the same postcode, matching on neighbourhood characteristics, allowing for the effect to vary over time, and after addressing recent criticism of staggered difference-in-differences designs. There is also no increase in the amount of properties listed or the time that they were listed on the website for, suggesting that trends in property prices do not mask more subtle changes in "native flight" or "native avoidance."

Although many Germans, when asked, prefer not to live in close proximity to refugees, these findings suggest that such preferences may not be held strongly enough to impact actual decisions over where to settle. I turn to survey data from 2016, which includes information on respondents' proximity to a refugee accommodation facility, to understand how natives who actually live next to an open refugee shelter feel about its inhabitants. Insofar as fears over the detrimental neighbourhood impact of refugees are based largely on prejudice, increased personal contact with refugees should reduce fears and counter natives' negative beliefs. Conversely, if the presence of refugees does deteriorate neighbourhood appeal and local quality of life, respondents living close to a shelter should feel particularly hostile towards refugees and should be more opposed to their immigration.

Survey results indicate that individuals living close to a shelter have more frequent contact with refugees and foreigners, and are somewhat more accepting of refugee immigration and somewhat less prone to anti-refugee sentiment compared

to those living further away. Tellingly, individuals residing close to a refugee shelter are also more, not less willing to have a refugee as their neighbour, and generally favour living in neighbourhoods with a more diverse residential composition. Rather than heightening perceived threat and decreasing local quality of life, shelters, at minimum, leave no lasting negative impression. At best, they increase the opportunity for casual encounters between refugees and residents within the neighbourhood and, in doing so, may ease residents' previously held anxieties over the new arrivals.

4.2 Background

In 2015, the number of refugee arrivals to Europe reached unforeseen heights. Within the year, more than one million asylum seekers crossed into Europe, fleeing conflict and persecution in their countries of origin (Dustmann et al. 2017). For many arrivals, Germany constituted the final destination, due in part to the alleged openness of the German populace towards immigration. In a 2016 survey of refugees and asylum seekers in Germany, close to half reported that Germany's 'welcome culture' was an important reason for their decision to migrate to the country; second only to concerns over human rights protection (Frey 2021). In total, more than 1.3 million applications for asylum were submitted in Germany during the years 2014 to 2016, exceeding the cumulative number of applications in the previous two decades.

4.2.1 Accommodating refugees

Whereas economic migrants generally choose the places in which they want to settle, refugees have only very little say in decisions over where to live. The distribution of asylum applicants across the country is coordinated using the *Koenigssteiner Schluessel*, a quota system which distributes applicants based on a state's population size and GDP. This assignment process is designed to evenly disperse incoming asylum seekers across the country, thereby reducing the strain on local resources and the competition between natives and refugees over scarce goods. Upon first arrival in Germany, asylum seekers are assigned to a temporary reception

centre (*Erstaufnahmeeinrichtung*), where they are registered, undergo a standard medical examination, and submit their asylum application.[1] From here, applicants are distributed to permanent accommodation facilities (*Gemeinschaftsunterkunft*) within the state, where they are required to remain for the first six months or until the completion of the application process (*§47 AsylG, AsylVfBeschlG, and Wohnsitzauflage, AsylG §60*). Many, however, continue to reside in government-run shelters for many months after having been granted protective status, until they can afford to move into private housing.

4.2.2 Refugee accommodation in Munich

Munich, Germany's third largest city, is required to house approximately 1.69% of the country's asylum seekers, or 11.3% of all applicants in Bavaria.[2] In September 2016, this amounted to close to 12,000 refugees and asylum seekers that were housed in one of the refugee shelters across the city. In addition to accommodating this sizeable number of refugees, however, Munich was also disproportionately exposed to the more general influx of refugees, given its proximity to the Southern border. For most of the refugees who crossed the Mediterranean Sea or travelled the West Balkan route, Munich became one of the first points of entry into Germany. As a result, residents in Munich were well aware of the increase in refugee immigration to Germany during the European refugee crisis. Fortuitously, the Munich government also publishes and regularly updates a detailed list of all refugee shelters in the city, which allows me to conduct this analysis in the first place.[3]

Given the surge in arrivals of refugees and asylum seekers in Munich and the dire need for housing, new accommodation facilities had to be opened at a rapid pace. Figure 4.1 visualises this increase: while there were only few permanent

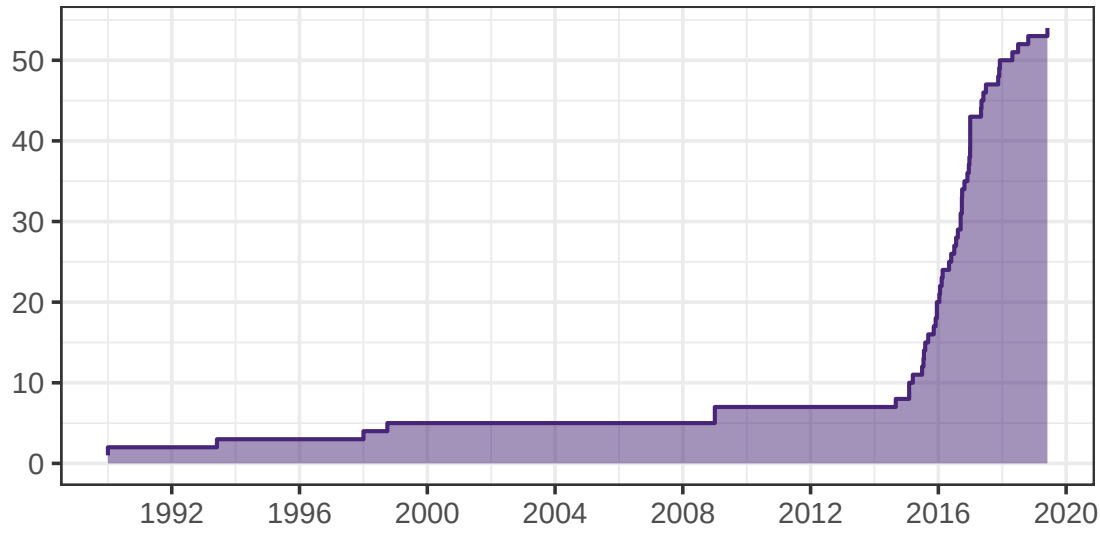
[1] Applicants usually remain in the temporary receptions for a few weeks, up to a maximum of six months.

[2] Formally, the Koenigssteiner Schluessel only allocates refugees from the federal to the state level. Each state has specific laws governing the subsequent allocation to its counties and cities, though for most this quota is largely based on population size or a combination of population size and GDP (see Marbach and Ropers 2018: for each state's allocation policies). In Bavaria, the allocation occurs on the basis of *§3 AsylG*, *§12a AufenthG DVAsyl* (Sozialreferat 2016).

[3] Sharing information on the opening time and location of refugee shelters is at the discretion of local governments, so that many choose not to make this data public.

refugee shelters in operation across the city prior to the refugee crisis, since 2015 this number has increased from 8 to 54 to accommodate the incoming refugees. At the end of 2019, these sites housed close to 7,000 adult refugees and asylum seekers.[4] The majority of these shelter residents are male, under the age of 45, and have been living at the site for more than a year (Sozialreferat 2020).

Figure 4.1: Cumulative number of refugee shelters in Munich, Germany

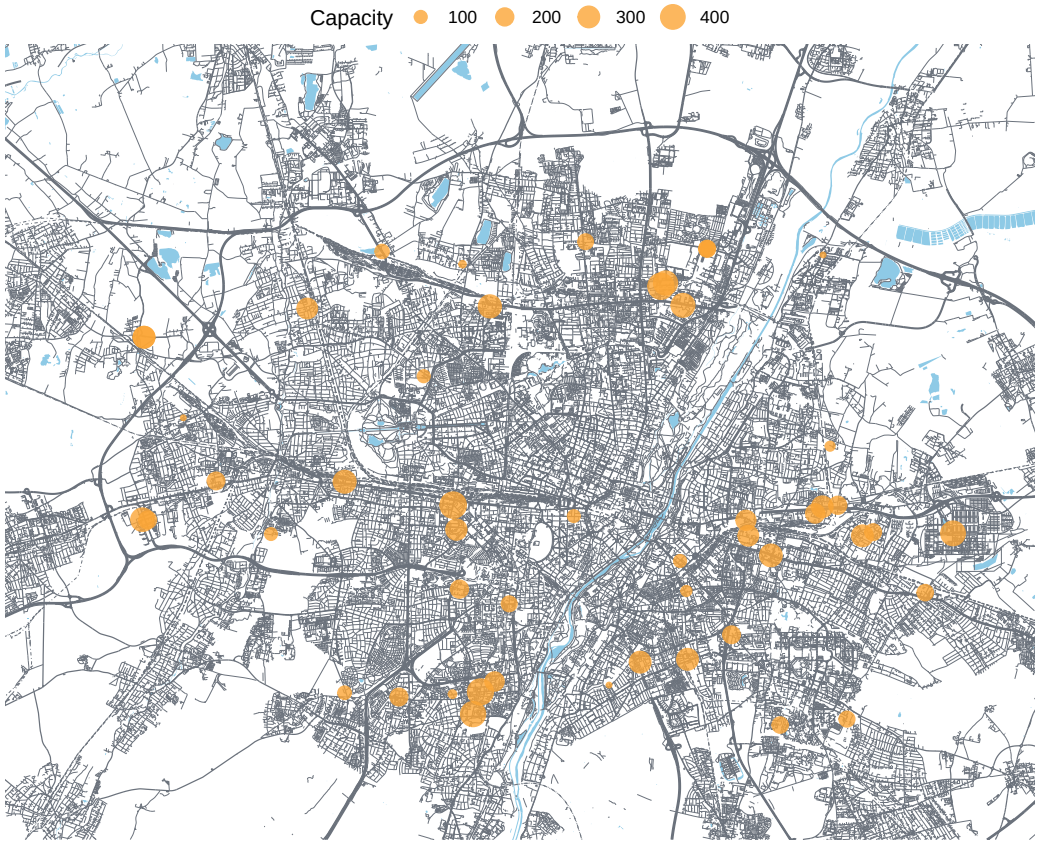


Note: The solid line represents the total cumulative number of shelters in Munich, Germany, over the period 1990 to 2019.

Decisions over where to open accommodation centres are made by a joint task force involving local and state actors, with oversight from the city council. In selecting sites, the task force considers an even distribution of refugee shelters across city districts, next to concerns over feasibility, usability, and economic viability (Kommunalreferat and Sozialreferat 2014). Indeed, a brief look at Figure 4.2 suggests that refugee shelters are spread evenly throughout Munich, and feature both in the city centre and periphery. The city of Munich also attempts to inform residents about the opening of a nearby shelter through various ways; including at town- and council hall meetings, as well as through fliers, open-door days, and public information events.

[4]These figures do not include asylum seekers under the age of 18. In total, close to 12,000 refugees and asylum seekers were housed in one of the city's refugee shelters in September 2016.

Figure 4.2: Location and capacity of each refugee shelter in Munich, Germany



Note: The points represent the location of each of the refugee shelters in Munich, Germany, while the size of the point indicates its maximum capacity.

4.2.3 Local resistance to planned shelters

The planned opening of refugee shelters is often vehemently opposed by some members of the local community. Opposition ranges from complaints during council meetings, legal challenges, and protests, to vandalism and arson, and features across both wealthy and poorer neighbourhoods. In an affluent area of Hamburg, for example, residents attempted to prevent the opening of an accommodation facility by, among other efforts, claiming the building site was home to protected species (Krone 2015). In Munich, legal disputes over the opening of a refugee reception centre culminated in the construction of a 4-meter-tall wall that separated neighbours from future shelter residents (Matzig 2016).[5] In other instances, resistance takes

[5]The wall was constructed prior to the opening of the site, allegedly to reduce expected noise pollution.

on more violent forms. Between 2015 and 2020, Germany has witnessed 277 arson attacks on refugee shelters (Mut gegen rechte Gewalt 2020). Many of these attacks target not-yet inhabited sites in an effort to stall or prevent their occupancy. In Munich, culprits of an attempted arson attack admitted to setting fire to a shelter building in an effort to prolong the construction process (Görl and Graner 2016).

While methods of opposition differ in severity and scope, concerned residents share similar ethnic prejudices which coalesce around the worry that the opening of a refugee shelter adversely affects local quality of life. Across petitions and interviews, opponents lament that the presence of refugees would decrease the quality of public amenities, increase noise pollution and the competition for scarce resources such as kindergarten and school places, and intensify local criminality (e.g. Kastner 2014). Ultimately, such concerns over the negative impacts of hosting refugees culminate in the fear over a decrease in neighbourhood appeal and falling real estate prices, where local properties are worth less due to their proximity to a refugee shelter. These concerns have led some to sue local governments for damages over anticipated losses, albeit to no avail (e.g. Bayerische Staatskanzlei 2017; Isenberg 2014).

4.2.4 Local support of planned shelters

While shelter openings are opposed by some members of the local community, however, they are also supported by others. In both the aforementioned examples in Hamburg and Munich, local residents mobilised to counter shelter opponents and signal their openness towards the new arrivals (Matzig 2016; Woldin 2017). More generally, around one in three German residents was donating to refugee organisations and close to ten percent were volunteering on-site to assist refugees in their arrival to the country during the height of the European refugee crisis in 2016, indicating a considerable desire to help and assist refugees among the German populace (Jacobsen, Eisnecker and Schupp 2017).

Even in hosting neighbourhoods, initial resistance to refugee shelters often quickly dissipates once a shelter has been built, suggesting that residents become more accepting of the accommodation site and its residents over time (Friedrichs, Leßke

and Schwarzenberg 2019; Zorlu 2017). In the above case in Hamburg, for example, initial resistance to the shelter vanished quickly: in a survey of nearby residents fielded two years after the opening in Hamburg, the large majority of respondents were supportive of the nearby facility (Friedrichs, Leßke and Schwarzenberg 2019). Similar dynamics occur in the aftermath of other not-in-my-backyard protests: psychiatric facilities, for example, are often vehemently opposed by the local community ahead of their opening, but residents become much more accepting of the facilities over time, and most forget about their existence entirely (Zippay and Lee 2008).

4.3 Extant evidence

Still, when asked where refugee reception shelters should be located, respondents consistently prefer shelters to be built in areas other than their own neighbourhood (Ferwerda, Flynn and Horiuchi 2017; Liebe et al. 2018). Using a list experiment, Ferwerda, Flynn and Horiuchi (2017) showcase that support for local resettlement is lower than for national resettlement—regardless of political inclinations or demographic characteristics, respondents favour shelters located outside of their own backyard.

Though such surveys and list experiments provide powerful insights into individuals' attitudes towards local refugee settlements, it is unclear how the process of imagining the opening of a refugee shelter in one's vicinity mirrors the actual experience. On the one hand, questionnaire responses are likely subject to social desirability bias and may underreport true objection to a nearby shelter. On the other hand, attitudes may also not translate into concrete behavioural reactions. Although there is considerable local animus against planned shelters, it is unclear to what extent this overt hostility is reflected in people's economic behaviour. While the placement of a local shelter may be opposed in principle, such opposition may not suffice to dampen neighbourhood appeal or encourage out-migration—particularly since the decision where to move is a multi-faceted and costly one. Finally, due to their discrete or cross-sectional nature, laboratory experiments neglect the ongoing

process by which native residents continue interacting and familiarising themselves with the accommodation facility and its inhabitants.

Some recent studies have therefore turned to studying the neighbourhood implications of local refugee immigration using household survey, census, and real estate data. Property listings, in particular, provide behavioural insights into how immigration affects intergroup dynamics at the neighbourhood level—where interactions between migrants and locals are most likely to occur (Andersson and Dahlberg 2018). Using household surveys, Alhawarin, Assaad and Elsayed (2021) show that the influx of Syrian refugees to Jordan, where 80 percent of refugees live outside of official refugee camps, increased rental prices among poor households due to increased competition between natives and refugees over affordable housing. In Turkey, the arrival of Syrian refugees also increased rents, albeit primarily among higher quality units: as refugees entered local neighbourhoods natives moved into more affluent areas, arguably in an effort to distance themselves from the new arrivals (Balkan et al. 2018; Tumen 2016).

Whereas the immigration of refugees can be characterised as a positive demand shock in the two aforementioned cases, in Europe, refugees are usually required to live in government-run shelters upon their arrival, and thus do not directly compete with natives on the property market. In the absence of direct competition, changes in property sale prices largely reflect residents' responses to and expectations about the arrival of refugees. Since shelter locations are determined by the government rather than by refugees themselves, such analyses also circumvent the issue of endogenous neighbourhood selection plaguing most empirical research on the neighbourhood impacts of immigration (Kirk and Laub 2010; Sampson, Morenoff and Gannon-Rowley 2002).

Existing research on the short-term impacts of refugee shelters indicates that refugee immigration to Europe has a more ambiguous effect on neighbourhood outcomes. Whereas some studies report that shelter openings decrease the attractiveness of surrounding properties (Hennig 2021; Kürschner Rauck 2020; Kürschner Rauck and Kvasnicka 2018), other studies find no, or only partial evidence of such dynamics

(Andersson and Dahlberg 2018; Daams, Proietti and Veneri 2019). In Germany, Kürschner Rauck (2020) examines the impact of large refugee reception centres on property prices in 2016, and finds that detached and semi-detached houses sold for 13 percent less following the opening of a nearby shelter. This considerable drop stands in stark contrast to the author's earlier work (Kürschner Rauck and Kvasnicka 2018) and research by Hennig (2021), who focus on German cities and report lower price penalties ranging from 0 to 4% in the year after the shelter openings. These differences may be in part due to the fact that Kürschner Rauck studies the impact of large refugee reception centres on house prices in mostly rural areas. While refugee shelters in urban regions tend to accommodate the same refugees for prolonged periods of time, allowing for sustained contact with residents, most large reception centres in rural regions are built further away from existing communities and only house asylum seekers for a few weeks up to a maximum of three (and later six) months. Although the study region spans three federal states, it also only includes information on 57 new shelters openings. By contrast, some 46 new refugee shelters were opened in Munich since the start of the refugee crisis in 2015 alone. Compared to all other property sales, the purchase of semi-detached houses is also comparatively rare, so that only 1590 sales in Kürschner Rauck's analysis occurred close enough to an open refugee shelter to warrant inclusion in the treatment group. Finally, differences between urban and rural areas may contribute to these dissimilar findings. Compared to urban regions, rural areas may not have the capacity to absorb the negative externalities that refugee shelters bring about due to limited public amenities and comparatively less prior exposure to foreign residents. Whereas the sudden presence of refugees may therefore be more noticeable in rural areas, in cities, pre-existing migrant communities together with the agglomeration of human activity, may obscure a neighbourhood's negative amenities such as nearby refugee reception centres (Daams, Proietti and Veneri 2019: 10).

Why, however, would the presence of a refugee shelter be seen as a negative amenity which would damage the desirability of surrounding properties in the first place? Natives' ethnic prejudices and subsequent preferences for ethnic homogeneity

in their community may decrease local property prices by encouraging existing residents to leave while simultaneously discouraging prospective residents from moving into a neighbourhood with a growing refugee presence. In the United States, 'white flight' (where White residents leave following the arrival of Black neighbours) and 'white avoidance' (where Whites avoid moving to neighbourhoods with a predominantly Black population) are critical to upholding the stark and persisting levels of racial segregation across North American cities (Cutler, Glaeser and Vigdor 1999; Frey 1979, 1980; Quillian 2002; Saiz and Wachter 2011). Batut and Schneider-Strawczynski (2021) suggest that such processes may also underlie natives' residential mobility in response to refugee immigration in Europe. Their study demonstrates that French municipalities which hosted refugees experienced a two percent decline in their local population in the two years after the opening of refugee accommodation, primarily because fewer natives decided to move into hosting areas.

Next to natives' preferences over the ethnic composition of their community, residents may also perceive the presence of refugees to negatively affect the quality of local amenities, such as public schools, parks, or the level of criminality within the neighbourhood (Accetturo et al. 2014). Though there is no conclusive evidence suggesting that the presence of refugees increases local crime rates (see Gehrsitz and Ungerer 2016), stereotypes, prejudice, and policy discourse that portrays immigrants as dangerous may still lead residents to associate refugees with an elevated risk of crime and a diminished quality of life (Maney and Abraham 2008; Quillian and Pager 2001). This association becomes evident in a series of interviews with protesters at a planned refugee accommodation centre in Nottinghamshire, UK (Hubbard 2005: 59-60). At the demonstration, many participants voiced their concerns over the potential danger of hosting refugees within the neighbourhood, describing prospective residents as 'militant young men who will soon become bored and wander through our villages looking for trouble', resulting in 'a large number of thefts, burglaries and muggings in local villages.' One protester concludes with a prediction that, as a result of the arrival of refugees, 'crime-free local villages will be transformed into villages where nobody wants to live.'

4.3.1 Refugee shelters and intergroup contact

While the above quote aptly encapsulates the fears and anxieties of shelter opponents, such anxieties feature most prominently in the period prior to the arrival of refugees. In fact, initial resistance from local communities frequently dissipates once a refugee shelter is established. This may be because fears over the neighbourhood impact of refugees are largely based on stereotypes and prejudice, rather than on personal experiences. The presence of a refugee accommodation centre within the immediate vicinity, however, facilitates regular contact between native residents and refugees which may reduce prejudice by countering residents' preconceived notions and beliefs (Allport 1958; Pettigrew and Tropp 2006). Sustained contact between a native majority and an ethnic outgroup has been shown to reduce prejudice and decrease discriminatory behaviour by increasing knowledge about the outgroup, reducing anxieties around intergroup encounters, and increasing empathy and perspective-taking (Paluck, Green and Green 2019; Pettigrew and Tropp 2006, 2008; Scacco and Warren 2018).

Indeed, research that differentiates between exposure to and interaction with refugees finds that while exposure with no opportunity for contact increases anti-refugee sentiment and hostility (Hangartner et al. 2019; Dinas et al. 2019; Gessler, Tóth and Wachs 2019), sustained contact between refugees and natives can attenuate these dynamics. In a convincing study, Steinmayr (2021) examines the effect of the refugee crisis on far-right voting in Austria, but differentiates between two types of municipalities: transit municipalities—where refugees passed through on their way to Germany— and hosting municipalities—where refugees settled into accommodation shelters. Whereas far-right support increased in transient municipalities where residents had considerable but fleeting exposure to passing refugees, far-right support was lower in areas where refugees settled because it allowed for more intergroup contact between natives and refugee residents. Friedrichs, Leßke and Schwarzenberg (2019) rely on a survey to monitor the sentiment of residents living close to refugee shelters across six hosting neighbourhoods in Germany and come to similar conclusions. Two years after the shelter opening, the overwhelming

majority of residents, including those who were initially opposed to the site, claim to view the facility in a positive light.

It is in the combination of "on-the-ground" data on residents' settlement behaviour with survey information on individuals' neighbourhood preferences that I see an important contribution of this study. To assess whether natives' ethnic prejudice influences decisions over where to live, I begin by monitoring changes in the demand, supply, and listing prices of properties in neighbourhoods with a refugee shelter in the years prior to and after the opening. I then turn to survey data to understand how the vicinity to an operating shelter impacts the attitudes of its neighbours: do nearby residents interact more with refugees, and do those interactions increase or decrease residents' levels of threats, prejudice, and preferences for ethnic homogeneity within the neighbourhood? This combination of behavioural and attitudinal information will provide insight into the extent to which ethnic prejudice seeps into real, economic decisions over where to live, while also providing suggestions for the mechanism underlying such behaviour.

4.4 Data

To estimate the local costs to hosting refugees, this paper combines data on the opening date and location of all refugee shelters throughout Munich which commenced operation between 2012 and 2019 with neighbourhood information on property listings and demographic composition.

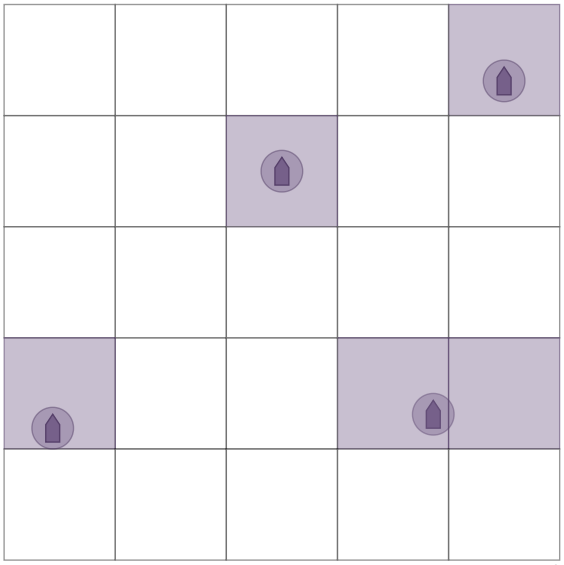
4.4.1 Refugee shelters

The Munich government releases and regularly updates a list of refugee shelters throughout the city, which includes information on the address, opening date, and capacity of each accommodation site.[6] Since property and demographic data is aggregated to 1km^2 raster cells, I geo-reference all listed addresses and assign each

[6]The list includes all accommodation facilities with a capacity of 48 beds or more. You can find the most up-to-date list of all shelters here: `https://www.muenchen.de/rathaus/Stadtverwaltung/Sozialreferat/Fluechtlinge/Unterkuenfte.html` I supplemented the list by manually going through all government press releases and statements that include information on shelter openings, and include all refugee shelters who were in operation for at least one year.

refugee shelter to the grid cell it is located in. As some refugee shelters are located at the border to an adjacent cell, I treat all grids within 100 meters of a refugee shelter as hosting neighbourhoods (see Figure 4.3).

Figure 4.3: Schematic drawing of neighbourhoods with and without refugee shelters



Note: This drawing illustrates how shelters are assigned to 1km^2 neighbourhood grids. Neighbourhoods with a refugee shelter are highlighted in purple. All neighbourhoods located within 100 meters of the shelter are defined as hosting neighbourhoods.

4.4.2 Demographic data

Demographic information is taken from two sources: the 2011 German census and the RWI Leibniz Institute for Economic Research. Both sources provide socio-demographic and economic information for the whole of Germany at the level of 1km^2 raster cells (Breidenbach and Eilers 2018).[7] While the former is based on official census counts, the latter is collected by *microm*, a micro geomarketing provider, which uses 'more than one billion individual data points for the aggregation of their dataset' to accurately depict the 41 million households throughout Germany (Breidenbach and Eilers 2018: 611). I use census data to obtain neighbourhood information on the population count, number of foreigners, household size, and

[7]The grid cells are defined according to the EU directive standardized European projection system INSPIRE (Infrastructure for Spatial Information in Europe). I refer to these raster cells as both "grids" and "neighbourhoods" throughout the manuscript.

the share of empty properties, and add RWI grid data on local unemployment and household income.

4.4.3 Property listings

Information on real estate prices is taken from *Immobilienscout24*, Germany's largest online real estate broker. The online portal is representative of the German real estate market, and has by far the broadest coverage: some 50% of all properties offered for sale or rent in Germany are listed on the platform. I obtain access to this data through a partnership with the RWI Leibniz Institute for Economic Research (RWI), which provides the raw data to each listing but aggregates location to the respective 1km^2 grid cell within which each property is located (Boelmann and Schaffner 2018). Next to the listing price, the dataset also includes information on the date and duration of each listing, as well as data on other relevant property characteristics, such as the number of rooms, living space, and property type. I remove all listings with missing values on the variables as well as those with extreme outliers from the analysis.[8] In total, the dataset includes non-missing information on 152,444 properties in Munich which were advertised for sale between 2012 and 2019.

Note that this study only examines the impact of a refugee shelter opening on the price development of properties listed as "for sale" on *Immobilienscout24*, and so does not account for changes in local rental prices. This is because, in addition to reflecting natives' revealed preferences, the rental market likely also faced simultaneous demand-side driven price increases due to the refugee immigration. During the heyday of the European refugee crisis, local authorities throughout Germany sought to reduce the shortage of existing communal facilities by also

[8]Since the dataset from *Immobilienscout24* relies on advertisers specifying the details of their properties, there are some coding errors, with some listings having unrealistically high or low values on some of the variables. I attempt to remove these from the estimation by treating observations whose price, number of rooms, and living space are higher/lower than the top/bottom 1% of all listings as outliers. I do this separately for house and apartment sales. This amounts to house listings whose living space is lower than 78m^2 or higher than 882m^2, whose listing price is lower than €201,600 or higher than €7.6m, or who have less than 3 or more than 20 rooms. For apartment listings, I exclude observations with less than 23 and more than 251 square meters, with a listing price of less than €80,000 or more than €2.8m, or with 7 or more separate rooms. I also exclude observations that have been listed on the website for longer than 446 days. See Table C.1 in the Appendix for more detail on missingness.

accommodating refugees in privately owned properties, thus increasing the demand for rental properties. Over time, as refugees moved out of communal shelters into privately-rented housing, this transition further increased the need for affordable rentals (Aehnelt et al. 2017). Thus, even if the presence of a refugee shelter may have decreased natives' desire to live within a hosting neighbourhood and so reduced natives' demand for rental properties, such an effect may be entirely subsumed by the simultaneous increased demand from local governments and refugees themselves. Property sales, on the other hand, are less likely to be affected by these crowding-out effects. Local governments sought to rent out apartments as an intermediary solution and so refrained from purchasing private housing. Refugees, on the other hand, generally can not afford to purchase a property immediately after transitioning out of communal shelters, and so do not directly compete with natives' over sold properties. Thus, compared to the rental market, property sales should not have received much of a direct stimulus from the immigration of refugees during the European refugee crisis (Kürschner Rauck 2020: 2).

4.5 Descriptives

Munich is the most expensive German city to rent or buy a property in, and real estate throughout the city has undergone a substantial increase in value over the period of analysis. Between 2012 and 2019, the average price per square meter has nearly doubled from €4750 to €8360. Properties located in the centre of the city, where population density is the highest, are generally more expensive compared to properties located in the periphery (see Figure 4.4). There is also considerable variation in socio-demographic composition within Munich, with the share of foreign residents and local unemployment being generally higher in northern and south-eastern neighbourhoods.

In Table 4.1 I assess to what extent properties located in hosting neighbourhoods (i.e. neighbourhoods where a refugee shelter will be or has been built) differ from properties in other areas in the city (i.e. control neighbourhoods). There is a substantial price difference between properties advertised in both localities: on

Figure 4.4: Neighbourhood demographics and property characteristics

Note: This plot visualises (from top left to bottom right) the average property price per square meter, the number of listings, the population, the share of foreigners, the unemployment rate, and the location of shelters at the neighbourhood level for the whole of Munich. Data on the number of listings and the average price per square meter is taken from *Immobilienscout24*, data on population and foreign residents is taken from the 2011 census, data on unemployment is taken from the RWI, and data on the location of refugee shelters is compiled by the author.

average, the listing price of buildings in the control group is more than €100,000 higher than for buildings in the treatment group. This is partly due to differences in the size and characteristics of listed properties. For one, properties in hosting neighbourhoods are smaller than in other parts of the city: the mean living space is 103m^2 for properties in control neighbourhoods as opposed to 88m^2 for properties in the treatment group. In hosting neighbourhoods, properties that are on sale are also more likely to be regular apartments over luxury properties and houses. After accounting for differences in size, the average listing price per square meter is €5,946 in treated areas, compared to €6,384 in the rest of the city.

Table 4.1: Summary statistics

	Control			Treatment		
	N	Mean	SD	N	Mean	SD
Dependent variables						
Price/m^2	130284	6383.51	2302.18	22160	5945.53	2053.71
log(Price/m^2)	130284	8.70	0.36	22160	8.63	0.34
Independent variables						
Price (in €1000)	130284	676.80	557.30	22160	534.81	399.82
Living space (m^2)	130284	103.01	64.62	22160	88.19	51.49
Total rooms	130284	3.40	1.89	22160	3.06	1.69
Regular flat	130284	0.42	0.49	22160	0.46	0.50
Other flat	130284	0.33	0.47	22160	0.36	0.48
Upscale flat	130284	0.06	0.24	22160	0.05	0.21
Townhouse	130284	0.13	0.34	22160	0.10	0.30
Other house	130284	0.05	0.22	22160	0.03	0.18

4.6 Methods

Given these differences, one cannot simply compare neighbourhoods with an operating shelter to neighbourhoods without a shelter to study how the presence of refugees affects the desirability of the surrounding community. Neighbourhoods where shelters are being built differ in observed and unobserved ways from other communities, impeding a direct comparison of outcomes. Instead, this paper relies on a difference-in-differences specification, which compares changes in local outcomes in hosting neighbourhoods before and after the opening of a refugee shelter with changes in other areas. The crucial assumption with difference-in-differences designs is that the outcome for units in the treatment group would have followed the same trend as it did for units in the control group, had treatment not occurred; an assumption I will discuss in more detail in the results section of the paper.

The following regression estimates the impact of the opening of a refugee accommodation on local property prices:

$$y_{ijt} = \delta T_{it} + \boldsymbol{X}_i'\beta + \eta_t + \mu_j + \epsilon_{ijt} \tag{4.1}$$

Where y_{ijt} denotes the logged listing price per square meter of property i in neighbourhood j at time t, and T_{it} is a binary variable that equals one if property i is located within a neighbourhood with an open refugee shelter at time t, and zero otherwise. The matrix $\boldsymbol{X}_i'$ conditions for a set of property-specific characteristics, including living space, number of rooms, and dwelling type. The vectors η_t and μ_j are time and neighbourhood fixed-effects, which control for common trends in the city's real estate market as well as time-invariant differences across neighbourhoods. Under the assumption of parallel trends, the coefficient of interest δ measures how property prices in hosting neighbourhoods deviate from other properties following the opening of a refugee shelter.

4.6.1 Stacked difference-in differences

Since shelters open at different points in time for different neighbourhoods, equation 4.1 is a staggered setup. Recently, various authors have pointed to potential problems with such staggered difference-in-differences designs (e.g. Baker, Larcker and Wang 2021; Callaway and Sant'Anna 2021; Goodman-Bacon 2021; Sun and Abraham 2020). When treatment effects are heterogeneous (either across treatment cohorts or over time), staggered difference-in-differences designs with time and unit fixed effects can bias estimates of the average treatment effect. Put briefly, this is because when treatment occurs at different times for different cohorts, units whose treatment status does not change within a given period serve as the control group for units whose treatment status does change, so that the comparison group for newly treated observations can be any of the following: "never treated", "not-yet treated", and "already treated" (Callaway and Sant'Anna 2021). Treatment effect estimates can be biased if "already treated" observations act as the comparison group for "newly treated" units, since changes in the outcomes of previously treated observations are subtracted from the changes of later-treated units.[9] When

[9] As Goodman-Bacon (2021) shows, the two-way fixed effects model is a variance-weighted average of all possible two-group two-period difference-in-differences estimators in the data. When treatment effects are heterogeneous across cohorts and evolve over time, some such weights may be negative, biasing the effect estimates. See Baker, Larcker and Wang (2021) and Goodman-Bacon (2021) for a more detailed explanation of these issues, and for a discussion of various remedies.

treatment effects evolve over time, this can even lead to effect estimates of the wrong sign (Baker, Larcker and Wang 2021).

These problems are likely less relevant for the study at hand, given that most of the control units in our sample are "never treated"—that is, they are located in neighbourhoods that never witness the opening of a local refugee shelter. Still, to account for the possibility of already-treated units biasing estimates of the average treatment effect, I complement equation 4.1 by using a "stacked" differences-in-differences approach, taken from Cengiz et al. (2019). To do this, I create a set of separate event-specific datasets for each unique treatment period, each of which only includes those treated neighbourhoods where treatment occurs in that specific period (i.e. neighbourhoods where a shelter opens at the given time) as well as all observations that never experience a shelter opening (i.e. all "never treated" units). I then stack these event-specific datasets in relative time to calculate the average treatment effect. By stacking and aligning each dataset along event-time as opposed to calendar time, this approach is akin to a setting where all treatment events occur simultaneously, and has been shown to guard against the biases stemming from heterogeneous treatment effects in staggered two-way fixed effects estimates (see Baker, Larcker and Wang 2021). This stacked regression is similar to equation 4.1, but also includes a full set of interactions across controls, clusters, and unit- and time-fixed effects for each event-specific dataset.

4.6.2 Event analysis

While the results from the difference-in-differences estimation capture the mean difference in property prices between hosting and non-hosting neighbourhoods before and after the opening of a refugee shelter, an event analysis allows for the study of differences between both groups at each time period relative to shelter opening. By comparing trends in outcomes prior to a shelter opening, it is also possible to evaluate the credibility of the parallel trends assumption. To look at the dynamic effect of openings on local communities, I therefore run a separate OLS model where

I include a full set of lag and lead dummy variables to indicate whether a unit has been (or will be) treated t quarters ago. This regression takes the following form:

$$y_{ijt} = \sum_{k \neq -1} \delta_k \mathbb{1}[t - E_i = k] + \boldsymbol{X}_i' \beta + \eta_t + \mu_j + \epsilon_{ijt} \tag{4.2}$$

where E_i is the period when the shelter first opens for unit i, and $\mathbb{1}[t - E_i = k]$ is an indicator for being k quarters away from the opening. I follow the recommendation of Baker, Larcker and Wang (2021) and include the full set of relative-time indicators, excluding only the quarter prior to the opening of the shelter (i.e. $k = -1$) as the reference category. As with the difference-in-differences estimation, I again guard against the potential biases listed above by also stacking the dataset in relative time (see Cengiz et al. 2019).

4.7 Results

The following section describes the results of the analyies. In the difference-in-differences specification, the *shelter opening* coefficient can be interpreted as the percent change in property prices following the opening of a shelter in a hosting neighbourhood.[10] All coefficients are net of time and neighbourhood fixed effects, with clustered errors at the level of the neighbourhood.

4.7.1 Changes in property prices

Results of the difference-in-differences estimation in Table 4.2 suggest that the opening of a refugee shelter does not impact the listing prices of properties within the neighbourhood. Net of property characteristics and period and neighbourhood fixed effects, the point estimate in Model 1 suggests a 0.4% drop in hosting neighbourhoods' property prices following the opening of a shelter, but this effect is statistically and substantively insignificant. In Model 2, I stack all events in relative time to account for the issues with staggered difference-in-difference designs, which further decreases the estimate to a 0.2% drop following the opening of a nearby shelter. At

[10] Since for small values of $\hat{\delta}$, $e^{\hat{\delta}} \approx 1 + \hat{\delta}$.

Table 4.2: Effect of a shelter opening on property prices (log(Price/m^2))

	Model 1	Model 2
Shelter opening	−0.004	−0.002
	(0.015)	(0.013)
Living space (std.)	0.086*	0.085*
	(0.034)	(0.037)
Total rooms (std.)	−0.029	−0.028
	(0.015)	(0.016)
Other flat	0.054***	0.052***
	(0.005)	(0.006)
Upscale flat	0.114***	0.111***
	(0.011)	(0.012)
Townhouse	0.122***	0.120***
	(0.014)	(0.015)
Other house	0.046**	0.043*
	(0.016)	(0.018)
Method	DD	Stacked
Num. obs	152444	2236988
R^2 (full model)	0.529	0.527
R^2 (proj model)	0.046	0.045
Num groups: neigh.	343	5159
Num groups: time	32	544

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

a mean square meter price of €5945, these point estimates reflect a small decline of between €12–24. In general, properties' listed square meter price increases with a larger total living space, decreases with a higher number of rooms, and is higher for more luxurious property types.[11]

In Table 4.3 I probe the robustness of this finding. Since the location of shelters is known ahead of time, residents of affected communities may adjust the listing prices of their properties prior to the actual opening date of the shelter, leading me to underestimate the true effect. To account for this anticipation effect, I repeat the analyses above but exclude all observations in the six months prior to the opening of a shelter for each hosting neighbourhood in Model 1 of Table 4.3. Next, in Model 2, I add neighbourhoods' distance from the centre of the city as a

[11]For property types, "regular flat" is the omitted reference category.

Table 4.3: Effect of a shelter opening on property prices across various robustness checks

	Model 1	Model 2	Model 3	Model 4
Shelter opening	−0.00	0.00	−0.01	0.02
	(0.02)	(0.01)	(0.02)	(0.02)
Robust	*Anticipate*	*Centrality*	*Apartments*	*Houses*
Controls	Yes	Yes	Yes	Yes
Method	DD	DD	DD	DD
Num. obs	151137	152444	125337	27107
R^2 (full model)	0.53	0.53	0.58	0.54
R^2 (proj model)	0.05	0.05	0.06	0.01
Num groups: neigh.	343	343	321	335
Num groups: time	32	32	32	32

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

geographic control and interact it with the time trend. Although shelters are evenly dispersed throughout Munich, the effect may differ depending on whether or not neighbourhoods are located in the centre or the periphery of the city. To assess whether the effect differs depending on property type, I also restrict the analysis to only apartment (Model 3) and house (Model 4) listings, respectively. Across all these specifications, however, the effect sizes remain insignificant and close to zero.

While I have thus far only distinguished between the presence or absence of accommodation sites, other research has pointed to the role that large refugee shelter play in stoking local opposition (e.g. Daams, Proietti and Veneri 2019). Larger shelters mean more refugees within the neighbourhood, which could provoke more negative reactions from within the local community. To account for this, I repeat the analysis but differentiate between shelters with a small (less than 100 beds), medium (between 100 and 300 beds), and large (300 or more beds) capacity. Results in Table 4.4, however, show that shelter size does not change the substantive findings. Regardless of the capacity of the accommodation facility the effect sizes remain insignificant, with coefficients even pointing in the reverse direction than were to be expected.

Table 4.4: Effect of a shelter opening on property prices, by shelter capacity

	Model 1
Small shelter (100 or less)	−0.023
	(0.029)
Medium shelter (100-300)	−0.003
	(0.018)
Large shelter (more than 300)	0.008
	(0.023)
Controls	Yes
Method	DD
Num. obs	152444
R^2 (full model)	0.529
R^2 (proj model)	0.046
Num groups: neigh.	343
Num groups: time	32

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

4.7.2 Accounting for neighbourhood differences

So far, the estimations above consider all properties located outside of hosting neighbourhoods as control units. Figure 4.4, however, indicates that neighbourhood composition differs considerably across Munich. Actual decisions over where to build a new accommodation facility are not made at random and may be influenced by the extent of (anticipated) backlash from the local community. Following this reasoning, refugee shelters may not decrease the perceived quality of hosting neighbourhoods precisely because shelters are only built in communities where residents are least impacted by the presence of refugees.

To assess the plausibility of this mechanism, I inspect the extent to which hosting neighbourhoods differ from other areas in the city. One way of minimising predicted backlash is to build shelters in neighbourhoods that are expected to be particularly resilient to the arrival of refugees. Potential for conflict and competition is likely lowest in areas with an already-established community of foreign residents and low levels of unemployment, with the latter proxying for competition in the labour market between the existing residents and the new arrivals.

Table 4.5: Neighbourhood composition by treatment status

	Control		Treatment	
	N	Mean	N	Mean
Distance to centre (m)	302	7846.80	42	6310.62
Population	302	4020.85	42	4969.02
Foreign residents (%)	302	17.24	42	22.18
Household size	302	2.09	42	2.02
Empty properties (%)	302	2.34	42	2.12
Unemployment (%)	302	3.86	42	5.59
Hhld. income (in €1000)	302	54.97	42	52.25

Table 4.5 contrasts the demographic composition of hosting neighbourhoods with other areas in the city, and does suggest that refugee shelters are more likely built in areas with a pre-existing foreign population—but hosting areas also feature a higher rate of unemployment and lower household income, implying that concerns over affordability, rather than resilience, have likely been guiding location choices.[12]

Still, in Table 4.6 I account for these differences to see whether estimates change once we take neighbourhoods' demographic composition into account. Instead of treating all units outside of hosting neighbourhoods as controls, I first restrict the control group to only those properties that are located outside of treated neighbourhoods but that are still within the same postcode, with the assumption being that nearby neighbourhoods share similar characteristics. This reduces the number of unique neighbourhoods from 343 to 179, or 335 unique event-specific grids (in the stacked regression). To compare each hosting neighbourhood to the respective control units from within the same zip code or area, I rely on the stacked difference-in-differences setup for both estimations, akin to the elegant solution proposed by Batut and Schneider-Strawczynski (2021). This process ensures that I compare each treated neighbourhoods to only those control neighbourhoods from within the same postcode, rather than to all control neighbourhoods whose postcode matches that of any other treated neighbourhood. In Model 2, I instead balance

[12]This is in line with the guidelines put forward by the task force responsible for selecting locations for refugee facilities, which takes an even distribution, economic viability, and the usability of the property into consideration when selecting sites (Kommunalreferat and Sozialreferat 2014).

treatment and control neighbourhoods on their population size, unemployment rate, share of foreign residents, household income, and distance to the centre using entropy balancing (Hainmueller 2012).[13] Results remain statistically insignificant for both specifications, however, suggesting that differences in neighbourhood composition are not driving the null results.[14]

Hosting neighbourhoods may also differ from other neighbourhoods in the extent to which the local community protested the planned opening of a shelter, which is difficult to approximate through neighbourhood demographics alone. To explore this possibility, I searched through prior press releases of the Munich government and identified four locations where refugee shelters were supposed to be built, but where such plans were eventually abandoned. I then studied newspaper coverage of each of these prospective sites to get a sense of the level of neighbourhood opposition in response to the planned opening. While there is some evidence that residents voiced their dissatisfaction with the planned shelter at three of the four sites, this opposition does not appear to have been more intense than elsewhere, and does not seem to have been the reason for the withdrawal from the project. Instead, with the rapid decline of new arrivals following the EU-Turkey agreement in March 2016, these additional sites were no longer needed. To estimate the level of violent opposition, I also identified each attack against a refugee shelter in Munich between 2014 and 2017, using a dataset collected by the non-profit organisation Mut gegen rechte Gewalt (2020). Of the 16 registered attacks in Munich, I was able to attribute 6 to specific sites based on the information included in the dataset; none of these six attacks, however, targeted one of the planned sites.

[13]See Figure C.1 in the Appendix for balance on observables across the unweighted and weighted samples.

[14]With difference-in-differences designs, the crucial assumption is that property prices in hosting neighbourhoods would have followed the same trajectory as properties in the rest of the city, had there be no refugee shelter opening. As refugee shelters are built in more affordable areas, however, gentrification dynamics may disproportionately increase property prices in more affordable parts of the city, thus violating the parallel trends assumption. In a scenario where the opening of a refugee shelter dampens these gentrification dynamics, property prices in (more affordable) hosting neighbourhoods would have increased at a higher rate than properties in the rest of the city, had a shelter not opened within the area. I account for this possibility in additional supplementary regression models, where I compare hosting neighbourhoods to only those control areas with similarly affordable property prices in 2012. Despite this modified control group, however, effects remain statistically and substantively insignificant, easing such concerns.

Table 4.6: Effect of a shelter opening on property prices, within zip code and using entropy balancing

	Model 1	Model 2
Shelter opening	−0.01	−0.01
	(0.01)	(0.02)
Robust	*Postcode*	*Matching*
Controls	Yes	Yes
Method	Stacked	DD
Num. obs	97484	152358
R^2 (full model)	0.60	0.54
R^2 (proj model)	0.07	0.06
Num groups: neigh.	335	334
Num groups: time	544	32

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

4.7.3 Changes in the supply of and demand for properties

In addition to focusing on property prices, an alternative way of proxying for the desire to live in hosting communities is to examine changes in the demand for and supply of properties on the online platform. If residents are more likely to move elsewhere in response to the sudden presence of local refugees, then the number of listed properties would increase in hosting neighbourhoods following the opening of a shelter. Likewise, if potential homeowners are less interested in properties located in hosting neighbourhoods after a shelter opening, then properties in those neighbourhoods should remain on the real estate platform for a longer duration of time before being sold. I explore both of these scenarios in Table 4.7. In Model 1, I use the number of listings within each neighbourhood at a given time as the dependent variable, to see whether the supply of properties increases in response to the presence of refugees. In Model 2, I rely on the number of days each property is listed for as the dependent variable to proxy for whether the demand for properties in host communities decreases in response to the opening. Both coefficients for the number of listings and listing duration are small and statistically insignificant and are negative rather than positive, albeit marginally so: following the opening of a local

Table 4.7: Effect of a shelter opening on the number and duration of property listings

	Nr of Listings	Days listed
	Model 1	Model 2
Shelter opening	−1.693	−0.592
	(2.335)	(2.411)
Controls	Yes	Yes
Method	DD	DD
Num. obs	9096	152083
R^2 (full model)	0.390	0.071
R^2 (proj model)	0.000	0.005
Num groups: neigh.	343	343
Num groups: time	32	32

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

shelter, the number of listings drops by about 1.7 listings (0.08 sd) and the listing duration declines by half a day (0.01 sd). In addition to property prices remaining unaffected, these results show that the demand for and supply of properties in hosting neighbourhoods also do not change as a result of a closeby shelter opening.

4.7.4 Changes in property prices over time

Whereas the analysis above estimates the average treatment effect on the treated; that is, the average effect of a shelter opening on the perceived quality of hosting neighbourhoods, it may be that property prices change dynamically in the months after the opening. If residents view arriving refugees as a threat and a source of competition, for example, then the impact on property prices should increase over time, as competition intensifies. Likewise, given that the number of newly incoming asylum seekers has decreased considerably relative to the height of the refugee crisis, it may be that the impact of a refugee shelter on hosting neighbourhoods was most severe in the immediate aftermath of the opening, and has since subsided. Such temporary changes may be overlooked in a conventional difference-in-differences design.

In Figure 4.5, I therefore examine changes in the impact of the shelter opening on property prices over time, by plotting the estimated lead and lag (δ_k) coefficients and confidence intervals from equation 4.2 for the three years before and after the opening of a refugee accommodation facility.[15] In addition to displaying the coefficients from the event study, Figure 4.5 also includes in dashed lines the estimates from the stacked event analysis—where events are stacked in relative time—with nearly identical results. In both cases, the quarter immediately prior to the opening of the shelter is chosen as the reference category.[16]

With difference-in-differences designs, a central assumption needed for retrieving causal estimates is that of parallel trends. This assumption states that treated units would have followed a similar trend as control units, had treatment not occurred. Figure 4.5 validates this assumption. In the three years prior to the shelter opening, property prices in hosting and non-hosting neighbourhoods follow a similar trend.

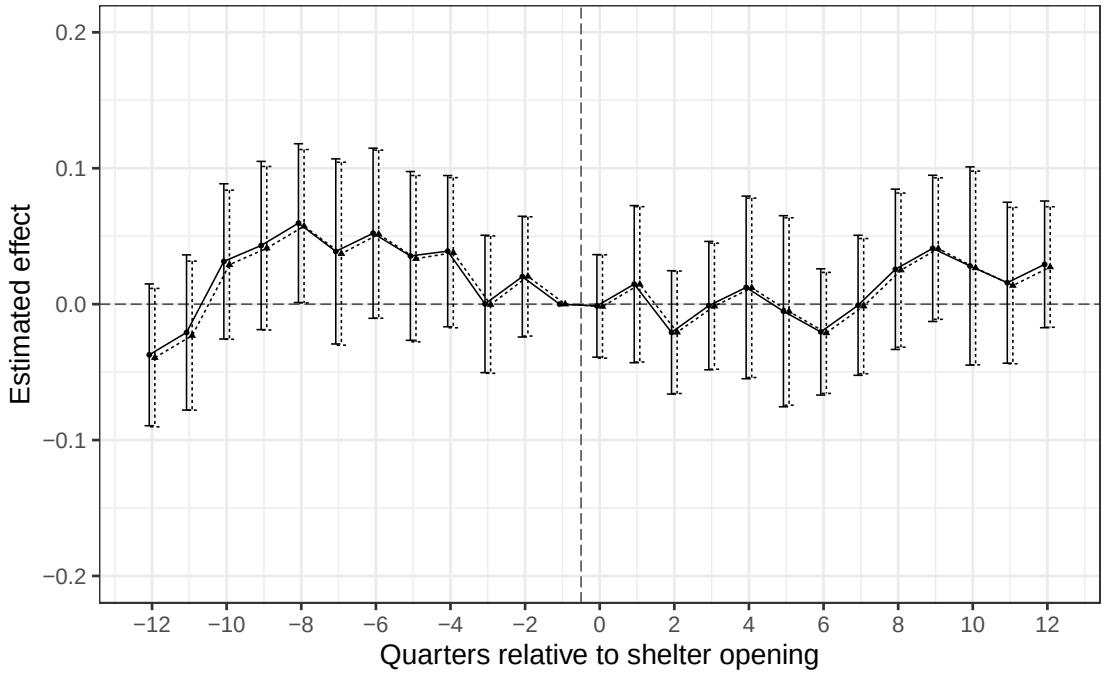
However, Figure 4.5 also demonstrates that even after the opening of the shelter, there is no considerable divergence in property price developments between hosting and non-hosting neighbourhoods. The point estimates continue to hover around zero in the three years following the opening, with no significant or systematic change over time. I again probe the robustness of these estimates through the various alternative specifications listed above, but once more find no evidence that refugee shelters negatively impacted property prices in affected neighbourhoods.

Together, these results suggest that the opening of refugee shelters had no discernible impact on the value of surrounding properties in Munich. Despite vehement opposition by residents to nearby shelter openings, and despite an intense public worry over the detrimental effect of hosting refugees, this study finds no evidence that neighbourhoods become less attractive following the arrival of refugees and asylum seekers within the community.

[15] Section C.3 in the Appendix includes the full list of coefficients underlying this plot.

[16] Following Baker, Larcker and Wang (2021), I include the full set of lead and lag coefficients in the regression equation.

Figure 4.5: Effect of shelter opening on property prices over time.



Note: Black circles summarise the coefficient estimates for being k quarters away from the shelter opening. Results are obtained using OLS conditioning on property characteristics and neighbourhood and time fixed effects. Horizontal solid and dotted lines indicate differences between the staggered and the stacked difference-in-differences setup. Vertical lines display the 95% confidence intervals.

4.7.5 Intergroup contact as a potential mechanism

While these results provide insight into the "on-the-ground" economic decisions over where to live, they do not reveal how residents who end up living next to an open refugee shelter feel about its inhabitants. Proximity to a refugee shelter likely increases opportunities for intergroup contact, which, if positive, can decrease natives' prejudicial beliefs and anti-refugee attitudes, thus improving intergroup relations. If, however, natives' worries that shelter openings decrease local quality of life prove true, nearby residents should feel particularly negative about their living situation, be more opposed to refugees, and prefer to live in areas with a more ethnically homogenous population.

To explore these attitudes in greater detail, I turn to the 2016 General Social Survey survey of German residents (GESIS - Leibniz-Institut für Sozialwissenschaften

2017), which, since 1980, provides insights into the attitudes and behaviours of a representative sample of German residents. Following the sudden surge of asylum applications, the 2016 survey round introduced a set of items gauging Germans' sentiment towards the new arrivals. Among other questions, interviewees were asked whether they reside within 1km of a refugee shelter, which fortuitously corresponds exactly with the treatment assignment cutoff used in this analysis. I use responses to this item as well as to other refugee-related questions to assess whether Germans who live within close proximity to refugee accommodation have more frequent contact with refugees than those living elsewhere, and if those contact experiences are associated with heightened or reduced perceptions of threat and competition.[17]

Figure 4.6: Contact with foreigners and refugees by individuals' proximity to a refugee shelter.

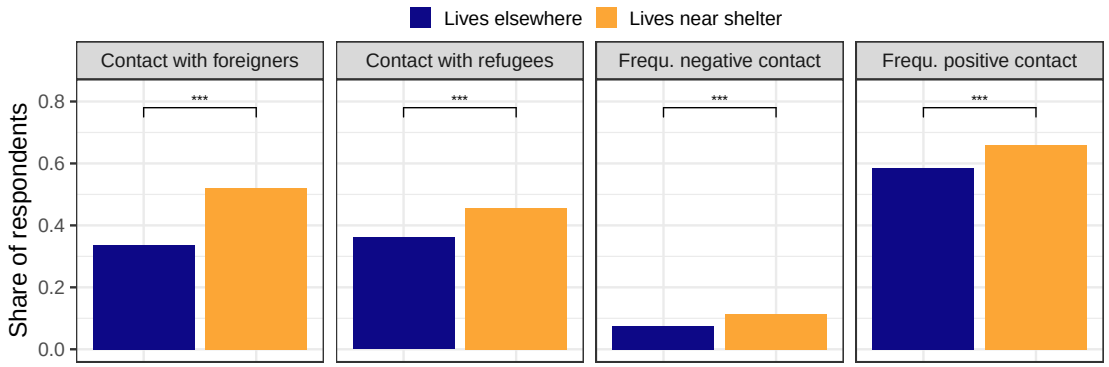


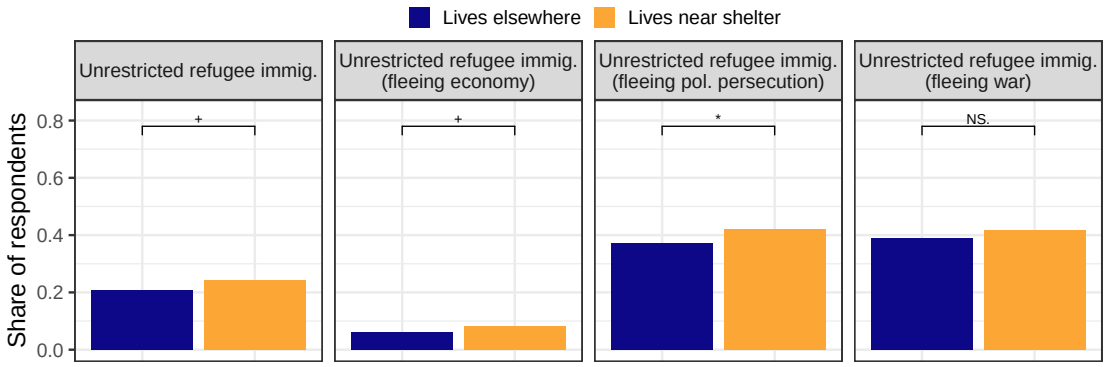
Figure 4.6 demonstrates that living next to a refugee reception centre does indeed increase casual encounters with refugees and asylum seekers: around one in two respondents who live close to a shelter have frequent contact with refugees (46%) and foreigners (52%) in their neighbourhood, compared to only around one third of respondents living elsewhere. These contact experiences are overwhelmingly positive. Two in three respondents living close to a shelter report to have frequent positive contact experiences, while only one in ten rate this contact negatively,

[17]Note that while I include bivariate bar plots in the figures below, I also ran a series of regression tables for each of the variables, where I additionally control for respondents' age, sex, political ideology, place of residence, and German citizenship, to account for differences between respondents who do/do not report to live close to a refugee shelter. Section C.6 in the Appendix lists these regression results.

compared to 59% and 8% of respondents living elsewhere. Concerns over the detrimental impact of refugees on local quality of life, which are often voiced by demonstrators during protests of planned sites, do not seem to match the experiences of actually living next to such a site.

Proximity to a refugee shelter also does not seem to heighten perceptions of threat and competition. Respondents living near a refugee accommodation are just as likely as other Germans to rate refugees as a risk to the economy, safety, social cohesion, and to welfare, and report similar levels of anger, fear, frustration, and pity as respondents elsewhere (see Figures C.2 and C.3 in the Appendix). In fact, when asked whether respondents would prefer to stop, restrict, or allow the immigration of asylum seekers, those living close to refugee shelters are generally more likely to be in favour of allowing the immigration of refugees (see Figure 4.7).

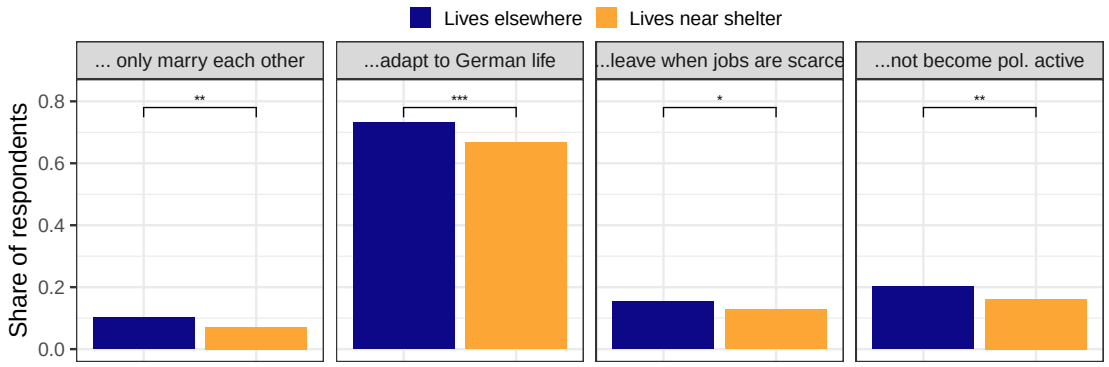
Figure 4.7: Share of respondents in favour of continuing to allow unrestricted immigration of asylum seekers, by individuals' proximity to a refugee shelter.



Germans who live close to refugee shelters also also less likely to view refugees as a cultural or economic threat, as shown in Figure 4.8: when asked whether foreigners living in Germany should adapt to the German way of life, should be forced to leave once jobs become scarce, should be prevented from being politically active, or should be required to only marry their fellow country-persons, respondents who live close to refugee shelters are always significantly less likely to support such infringements.

Finally, while the above questions gauge natives' general attitudes towards refugees and foreigners, respondents were also explicitly asked about their preferred

Figure 4.8: Attitudes towards restricting the rights of foreign residents in Germany, by individuals' proximity to a refugee shelter. "Foreigners should..."

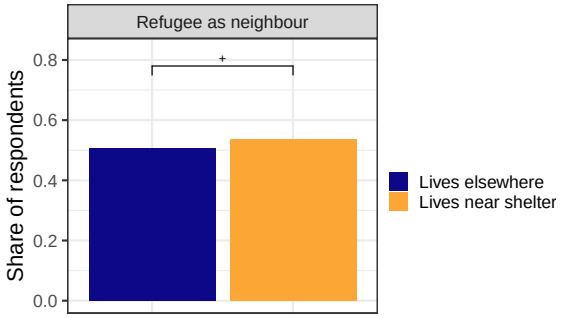


neighbourhood environment, and their willingness to live next to a refugee. This is perhaps the strongest indicator of whether living next to a refugee shelter is detrimental to residents' quality of life. If the experience of living in the vicinity of a refugee accommodation is primarily negative, one would expect those respondents to be, *ceteris paribus*, more opposed to having a refugee as their neighbour. Figure 4.9 reveals that this is not the case; instead, those who already live within close proximity to a refugee shelter are more willing to have a refugee as their neighbour compared to other respondents. This openness towards having a refugee as one's neighbour also translates into a more general preference for living in ethnically-diverse neighbourhoods. When asked to select among a set of neighbourhoods with a varying share of foreign neighbours, those living in close proximity to refugees are again more, not less likely to opt for areas with a more diverse neighbourhood composition (see Figure 4.10).[18]

Together, these survey responses provide additional context to the above null finding. At minimum, they imply that living close to a refugee shelter has no particular impact on residents' daily lives: despite regularly encountering refugees within their own community, affected residents share similar sentiment and attitudes towards refugees and asylum seekers as the rest of the country. Though suggestive,

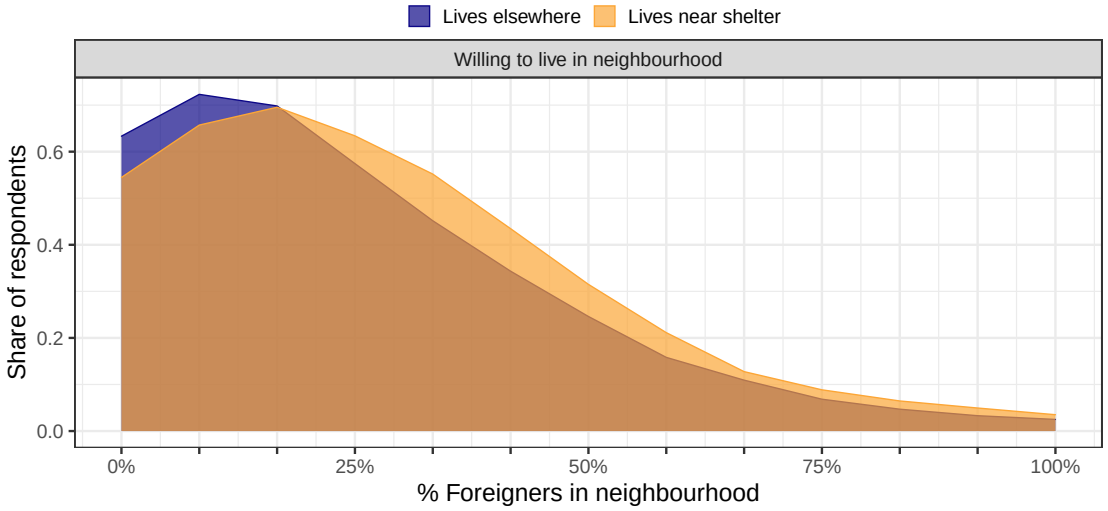
[18]In this item, respondents were shown 13 fictitious neighbourhoods with varying degrees of foreign neighbours, ranging from 0% to 100%. Respondents were asked to select all neighbourhoods that they would be happy to live in.

Figure 4.9: Share of respondents who are willing to have a refugee as their neighbour, by individuals' proximity to a refugee shelter.



some results even indicate that such proximity may actually improve intergroup relations—sensitising nearby residents to the plight and precarity of refugees' everyday reality, and thereby affecting their views on restricting the immigration of new or the rights of existing migrants. While this survey provides only cross-sectional insights, it does point to increased contact and exposure as a potential mechanism underlying this effect. Compared to other Germans, residents of hosting communities are far more likely to interact with refugees within their neighbourhood environment and are more likely to rate these contact experiences as positive.

Figure 4.10: Preference for neighbourhoods with various shares of foreign residents, by individuals' proximity to a refugee shelter.



4.8 Limitations

There are a number of important caveats to consider before discussing the implications of this study. First, while results show that refugee shelter openings do not affect property prices in hosting neighbourhoods, sceptical readers may argue that this average null effect is the result of simultaneous counteracting trends, where a shelter opening drives out some residents while at the same time also attracting others. For example, the presence of refugees may encourage more elderly or conservative community members to leave, but also attract younger or liberal households to move into the neighbourhood. However, while such simultaneous developments may not affect average listing prices, they would still result in underlying changes in the demand for and supply of local housing, and so would be detectable with the current research design.

Of more critical importance, however, is the question of representativity: while the study examines changes in property prices in Munich, the city is not representative of the real estate market in the country. Over the last decade, property prices in Munich have been soaring, with the average price per square meter nearly doubling during the period of analysis. Given the intense demand for local real estate and the lucrative financial rewards, a refugee shelter opening may not suffice to discourage prospective residents from purchasing a property. Due to the high prices and the competitive market, buyers may also treat the purchase of a property as a financial investment rather than as a place to settle, and so be less worried about the neighbourhood environment. In other areas with less competition over local real estate, the presence of a shelter could thus have a greater sway on decisions over where to move. This could explain why studies of rural areas—where the demand for real estate is much lower—have found considerably larger price penalties of up to 13% for properties located close to an accommodation site (Kürschner Rauck 2020). In future research, I plan on exploring this variation in greater detail, and hope to examine whether the effect of refugee shelters on property prices differs between rural and urban areas, and depends on the degree of competition over local real estate.

More generally, it is important to keep in mind that the majority of German households do not own the property they live in. Germany ranks second lowest in homeownership among all OECD member states, with only some 45 percent of German households owning their main residence (Kaas et al. 2020). Although I have laid out the reasons for why changes in property sales prices provide us with a better sense of how the native population reacts to the local influx of refugees, this decision also inadvertently means that the study does not capture how residents who rent their property react to the opening of a nearby shelter. Due to the high transition costs associated with homeownership, homeowners are also less mobile than renters, and are therefore not as quick to respond to local shocks (DiPasquale and Glaeser 1999). It is thus conceivable that hosting neighbourhoods do become less attractive following the opening of a refugee shelter, but that this effect is only limited to rental properties.

Decisions over where to erect future refugee shelters may also, explicitly or not, consider the expected backlash from the local community. I have shown that refugee shelters are more likely to be built in less affluent neighbourhoods with a higher share of foreign and unemployed residents, and have argued that this is due to considerations over affordability. An alternative argument would be that such communities are less likely to counter-mobilise, while neighbourhoods that would have suffered the largest price penalties were most successful at preventing the opening of a refugee shelter within their community. Though I have attempted to account for this possibility by examining all instances where refugee shelters were damaged or attacked, such attacks are only one of a myriad of ways in which residents can attempt to prevent the opening of a refugee accommodation site—with opposition at town hall meetings, for example, being perhaps more effective, albeit harder to quantify. In contrasting neighbourhoods with existing shelters to areas where shelters were planned but never opened, future studies could shine light on the various ways in which shelters are opposed by local residents, and identify the contexts in which such opposition was effective.

Finally, since the survey data I lean on in the second part of the study is cross-sectional, future efforts have to be made to assess whether increased contact is, in fact, responsible for the more favourable immigration attitudes among respondents living near a refugee accommodation. For one, attitudinal differences between those living closer to and further away from refugee shelters may be a result of selective migration, where residents most opposed to immigration move out of neighbourhoods where refugees settle. This is unlikely to have occurred in Munich, given no change in the demand, supply, and price dynamics of properties in hosting neighbourhoods, but may have taken place in other regions; especially in areas with high prior levels of resentment and anti-refugee hostility.

4.9 Conclusion

In resisting the opening of a local refugee accommodation facility, residents put forward numerous reasons for why the presence of refugees would harm the local community: from intensifying competition over local resources, to heightening local crime, to changing the "feel" of the neighbourhood. Ultimately, such concerns culminate in worries over depreciating property values, where residents threaten to move elsewhere or fear that others will avoid the neighbourhood following the opening of a local refugee shelter. Such fears are widely held and are successful in mobilising neighbourhood opposition, even among those who support the accommodation of asylum seekers in principle. At the same time, empirical evidence to assess the validity of these claims remains scarce. In this analysis I have set out to examine whether the opening of refugee shelters has a negative impact on the home value of nearby properties in Munich—a city disproportionately exposed to the arrival of refugees during the height of the European refugee crisis. Using a difference-in-differences design that exploits the eventual opening of several refugee shelters throughout the city, this study shows that the presence of refugees within the neighbourhood has no significant impact on the value of local real estate, and does not change the demand for or supply of properties in the area. Although many Germans, when asked, prefer not to have a refugee as their neighbour,

these preferences seem not to be strong enough to influence actual decisions over where within the city to settle.

I use survey data to understand how the experience of living next to a refugee shelter actually shapes residents' daily lives, and show that such proximity does not seem to leave a lasting negative impression. Residents to live close to a shelter seem to share similar emotions towards and risk assessments of refugees and asylum seekers as other Germans living elsewhere. Though suggestive, proximity to refugee accommodation may even improve intergroup dynamics between native residents and refugees: residents who live close to a shelter have more frequent (positive) encounters with refugees, and are open to living in more ethnically-heterogeneous neighbourhoods, even if that means having a refugee live closeby.

Notwithstanding the study's limitations, these findings demonstrate that refugee shelters, while vehemently opposed by some members of the local community ahead of the opening, do not seem to have as damaging an effect on the local community as prophesied. At minimum, they do not impact local home values, and do not encourage the emigration of existing, or discourage the immigration of prospective residents into the local community. Once built, they also do not leave a lasting negative impression on nearby residents. If anything, the findings presented here provide some cautious glimmer of hope: that such proximity may actually improve intergroup dynamics between native and refugee residents.

CHAPTER 5

Concluding remarks

In 2015, more than one million refugees crossed over into Europe, in the hopes of escaping domestic conflict and unrest. Many of these arrivals made their way to Germany, in the hopes of being welcome in the country upon their arrival. As a result, more than 1.3 million applications for asylum were submitted in Germany between 2014 and 2016, constituting the largest immigration to the country since the beginning of the Federal Republic.

The impact of this surge in immigration has been multi-faceted. This thesis has examined the various ways in which the arrival of refugees upended German society, and has transformed the relationship between the existing native and the incoming refugee populations. To encompass as wide a range of dynamics as possible, each chapter has focused on a different set of interactions between both groups: from everyday behaviour, such as deciding where to live within a city, to more nuanced changes in attitudes, up to the most extreme and violent encounters. Next to analysing these dynamics, it has also studied the role that threatening events play in amplifying ethnic stereotypes and thus reshaping each of the above interactions.

Chapter 2 has focused on the most extreme form of opposition to the new arrivals—violent attacks against refugees and their shelters—and has illuminated where and when such violence takes place. It is well-established that anti-refugee attacks are more likely to take place in areas with a strong far-right party presence, high levels of unemployment, and a low share of foreign residents. However, the location of these attacks is not only driven by the structural characteristics of a given

locality, but also by the temporal context in which these encounters are situated. The escalation of intergroup conflict at particular moments is, according to the findings in Chapter 2, in large part due to the occurrence of "big" or "threatening" events that pit the native population against the immigrant community. One such event, the 2016 New Year's Eve sexual assaults, not only drastically and lastingly increased the amount of violence against refugees, but also mobilised previously peaceful communities to lash out against the local refugee population for the first time. The chapter therefore ends with the recommendation to incorporate threatening events into the study of intergroup conflict, given that such events hold the capacity to not only change the occurrence, but also reshape the very ecologies of conflict.

Whereas Chapter 2 studies the most extreme form of resistance to refugee immigration, Chapter 3 focuses instead on how the general population feels about this sudden influx, and once again examines how threatening events can affect these sentiments. Despite Germans' perceived openness towards refugee immigration, concerns and fears over the new arrivals were also widespread: during the height of the crisis in 2016, many interpreted the increased presence of refugees within Germany as a risk to security and personal safety. Chapter 3 shows that the sudden occurrence of a series of terrorist attacks in Germany and France in July 2016 drastically amplified these fears. As a result of the attacks, anti-refugee sentiment increased considerably among the native population: refugees were seen as a threat to safety and security, and the immigration of new asylum seekers was more heavily opposed in the weeks following the terrorist attacks. Notably, the study also finds that this increase in natives' hostility towards refugees corresponds with a reduction in refugees' own reported quality of life. A representative survey of the refugee population fielded at the time of the attacks reveals that refugees experienced considerably more discrimination and felt less welcome in Germany in the aftermath of the events. Ultimately, the terrorist attacks and the discrimination that followed left a sizable, though temporary, impact on mental wellbeing: following the attacks, refugees suffered clinically-relevant declines in mental health and experienced heightened levels of emotional distress. These results underscore the

need to more fully account for barriers that impede the integration of refugees in a host country. Threatening events can counteract integration efforts by inciting anti-refugee hostility among the native population and thus exposing refugees to a harsher climate and to more discrimination upon their arrival. More generally, the results from Chapter 3 complement those of the previous chapter by showing that the impact of threatening events extends beyond the fringes of the extreme right and deteriorates attitudes towards refugees among the native population as a whole.

Finally, Chapter 4 focuses on the arrival of refugees at the very local level, and examines how this arrival shapes subsequent dynamics within the hosting neighbourhood. Although the refugee crisis loomed large for all Germans, for some the experience became a national as well as local one, as refugee shelters opened in the immediate vicinity. Chapter 4 examines the extent to which ethnic prejudice seeps into other realms of social life, so that the mere presence of refugees within a neighbourhood impacts that neighbourhood's perceived desirability. Results provide reason for cautious optimism: although residents oppose the opening of a nearby refugee shelter in principle, such opposition does not seem to be felt strongly enough to influence natives' actual "on-the-ground" decisions over where to live. Concretely, Chapter 4 finds that properties do not become less valuable following the opening of a nearby refugee shelter. In fact, rather than spurring residential segregation—where native residents move elsewhere or avoid moving into areas with a growing immigrant population—the presence of refugees within a community may even have positive implications. Refugee shelters facilitate regular encounters between native and foreign residents within the neighbourhood, which could reduce preconceived fears over refugees' negative impact on the local community and thus improve intergroup dynamics.

More generally, this thesis is about what happens when two social groups meet, and about the conditions under which such meetings escalate into conflict. It underscores the importance of studying both the place and the timing of conflict, including the interaction of the two. It also reveals how the antagonism that precedes group conflict coalesces around certain, "threatening" events—events that

amplify negative group perceptions and thus hold the power to pit one group against the other. Though much of the thesis deals with the intensification of antagonism, it also points to its limitations. Conflict between two groups does not seem to seep into all areas of social life.

Some readers may wonder why conflict intensifies in some of the studies but not in others. As Chapters 2 and 3 demonstrate, anti-refugee sentiment can be so severe as to lead to outright attacks against refugees, as well as to the destruction of their living quarters. Yet, despite this aggression, natives' actual decisions over where to live do not seem to be impacted by the local presence of refugees. This discrepancy, I believe, lies in the nature of these two actions. Violent attacks are conducted by a small subset of the population, which is strongly opposed to the presence of refugees within their vicinity. For the general population, however, decisions over where to buy a property are multi-faceted, and are influenced by factors other than the proximity to a refugee accommodation. Though anti-refugee sentiment was widespread during the European refugee crisis, this sentiment may not have been held strongly enough to change settlement behaviour. As the other two studies have demonstrated, however, the intensity of such attitudes depends in part on the temporal context in which they occur. Threatening events that bring ethnic stereotypes to the fore, amplify group distinctions, and intensify hostility may well change the salience of refugee accommodations in decisions over where to settle in the future. It is only through a study of both the place and the timing of group interactions that one can best account for such processes.

In his renowned 2006 Johan Skytte Prize Lecture, Robert Putnam (2007: 1) opened his speech with the following words:

> One of the most important challenges facing modern societies, and at the same time one of our most significant opportunities, is the increase in ethnic and social heterogeneity in virtually all advanced countries. The most certain prediction that we can make about almost any modern society is that it will be more diverse a generation from now than it is today.

It did not take a whole generation, or even a whole decade, for Putnam (2007)'s prediction to bear fruit. Already today, some 80 million people worldwide—more than 1% of the world's population—have fled their homes due to war or persecution. In light of accelerating climate change, growing global instability, and persisting economic inequality, forced displacement and the transnational migration that follows will almost certainly increase immigration to Europe and beyond in the coming decades. In light of these predictions, it is all the more important to understand the impact such immigration has on both the native and the immigrant population, to identify areas of contention, refine current integration processes, and ultimately strive to improve immigrant-native interactions in the future.

Appendices

APPENDIX A

Appendix for Chapter 2

A.1 Summary statistics

Table A.1: Summary statistics

	Obs	Mean	St.Dev	Min	Max
Dependent variable					
Anti-refugee attacks	437,304	0.01	0.10	0	1
Independent variables					
Refugee share	437,304	1.05	0.63	0.08	13.19
Monthly arrivals	437,304	10.33	0.83	9.19	12.24
Unemployment rate	437,304	2.64	1.27	0.59	7.51
Non-EU Foreign pop.	437,304	5.01	2.91	0.71	18.40
Homicide Rate	437,304	2.79	4.08	0	68.13
log(GDP per person)	437,304	3.48	0.33	2.73	4.87
log(Population)	437,304	5.07	0.66	3.53	8.17
Voting Turnout	437,304	47.21	7.13	26.35	66.86
AfD share	437,304	7.21	1.79	2.76	14.48
NPD Share	437,304	1.10	1.04	0.21	5.70
Past attacks in district	426,132	0.23	0.71	0	17
Past attacks elsewhere	426,132	93.37	89.73	2	383
Time	437,304	−182.50	316.39	−730	365
East	437,304	0.21	0.40	0	1
City	437,304	0.26	0.44	0	1
New Year's Eve Dummy	437,304	0.33	0.47	0	1
Hostile districts	437,304	0.10	0.30	0	1

A.2 Newspaper articles mentioning 'crime' and 'refugee' in their main text

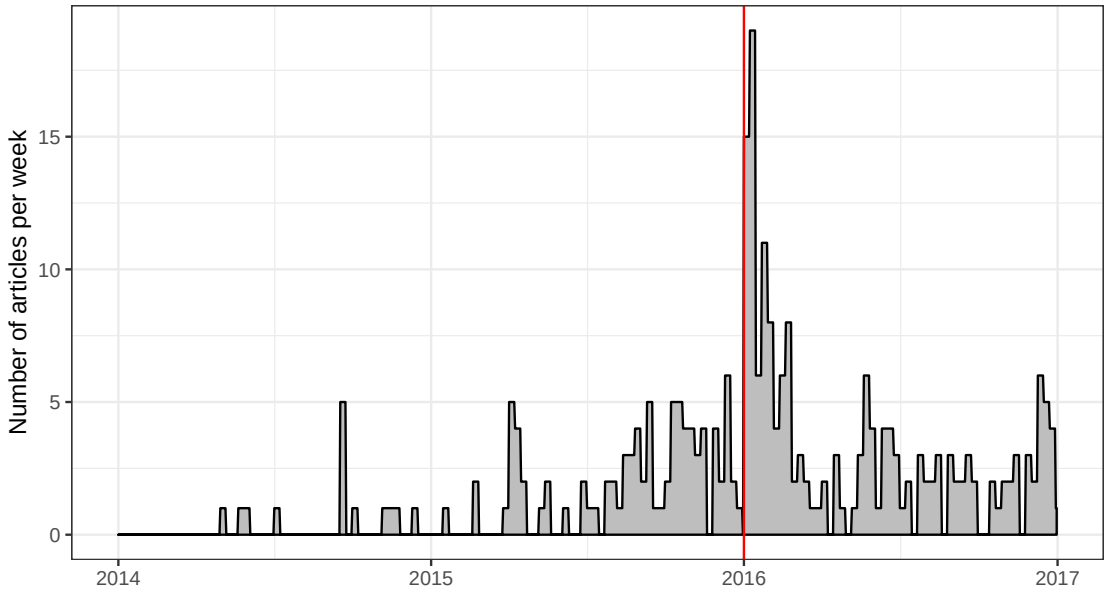


Figure A.1: Weekly number of newspaper articles in *Spiegel Online* containing the German word for "crime" and "refugee" in their main text.

A.3 Support for the AfD and the NPD in the 2013, 2014, and 2017 elections

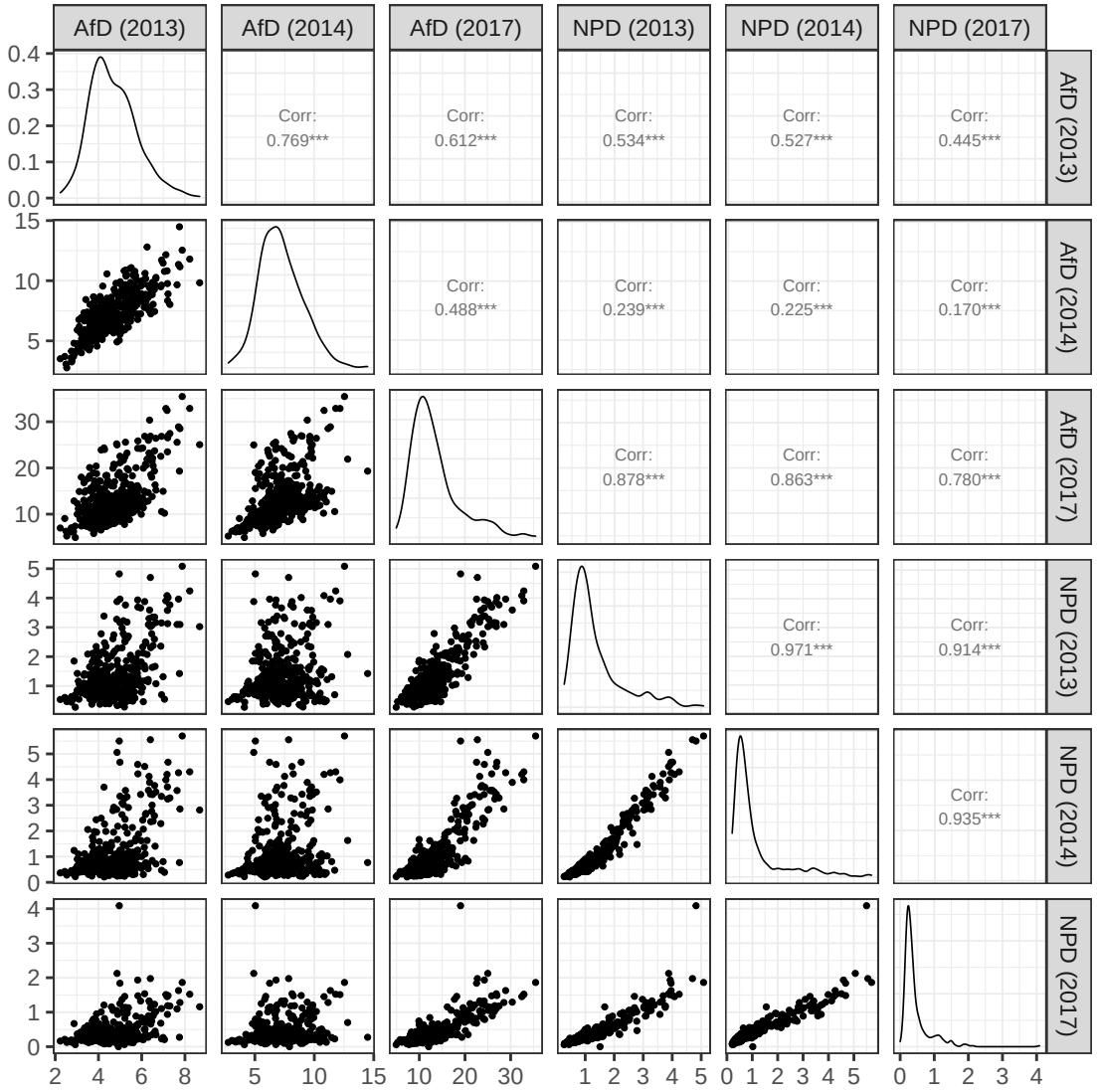


Figure A.2: Correlation between district support for the AfD and the NPD in the 2013, 2014, and 22017 elections.

A.4 Full Tables

	Model 1		Model 2	
	OR	Rob. SE	OR	Rob. SE
Refugee share	1.06	0.12	1.11	0.11
Monthly arrivals	1.48***	0.06	1.43***	0.06
East	1.60**	0.26	1.59**	0.26
Unemployment rate	1.23*	0.12	1.22*	0.12
Non-EU Foreign pop.	0.49***	0.06	0.47***	0.06
Voting turnout	0.80**	0.06	0.80**	0.06
AfD Strength	1.11	0.08	1.12	0.09
NPD Strength	1.20	0.13	1.21+	0.13
Attacks in district (4 weeks)	1.09**	0.03	1.09**	0.03
Attacks elsewhere (4 weeks)	2.74***	0.11	2.79***	0.11
log(Population)	3.91***	0.31	3.93***	0.31
City	1.28*	0.13	1.30*	0.13
GDP per capita	1.26*	0.09	1.26*	0.09
Male-Female Ratio	1.01	0.07	1.01	0.07
Homicide rate	0.97	0.05	0.97	0.05
Tuesday	0.95	0.05	0.95	0.05
Wednesday	0.89*	0.05	0.88	0.05
Thursday	0.94	0.05	0.93	0.05
Friday	1.01	0.05	1.01	0.05
Saturday	1.19**	0.05	1.20***	0.05
Sunday	1.09	0.05	1.09	0.05
Time	2.83***	0.09	2.75***	0.09
NYE 2015 (W1)	3.05***	0.40	3.29***	0.44
NYE 2015 (W2)			5.35***	0.52
NYE 2015 (W3)			2.30***	0.26
NYE 2015 (W4)			1.24*	0.13
Paris Jan 2015 (W1)	1.66+	0.44	1.76*	0.47
Paris Jan 2015 (W2)			2.39***	0.59
Paris Jan 2015 (W3)			1.01	0.29
Brussels 2014 (W1)	0.56	0.33	0.59	0.35
Copenhagen 2015 (W1)	0.74	0.35	0.78	0.37
Paris Apr 2015 (W1)	0.84	0.30	0.90	0.32
St Quentin 2015 (W1)	0.86	0.23	0.93	0.25
Paris Nov 2015 (W1)	0.81	0.13	0.89	0.14
Brussels/Glasgow 2016 (W1)	1.14	0.12	1.18	0.12
Magnanville 2016 (W1)	1.03	0.15	1.07	0.16
Nice 2016 (W1)	1.17	0.18	1.22	0.19
St Étienne 2016 (W1)	1.25	0.18	1.30+	0.19
Berlin 2016 (W1)	0.91	0.15	0.95	0.15
sd(district)	0.42***	0.03	0.42***	0.03
Observations	426132		426132	
AIC	44772		44487	

Table A.2: Table 1, full model

	Model 3		Model 4		Model 5	
	OR	Rob.SE	OR	Rob.SE	OR	Rob.SE
Days before	1.00***	0.00	1.00***	0.00	1.00***	0.00
NYE	4.59***	0.52	5.85***	0.64	4.85***	0.50
Days after	1.00***	0.00	0.99***	0.00	0.99***	0.00
Hostile			2.85***	0.31		
Hostile x Days before			1.00	0.00		
Hostile x NYE			0.43***	0.06		
Hostile x Days after			1.00	0.00		
NPD	1.21+	0.13	1.16	0.12	1.82***	0.26
NPD x Days before					1.00	0.00
NPD x NYE					0.51***	0.05
NPD x Days after					1.00	0.00
Dist. from Col.			1.02	0.11	0.93	0.11
Dist. from Col. x Days before			1.00**	0.00	1.00***	0.00
Dist. from Col. x NYE			1.25+	0.15	1.56***	0.20
Dist. from Col. x Days after			1.00***	0.00	1.00***	0.00
Refugee share	1.16	0.11	1.25***	0.08	1.27***	0.08
East	1.58**	0.26	1.25	0.17	1.29+	0.20
Unemployment rate	1.21+	0.12	1.23*	0.10	1.26*	0.12
Non-EU Foreign pop.	0.46***	0.06	0.62***	0.07	0.56***	0.07
Voting turnout	0.80**	0.06	0.97	0.07	0.96	0.08
AfD Strength	1.12	0.09	0.97	0.07	1.01	0.08
log(Population)	3.94***	0.32	2.91***	0.21	3.80***	0.28
City	1.29*	0.16	1.14	0.11	1.23+	0.14
GDP per capita	1.25*	0.11	1.14+	0.09	1.15	0.10
Male-Female Ratio	1.02	0.07	1.01	0.06	1.01	0.06
Homicide rate	0.97	0.05	0.91	0.05	0.94	0.05
Monthly arrivals	1.76***	0.13	1.73***	0.13	1.73***	0.13
Tuesday	0.95	0.05	0.95	0.05	0.95	0.05
Wednesday	0.89*	0.05	0.89*	0.05	0.89*	0.05
Thursday	0.95	0.05	0.95	0.05	0.95	0.05
Friday	1.00	0.05	1.00	0.05	1.00	0.05
Saturday	1.18**	0.06	1.18**	0.06	1.18**	0.06
Sunday	1.09	0.06	1.09	0.06	1.09	0.06
Attacks in district (4 weeks)	1.08*	0.03	1.12***	0.03	1.07*	0.03
Attacks elsewhere (4 weeks)	1.16**	0.06	1.14*	0.06	1.16**	0.06
sd(district)	0.42***	0.03	0.33***	0.03	0.39***	0.03
Observations	426132		426132		426132	
AIC	44411		44159		44269	

Table A.3: Table 2, full model

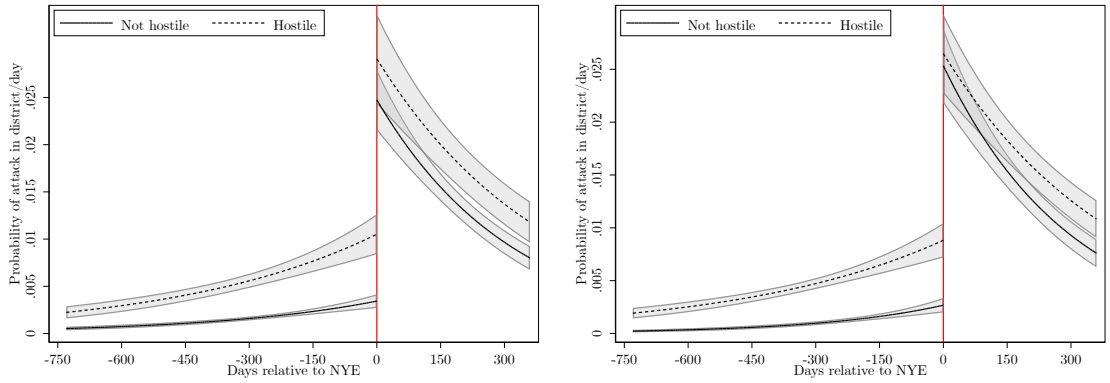
A.5 Regression discontinuity models

Table A.4 below lists the estimated coefficient of each threatening event on the number of anti-refugee attacks in Germany (together with the standard errors in parentheses). To estimate these coefficients, I ran a series of regression discontinuity designs at the country level and varied the temporal bandwidth to contain observations within a 3, 4, and 5 week period before and after each event. Following Hausman and Rapson (2018) I control for temporal confounders, namely systematic daily variation and monthly refugee inflow, using the global sample (i.e. the entire 3-year period), and use the residuals from this regression to estimate the local effects.

		+/− 21 days	+/− 28 days	+/− 35 days
Location	Date	($N = 43$)	($N = 57$)	($N = 71$)
Brussels	May 24, 2014	0.01	0.12	0.66
		(0.46)	(0.40)	(0.41)
Paris	Jan 07, 2015	2.70**	2.38**	1.53*
		(0.86)	(0.72)	(0.64)
Copenhagen	Feb 14, 2015	−0.91	−0.19	0.08
		(0.75)	(0.63)	(0.58)
Paris	Apr 19, 2015	−1.35	−0.94	0.11
		(0.81)	(0.81)	(0.74)
St.Quentin	Jun 26, 2015	0.85	0.49	0.32
		(0.90)	(0.85)	(0.79)
Berlin	Sep 17, 2015	1.39	1.10	0.07
		(1.59)	(1.45)	(1.35)
Paris	Nov 13, 2015	2.33	0.32	0.24
		(1.79)	(1.56)	(1.42)
Cologne	Dec 31, 2015	11.53***	14.01***	14.10***
		(3.04)	(2.49)	(2.17)
Brussels/Glasgow	Mar 22, 2016	7.32**	6.39*	4.60*
		(2.64)	(2.45)	(2.14)
Essen	Apr 16, 2016	4.42	3.82	0.97
		(2.23)	(1.98)	(1.86)
Magnanville	Jun 13, 2016	0.11	−0.90	−1.35
		(1.73)	(1.50)	(1.47)
Nice	Jul 14, 2016	−0.74	1.38	2.15
		(2.29)	(1.90)	(1.67)
Würzburg/Ansbach	Jul 18, 2016	3.72	3.21	3.63*
		(2.21)	(1.72)	(1.58)
St.Etienne	Jul 26, 2016	−3.71	−3.79*	−3.63*
		(2.24)	(1.84)	(1.56)
Berlin[a]	Dec 19, 2016	2.79	2.79	3.25
		(2.43)	(2.22)	(2.19)

Table A.4: OLS estimates of the immediate impact of each threatening event on the number of anti-refugee attacks across Germany at different bandwidths. *Note:* [a]: Since the dataset spans until December 31st, 2016, there are only 10 observations following the terrorist attack in Berlin on Dec. 19th.

A.6 Alternative “hostility" cut-off points



(a) 80th percentile

(b) 51st percentile

Figure A.3: Predicted effect of NYE on anti-refugee violence on hostile and peaceful districts, at different hostility cut-off levels

A.7 Alternative model specifications

A.7.1 District fixed effects

	Model 1		Model 2	
	OR	Rob. SE	OR	Rob. SE
Refugee share	0.83	(0.12)	0.92	(0.12)
Monthly arrivals	1.47***	(0.03)	1.43***	(0.03)
Attacks in district (4 weeks)	1.05**	(0.02)	1.05**	(0.02)
Attacks elsewhere (4 weeks)	2.79***	(0.03)	2.89***	(0.04)
Summer Period	1.03	(0.04)	1.11*	(0.04)
Tuesday	0.95	(0.06)	0.95	(0.06)
Wednesday	0.88	(0.06)	0.88	(0.06)
Thursday	0.94	(0.06)	0.93	(0.06)
Friday	1.01	(0.06)	1.01	(0.06)
Saturday	1.19**	(0.06)	1.19**	(0.05)
Sunday	1.09	(0.06)	1.09	(0.06)
Time	3.33***	(0.09)	3.10***	(0.09)
NYE 2015 (W1)	3.04***	(0.12)	3.35***	(0.12)
NYE 2015 (W2)			5.45***	(0.09)
NYE 2015 (W3)			2.33***	(0.10)
NYE 2015 (W4)			1.25*	(0.11)
Paris Jan 2015 (W1)	1.65*	(0.26)	1.81*	(0.26)
Paris Jan 2015 (W2)			2.46***	(0.23)
Paris Jan 2015 (W3)			1.04	(0.32)
Brussels 2014 (W1)	0.57	(0.58)	0.61	(0.58)
Copenhagen 2015 (W1)	0.74	(0.36)	0.80	(0.36)
Paris Apr 2015 (W1)	0.84	(0.32)	0.92	(0.32)
St Quentin 2015 (W1)	0.83	(0.28)	0.86	(0.28)
Paris Nov 2015 (W1)	0.81	(0.16)	0.90	(0.16)
Brussels/Glasgow 2016 (W1)	1.14	(0.12)	1.19**	(0.10)
Magnanville 2016 (W1)	1.01	(0.14)	1.00	(0.14)
Nice 2016 (W1)	1.14	(0.15)	1.13	(0.15)
St Étienne 2016 (W1)	1.22	(0.14)	1.20	(0.14)
Berlin 2016 (W1)	0.92	(0.16)	0.99	(0.16)
District FE	✓		✓	
Observations	419724		419724	
AIC	42413		42125	

Table A.5: Table 1, district fixed effects

	Model 3		Model 4		Model 5	
	OR	Rob.SE	OR	Rob.SE	OR	Rob.SE
Days before	1.00***	(0.00)	1.00***	(0.00)	1.00***	(0.00)
NYE	4.60***	(0.09)	5.78***	(0.10)	4.84***	(0.10)
Days after	1.00***	(0.00)	1.00***	(0.00)	1.00***	(0.00)
Hostile x Days before			1.00	(0.00)		
Hostile x NYE			0.44***	(0.11)		
Hostile x Days after			1.00***	(0.00)		
NPD Strength x Days before					1.00*	(0.00)
NPD Strength x NYE					0.51***	(0.09)
NPD Strength x Days after					1.00	(0.00)
District FE	✓		✓		✓	
Controls	✓		✓		✓	
Observations	419724		419724		419724	
AIC	42057		41888		41949	

Table A.6: Table 2, district fixed effects

A.7.2 District-week as unit-of-analysis

	Model 1		Model 2	
	OR	Rob. SE	OR	Rob. SE
Refugee share	1.07	0.10	1.20*	0.10
Monthly arrivals	1.48***	0.05	1.42***	0.05
East	1.96***	0.34	1.72**	0.30
Unemployment rate	1.12	0.11	1.23*	0.12
Non-EU Foreign pop.	0.68**	0.09	0.55***	0.07
Voting turnout	0.77***	0.06	0.80**	0.06
AfD Strength	1.04	0.08	1.12	0.09
NPD Strength	1.23+	0.14	1.20	0.14
Attacks in district (4 weeks)	1.29***	0.04	1.30***	0.04
Attacks elsewhere (4 weeks)	3.43***	0.16	3.52***	0.17
log(Population)	3.62***	0.30	3.79***	0.31
NYE 2015 (W1)	4.32***	0.67	4.84***	0.76
NYE 2015 (W2)			7.12***	0.92
NYE 2015 (W3)			2.50***	0.34
NYE 2015 (W4)			1.79***	0.24
Paris Jan 2015 (W1)	1.82*	0.53	1.96*	0.57
Paris Jan 2015 (W2)			2.28**	0.61
Paris Jan 2015 (W3)			1.32	0.41
Brussels 2014 (W1)	0.62	0.38	0.64	0.40
Copenhagen 2015 (W1)	1.01	0.34	1.08	0.37
Paris Apr 2015 (W1)	0.76	0.28	0.81	0.30
St Quentin 2015 (W1)	1.06	0.33	1.15	0.37
Paris Nov 2015 (W1)	0.61*	0.13	0.66+	0.14
Brussels/Glasgow 2016 (W1)	0.86	0.12	0.90	0.13
Magnanville 2016 (W1)	0.93	0.17	0.98	0.18
Nice 2016 (W1)	1.18	0.21	1.24	0.22
St Étienne 2016 (W1)	0.93	0.15	0.97	0.16
Berlin 2016 (W1)	0.64*	0.14	0.66+	0.14
sd(district)	0.40***	0.03	0.40***	0.03
Controls	✓		✓	
Observations	61845		61845	
AIC	23833		23593	

Table A.7: Table 1, multilevel logit using district-week as the unit of analysis

	Model 3		Model 4		Model 5	
	OR	Rob.SE	OR	Rob.SE	OR	Rob.SE
Days before	1.01***	0.00	1.01***	0.00	1.01***	0.00
NYE	6.37***	0.77	7.21***	0.86	6.34***	0.75
Days after	0.97***	0.00	0.96***	0.00	0.96***	0.00
Hostile			2.79***	0.33		
Hostile x Days before			1.00	0.00		
Hostile x NYE			0.43***	0.07		
Hostile x Days after			1.01	0.00		
NPD Strength	1.19	0.14	1.15	0.12	1.70***	0.24
NPD Strength x Days before					1.00	0.00
NPD Strength x NYE					0.56***	0.07
NPD Strength x Days after					1.01+	0.00
sd(district)	0.40***	0.03	0.30***	0.03	0.36***	0.03
Controls	✓		✓		✓	
Observations	61845		61845		61845	
AIC	23539		23359		23435	

Table A.8: Table 2, Multilevel logit using district-week as the unit of analysis

APPENDIX B

Appendix for Chapter 3

B.1 Number of asylum applications in Germany

As Figure B.1 details, the number of asylum application in Germany drastically increased following the influx of asylum seekers into the country in 2015 and 2016, before tempering off in later years alongside the decline in refugee arrivals following the EU-Turkey agreement on March 18th, 2016.

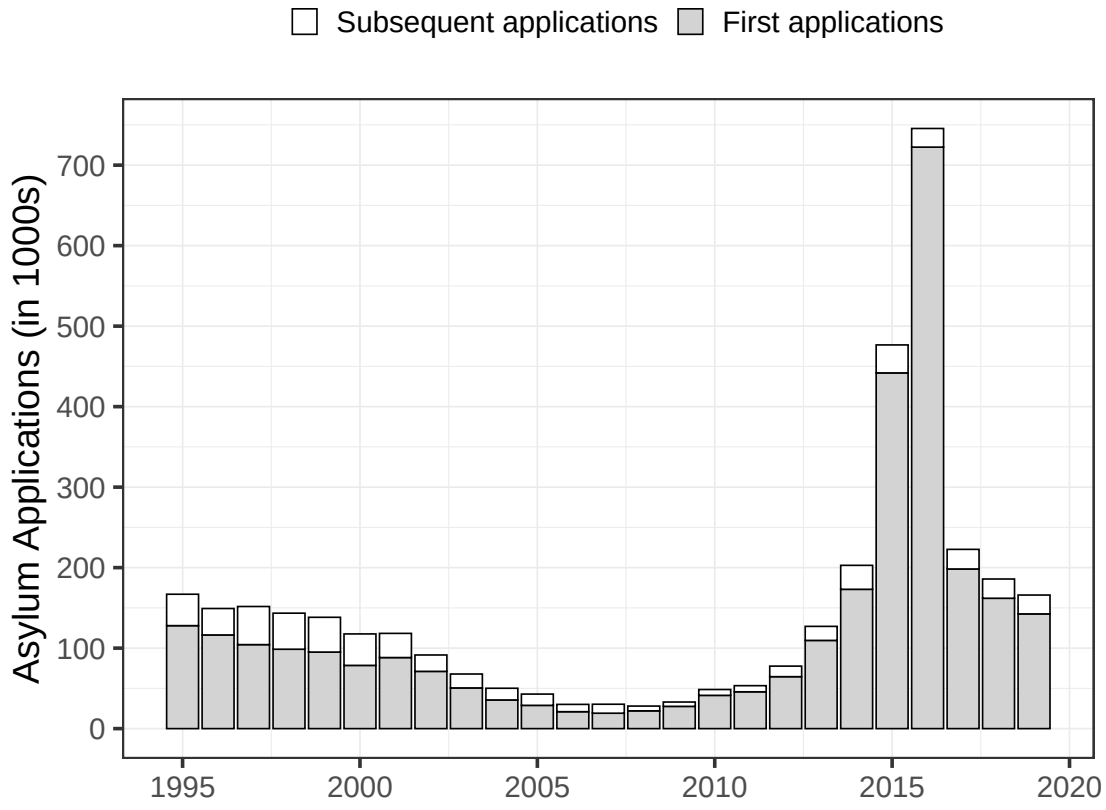


Figure B.1: Number of asylum applications in Germany, 1995–2019

B.2 Correlation matrices

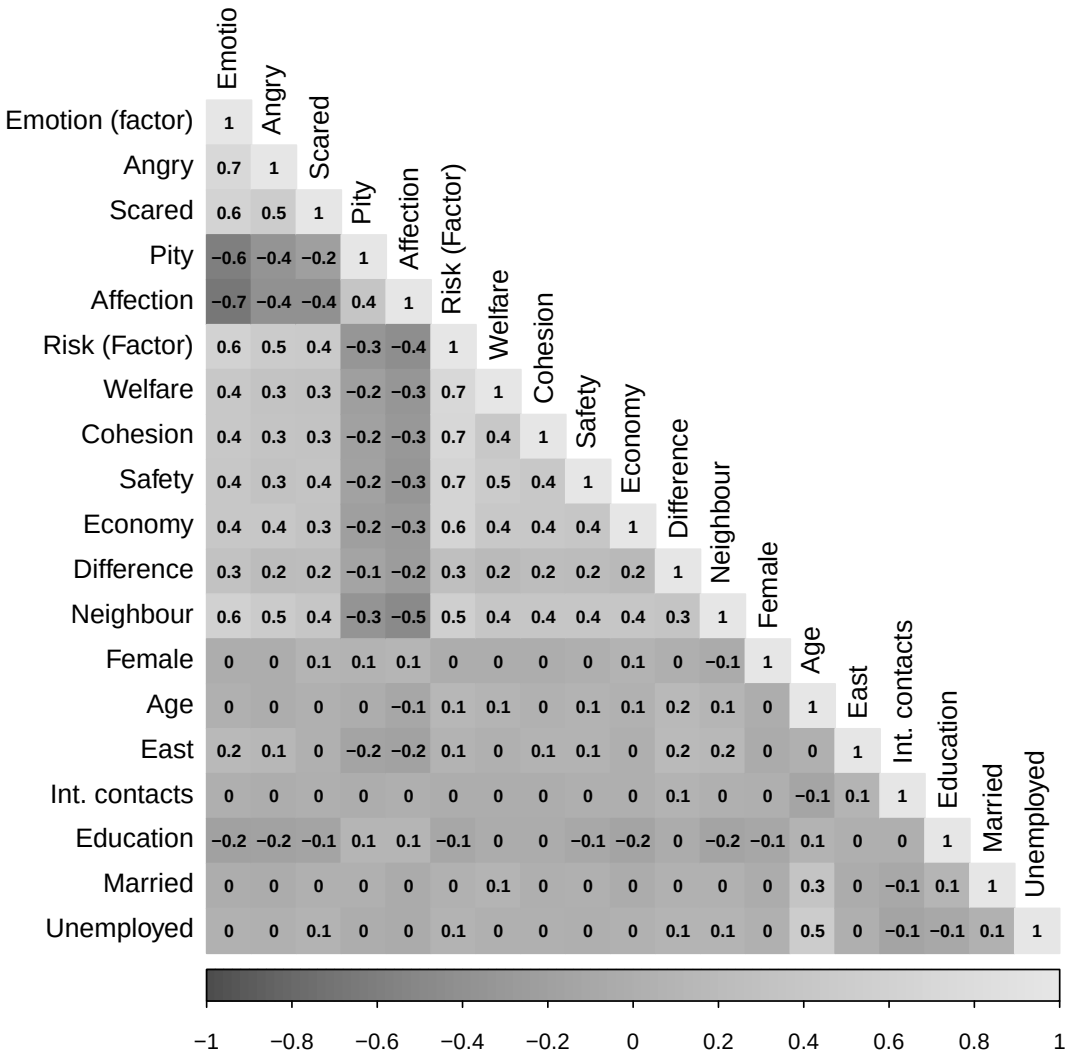


Figure B.2: Correlation matrix, German sample

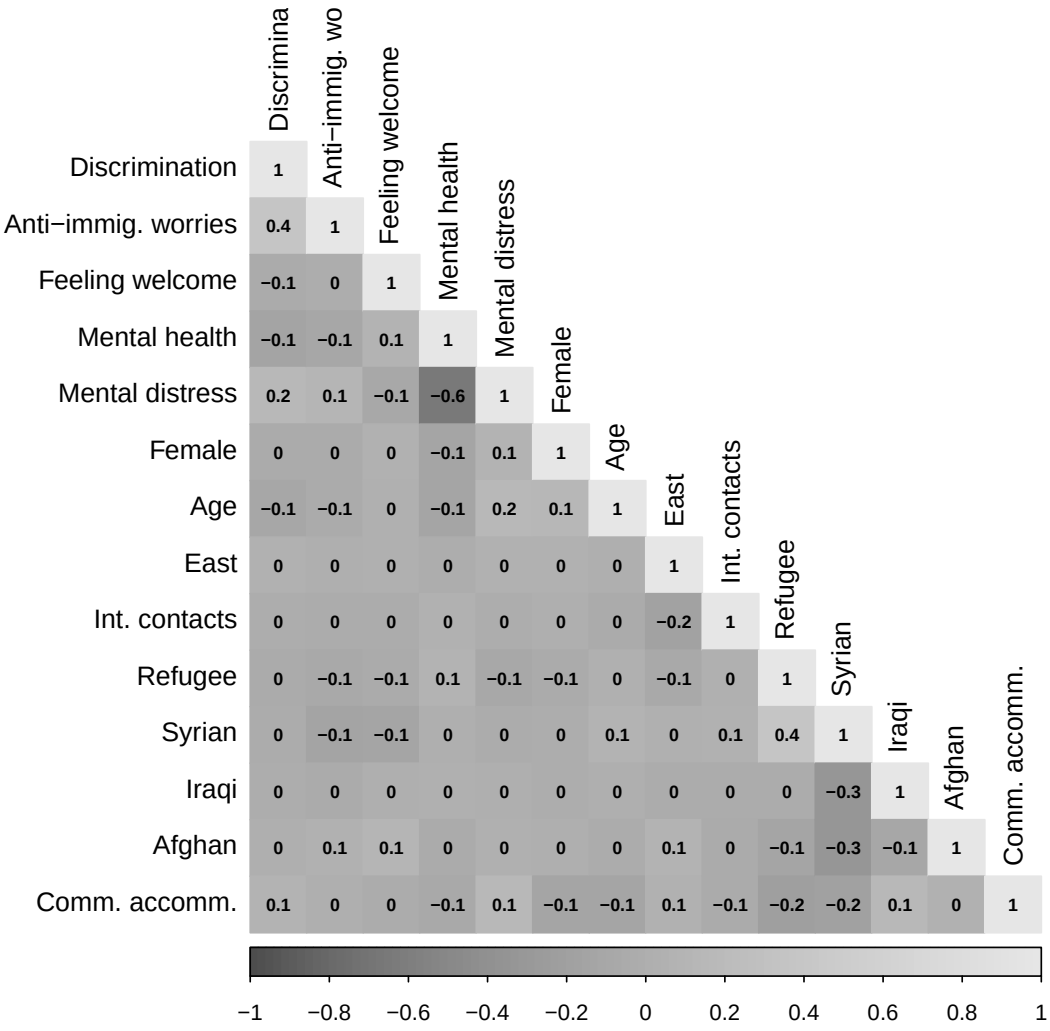
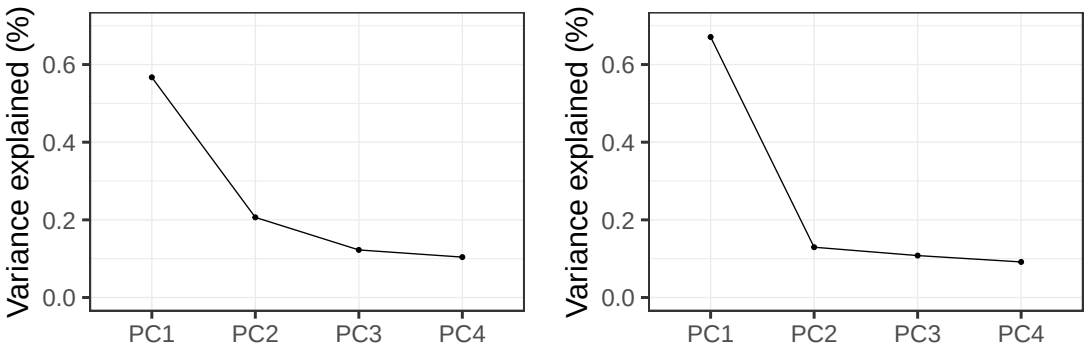


Figure B.3: Correlation matrix, Refugee sample

B.3 Scree plots



(a) Negative emotions **(b)** Risk perceptions

Figure B.4: Scree plots showing the amount of variance explained by each principal component.

B.4 The 2016 Munich shooting

On 22 July 2016, an Iranian-German adolescent opened fire near a mall in Munich, killing nine people and wounding thirty-six others. However, unlike with the other cases considered in this analysis, it was more difficult to identify the motivations of the perpetrator in the aftermath of the attack. Journalistic enquiries in the following days revealed that the 18-year-old perpetrator had been a victim of bullying at school and attempted to lure fellow classmates to the site of the shooting (Schmidt, Connolly and Graham-Harrison 2016). Accordingly, officials suspected "revenge" to be the main motive behind the massacre, and registered the attack as a "revenge crime". However, later reporting also revealed that the perpetrator exhibited xenophobic tendencies and sympathised with right-extremist ideals.[1] Finally, following long deliberation, the Bavarian Police declared in October 2019 that the Munich shooting was being reclassified from a "revenge-" to a "politically motivated crime", since 'the radical right-wing and racist views of the perpetrator should not be ignored' (Deutsche Welle 2019). However, this decision was still far in the future during the

[1]For example, the perpetrator was proud to share his birthday with Adolf Hitler, while the attack itself took place on the fifth anniversary of the shootings in Norway, where right-extremist Anders Breivik killed 77 people.

period of analysis considered here, so that I do not expect the events in Munich to have had an impact on Germans' or refugees' attitudes and well-being.

To examine whether the event radically changed the coefficient estimates, I also run a regression where I differentiate between each treatment week. The Munich shootings occurred on July 22nd, 8 days after the first terrorist attack on July 14th, 2016, so that the "Week 1" dummy conveniently captures the treatment effect prior to the events in Munich. If the Munich shooting affected how Germans' felt towards refugees and vice versa, responses in the aftermath of the Munich shooting should differ systematically from previous responses. In particular, Germans' anti-refugee sentiment would be expected to decline in the aftermath of the Munich shooting, given that other xenophobic attacks have temporarily improved natives' sentiment towards minority groups (e.g. Jakobsson and Blom 2014). As Figures B.5–B.8 however highlight, treatment coefficient estimates in the first week (i.e. among those who were interviewed prior to the Munich shootings) do not differ substantially and systematically to those in following weeks (i.e. those interviewed after the Munich shootings) across the regression models, increasing my confidence in the assumption that the Munich shootings did not bias the effect estimates.

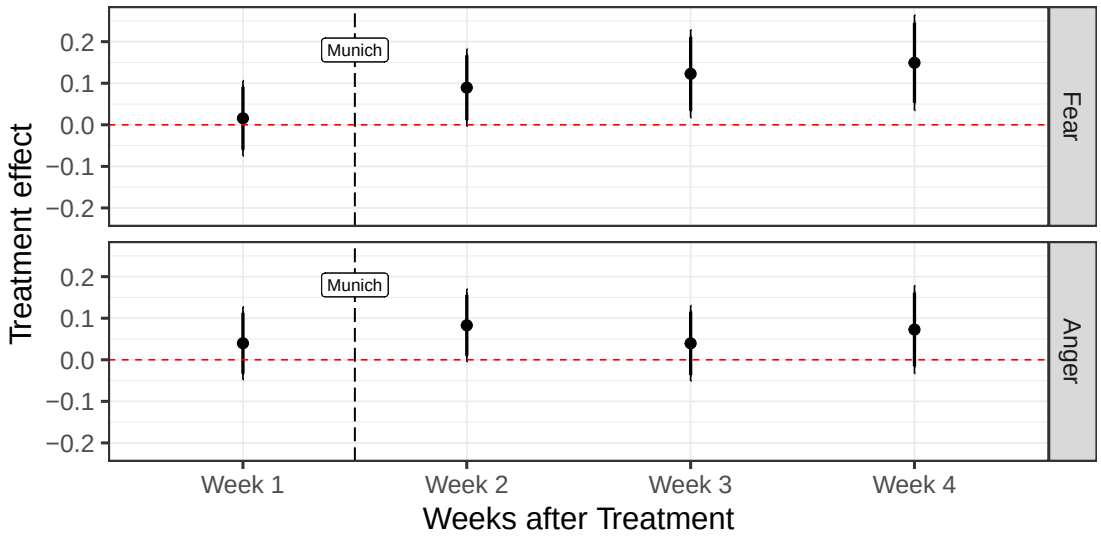


Figure B.5: Treatment effect of the July 2016 terrorist attacks on Germans' emotions towards refugees, weekly estimates.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

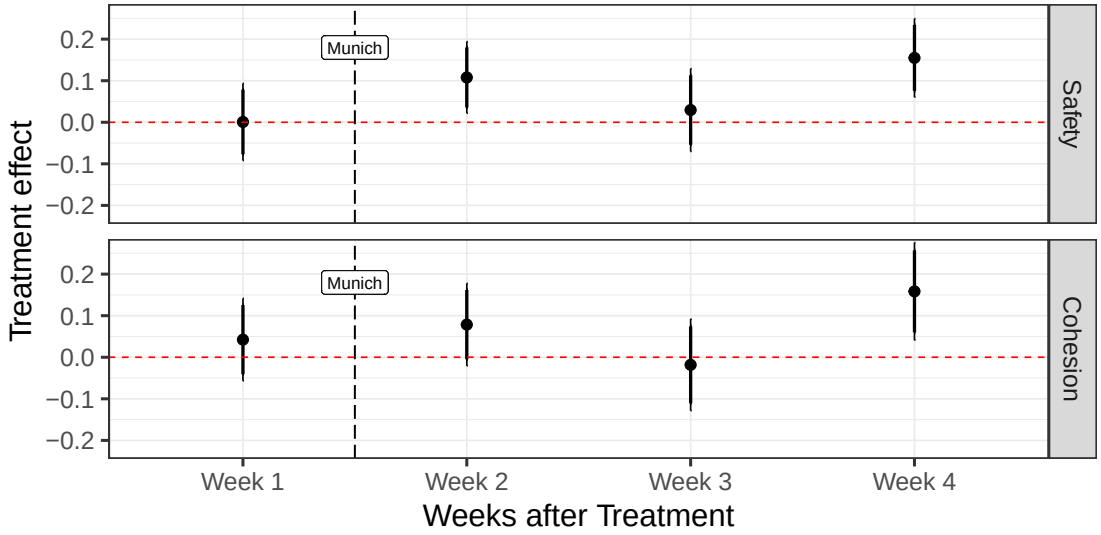


Figure B.6: Treatment effect of the July 2016 terrorist attacks on Germans' risk assessment of refugees, weekly estimates.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

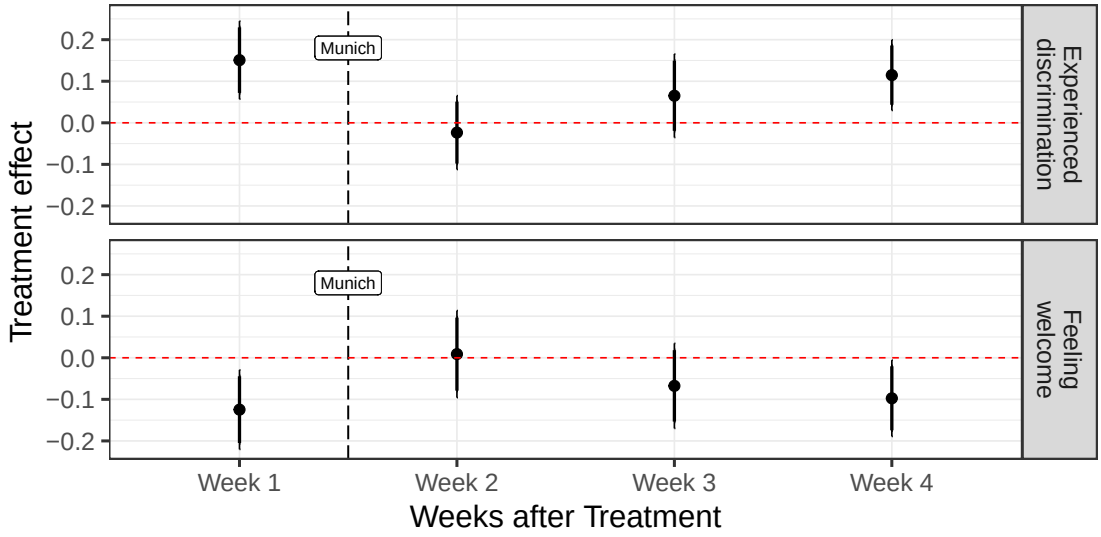


Figure B.7: Treatment effect of the July 2016 terrorist attacks on refugees' experiences of discrimination, weekly estimates.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

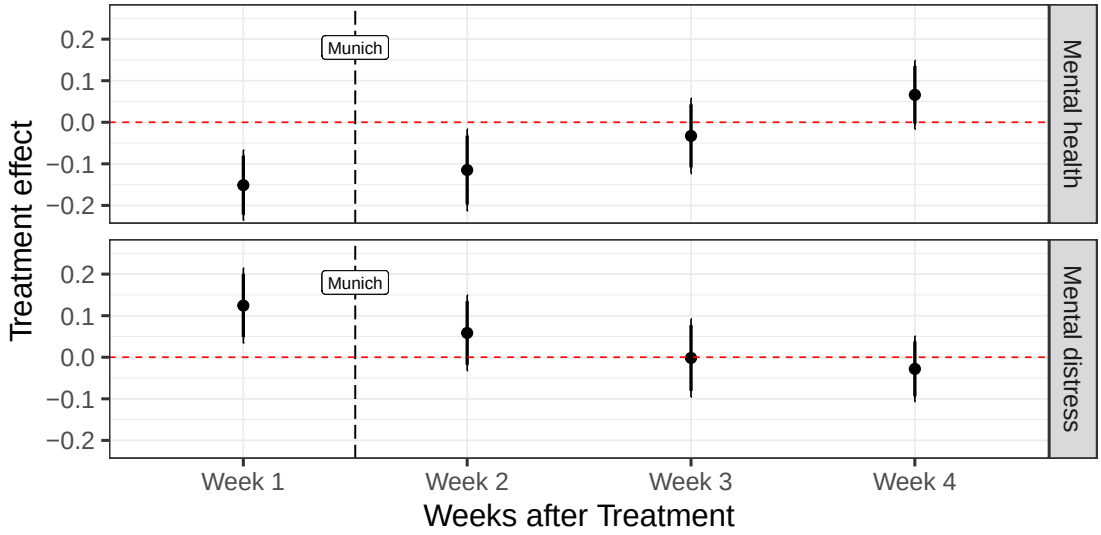


Figure B.8: Treatment effect of the July 2016 terrorist attacks on refugees' wellbeing, weekly estimates.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.5 Questionnaire items

Table B.1: Description of items from the Survey of German citizens

Description	Range
Emotions	
What about asylum seekers/Turkish people/Italian people/Jewish people/Polish people living in Germany? To what extent do the following statements apply:	
...I feel sorry for them.	1 (Applies completely) to 4 (Does not apply at all).
...They annoy me.	1 (Applies completely) to 4 (Does not apply at all).
...I find them likeable.	1 (Applies completely) to 4 (Does not apply at all).
...They scare me.	1 (Applies completely) to 4 (Does not apply at all).
Perceived risks	
If you think about the development of German society in the next few years: Do you think that, in the following areas, there will be more opportunities, more risks or neither of these as a result of the refugees?	
...As regards the welfare state.	1 (Considerably more risks) to 5 (Considerably more opportunities).
...As regards public security.	1 (Considerably more risks) to 5 (Considerably more opportunities).
...As regards people living together in society.	1 (Considerably more risks) to 5 (Considerably more opportunities).
...As regards the economic situation in Germany.	1 (Considerably more risks) to 5 (Considerably more opportunities).
Social Distance	
How pleasant or unpleasant would it be to for you to have an asylum seeker/Turkish person/Italian person/Jewish person/Polish person as your neighbour?	1 (Very pleasant) to 7 (Very unpleasant).
How strongly, in your opinion, do asylum seekers/Turkish persons/Italian persons/Jewish persons/Polish persons who live in Germany differ from Germans in their lifestyles?	1 (Not at all) to 7 (Very strongly).

Table B.2: Description of items from the Survey of Refugees and Asylum Seekers

Description	Range
Hostility	
How often in the last 24 months have you personally experienced being disadvantaged in Germany because of your origin?	1 (Frequently) to 3 (Never)
How often do you worry about...	
...your own economic situation?	1 (A lot) to 3 (Never).
...your health?	1 (A lot) to 3 (Never).
...anti-foreigner sentiment and xenophobia in Germany?	1 (A lot) to 3 (Never).
...the result of your asylum application?	1 (A lot) to 3 (Never).
...being unable to stay in Germany?	1 (A lot) to 3 (Never).
...being unable to return to your country of origin?	1 (A lot) to 3 (Never).
Did you feel welcome in Germany at arrival/now?	1 (Totally) to 5 (Not at all)
PHQ-4: Patient Health Questionnaire	
Over the last two weeks, how often have you been bothered by the following problems?	
...Little interest or pleasure in your activities	0 (Not at all) to 3 (Nearly every day)
...Low spirits, melancholy or hopelessness	0 (Not at all) to 3 (Nearly every day)
...Nervousness, anxiety or tension	0 (Not at all) to 3 (Nearly every day)
...Unable to stop or control worrying	0 (Not at all) to 3 (Nearly every day)
MCS: Mental Health Component Summary	
How would you describe your current state of health?	1 (Very well) to 5 (Poor)
If you have to climb stairs, i.e. walk up several floors: Does your state of health restrict you a lot, a little, or not at all?	1 (A lot) to 3 (Not at all)
And what about other strenuous activities in everyday life, e.g. when you have to lift something heavy or need to be mobile:Does your state of health restrict you a lot, a little or not at all?	1 (A lot) to 3 (Not at all)
How often in the last four weeks...	
..did you feel in low spirits and melancholy?	1 (Very often) to 5 (Never)
...did you feel full of energy?	1 (Very often) to 5 (Never)

Continued on next page

Table B.2 – *Continued from previous page*

Description	Range
...did you feel full of energy?	1 (Very often) to 5 (Never)
...did you suffer from severe physical pain?	1 (Very often) to 5 (Never)
..., due to health problems of a physical nature, did you achieve less in your work or everyday activities than you actually intended?	1 (Very often) to 5 (Never)
..., due to health problems of a physical nature, have you been restricted in the type of tasks you can perform in your work or everyday activities?	1 (Very often) to 5 (Never)
..., due to psychological or emotional problems, did you achieve less in your work or everyday activities than you actually intended?	1 (Very often) to 5 (Never)
..., due to psychological problems or emotional problems, did you perform your work or everyday activities less carefully than usual?	1 (Very often) to 5 (Never)
..., due to health or psychological problems, have you been restricted in terms of your social contact to for example friends, acquaintances or relatives?	1 (Very often) to 5 (Never)

B.6 Full tables

Table B.3: Impact of July 2016 terrorist attacks on feelings towards asylum seekers

	Factor	Fear	Anger	Pity	Affection
Treatment	0.08^{**}	0.09^{***}	0.06^{**}	-0.01	-0.07^{**}
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Female	-0.03	0.08^{***}	-0.02	0.06^{**}	0.10^{***}
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Age	0.04	-0.00	0.01	-0.04	-0.12^{***}
	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)
East	0.17^{***}	0.03	0.12^{***}	-0.13^{***}	-0.17^{***}
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Int. contacts	-0.01	-0.00	-0.03	0.00	0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Tertiary	-0.20^{***}	-0.13^{***}	-0.16^{***}	0.10^{***}	0.13^{***}
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Married	0.00	0.05	-0.02	0.03	-0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Unemployed	0.01	0.05	0.01	0.01	0.03
	(0.04)	(0.04)	(0.03)	(0.03)	(0.04)
R^2	0.07	0.04	0.05	0.04	0.07
Adj. R^2	0.06	0.03	0.05	0.03	0.06
Num. obs.	959	959	959	959	959
RMSE	0.47	0.46	0.43	0.41	0.48

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table B.4: Impact of July 2016 terrorist attacks on risks associated with asylum seekers

	Factor	Safety	Cohesion	Welfare State	Economy
Treatment	0.05	0.06**	0.07**	0.03	0.04
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Female	−0.01	0.01	−0.01	0.00	0.05
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Age	0.13***	0.08**	0.05	0.08*	0.10**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
East	0.08**	0.06*	0.08**	0.04	0.02
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Int. contacts	−0.02	0.00	−0.02	−0.01	−0.00
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Tertiary	−0.13***	−0.09***	−0.04	−0.05	−0.15***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Married	0.02	0.02	−0.01	0.07**	−0.05
	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
Unemployed	−0.01	−0.03	−0.00	−0.01	−0.02
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
R^2	0.04	0.02	0.01	0.02	0.03
Adj. R^2	0.03	0.01	0.00	0.01	0.03
Num. obs.	959	959	959	959	959
RMSE	0.48	0.45	0.50	0.48	0.48

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table B.5: Impact of July 2016 terrorist attacks on perceived social distance

	Refugee as Neighbour	Difference to Germans
Treatment	0.04	−0.00
	(0.03)	(0.03)
Female	−0.06**	0.02
	(0.03)	(0.03)
Age	0.10**	0.16***
	(0.04)	(0.04)
East	0.16***	0.18***
	(0.03)	(0.03)
Int. contacts	0.03	0.07**
	(0.03)	(0.03)
Tertiary	−0.17***	−0.05
	(0.03)	(0.03)
Married	0.04	0.00
	(0.03)	(0.03)
Unemployed	0.02	0.01
	(0.04)	(0.04)
R^2	0.07	0.07
Adj. R^2	0.06	0.06
Num. obs.	959	959
RMSE	0.48	0.49

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table B.6: Impact of July 2016 terrorist attacks on refugees and asylum seekers

	Discrimination	Anti-immig. worries	Change in welcome
Treatment	0.08**	0.02	−0.06*
	(0.03)	(0.03)	(0.03)
Refugee	−0.04	−0.02	−0.01
	(0.03)	(0.03)	(0.03)
Syrian	−0.02	−0.16***	−0.13***
	(0.04)	(0.04)	(0.04)
Iraqi	−0.05	−0.15***	−0.02
	(0.06)	(0.05)	(0.06)
Afghan	−0.01	−0.03	0.11*
	(0.06)	(0.06)	(0.06)
Comm. accom.	0.04	−0.03	−0.07*
	(0.03)	(0.03)	(0.04)
Female	−0.04	−0.04	0.04
	(0.03)	(0.03)	(0.04)
Age	−0.10***	−0.04	0.03
	(0.03)	(0.03)	(0.03)
East	0.05	0.01	0.03
	(0.04)	(0.04)	(0.04)
Int. contacts	−0.00	−0.02	−0.01
	(0.03)	(0.03)	(0.03)
R^2	0.03	0.03	0.03
Adj. R^2	0.02	0.02	0.02
Num. obs.	1033	1033	1033
RMSE	0.48	0.45	0.52

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table B.7: Impact of July 2016 terrorist attacks on refugees' and asylum seekers' well-being

	Mental distress	Mental health
Treatment	0.04	-0.05^{*}
	(0.03)	(0.03)
Refugee	-0.06^{*}	0.05
	(0.03)	(0.03)
Syrian	0.02	-0.03
	(0.04)	(0.04)
Iraqi	-0.02	0.06
	(0.06)	(0.05)
Afghan	0.05	-0.08
	(0.06)	(0.05)
Comm. accom.	0.17^{***}	-0.10^{***}
	(0.03)	(0.03)
Female	0.07^{**}	-0.12^{***}
	(0.03)	(0.03)
Age	0.17^{***}	-0.13^{***}
	(0.03)	(0.03)
East	0.03	0.03
	(0.04)	(0.04)
Int. contacts	0.01	0.04
	(0.03)	(0.03)
R^2	0.06	0.05
Adj. R^2	0.05	0.04
Num. obs.	1033	1033
RMSE	0.47	0.48

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

B.7 Changes in Germans' attitudes towards all minority groups

B.7.1 Negative emotions

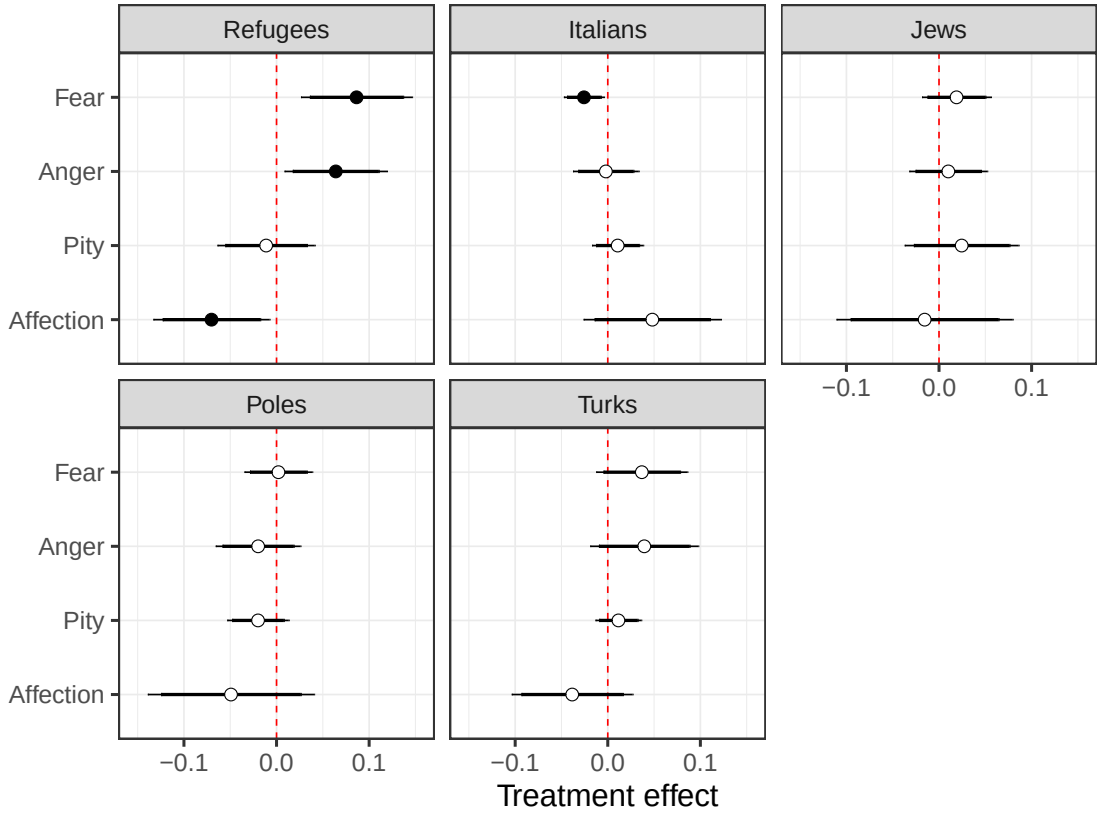


Figure B.9: Treatment effect of the July 2016 terrorist attacks on respondents' emotions towards different immigrant and minority groups: Refugees, Italians, Poles, Turks, and Jews

Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.7.2 Perceived social distance

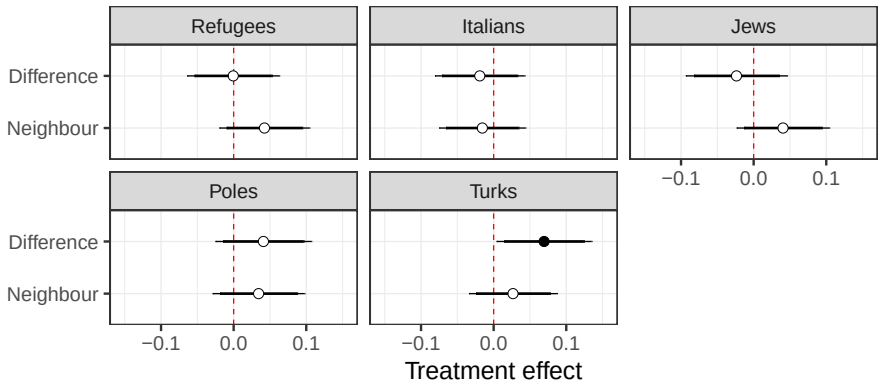


Figure B.10: Treatment effect of the July 2016 terrorist attacks on respondents' perceived social distance between Germans and different immigrant and minority groups: Asylum Seekers, Italians, Poles, Turks, and Jews.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.8 Refugees' list of worries

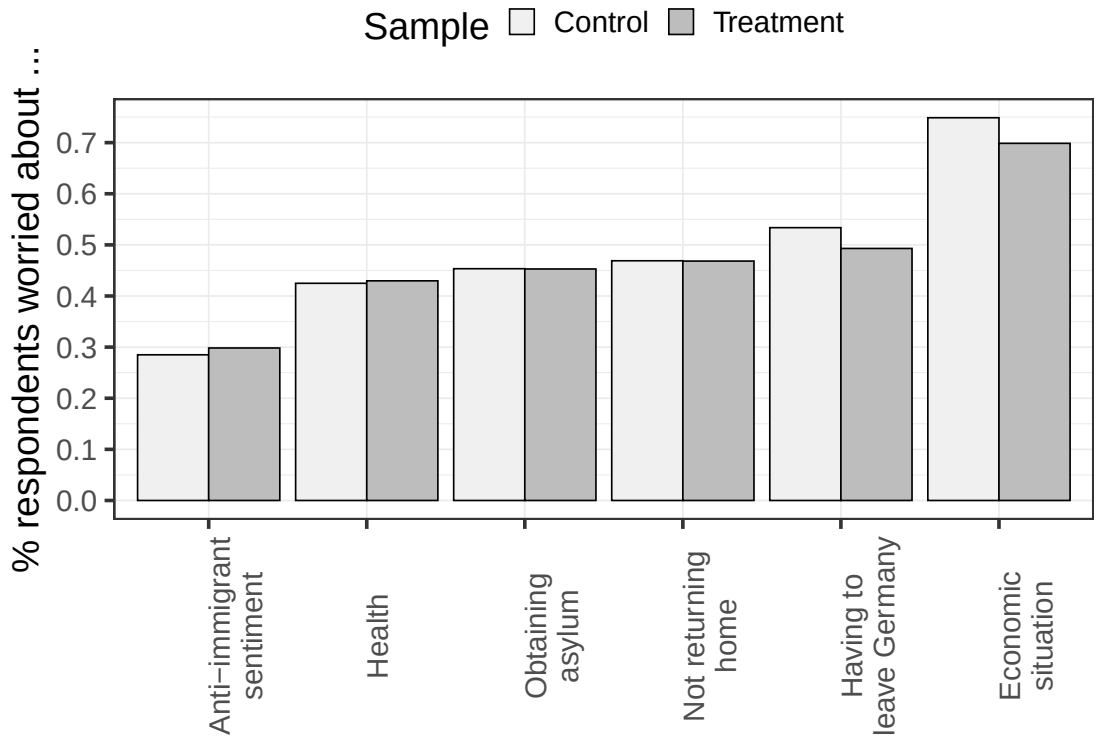


Figure B.11: Set of worries refugees are concerned about, in both treatment and control groups

B.9 Entropy balance

Entropy balancing directly balances control and treatment groups on observed covariates, using maximum entropy weights. The goal with entropy balancing, as with all preprocessing of the data prior to the estimation of causal effects, is to adjust the covariate distribution in the control group by reweighing observations in such a way as that it becomes similar to the covariate distribution of the treatment group. In entropy balancing, groups are balanced directly on observed covariates, and may be balanced on higher moments of the data. This approach estimates the counterfactual in the following way:

$$E[\widehat{Y(0) \mid T} = 1] = \frac{\sum_{\{i|T=0\}} Y_i w_i}{\sum_{\{i|T=0\}} w_i}, \tag{B.1}$$

where w_i is the entropy balancing weight chosen to minimise the entropy distance metric, $\log(w_i/q_i)$:

$$\min_{w_i} H(w) = \sum_{\{i|T=0\}} w_i \log(w_i/q_i), \tag{B.2}$$

with $q_i = 1/n_0$ denoting a base weight, and implemented conditional on a set of balancing constraints:

$$\sum_{\{i|T=0\}} w_i c_{ri}(\mathbf{X}_i) = m_r, \quad r \in 1, \ldots, R \tag{B.3}$$

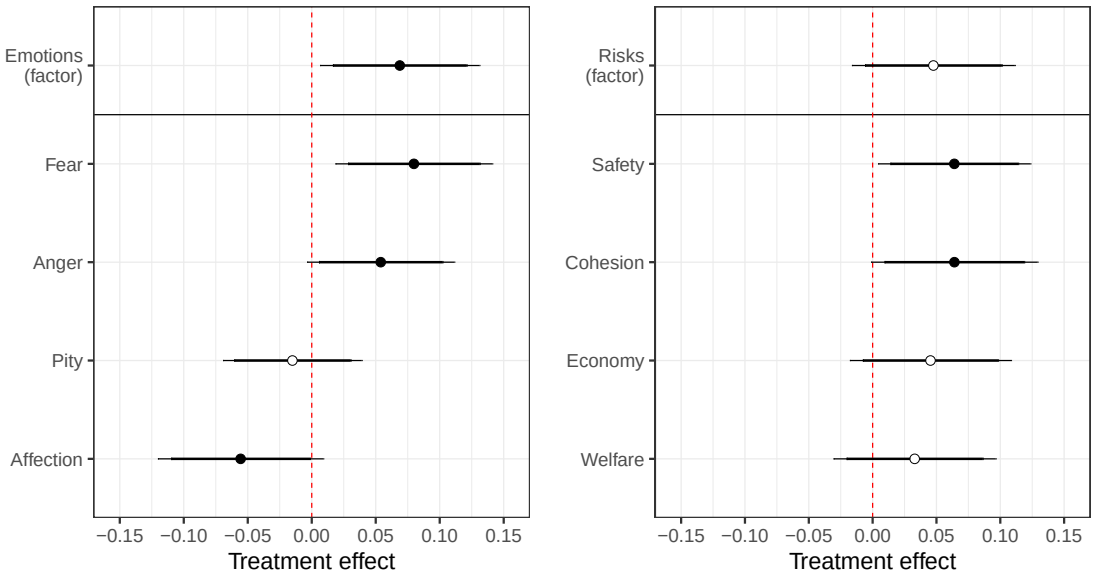
$$\sum_{\{i|T=0\}} w_i = 1, \text{ and} \tag{B.4}$$

$$w_i \geq 0 \text{ for all } w_i \text{ so that } D = 0 \tag{B.5}$$

In practice, entropy balancing can be understood as a generalisation of the weighting approach in propensity score models, but directly adjusts the weights to the known sample moments (Hainmueller 2012: 31). All results below rely on this approach, and use a sample that was reweighted using entropy balancing where treatment and control groups were balanced on the first (mean), second (variance) and third (skewness) moment conditions of each covariate. The variable measuring the number of prior interview attempts was left out of the balancing

process. This was done because of the considerable differences between control and treatment groups, which may result in control group weights for this variable that are unrealistic and thus would severely distort the estimated results. Following the advice of Muñoz, Falcó-Gimeno and Hernández (2019), this variable is excluded from the re-balancing process.

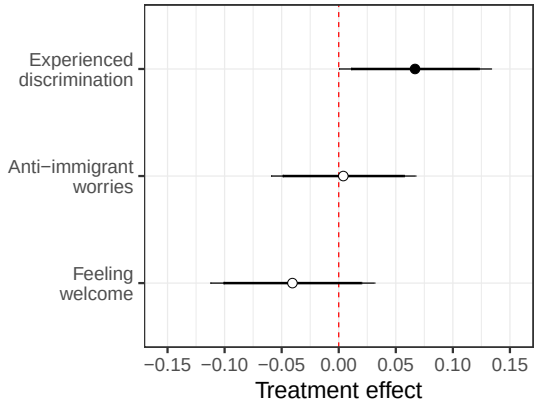
B.9.1 Anti-refugee attitudes



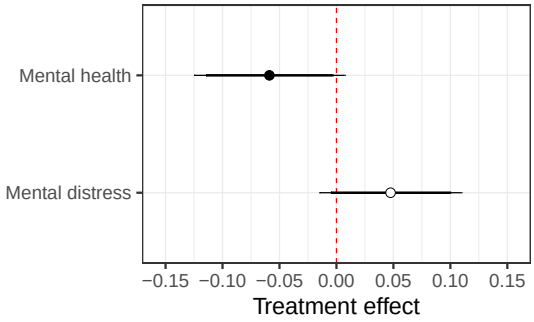
(a) Emotions towards asylum seekers **(b)** Risks associated with asylum seekers

Figure B.12: Impact of the July 2016 terror attacks on feelings toward refugees and risk perceptions, entropy balanced sample.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained with entropy-balancing weights. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.9.2 Refugees' sentiment and mental health



(a) Impact on refugee sentiment



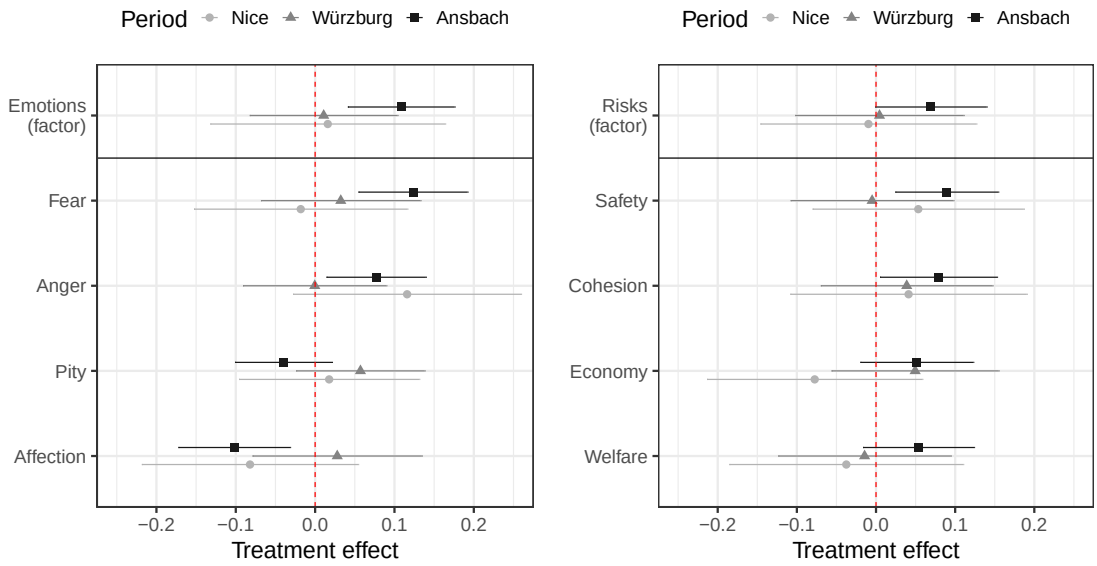
(b) Impact on refugee well-being

Figure B.13: Impact of the July 2016 terrorist attacks on (a) refugee sentiment and (b) well-being, entropy balanced sample.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained with entropy-balancing weights. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.10 Treatment intensity

In the estimations below, I further disaggregate the treatment effect to identify the exposure to each individual event. Accordingly, the coefficient for Nice displays the effect for all respondents who were interviewed after the terrorist attacks in Nice, but before the attacks in Würzburg and Ansbach, while the coefficient for Würzburg identifies all respondents who were exposed to the attacks Nice and Würzburg but not in Ansbach and so on. Given the close proximity within which all three events occurred, only few respondents are exposed to one or two but not all three attacks. For the German sample, 48 respondents were interviewed after Nice but before Würzburg and Ansbach, and 98 after Würzburg but before Ansbach. In the survey of refugees and asylum seekers, 75 interviews were conducted after Nice and before Würzburg and Ansbach, and 125 after Würzburg but before Ansbach. This considerably reduces the statistical power of the estimates. Still, results are qualitatively similar with coefficient estimates pointing in a similar direction.

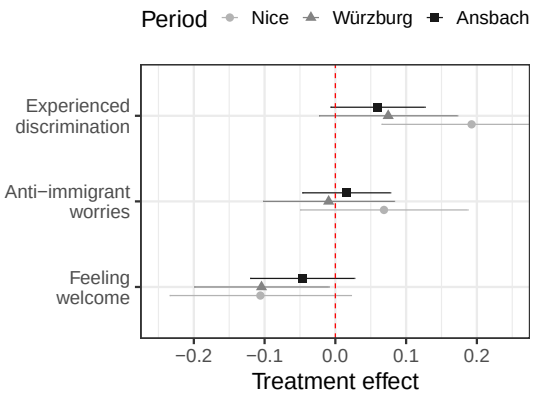
B.10.1 Anti-refugee attitudes



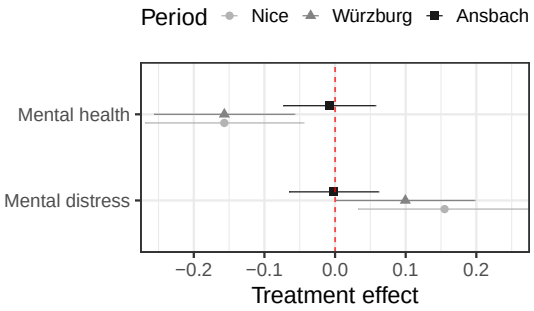
(a) Emotions towards asylum seekers **(b)** Risks associated with asylum seekers

Figure B.14: Impact of the July 2016 terrorist attacks on feelings toward refugees and risk perceptions, accounting for the effect of each terrorist attack.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.10.2 Refugees' sentiment and mental health



(a) Impact on refugee sentiment



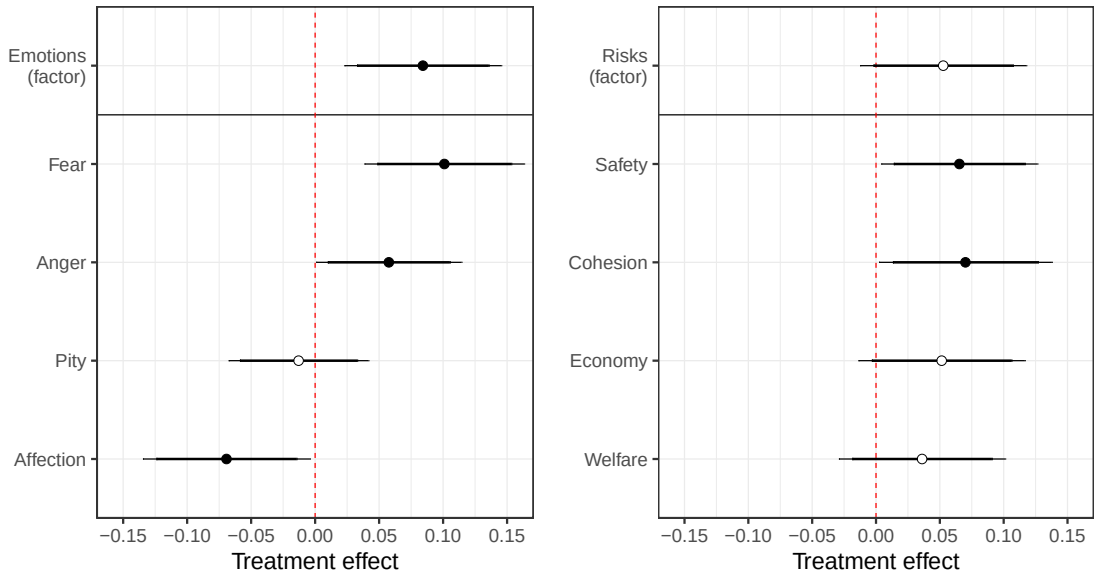
(b) Impact on refugee well-being

Figure B.15: Impact of the July 2016 terrorist attacks on (a) refugee sentiment and (b) well-being, accounting for the effect of each terrorist attack.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.11 Excluding Nice

In the estimations below, I exclude all respondents who were exposed to the terrorist attacks in Nice, but not to any of the two domestic attacks in Germany from the analysis.

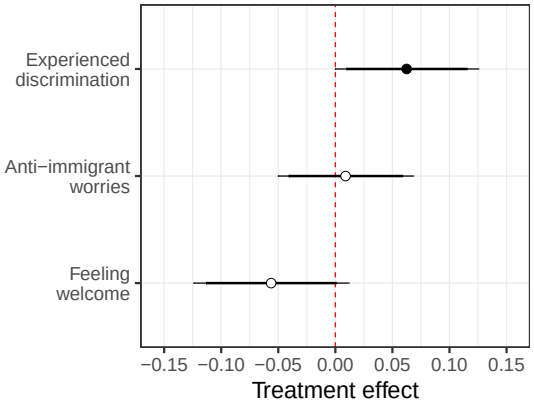
B.11.1 Anti-refugee attitudes



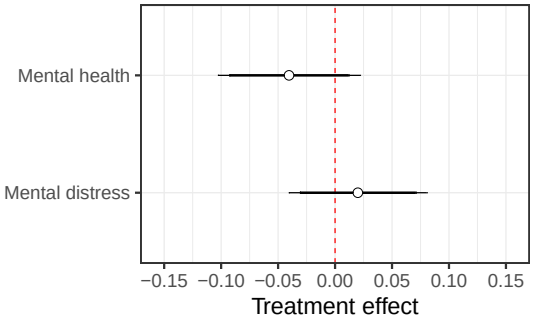
(a) Emotions towards asylum seekers **(b)** Risks associated with asylum seekers

Figure B.16: Impact of the July 2016 terrorist attacks on feelings toward refugees and risk perceptions, excluding Nice.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.11.2 Refugees' sentiment and mental health



(a) Impact on refugee sentiment



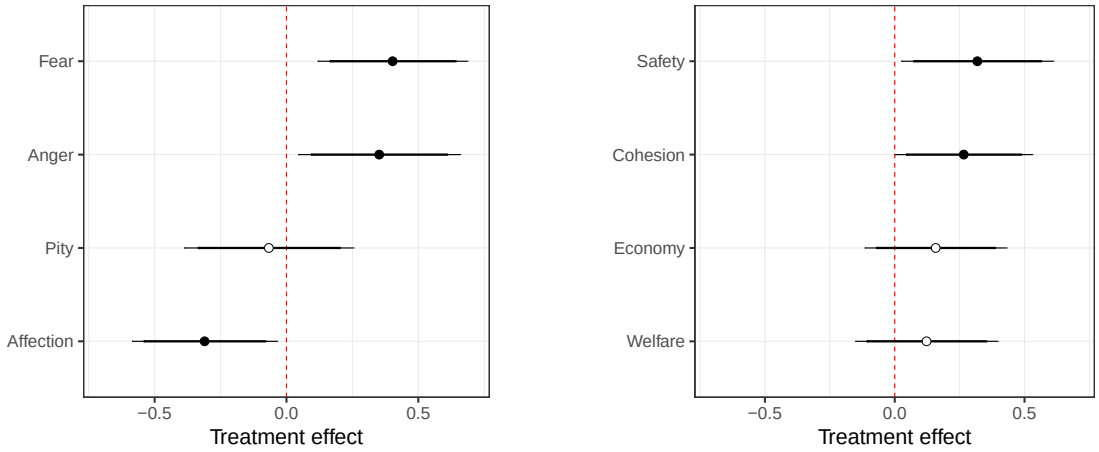
(b) Impact on refugee well-being

Figure B.17: Impact of the July 2016 terrorist attacks on (a) refugee sentiment and (b) well-being, excluding Nice.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.12 Logistic regression

The estimations below rely on logistic regression analyses to estimate the treatment effect on binary dependent variables.

B.12.1 Anti-refugee attitudes



(a) Emotions towards asylum seekers **(b)** Risks associated with asylum seekers

Figure B.18: Impact of the July 2016 terrorist attacks on feelings toward refugees and risk perceptions, logistic regression.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using logistic regression, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.12.2 Refugees' sentiment

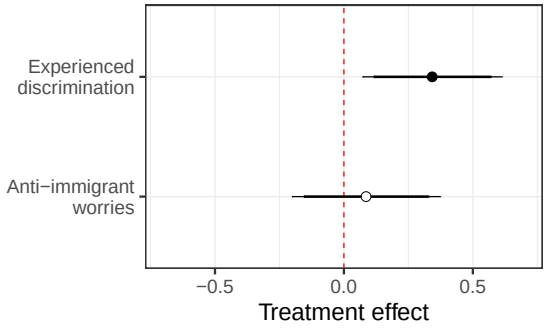


Figure B.19: Impact of the July 2016 terrorist attacks on refugee sentiment, logistic regression.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using logit models, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.13 Missingness

Tables B.8 and B.9 detail the number and share of missing values across each variable for the German and Refugee samples. Missingness differs considerably across variables, and is greatest for the dependent variables measuring German respondents' affection towards refugees (13%) as well as refugee respondents' wellbeing (12%), but considerably lower for all other variables. Given the analyses of multiple outcome variables and the considerable differences in missingness, I rely on multiple imputation to preserve the maximum number of observations across all models. Alternatively, in the specifications below, I re-estimate all results using list-wise deletion by model group.

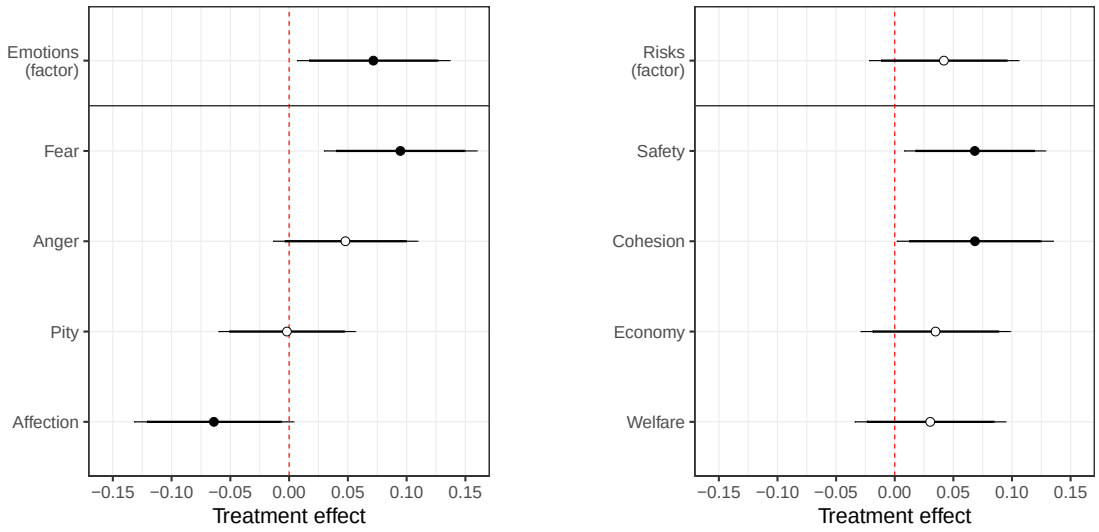
Table B.8: Missing values (German sample)

	Freq.	Prop.
Emotions		
Anger	16	0.02
Fear	20	0.02
Pity	13	0.01
Affection	129	0.13
Risk		
Welfare state	11	0.01
Social cohesion	11	0.01
Safety	9	0.01
Economy	14	0.01
Social distance		
Cultural difference	37	0.04
Neighbour	18	0.02
Independent variables		
Female	0	0.00
Age	0	0.00
East	0	0.00
Int. contacts	0	0.00
Tertiary	4	0.00
Married	1	0.00
Unemployed	0	0.00

Table B.9: Missing values (Refugee sample)

	Freq.	Prop.
Hostility		
Discrimination	0	0.00
Anti-immig. worries	0	0.00
Feeling welcome	43	0.04
Well-being		
Mental health	122	0.12
Mental distress	121	0.12
Independent variables		
Female	0	0.00
Age	0	0.00
East	0	0.00
Int. contacts	0	0.00
Refugee	25	0.02
Syrian	0	0.00
Iraqi	0	0.00
Afghan	0	0.00
Comm. accom.	0	0.00

B.13.1 Anti-refugee attitudes

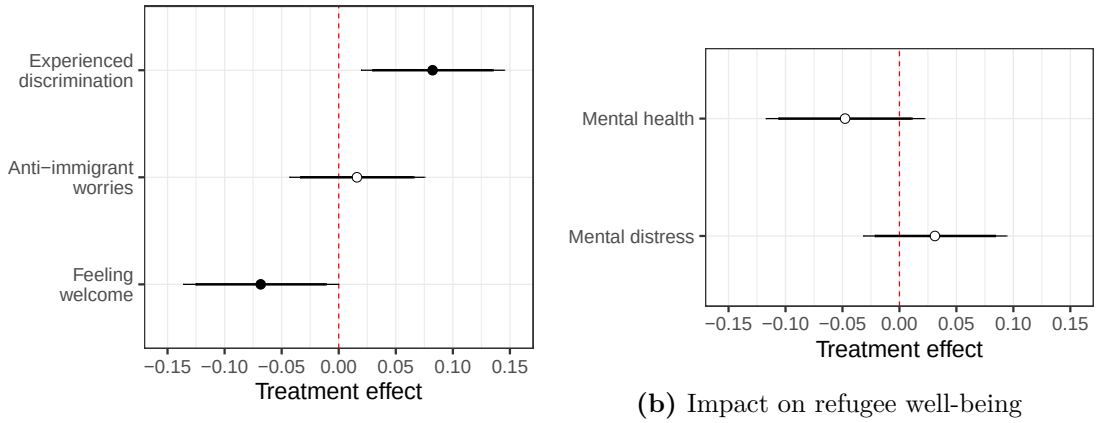


(a) Emotions towards asylum seekers

(b) Risks associated with asylum seekers

Figure B.20: Impact of the terror attacks in Nice, Ansbach, and Würzburg on feelings toward refugees and risk perceptions, list-wise deletion of missing values.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.13.2 Refugees' sentiment and mental health



(a) Impact on refugee sentiment

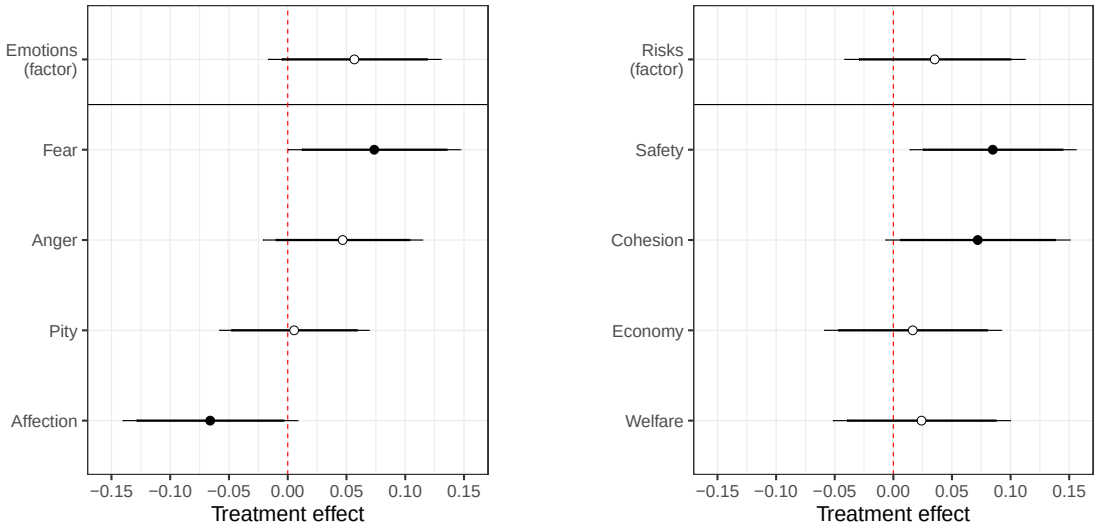
(b) Impact on refugee well-being

Figure B.21: Impact of the July 2016 terrorist attacks on (a) refugee sentiment and (b) well-being, list-wise deletion of missing values.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.14 Reachability

In the analyses below, I only include those respondents where an interview occurred after 1, 2, or at most 3 contact attempts.

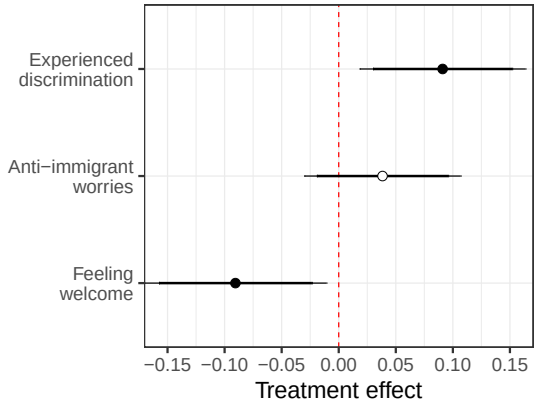
B.14.1 Anti-refugee attitudes



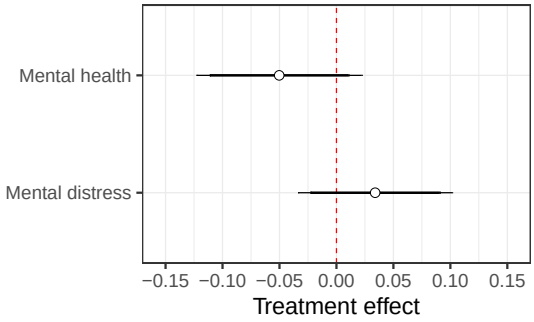
(a) Emotions towards asylum seekers **(b)** Risks associated with asylum seekers

Figure B.22: Impact of the July 2016 terrorist attacks on feelings toward refugees and risk perceptions, accounting for differences in reachability.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.14.2 Refugees' sentiment and mental health



(a) Impact on refugee sentiment



(b) Impact on refugee well-being

Figure B.23: Impact of the July 2016 terrorist attacks on (a) refugee sentiment and (b) well-being, accounting for differences in reachability.
Notes: Black circles summarise the treatment effect estimates across each regression. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.15 Varying bandwidths

The estimations below are run at two different temporal bandwidths: 21 and 35 days (or 3 and 5 weeks, respectively) before and after the first attack in Nice on July 14th, 2016. All estimations are derived through OLS with heteroskedasticity-robust standard errors.

B.15.1 Negative sentiment

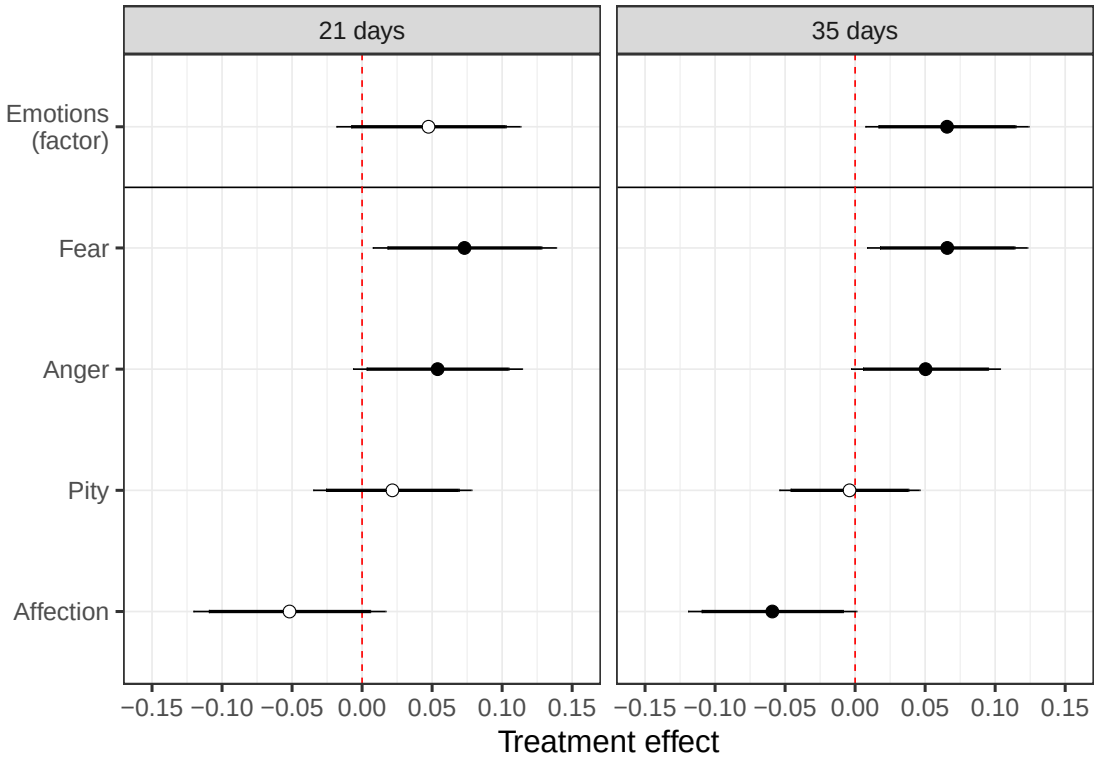


Figure B.24: Impact of the July 2016 terrorist attacks on feelings toward refugees, varying bandwidths.
Notes: All models are estimated using a temporal bandwidth of +/- 21 and 35 days. Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.15.2 Risk perceptions

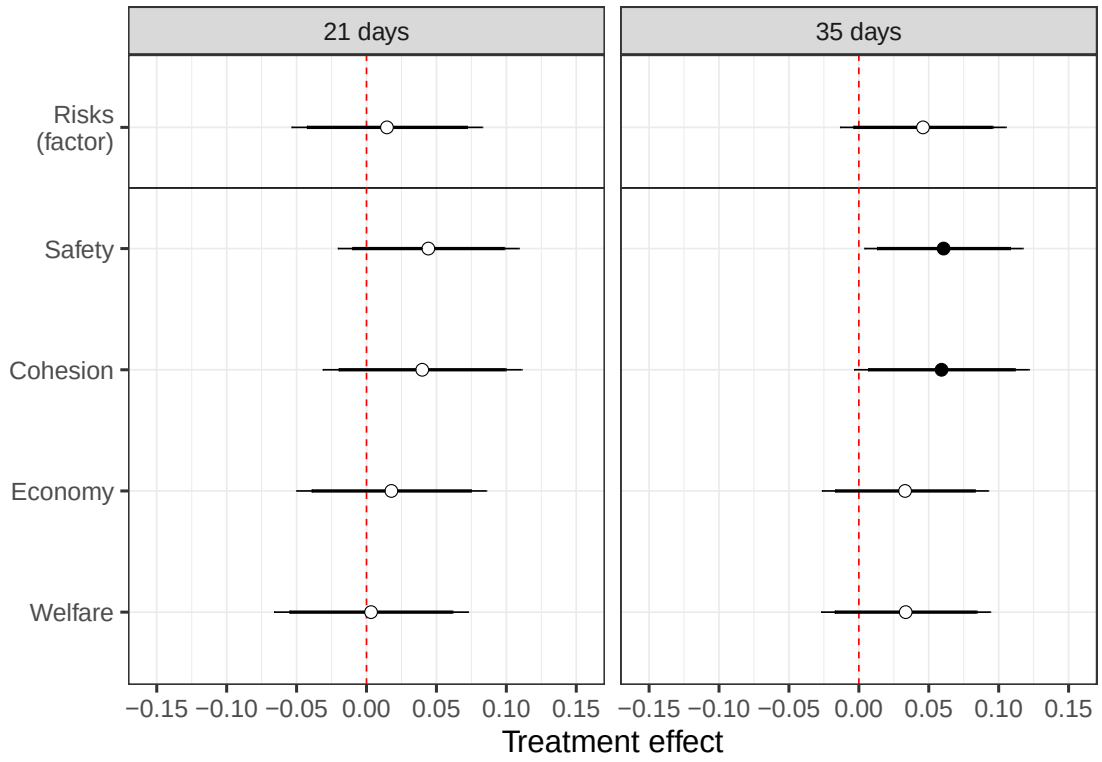


Figure B.25: Impact of the July 2016 terrorist attacks on risk perceptions towards refugees, varying bandwidths.
Notes: All models are estimated using a temporal bandwidth of +/- 21 and 35 days. Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.15.3 Discrimination and hostility

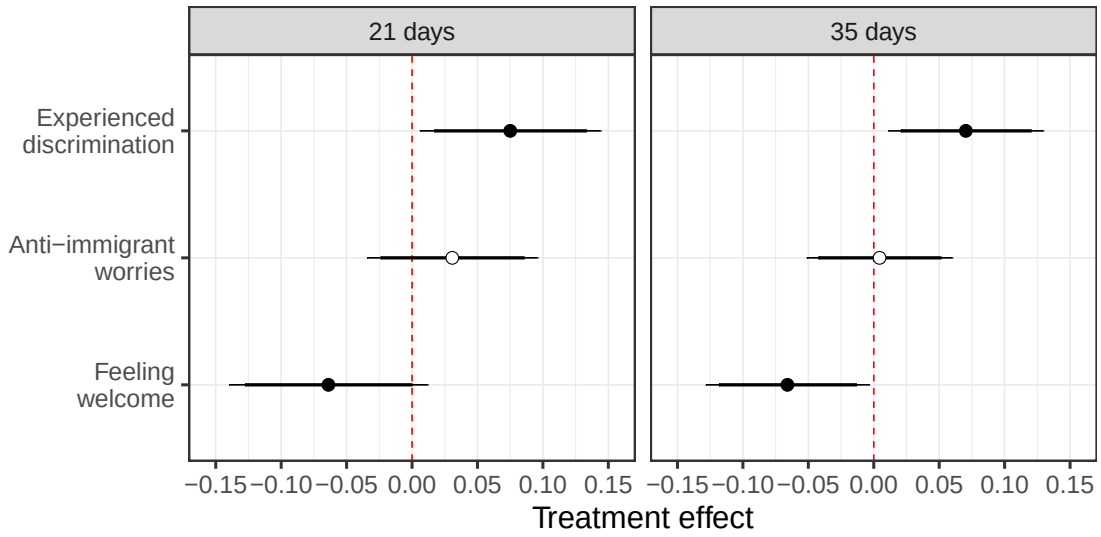


Figure B.26: Impact of the July 2016 terrorist attacks on refugee sentiment, varying bandwidths.
Notes: All models are estimated using a temporal bandwidth of +/- 21 and 35 days. Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.15.4 Mental wellbeing

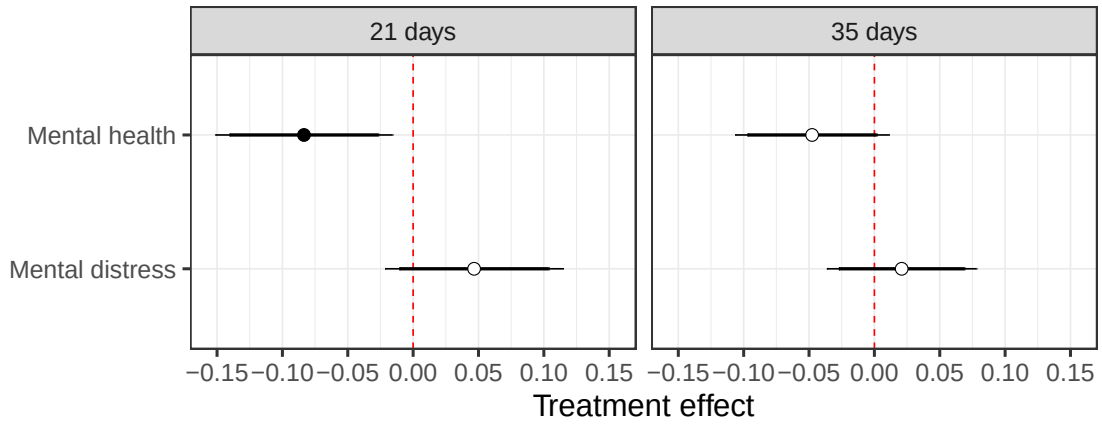


Figure B.27: Impact of the July 2016 terrorist attacks on refugees' mental wellbeing, varying bandwidths.
Notes: All models are estimated using a temporal bandwidth of +/- 21 and 35 days. Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, refugee status, country of origin, type of refugee shelter and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.16 Specification curve

Thus far, I have scrutinised the stability of our results to specific model adjustments. A more exhaustive way to assess the robustness of the estimates is to run all possible specifications that arise from a combination of analytical choices, using a specification curve analysis (Simonsohn, Simmons and Nelson 2020). The Figures B.28 and B.29 display how the estimated treatment effect varies across all combination of all control variables used. In total, Figure B.28 displays the coefficients of 128 separately-estimated models, and Figure B.29 the coefficients of 512 separate models. Effect sizes are ordered by magnitude, and are strongly consistent across model specifications.

B.16.1 Anti-refugee attitudes

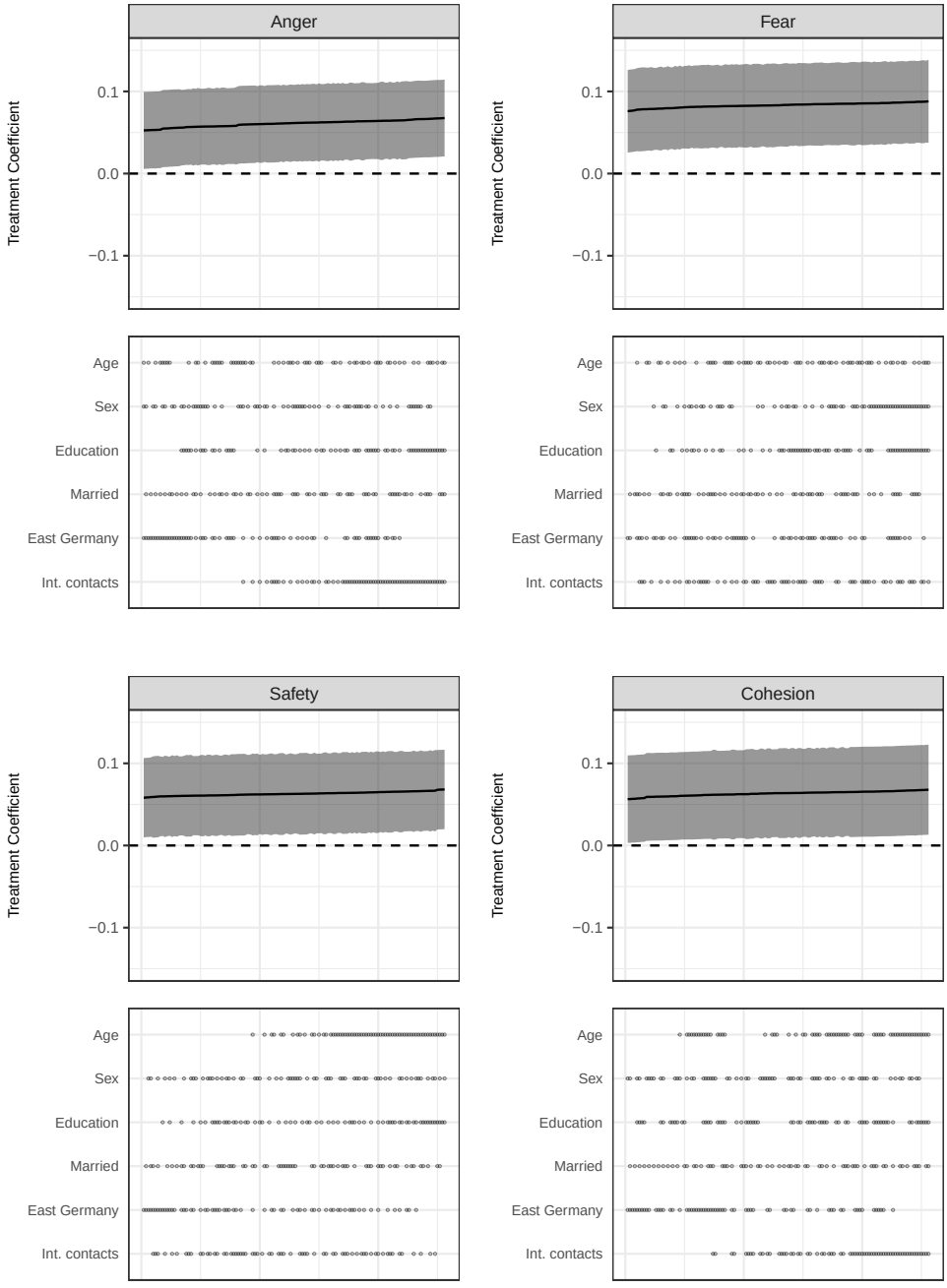


Figure B.28: Specification plots, German sample
Notes: The plots below show the estimated coefficients across a large number of model specifications. Dots indicate the inclusion of a modelling choice into the specification. Specifications are ordered by effect size magnitude (with 90% CI).

B.16.2 Refugees' sentiment and mental health

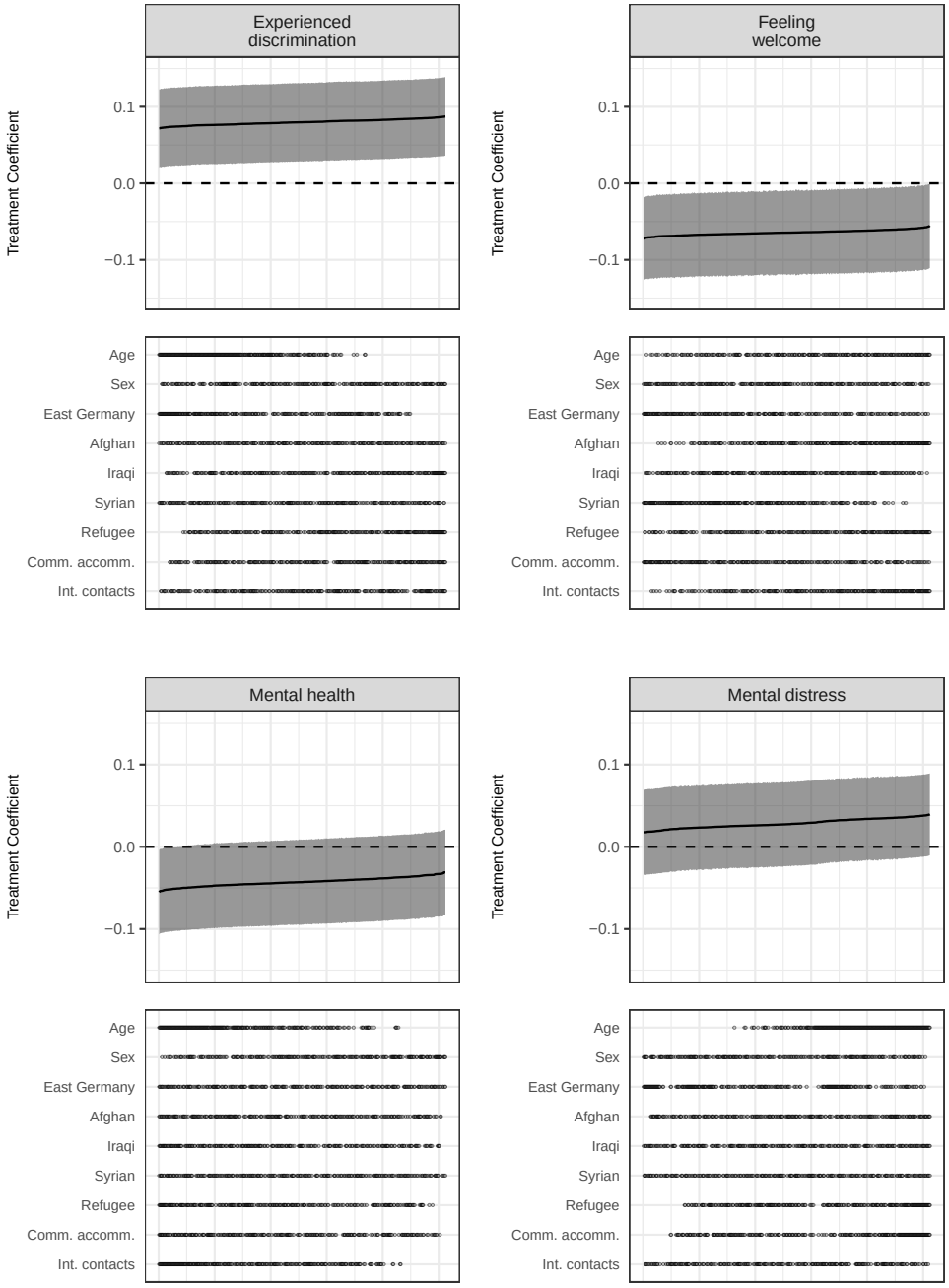
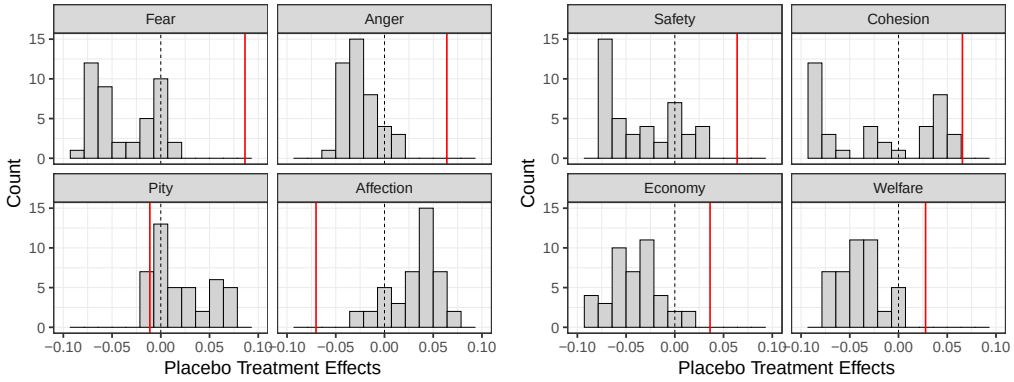


Figure B.29: Specification plots, Refugee sample
Notes: The plots below show the estimated coefficients across a large number of model specifications. Dots indicate the inclusion of a modelling choice into the specification. Specifications are ordered by effect size magnitude (with 90% CI).

B.17 Placebo analysis

The following plots compare the estimated coefficients from the placebo treatments in the period prior to the first terrorist attack (grey bars) to the estimated treatment effect reported in the results section (red line). As can be seen, the estimated coefficients reported in the main analysis are all consistently larger than the estimated effects from all placebo models (except for the coefficient for pity), with placebo estimates tending to cluster around zero.

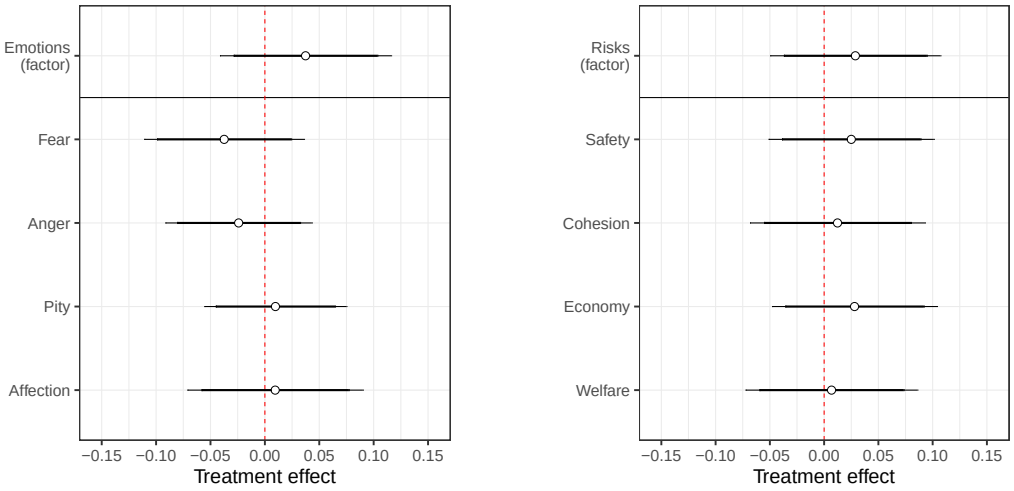


(a) Negative emotions towards refugees **(b)** Risk assessments of refugees

Figure B.30: Comparison of placebo estimates to reported effect sizes.
Notes: The red line indicates the effect estimate from the main specification reported in the results section, while the grey bars denote the density of placebo effect estimates.

B.18 2016 Brexit referendum

On June 23rd, 2016, the UK voted to leave the European Union, with immigration having played a considerable role in the decision (Goodwin and Milazzo 2017). In Figure B.31 I examine whether the Brexit referendum may have temporarily improved Germans' attitudes towards refugee and asylum immigration, but results show that it had no tangible effect on how Germans felt towards refugees.



(a) Negative emotions towards refugees **(b)** Risk assessments of refugees

Figure B.31: Impact of the 2016 Brexit referendum on feelings toward and risk assessments of refugees.

B.19 Sense of solidarity and national pride

In addition to questions about their sentiment towards refugees and asylum seekers, German respondents were asked how connected they felt towards others in their country, towards the European Union and its residents, and how proud they felt to be German. I use responses to these questions to assess whether Germans' sense of solidarity and national pride was affected by the terrorist attacks.

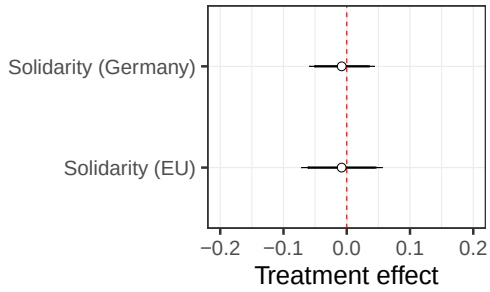


Figure B.32: Impact of the July 2016 terrorist attacks on Germans' sense of solidarity and national pride.

B.20 Attitudes towards refugee immigration

A subset of respondents in the German sample was asked whether they were in favour of continuing to admit, limit, or restrict the immigration of asylum seekers fleeing war, political persecution, or dire economic circumstances. I recode this three-way categorical variable into a binary variable that measures some or strong opposition to the immigration of asylum seekers. Results in Figure B.33 suggest that respondents were more likely to oppose the immigration of refugees following the terrorist attacks, regardless of whether refugees were believed to be escaping war, political persecution, or economic circumstances. In fact, the point estimate is most pronounced for refugees fleeing war, at around 11 percentage points. Given that in the control group, the overwhelming majority of respondents were already opposed to the arrival of economic migrants (93%), as opposed to fleeing war (53%) and political persecution (59%), these differences likely reflect ceiling effects.

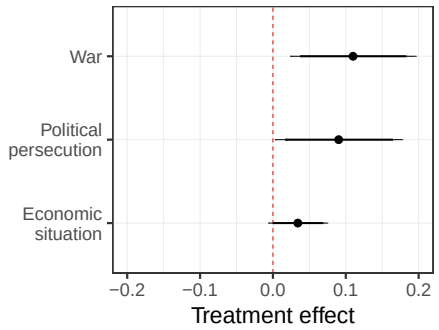


Figure B.33: Impact of the July 2016 terror attacks on attitudes towards limiting the immigration of refugees and asylum seekers (Limit the immigration of refugees and asylum seekers fleeing...)

B.21 Subjective health

Respondents were asked to rate their overall subjective health on a scale from 1 to 5. Whereas the terrorist attacks have an immediate and considerable impact on refugees' mental health and distress, Germans subjective wellbeing does not change in the aftermath of the attacks, with effect estimates remaining statistically insignificant and close to zero throughout each treatment period.

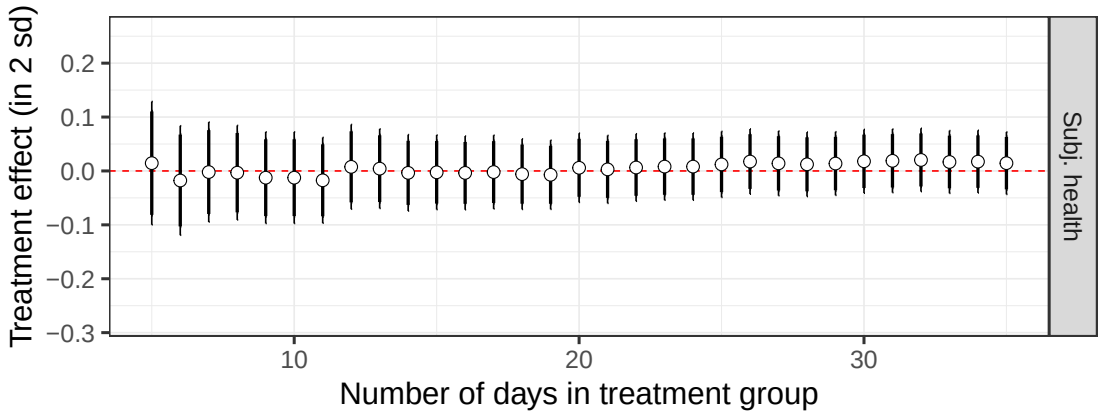
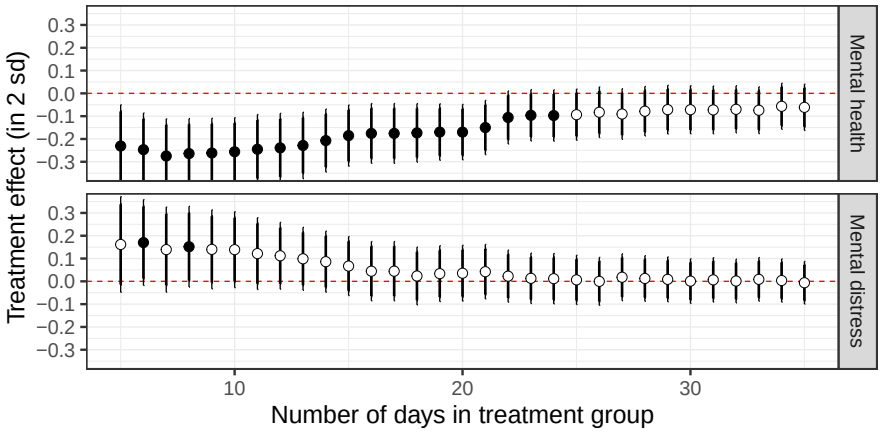


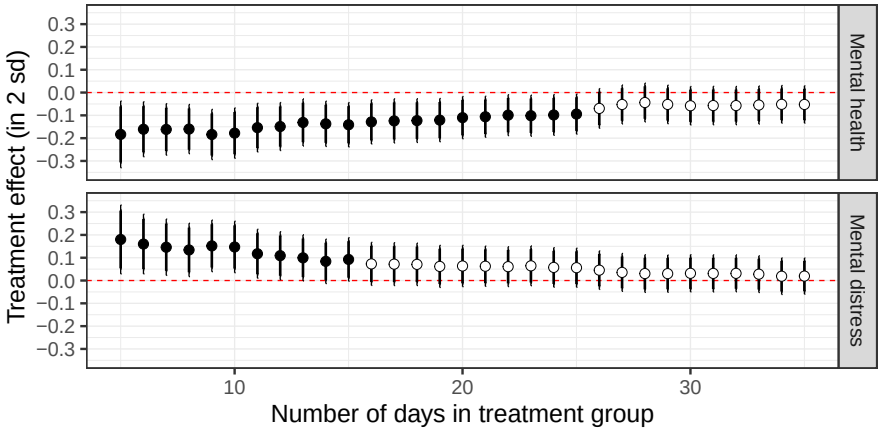
Figure B.34: Impact of the July 2016 terrorist attacks on Germans' subjective health assessment.
Notes: Black circles summarise the treatment effect estimates across each regression. Results are obtained using OLS with heteroskedasticity-robust standard errors, conditioning on age, sex, place of residence, education, marriage and employment status, and prior interview attempts. Thick and thin lines indicate 90% and 95% confidence intervals, respectively.

B.22 Mental health effect by refugee status

Figure B.35 separately analyses the impact of the July 2016 terrorist attacks on asylum seekers' mental health, by respondents refugee status. Whereas Figure B.35a visualises how the terrorist attacks impacted mental health among respondents formal refugee status, Figure B.35b examines the effect for only those respondents who were still awaiting a decision on their application, or who had their claim for asylum rejected by the time of the survey interview.



(a) Asylum seekers with formal refugee status



(b) Asylum seekers without formal refugee status

Figure B.35: Impact of the July 2016 terrorist attacks on mental health over time, by asylum seekers' refugee status.

APPENDIX C

Appendix for Chapter 4

C.1 Missingness

Table C.1: Missing values

	Freq.	Prop.
Dependent variables		
Price/m^2	3794	0.02
log(Price/m^2)	3794	0.02
Property		
Price (in €1000)	3666	0.02
Living space (m^2)	3210	0.02
Total rooms	1835	0.01
Regular flat	0	0.00
Other flat	0	0.00
Upscale flat	0	0.00
Townhouse	0	0.00
Other house	0	0.00
Neighbourhood		
Distance to centre (m)	0	0.00
Population	0	0.00
Foreign residents (%)	17	0.00
Household size	0	0.00
Empty properties (%)	49	0.00
Unemployment (%)	22	0.00
Hhld. income (in €1000)	22	0.00

C.2 Balance plot

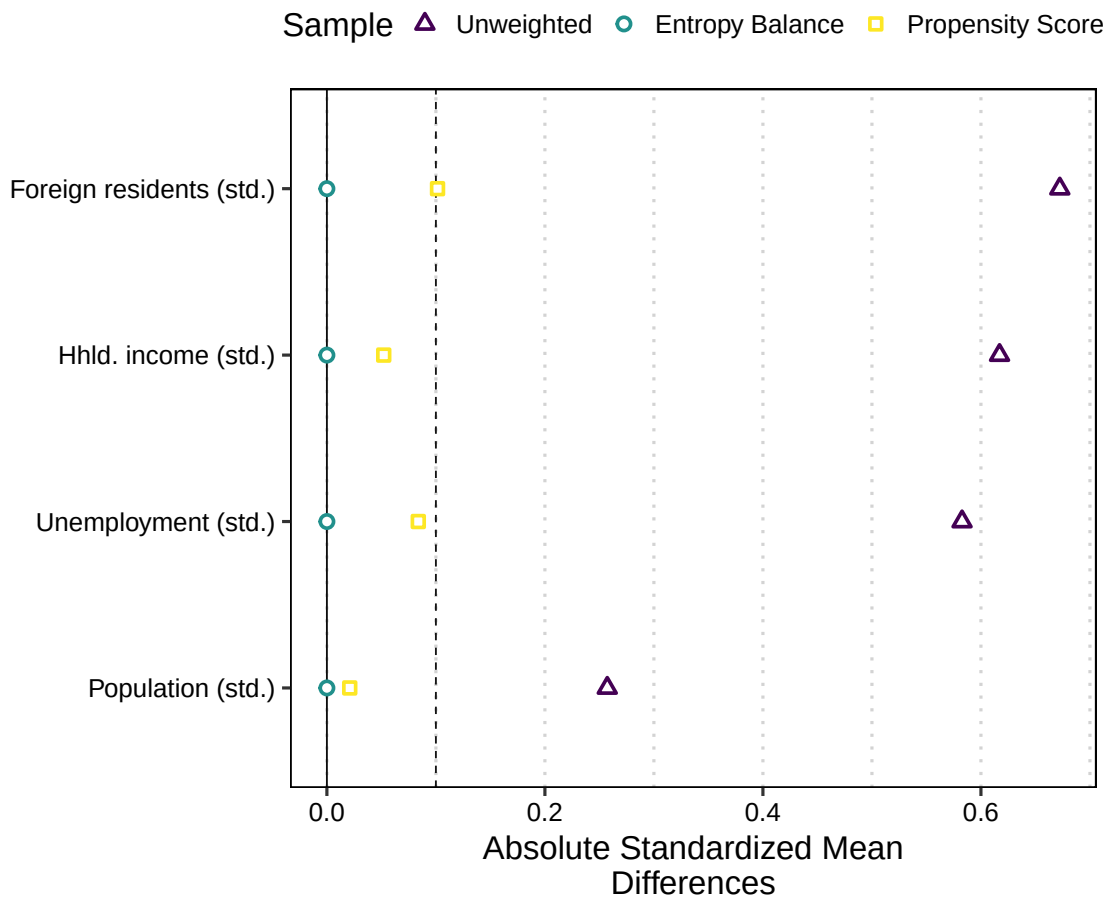


Figure C.1: Balance between treatment and control groups across neighbourhood characteristics.

C.3 Event analysis tables

Table C.2: Dynamic effect of a shelter opening on property prices (log(Price/m^2))

	Model 1	Model 2
Shelter opening (t = -29)	−0.062	−0.058
	(0.046)	(0.045)
Shelter opening (t = -28)	0.037	0.034
	(0.026)	(0.023)
Shelter opening (t = -27)	−0.025	−0.022
	(0.028)	(0.025)
Shelter opening (t = -26)	−0.122***	−0.125***
	(0.025)	(0.023)
Shelter opening (t = -25)	−0.084*	−0.084**
	(0.034)	(0.031)
Shelter opening (t = -24)	−0.069*	−0.069*
	(0.030)	(0.028)
Shelter opening (t = -23)	−0.082**	−0.083**
	(0.032)	(0.030)
Shelter opening (t = -22)	0.011	0.009
	(0.049)	(0.047)
Shelter opening (t = -21)	−0.052	−0.051
	(0.033)	(0.031)
Shelter opening (t = -20)	−0.070**	−0.072**
	(0.027)	(0.025)
Shelter opening (t = -19)	−0.008	−0.008
	(0.042)	(0.040)
Shelter opening (t = -18)	−0.009	−0.009
	(0.037)	(0.036)
Shelter opening (t = -17)	−0.010	−0.012
	(0.042)	(0.041)
Shelter opening (t = -16)	−0.060	−0.060
	(0.034)	(0.033)
Shelter opening (t = -15)	−0.001	−0.003
	(0.036)	(0.035)
Shelter opening (t = -14)	−0.013	−0.014
	(0.031)	(0.030)
Shelter opening (t = -13)	−0.003	−0.004
	(0.033)	(0.032)
Shelter opening (t = -12)	−0.037	−0.039
	(0.027)	(0.026)
Shelter opening (t = -11)	−0.021	−0.023
	(0.029)	(0.028)
Shelter opening (t = -10)	0.031	0.029
	(0.029)	(0.028)

Shelter opening (t = -9)	0.043	0.041
	(0.031)	(0.031)
Shelter opening (t = -8)	0.060*	0.057*
	(0.030)	(0.029)
Shelter opening (t = -7)	0.039	0.037
	(0.035)	(0.034)
Shelter opening (t = -6)	0.052	0.051
	(0.032)	(0.032)
Shelter opening (t = -5)	0.035	0.033
	(0.032)	(0.031)
Shelter opening (t = -4)	0.039	0.038
	(0.028)	(0.028)
Shelter opening (t = -3)	0.000	−0.000
	(0.026)	(0.026)
Shelter opening (t = -2)	0.020	0.020
	(0.023)	(0.022)
Shelter opening (t = 0)	−0.001	−0.002
	(0.019)	(0.019)
Shelter opening (t = 1)	0.015	0.015
	(0.029)	(0.029)
Shelter opening (t = 2)	−0.021	−0.021
	(0.023)	(0.023)
Shelter opening (t = 3)	−0.001	−0.001
	(0.024)	(0.024)
Shelter opening (t = 4)	0.012	0.012
	(0.034)	(0.034)
Shelter opening (t = 5)	−0.005	−0.005
	(0.036)	(0.035)
Shelter opening (t = 6)	−0.020	−0.021
	(0.024)	(0.023)
Shelter opening (t = 7)	−0.001	−0.001
	(0.026)	(0.025)
Shelter opening (t = 8)	0.026	0.025
	(0.030)	(0.029)
Shelter opening (t = 9)	0.041	0.041
	(0.027)	(0.027)
Shelter opening (t = 10)	0.028	0.027
	(0.037)	(0.036)
Shelter opening (t = 11)	0.016	0.014
	(0.030)	(0.029)
Shelter opening (t = 12)	0.029	0.027
	(0.024)	(0.023)
Shelter opening (t = 13)	0.040	0.037
	(0.022)	(0.021)
Shelter opening (t = 14)	0.060	0.058

	(0.038)	(0.038)
Shelter opening (t = 15)	0.072*	0.069*
	(0.029)	(0.027)
Shelter opening (t = 16)	−0.018	−0.022
	(0.050)	(0.050)
Shelter opening (t = 17)	−0.128*	−0.129*
	(0.065)	(0.063)
Shelter opening (t = 18)	−0.054	−0.057
	(0.100)	(0.099)
Shelter opening (t = 19)	0.050	0.047
	(0.026)	(0.025)
Shelter opening (t = 20)	−0.029	−0.032
	(0.024)	(0.022)
Living space (std.)	0.086*	0.085*
	(0.034)	(0.037)
Total rooms (std.)	−0.029	−0.028
	(0.015)	(0.016)
Other flat	0.053***	0.052***
	(0.005)	(0.006)
Upscale flat	0.114***	0.111***
	(0.011)	(0.012)
Townhouse	0.122***	0.120***
	(0.014)	(0.015)
Other house	0.046**	0.043*
	(0.016)	(0.018)
Method	Event	Stacked
Num. obs	152444	2236988
R^2 (full model)	0.530	0.527
R^2 (proj model)	0.049	0.045
Num groups: neigh.	343	5159
Num groups: time	32	544

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

C.4 Risks associated with refugees by proximity to refugee shelter

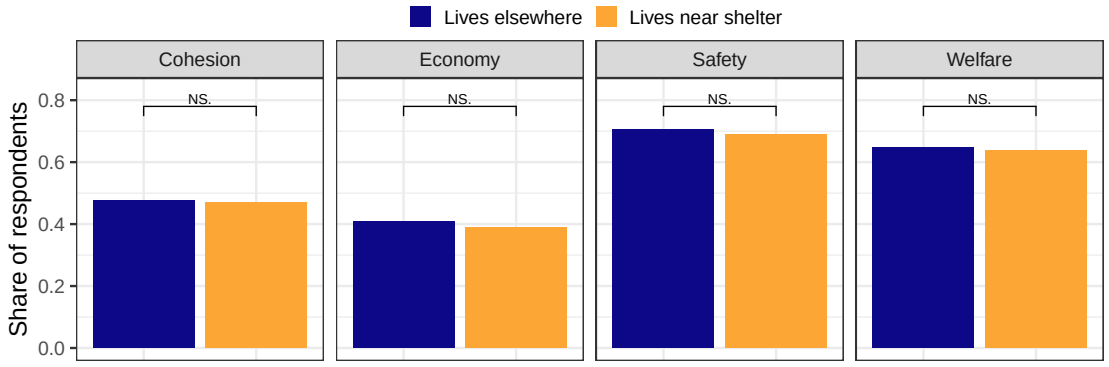


Figure C.2: Risks associated with refugees by individuals' proximity to a refugee shelter.

C.5 Emotions towards refugees by proximity to refugee shelter

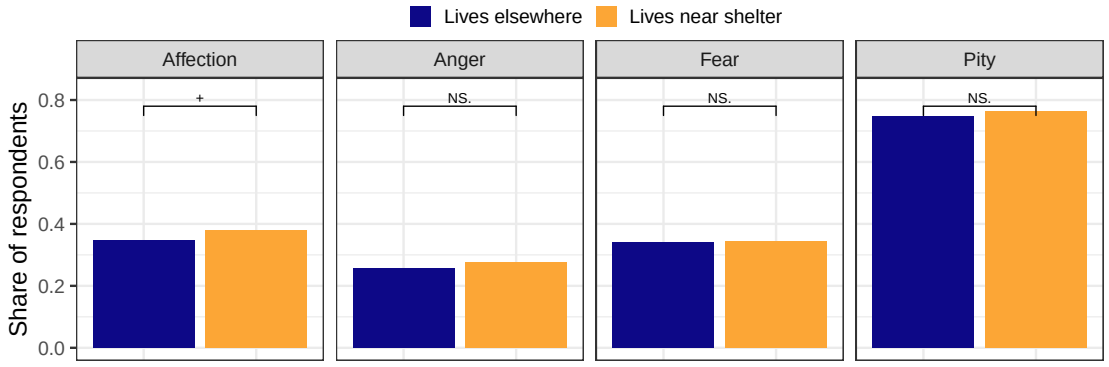


Figure C.3: Emotions towards refugees by individuals' proximity to a refugee shelter.

C.6 Survey tables

Table C.3: Contact experiences

	Contact (refug.)	Contact (foreign)	Pos. contact	Neg. contact
Lives near shelter	0.08***	0.18***	0.07***	0.04***
	(0.02)	(0.02)	(0.02)	(0.01)
Age	−0.01***	−0.00***	−0.01***	−0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
Female	0.01	0.02	−0.01	−0.01
	(0.02)	(0.02)	(0.02)	(0.01)
German	0.04		0.70***	0.12***
	(0.04)		(0.04)	(0.02)
Pol. ideology (std.)	−0.06***	−0.04*	−0.13***	0.06***
	(0.02)	(0.02)	(0.02)	(0.01)
Tertiary educ.	0.13***	0.06**	0.13***	−0.03*
	(0.02)	(0.02)	(0.02)	(0.01)
R^2	0.10	0.06	0.16	0.04
Num. obs.	3145	2981	3151	3151

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{\cdot}p < 0.1$

Table C.4: Attitudes towards restricting the rights of foreigners

	Marry	Adapt	Jobs	Pol. active
Lives near shelter	−0.02*	−0.05***	−0.02	−0.03·
	(0.01)	(0.02)	(0.01)	(0.01)
Age	0.00***	0.00***	0.00***	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
Female	0.00	0.01	−0.00	−0.01
	(0.01)	(0.01)	(0.01)	(0.01)
German	0.07**	0.72***	0.13***	0.17***
	(0.02)	(0.03)	(0.03)	(0.03)
Pol. ideology (std.)	0.04***	0.16***	0.08***	0.11***
	(0.01)	(0.01)	(0.01)	(0.01)
Tertiary educ.	−0.05***	−0.06***	−0.09***	−0.12***
	(0.01)	(0.02)	(0.01)	(0.01)
R^2	0.05	0.18	0.05	0.07
Num. obs.	3151	3151	3151	3151

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{\cdot}p < 0.1$

Table C.5: Respondents' willingness to have various immigrant and minority groups as their neighbour

	Refugee	Turk	Pole	Jew	Italian
Lives near shelter	0.03	0.03·	0.00	0.03*	0.00
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
Age	−0.00***	−0.00***	−0.00***	−0.00***	−0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Female	0.00	−0.01	−0.03*	0.01	0.00
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
German	−0.05	−0.05	−0.06*	0.04	−0.01
	(0.04)	(0.04)	(0.03)	(0.03)	(0.02)
Pol. ideology (std.)	−0.24***	−0.17***	−0.07***	−0.07***	−0.03***
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
Tertiary educ.	0.11***	0.07***	0.07***	0.06***	0.01
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
R^2	0.08	0.05	0.03	0.03	0.01
Num. obs.	3151	3151	3151	3151	3151

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{\cdot}p < 0.1$

Bibliography

Accetturo, Antonio, Francesco Manaresi, Sauro Mocetti and Elisabetta Olivieri. 2014. "Don't Stand so Close to Me: The Urban Impact of Immigration." *Regional Science and Urban Economics* 45:45–56.

Adam, Heribert. 2015. "Xenophobia, Asylum Seekers, and Immigration Policies in Germany." *Nationalism and Ethnic Politics* 21(4):446–464.

Aehnelt, Reinhard, Kristin Schwarze, Daniel Förste and Anja Nelle. 2017. "Integration von Flüchtlingen in den regulären Wohnungsmarkt." *Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR)* 21/2017.

Alesina, Alberto and Nicola Fuchs-Schündeln. 2007. "Good-Bye Lenin (or Not?): The Effect of Communism on People's Preferences." *American Economic Review* 97(4):1507–1528.

Alhawarin, Ibrahim, Ragui Assaad and Ahmed Elsayed. 2021. "Migration Shocks and Housing: Short-Run Impact of the Syrian Refugee Crisis in Jordan." *Journal of Housing Economics* 53:101761.

Allport, Gordon W. 1958. *The Nature of Prejudice*. A Comprehensive and Penetrating Study of the Origin and Nature of Prejudice Cambridge, Massachusetts: Addison-Wesley.

Andersson, Henrik and Matz Dahlberg. 2018. "Refugee Immigration and the Housing Market." *Working Paper* pp. 1–43. `https://conpol.org/wp-content/uploads/2019/12/RefugeeHousing.pdf`.

Åslund, Olof and Dan-Olof Rooth. 2005. "Shifts in Attitudes and Labor Market Discrimination: Swedish Experiences after 9-11." *Journal of Population Economics* 18(4):603–629.

Baker, Andrew, David F. Larcker and Charles C. Y. Wang. 2021. "How Much Should We Trust Staggered Difference-In-Differences Estimates?" *European Corporate Governance Institute–Finance Working Paper* 736/2021.

Balkan, Binnur, Elif Ozcan Tok, Huzeyfe Torun and Semih Tumen. 2018. "Immigration, Housing Rents, and Residential Segregation: Evidence from Syrian Refugees in Turkey." *IZA Discussion Papers* 11611:1–35.

Banerjee, Rupa. 2008. "An Examination of Factors Affecting Perception of Workplace Discrimination." *Journal of Labor Research* 29(4):380–401.

Bansak, Kirk, Jens Hainmueller and Dominik Hangartner. 2016. "How Economic, Humanitarian, and Religious Concerns Shape European Attitudes toward Asylum Seekers." *Science* 354(6309):217–222.

Bar-Tal, Daniel and Daniela Labin. 2001. "The Effect of a Major Event on Stereotyping: Terrorist Attacks in Israel and Israeli Adolescents' Perceptions of Palestinians, Jordanians and Arabs." *European Journal of Social Psychology* 31(3):265–280.

Batut, Cyprien and Sarah Schneider-Strawczynski. 2021. "Rival Guests or Defiant Hosts? The Local Economic Impact of Hosting Refugees." *Journal of Economic Geography* pp. 1–24. https://doi.org/10.1093/jeg/lbab014.

Baumgärtner, Maik, Markus Brauck, Jürgen Dahlkamp, Jörg Diehl, Ulrich Fichtner, Jan Friedman, Matthias Geyer, Hubert Gude, Horand Knaup, Alexander Kühn, Dialika Neufeld, Ralf Neukirch, Ann-Kathrin Nezik, Miriam Olbrisch, Maximilian Popp, Gordon Repinski, Sven Röbel, Barbara Schmid, Fidelius Schmid, Andreas Ulrich and Antje Windman. 2016. "Chaos and Violence: How New Year's Eve in Cologne Has Changed Germany." *Spiegel Online* . (last accessed: July 31st, 2021).
URL: *http://www.spiegel.de/international/germany/cologne-attacks-trigger-raw-debate-on-immigration-in-germany-.a-1071175.html*

Bayerische Staatskanzlei. 2017. "VGH München, Beschluss v. 29.12.2017 – 9 ZB 16.1480: Rücksichtnahmegebot Und Wertminderung von Grundstücken Durch Unterbringung von Asylbewerbern Auf Dem Nachbargrundstück." https://www.gesetze-bayern.de/Content/Document/Y-300-Z-BECKRS-B-2017-N-138469?hl=true.

Benček, David and Julia Strasheim. 2016. "Refugees Welcome? A Dataset on Anti-Refugee Violence in Germany." *Research & Politics* 3(4):1–11.

Bielicki, Jan. 2019. Cologne's New Year's Eve Sexual Assaults: The Turning Point in German Media Coverage. In *Refugee News, Refugee Politics: Journalism, Public Opinion and Policy Making in Europe*, ed. Giovanna Dell' Orto and Irmgard Wetzstein. New York: Routledge.

Biggs, Michael. 2005. "Strikes as Forest Fires: Chicago and Paris in the Late Nineteenth Century." *American Journal of Sociology* 110(6):1684–1714.

Birkelund, Gunn Elisabeth, Tak Wing Chan, Elisabeth Ugreninov, Arnfinn H Midtbøen and Jon Rogstad. 2018. "Do Terrorist Attacks Affect Ethnic Discrimination in the Labour Market? Evidence from Two Randomized Field Experiments." *The British Journal of Sociology* 5(4):1–20.

Black, Donald. 1983. "Crime as Social Control." *American Sociological Review* 48(1):34–45.

Blumer, Herbert. 1958. "Race Prejudice as a Sense of Group Position." *The Pacific Sociological Review* 1(1):3–7.

Boelmann, Barbara and Sandra Schaffner. 2018. FDZ Data Description: Real-Estate Data for Germany (RWI-GEO-RED). Advertisements on the Internet Platform ImmobilienScout24. Research Report RWI Projektberichte. (last accessed: July 31st, 2021).
URL: *https://www.econstor.eu/handle/10419/195940*

Bogain, Ariane. 2019. "Terrorism and the Discursive Construction of National Identity in France." *National Identities* 21(3):241–265.

Bogic, Marija, Anthony Njoku and Stefan Priebe. 2015. "Long-Term Mental Health of War-Refugees: A Systematic Literature Review." *BMC International Health and Human Rights* 15(29):1–42.

Böhmelt, Tobias, Vincenzo Bove and Enzo Nussio. 2020. "Can Terrorism Abroad Influence Migration Attitudes at Home?" *American Journal of Political Science* 64(3):437–451.

Boomgaarden, Hajo G and Claes H de Vreese. 2007. "Dramatic Real-World Events and Public Opinion Dynamics: Media Coverage and Its Impact on Public Relations to an Assassination." *International Journal of Public Opinion Research* 19(3):354–366.

Bor, Jacob, Atheendar S. Venkataramani, David R. Williams and Alexander C. Tsai. 2018. "Police Killings and Their Spillover Effects on the Mental Health of Black Americans: A Population-Based, Quasi-Experimental Study." *The Lancet* 392(10144):302–310.

Braun, R. 2011. "The Diffusion of Racist Violence in the Netherlands: Discourse and Distance." *Journal of Peace Research* 48(6):753–766.

Braun, R and R Koopmans. 2010. "The Diffusion of Ethnic Violence in Germany: The Role of Social Similarity." *European Sociological Review* 26(1):111–123.

Breidenbach, Philipp and Lea Eilers. 2018. "RWI-GEO-GRID: Socio-Economic Data on Grid Level." *Jahrbücher für Nationalökonomie und Statistik* 238(6):609–616.

Brouard, Sylvain, Pavlos Vasilopoulos and Martial Foucault. 2018. "How Terrorism Affects Political Attitudes: France in the Aftermath of the 2015–2016 Attacks." *West European Politics* 41(5):1073–1099.

Bundesamt für Migration und Flüchtlinge. 2017. Chancen Auf Asyl Sind Bundesweit Einheitlich. Technical Report 012/2017 Bundesamt für Migration und Flüchtlinge. (last accessed: July 31st, 2021).
URL: *https://www.bamf.de/SharedDocs/Pressemitteilungen/DE/2017/20170327-012-pm-studie-anerkennungsquoten.html*

Bundeszentrale für politische Bildung. 2018. "Zahlen Zu Asyl in Deutschland.". (last accessed: July 31st, 2021).
URL: *https://www.bpb.de/gesellschaft/migration/flucht/*

Burt, Callie Harbin, Ronald L. Simons and Frederick X. Gibbons. 2012. "Racial Discrimination, Ethnic- Racial Socialization, and Crime: A Micro-Sociological Model of Risk and Resilience." *American Sociological Review* 77(4):648–677.

Byers, Bryan D. and James A. Jones. 2007. "The Impact of the Terrorist Attacks of 9/11 on Anti-Islamic Hate Crime." *Journal of Ethnicity in Criminal Justice* 5(1):43–56.

Callaway, Brantly and Pedro H.C. Sant'Anna. 2021. "Difference-in-Differences with Multiple Time Periods." *Journal of Econometrics* 225(2):200–230.

Carlin, Ryan E., Gregory J. Love and Elizabeth J. Zechmeister. 2014. "Natural Disaster and Democratic Legitimacy: The Public Opinion Consequences of Chile's 2010 Earthquake and Tsunami." *Political Research Quarterly* 67(1):3–15. 10.1177/1065912913495592.

Castanho Silva, Bruno. 2018. "The (Non)Impact of the 2015 Paris Terrorist Attacks on Political Attitudes." *Personality and Social Psychology Bulletin* 44(6):838–850.

Cengiz, Doruk, Arindrajit Dube, Attila Lindner and Ben Zipperer. 2019. "The Effect of Minimum Wages on Low-Wage Jobs." *The Quarterly Journal of Economics* 134(3):1405–1454.

Collins, Randall. 2004. "Rituals of Solidarity and Security in the Wake of Terrorist Attack." *Sociological Theory* 22(1):53–87.

Colombo, Emilio, Valentina Rotondi and Luca Stanca. 2019. The Day after the Bomb: Well-Being Effects of Terrorist Attacks in Europe. SSRN Scholarly Paper ID 3421656 Social Science Research Network Rochester, NY: . (last accessed: July 31st, 2021).
URL: *https://papers.ssrn.com/abstract=3421656*

Connolly, Kate. 2016*a*. "Bavaria Calls for Extra Police and Migrant Crackdown after Attacks." *The Guardian* . (last accessed: July 31st, 2021).
URL: *https://www.theguardian.com/world/2016/jul/26/germany-bavaria-police-attacks-munich-ansbach-wurzburg*

Connolly, Kate. 2016*b*. "Cologne Inquiry into 'coordinated' New Year's Eve Sex Attacks." *The Guardian* . (last accessed: July 31st, 2021).
URL: *http://www.theguardian.com/world/2016/jan/05/germany-crisis-cologne-new-years-eve-sex-attacks*

Connolly, Kate and Kim Willsher. 2016. "Summer of fear: the anxious mood in Germany and France." *The Guardian* . (last accessed: July 31st, 2021).
URL: *https://www.theguardian.com/world/2016/jul/29/one-eye-on-the-emergency-exit-the-anxious-mood-in-germany-and-france*

Cutler, David M., Edward L. Glaeser and Jacob L. Vigdor. 1999. "The Rise and Decline of the American Ghetto." *Journal of Political Economy* 107(3):455–506.

Czymara, Christian S and Alexander W Schmidt-Catran. 2017. "Refugees Unwelcome? Changes in the Public Acceptance of Immigrants and Refugees in Germany in the Course of Europe's 'Immigration Crisis'." *European Sociological Review* 33(6):735–751.

Daams, Michiel N., Paola Proietti and Paolo Veneri. 2019. "The Effect of Asylum Seeker Reception Centers on Nearby House Prices: Evidence from The Netherlands." *Journal of Housing Economics* 46:101658.

Dancygier, Rafaela. 2020. "Another Progressive's Dilemma: Immigration, the Radical Right & Threats to Gender Equality." *Daedalus* 149(1):56–71.

Dancygier, Rafaela M. 2010. *Immigration and Conflict in Europe*. New York, NY: Cambridge University Press.

Dancygier, Rafaela M and Donald P Green. 2010. Hate Crime. In *The SAGE Handbook of Prejudice, Stereotyping and Discrimination*, ed. Peter Glick John F. Dovidio, Miles Hewstone and Victoria M. Esses. London: SAGE Publications Ltd pp. 294–311.

Dancygier, Rafaela, Naoki Egami, Amaney Jamal and Ramona Rischke. 2021. "Hate Crimes and Gender Imbalances: Fears over Mate Competition and Violence against Refugees." *American Journal of Political Science* 10.1111/ajps.12595.

Davis, Darren W. 2007. *Negative Liberty: Public Opinion and the Terrorist Attacks on America*. Russell Sage Foundation.

der Spiegel. 2016. "Horst Seehofer und die CSU: Forderung nach neuen Sicherheitsmaßnahmen." *Der Spiegel* . (last accessed: July 31st, 2021).
URL: *https://www.spiegel.de/politik/deutschland/csu-stellt-forderungen-zur-sicherheitspolitik-vor-a-1104813.html*

Desmond, Matthew, Andrew V Papachristos and David S Kirk. 2016. "Police Violence and Citizen Crime Reporting in the Black Community." *American Sociological Review* 81(5):857–876.

Deutsche Welle. 2019. "Germany: 2016 Munich Attack Had 'radical Right-Wing' Motives, Say Police." *Deutsche Welle* . (last accessed: July 31st, 2021).
URL: *https://www.dw.com/en/germany-2016-munich-attack-had.-radical-right-wing-motives-say-police/a-50991641*

Dhattiwala, Raheel and Michael Biggs. 2012. "The Political Logic of Ethnic Violence." *Politics & Society* 40(4):483–516.

Dinas, Elias, Konstantinos Matakos, Dimitrios Xefteris and Dominik Hangartner. 2019. "Waking Up the Golden Dawn: Does Exposure to the Refugee Crisis Increase Support for Extreme-Right Parties?" *Political Analysis* 27(2):244–254.

DiPasquale, Denise and Edward L. Glaeser. 1999. "Incentives and Social Capital: Are Homeowners Better Citizens?" *Journal of Urban Economics* 45(2):354–384.

Disha, Ilir, James C Cavendish and Ryan D King. 2011. "Historical Events and Spaces of Hate: Hate Crimes against Arabs and Muslims in Post-9/11 America." *Social Problems* 58(1):21–46.

DIW Berlin. 2019. "DIW Berlin: IAB-BAMF-SOEP Survey of Refugees in Germany.". (last accessed: July 31st, 2021).
URL: *10.5684/soep.iab-bamf-soep-mig.2016*

Dustmann, Christian, Francesco Fasani, Tommaso Frattini, Luigi Minale and Uta Schönberg. 2017. "On the Economics and Politics of Refugee Migration." *Economic Policy* 32(91):497–550.

Dustmann, Christian, Kristine Vasiljeva and Anna Piil Damm. 2019. "Refugee Migration and Electoral Outcomes." *The Review of Economic Studies* 86(5):2035–2091.

Echebarria-Echabe, Agustin and Emilia Fernández-Guede. 2006. "Effects of Terrorism on Attitudes and Ideological Orientation." *European Journal of Social Psychology* 36(2):259–265.

Eddy, Melissa. 2016*a*. "Reports of Attacks on Women in Germany Heighten Tension Over Migrants." *The New York Times* . (last accessed: July 31st, 2021).
URL: *https://www.nytimes.com/2016/01/06/world/europe/coordinated-attacks-on-women-in-cologne-were-unprecedented-.germany-says.html*

Eddy, Melissa. 2016*b*. "Suicide Bomber in Ansbach, Germany, Pledged Loyalty to ISIS, Officials Say." *New York Times* . (last accessed: July 31st, 2021).
URL: *https://www.nytimes.com/2016/07/26/world/europe/ansbach-germany-music-festival-explosion.html*

Esser, Frank and Hans Bernd Brosius. 1996. "Television as Arsonist?: The Spread of Right-Wing Violence in Germany." *European Journal of Communication* 11(2):235–260.

Falk, Armin, Andreas Kuhn and Josef Zweimüller. 2011. "Unemployment and Right-Wing Extremist Crime." *Scandinavian Journal of Economics* 113(2):260–285.

Federal Office for the Protection of the Constitution. 2019. "Übersicht Ausgewählter Islamistisch-Terroristischer Anschläge." *Verfassungsschutz* . (last accessed: July 31st, 2021).
URL: *https://www.verfassungsschutz.de/de/arbeitsfelder/af-islamismus-und-islamistischer-terrorismus/zahlen-und-fakten-islamismus/zuf-is-uebersicht-ausgewaehlter.-islamistisch-terroristischer-anschlaege*

Ferrín, Mónica, Moreno Mancosu and Teresa M. Cappiali. 2019. "Terrorist Attacks and Europeans' Attitudes towards Immigrants: An Experimental Approach." *European Journal of Political Research* 59(3):491–516.

Ferwerda, Jeremy, D. J. Flynn and Yusaku Horiuchi. 2017. "Explaining Opposition to Refugee Resettlement: The Role of NIMBYism and Perceived Threats." *Science Advances* 3(9):e1700812.

Frank, Joachim. 2017. "Eine Chronik der Berichterstattung über die Kölner Silvesternacht." *Kölner Stadtanzeiger* . (last accessed: July 31st, 2021).
URL: *https://story.ksta.de/2017/05/chronik-der-koelner-.silvesternacht/*

Frey, Arun. 2020. "'Cologne Changed Everything'—The Effect of Threatening Events on the Frequency and Distribution of Intergroup Conflict in Germany." *European Sociological Review* 36(5):684—699.

Frey, Arun. 2021. "Getting Under the Skin: The Impact of Terrorist Attacks on Native- and Immigrant Sentiment." *Social Forces* soab135:1–30.
URL: *https://doi.org/10.1093/sf/soab135*

Frey, William H. 1979. "Central City White Flight: Racial and Nonracial Causes." *American Sociological Review* 44(3):425–448.

Frey, William H. 1980. "Black In-Migration, White Flight, and the Changing Economic Base of the Central City." *American Journal of Sociology* 85(6):1396–1417.

Friedman, Jed. 2012. "Whether to Probit or to Probe It: In Defense of the Linear Probability Model." *Development Impact* . (last accessed: July 31st, 2021).
URL: *https://blogs.worldbank.org/impactevaluations/whether-to-probit-or-to-probe-it-in-defense-of-the-linear-.probability-model*

Friedrichs, Jürgen, Felix Leßke and Vera Schwarzenberg. 2019. *Fremde Nachbarn: Die sozialräumliche Integration von Flüchtlingen.* VS Verlag für Sozialwissenschaften.

Galea, Sandro, Jennifer Ahern, Heidi Resnick, Dean Kilpatrick, Michael Bucuvalas, Joel Gold and David Vlahov. 2002. "Psychological Sequelae of the September 11 Terrorist Attacks in New York City." *New England Journal of Medicine* 346(13):982–987.

Gehrsitz, Markus and Martin Ungerer. 2016. "Jobs, Crime, and Votes a Short-Run Evaluation of the Refugee Crisis in Germany." *IZA Discussion Paper Series* 10494.

Gelman, Andrew. 2008. "Scaling Regression Inputs by Dividing by Two Standard Deviations." *Statistics in Medicine* 27(15):2865–2873.

GESIS - Leibniz-Institut für Sozialwissenschaften. 2017. "ALLBUS/GGSS 2016 (Allgemeine Bevölkerungsumfrage Der Sozialwissenschaften/German General Social Survey 2016)." *GESIS Data Archive* ZA5250 Data file Version 2.1.0,.

Gessler, Theresa, Gergö Tóth and Johannes Wachs. 2019. "No Country for Asylum Seekers? How Short-Term Exposure to Refugees Influences Attitudes and Voting Behavior in Hungary." *Political Behaviour* pp. 1–30.
URL: *https://doi.org/10.1007/s11109-021-09682-1*

Gill, Sarah C., Peter Butterworth, Bryan Rodgers and Andrew Mackinnon. 2007. "Validity of the Mental Health Component Scale of the 12-Item Short-Form Health Survey (MCS-12) as Measure of Common Mental Disorders in the General Population." *Psychiatry Research* 152(1):63–71.

Golder, Matt. 2003. "Explaining Variation In The Success Of Extreme Right Parties In Western Europe." *Comparative Political Studies* 36(4):432–466.

Goodman-Bacon, Andrew. 2021. "Difference-in-Differences with Variation in Treatment Timing." *Journal of Econometrics* 225(2):254–277.

Goodwin, Matthew and Caitlin Milazzo. 2017. "Taking back control? Investigating the role of immigration in the 2016 vote for Brexit." *The British Journal of Politics and International Relations* 19(3):450–464.
URL: *https://doi.org/10.1177/1369148117710799*

Görl, Wolfgang and Nicole Graner. 2016. "Milbertshofen: Brandanschlag auf Flüchtlingsunterkunft." *Sueddeutsche Zeitung* . (last accessed: July 31st, 2021).
URL: *https://www.sueddeutsche.de/muenchen/milbertshofen-brandanschlag-auf-geplante-fluechtlingsunterkunft-1.2894164*

Granovetter, Mark. 1978. "Threshold Models of Collective Behavior." *American Journal of Sociology* 83(6):1420–1443.

Grover, Chris and Keith Soothill. 1996. "Ethnicity, the Search for Rapists and the Press." *Ethnic and Racial Studies* 19(3):567–584.

Gunnarsson, Jonas. 2016. Recent Attacks against Women in European Cities – the Need for a Comprehensive Response. Parliamentary Assembly 13961 Council of Europe. (last accessed: July 31st, 2021).
URL: *https://www.refworld.org/docid/58371afa4.html*

Hainmueller, Jens. 2012. "Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies." *Political Analysis* 20(1):25–46.

Halla, Martin, Alexander F Wagner and Josef Zweimüller. 2017. "Immigration and Voting for the Far Right." *Journal of the European Economic Association* 15(6):1341–1385.

Hangartner, Dominik, Elias Dinas, Moritz Marbach, Konstantinos Matakos and Dimitrios Xefteris. 2019. "Does Exposure to the Refugee Crisis Make Natives More Hostile?" *American Political Science Review* 113(2):442–455.

Hausman, Catherine and David S. Rapson. 2018. "Regression Discontinuity in Time: Considerations for Empirical Applications." *Annual Review of Resource Economics* 10(1):533–552.

Hedström, Peter. 1994. "Contagious Collectivities: On the Spatial Diffusion of Swedish Trade Unions, 1890-1940." *American Journal of Sociology* 99(5):1157–1179.

Hennig, Jakob. 2021. "Neighborhood Quality and Opposition to Immigration: Evidence from German Refugee Shelters." *Journal of Development Economics* 150:102604.

Hetherington, Marc J. and Michael Nelson. 2003. "Anatomy of a Rally Effect: George W. Bush and the War on Terrorism." *PS: Political Science & Politics* 36(1):37–42.

Hewitt, Gavin. 2016. "Cologne's Profound Impact on Europe." *BBC* . (last accessed: July 31st, 2021).
URL: *https://www.bbc.com/news/world-europe-35261988*

Hopkins, Daniel J. 2010. "Politicized Places: Explaining Where and When Immigrants Provoke Local Opposition." *American Political Science Review* 104(01):40–60.

Hubbard, Phil. 2005. "Accommodating Otherness: Anti-Asylum Centre Protest and the Maintenance of White Privilege." *Transactions of the Institute of British Geographers* 30(1):52–65.

Isenberg, Michael. 2014. "Stuttgart-Feuerbach: Anwohner protestieren gegen Flüchtlingsheim." *Stuttgarter Nachrichten* . (last accessed: July 31st, 2021).
URL: *https://www.stuttgarter-nachrichten.de/inhalt.stuttgart-feuerbach-anwohner-protestieren-gegen-fluechtlingsheim.e201cf0a-7be9-44bf-bf2e-615b09addf90.html*

Jäckle, Sebastian and Pascal D König. 2016. "The Dark Side of the German 'Welcome Culture': Investigating the Causes behind Attacks on Refugees in 2015." *West European Politics* 40(2):223–251.

Jäckle, Sebastian and Pascal D König. 2018. "Threatening Events and Anti-Refugee Violence: An Empirical Analysis in the Wake of the Refugee Crisis during the Years 2015 and 2016 in Germany." *European Sociological Review* 31(6):265.

Jacobsen, Jannes, Philipp Eisnecker and Jürgen Schupp. 2017. "In 2016, around One-Third of People in Germany Donated for Refugees and Ten Percent Helped out on Site—yet Concerns Are Mounting." *DIW Economic Bulletin* 7(16/17):165–176.

Jakobsson, Niklas and Svein Blom. 2014. "Did the 2011 Terror Attacks in Norway Change Citizens' Attitudes Toward Immigrants?" *International Journal of Public Opinion Research* 26(4):475–486.

Johnston, David W. and Grace Lordan. 2012. "Discrimination Makes Me Sick! An Examination of the Discrimination–Health Relationship." *Journal of Health Economics* 31(1):99–111.

Jungkunz, Sebastian, Marc Helbling and Carsten Schwemmer. 2019. "Xenophobia before and after the Paris 2015 Attacks: Evidence from a Natural Experiment." *Ethnicities* 19(2):271–291.

Kaas, Leo, Georgi Kocharkov, Edgar Preugschat and Nawid Siassi. 2020. "Reasons for the Low Homeownership Rate in Germany." *Deutsche Bundesbank Research Brief* 30:1–4.

Kam, Cindy D. and Donald R. Kinder. 2007. "Terror and Ethnocentrism: Foundations of American Support for the War on Terrorism." *Journal of Politics* 69(2):320–338.

Kastner, Bernd. 2014. "Bayernkaserne in München - Wie Gerüchte Angst machen." *Sueddeutsche Zeitung* . (last accessed: July 31st, 2021).
URL: *https://www.sueddeutsche.de/muenchen/fluechtlinge-in-der-bayernkaserne-wie-geruechte-angst-machen-1.2082643*

King, Gary and Langche Zeng. 2003. "Logistic Regression in Rare Events Data." *Journal of Statistical Software* 8(2):1–27.

King, Ryan D and Gretchen M Sutton. 2013. "High Times For Hate Crimes: Explaining the Temporal Clustering of Hate-Motivated Offending." *Criminology* 51(4):871–894.

Kirk, David S. and John H. Laub. 2010. "Neighborhood Change and Crime in the Modern Metropolis." *Crime and Justice* 39(1):441–502.

Kommunalreferat and Sozialreferat. 2014. "Sitzungsvorlage Nr. 14 – 20 / V 00955: Programm Zur Unterbringung von Flüchtlingen Und Wohnungslosen.". Sozialreferat München.

Koopmans, Ruud. 1996. "Explaining the Rise of Racist and Extreme Right Violence in Western Europe: Grievances or Opportunities?" *European Journal of Political Research* 30(2):185–216.

Koopmans, Ruud and Susan Olzak. 2004. "Discursive Opportunities and the Evolution of Right-Wing Violence in Germany." *American Journal of Sociology* 110(1):198–230.

Köttig, Michaela and Johanna Sigl. 2020. "Racist Mobilisation and Sexualisation in the 'Refugee Debate' in Germany." *Journal of Sociology* 56(1):69–83.

Kriesi, Hanspeter. 2012. *Political Conflict in Western Europe*. Cambridge: Cambridge University Press.

Kroenke, Kurt, Robert L. Spitzer, Janet B. W. Williams and Bernd Löwe. 2009. "An Ultra-Brief Screening Scale for Anxiety and Depression: The PHQ-4." *Psychosomatics* 50(6):613–621.

Krone, Tobias. 2015. "Klage gegen Flüchtlingsheim: Das Heim und die feinen Leute." *Die Tageszeitung: taz* . (last accessed: July 31st, 2021).
URL: *https://taz.de/!5019822/*

Krueger, Alan B and Jorn-Steffen Pischke. 1997. "A Statistical Analysis of Crime against Foreigners in Unified Germany." *The Journal of Human Resources* 32(1):182–209.

Kühne, Simon, Jannes Jacobsen, DIW Berlin and Martin Kroh. 2019. "Sampling in Times of High Immigration: The Survey Process of the IAB-BAMF-SOEP Survey of Refugees." *Survey Methods: Insights from the Field* pp. 1–9.
URL: *https://surveyinsights.org/?p=11416*

Kürschner Rauck, Kathleen. 2020. ""Not in My Backyard!" The 2015 Refugee Crisis in Germany." *SSRN Scholarly Paper* .
URL: *http://dx.doi.org/10.2139/ssrn.3697189*

Kürschner Rauck, Kathleen and Michael Kvasnicka. 2018. The 2015 European Refugee Crisis and Residential Housing Rents in Germany. In *25th Annual European Real Estate Society Conference*. Reading, United Kingdom: European Real Estate Society.

LaPiere, Richard T. 1934. "Attitudes vs. Actions." *Social Forces* 13(2):230–237.

Larsen, Erik Gahner, David Cutts and Matthew J. Goodwin. 2019. "Do Terrorist Attacks Feed Populist Eurosceptics? Evidence from Two Comparative Quasi-experiments." *European Journal of Political Research* 59(1):182–205.

Lauter, Rita. 2017. "Kölner Silvesternacht : Zwei Jahre und 36 Verurteilungen später." *Die Zeit* . (last accessed: July 31st, 2021).
URL: *https://www.zeit.de/gesellschaft/zeitgeschehen/2017-12/koelner-silvesternacht-2015-sexuelle-uebergriffe-ermittlungen*

Legewie, Joscha. 2013. "Terrorist Events and Attitudes toward Immigrants: A Natural Experiment." *American Journal of Sociology* 118(5):1199–1245.

Legewie, Joscha. 2016. "Racial Profiling in Stop-and-Frisk Operations: How Local Events Trigger Periods of Increased Discrimination." *American Journal of Sociology* 122(2):379–424.

Legewie, Joscha and Jeffrey Fagan. 2019. "Aggressive Policing and the Educational Performance of Minority Youth." *American Sociological Review* 84(2):220–247.

Lewis, Valerie A. and Ridhi Kashyap. 2013. "Are Muslims a Distinctive Minority? An Empirical Analysis of Religiosity, Social Attitudes, and Islam." *Journal for the Scientific Study of Religion* 52(3):617–626.

Lickel, Brian, Norman Miller, Douglas M Stenstrom, Thomas F Denson and Toni Schmader. 2006. "Vicarious Retribution: The Role of Collective Blame in Intergroup Aggression." *Journal of Personality and Social Psychology* 10(4):372–390.

Liebe, Ulf, Jürgen Meyerhoff, Maarten Kroesen, Caspar Chorus and Klaus Glenk. 2018. "From Welcome Culture to Welcome Limits? Uncovering Preference Changes over Time for Sheltering Refugees in Germany." *PLOS ONE* 13(8):e0199923.

Lieberson, Stanley. 1985. *Making It Count: The Improvement of Social Research and Theory*. Berkeley: University of California Press.

Light, Michael T., Ellen Dinsmore and Michael Massoglia. 2019. "How Do Criminal Courts Respond in Times of Crisis? Evidence from 9/11." *American Journal of Sociology* 125(2):485–533.

Löwe, Bernd, Inka Wahl, Matthias Rose, Carsten Spitzer, Heide Glaesmer, Katja Wingenfeld, Antonius Schneider and Elmar Brähler. 2010. "A 4-Item Measure of Depression and Anxiety: Validation and Standardization of the Patient Health Questionnaire-4 (PHQ-4) in the General Population." *Journal of Affective Disorders* 122(1-2):86–95.

Maney, Gregory M. and Margaret Abraham. 2008. "Whose Backyard? Boundary Making in NIMBY Opposition to Immigrant Services." *Social Justice* 35(4):66–82.

Marbach, Moritz and Guido Ropers. 2018. "Not in My Backyard: Do Increases in Immigration Cause Political Violence?" *IPL Working Paper Series* 18(2):1–36.

Marbach, Moritz, Jens Hainmueller and Dominik Hangartner. 2018. "The Long-Term Impact of Employment Bans on the Economic Integration of Refugees." *Science Advances* 4(9):1–6.

Matzig, Gerhard. 2016. "Mauern: Grenze zwischen "wir" und "die"." *Sueddeutsche Zeitung* . (last accessed: July 31st, 2021).
URL: *https://www.sueddeutsche.de/kultur/fluechtlinge-und-architektur-die-grenze-zwischen-wir-und-die-1.3238704*

Merkl, Peter H. 1993. *Encounters With the Contemporary Radical Right*. Westview Press.

Monk, Ellis P. 2015. "The Cost of Color: Skin Color, Discrimination, and Health among African-Americans." *American Journal of Sociology* 121(2):396–444.

Mueller, John E. 1970. "Presidential Popularity from Truman to Johnson." *The American Political Science Review* 64(1):18–34.

Müller, Karsten and Carlo Schwarz. 2021. "Fanning the Flames of Hate: Social Media and Hate Crime." *Journal of the European Economic Association* 19(4):2131––2167. https://doi.org/10.1093/jeea/jvaa045.

Muñoz, Jordi, Albert Falcó-Gimeno and Enrique Hernández. 2019. "Unexpected Event during Survey Design: Promise and Pitfalls for Causal Inference." *Political Analysis* 28(2):1–21.

Mut gegen rechte Gewalt. 2020. "Chronik Flüchtlingsfeindlicher Vorfälle.". (last accessed: July 31st, 2021).
URL: *https://www.mut-gegen-rechte-gewalt.de/service/chronik-vorfaelle*

Navarrete, Carlos David, Melissa M. McDonald, Ludwin E. Molina and Jim Sidanius. 2010. "Prejudice at the Nexus of Race and Gender: An Outgroup Male Target Hypothesis." *Journal of Personality and Social Psychology* 98(6):933–945.

Neumayer, Eric. 2006. "Unequal Access to Foreign Spaces: How States Use Visa Restrictions to Regulate Mobility in a Globalized World." *Transactions of the Institute of British Geographers* 31(1):72–84.

NRW Landtag, NRW. 2017. "Drucksache 16/14450: Schlussbericht Des Parlamentarischen Untersuchungsausschusses IV." Drucksache 16/14450:1–1352.

Nübling, Matthias, Hanfried H. Andersen, Axel Mühlbacher, Jürgen Schupp and Gert Wagner. 2007. "Computation of Standard Values for Physical and Mental Health Scale Scores Using the SOEP Version of SF12v2." *Schmollers Jahrbuch : Journal of Applied Social Science Studies / Zeitschrift für Wirtschafts- und Sozialwissenschaften* 127(1):171–182.

Olzak, Susan. 1990. "The Political Context of Competition: Lynching and Urban Racial Violence, 1882-1914." *Social Forces* 69(2):395–421.

Olzak, Susan. 1994. *The Dynamics of Ethnic Competition and Conflict*. Stanford: Stanford University Press.

Paluck, Elizabeth Levy, Seth A. Green and Donald P. Green. 2019. "The Contact Hypothesis Re-Evaluated." *Behavioural Public Policy* 3(2):129–158.

Pascoe, Elizabeth A. and Laura Smart Richman. 2009. "Perceived Discrimination and Health: A Meta-Analytic Review." *Psychological bulletin* 135(4):531–554.

Pearlin, Leonard I. 1999. The Stress Process Revisited. In *Handbook of the Sociology of Mental Health*, ed. Carol S. Aneshensel and Jo C. Phelan. Handbooks of Sociology and Social Research Boston, MA: Springer US pp. 395–415.

Peffley, Mark, Marc L. Hutchison and Michal Shamir. 2015. "The Impact of Persistent Terrorism on Political Tolerance: Israel, 1980 to 2011." *American Political Science Review* 109(4):817–832.

Peters, Benedikt and Markus Mayr. 2016. "Merkel: Terror von Flüchtlingen "verhöhnt das Land"." *Süddeutsche.de* . (last accessed: July 31st, 2021).
URL: *https://www.sueddeutsche.de/politik/pressekonferenz-merkel-wir-schaffen-das-und-haben-bereits-sehr.-viel-geschafft-1.3098808*

Pettigrew, Thomas F. 1998. "Intergroup Contact Theory." *Annual Review of Psychology* 49(1):65–85.

Pettigrew, Thomas F. and Linda R. Tropp. 2006. "A Meta-Analytic Test of Intergroup Contact Theory." *Journal of Personality and Social Psychology* 90(5):751–783.

Pettigrew, Thomas F. and Linda R. Tropp. 2008. "How Does Intergroup Contact Reduce Prejudice? Meta-Analytic Tests of Three Mediators." *European Journal of Social Psychology* 38(6):922–934.

Piopiunik, Marc and Jens Ruhose. 2017. "Immigration, Regional Conditions, and Crime: Evidence from an Allocation Policy in Germany." *European Economic Review* 92:258–282.

Pischke, Jörn-Steffen. 2012. "Probit Better than LPM?" *www.mostlyharmlesseconometrics.com* . (last accessed: July 31st, 2021).
URL: *http://www.mostlyharmlesseconometrics.com/2012/07/probit-better-than-lpm/*

Putnam, Robert D. 2007. "E Pluribus Unum: Diversity and Community in the Twenty-First Century The 2006 Johan Skytte Prize Lecture." *Scandinavian Political Studies* 30(2):137–174.

Qian, Zhenchao and Daniel T. Lichter. 2007. "Social Boundaries and Marital Assimilation: Interpreting Trends in Racial and Ethnic Intermarriage." *American Sociological Review* 72(1):68–94.

Quillian, Lincoln. 2002. "Why Is Black–White Residential Segregation So Persistent?: Evidence on Three Theories from Migration Data." *Social Science Research* 31(2):197–229.

Quillian, Lincoln and Devah Pager. 2001. "Black Neighbors, Higher Crime? The Role of Racial Stereotypes in Evaluations of Neighborhood Crime." *American Journal of Sociology* 107(3):717–767.

Rabby, Faisal and William M III Rogers. 2010. "The Impact of 9/11 and the London Bombings on the Employment and Earnings of U.K. Muslims." *IZA Discussion Papers* 4763:1–31.

Rubin, G. James, Chris R. Brewin, Neil Greenberg, John Simpson and Simon Wessely. 2005. "Psychological and Behavioural Reactions to the Bombings in London on 7 July 2005: Cross Sectional Survey of a Representative Sample of Londoners." *BMJ* 331(7517):606–613.

Saiz, Albert and Susan M. Wachter. 2011. "Immigration and the Neighborhood." *American Economic Journal: Economic Policy* 3(2):169–188.

Sampson, Robert J., Jeffrey D. Morenoff and Thomas Gannon-Rowley. 2002. "Assessing "Neighborhood Effects": Social Processes and New Directions in Research." *Annual Review of Sociology* 28(1):443–478.

Sawyer, Pamela J., Brenda Major, Bettina J. Casad, Sarah S. M. Townsend and Wendy Berry Mendes. 2012. "Discrimination and the Stress Response: Psychological and Physiological Consequences of Anticipating Prejudice in Interethnic Interactions." *American Journal of Public Health* 102(5):1020–1026.

Scacco, Alexandra and Shana S. Warren. 2018. "Can Social Contact Reduce Prejudice and Discrimination? Evidence from a Field Experiment in Nigeria." *American Political Science Review* 112(3):654–677.

Schmidt, Janek, Kate Connolly and Emma Graham-Harrison. 2016. "Munich shooting: killer was bullied teen loner obsessed with mass murder." *The Guardian* . (last accessed: July 31st, 2021).
URL: *https://www.theguardian.com/world/2016/jul/23/munich-shooting-loner-facebook-ali-sonboly-bullied-killer*

Schüller, Simone. 2016. "The Effects of 9/11 on Attitudes toward Immigration and the Moderating Role of Education." *Kyklos* 69(4):604–632.

Schuster, M. A., B. D. Stein, L. Jaycox, R. L. Collins, G. N. Marshall, M. N. Elliott, A. J. Zhou, D. E. Kanouse, J. L. Morrison and S. H. Berry. 2001. "A National Survey of Stress Reactions after the September 11, 2001, Terrorist Attacks." *The New England Journal of Medicine* 345(20):1507–1512.

Shuster, Simon. 2016. "Germany's Migrant Assault Scandal and Europe's Refugee Challenge." *Time Magazine* . (last accessed: July 31st, 2021).
URL: *https://time.com/4188337/fear-and-loathing/*

Simonsohn, Uri, Joseph P. Simmons and Leif D. Nelson. 2020. "Specification Curve Analysis." *Nature Human Behaviour* 4(11):1208–1214.

Sniderman, Paul M, Louk Hagendoorn and Markus Prior. 2004. "Predisposing Factors and Situational Triggers: Exclusionary Reactions to Immigrant Minorities." *American Political Science Review* 98(01):35–49.

Sozialreferat. 2016. "Strategie Flüchtlingsunterbringung: Sitzungsvorlage Nr. 14-20 / V 07111.". Amt für Wohnen und Migration Wohnen und Betreuen von unbegleiteten minderjährigen und heranwachsenden Flüchtlingen, München.

Sozialreferat. 2020. "Daten zu in München untergebrachten Flüchtlingen." *Sozialreferat und Kommunalreferat München* . (last accessed: July 31st, 2021).
URL: *https://www.muenchen.de/rathaus/Stadtverwaltung/Sozialreferat/Fluechtlinge/Hintergrund.html*

START. 2018. "Global Terrorism Database.". (last accessed: July 31st, 2021).
URL: *https://www.start.umd.edu/gtd*

Staudenmaier, Rebecca. 2016. "Report: Over 1,200 Women Assaulted in Germany on New Year's Eve." *Deutsche Welle* . (last accessed: July 31st, 2021).
URL: *https://www.dw.com/en/report-over-1200-women-assaulted.-in-germany-on-new-years-eve/a-19391708*

Steinmayr, Andreas. 2021. "Contact versus Exposure: Refugee Presence and Voting for the Far Right." *The Review of Economics and Statistics* 103(2):310–327.

Stekhofen, Daniel J. and Peter Bühlmann. 2012. "MissForest—Non-Parametric Missing Value Imputation for Mixed-Type Data." *Bioinformatics* 28(1):112–118.

Sun, Liyang and Sarah Abraham. 2020. "Estimating Dynamic Treatment Effects in Event Studies With Heterogeneous Treatment Effects." *SSRN Scholarly Paper* ID 3158747.

Taylor, Shelley E. 1991. "Asymmetrical Effects of Positive and Negative Events: The Mobilization - Minimization Hypothesis." *Psychological Bulletin* 110(1):67–85.

Tumen, Semih. 2016. "The Economic Impact of Syrian Refugees on Host Countries: Quasi-Experimental Evidence from Turkey." *The American Economic Review* 106(5):456–460.

Van de Vyver, Julie, Diane M. Houston, Dominic Abrams and Milica Vasiljevic. 2016. "Boosting Belligerence: How the July 7, 2005, London Bombings Affected Liberals' Moral Foundations and Prejudice." *Psychological Science* 27(2):169–177.

Van Hauwaert, Steven M. and Robert A. Huber. 2020. "In-group Solidarity or Out-group Hostility in Response to Terrorism in France? Evidence from a Regression Discontinuity Design." *European Journal of Political Research* 59(4):936–953.

Vernby, Kåre and Rafaela Dancygier. 2019. "Can Immigrants Counteract Employer Discrimination? A Factorial Field Experiment Reveals the Immutability of Ethnic Hierarchies." *PLOS ONE* 14(7):e0218044.

Vilagut, Gemma, Carlos G. Forero, Alejandro Pinto-Meza, Joseph M. Haro, Ron de Graaf, Ronny Bruffaerts, Vivanne Kovess, Giovanni de Girolamo, Herbert Matschinger, Montserrat Ferrer and Jordi Alonso. 2013. "The Mental Component of the Short-Form 12 Health Survey (SF-12) as a Measure of Depressive Disorders in the General Population: Results with Three Alternative Scoring Methods." *Value in Health* 16:564–573.

Vorländer, Hans, Maik Herold and Steven Schäller. 2016. *PEGIDA: Entwicklung, Zusammensetzung und Deutung einer Empörungsbewegung.* VS Verlag für Sozialwissenschaften.

Wagner, Sander and Ivaylo D. Petev. 2019. "The Economic Penalty of Terrorism: Increase in Discrimination Against Arabs and Muslims after Paris Attacks." *Working Paper* pp. 1–40. (last accessed: July 31st, 2021).
URL: *https://doi.org/10.31235/osf.io/vra4b*

Walther, Lena, Lukas M. Fuchs, Jürgen Schupp and Christian von Scheve. 2019. "Living Conditions and the Mental Health and Well-Being of Refugees: Evidence from a Large-Scale German Panel Study." *SOEPpapers on Multidisciplinary Panel Data Research* 1029. (last accessed: July 31st, 2021).
URL: *https://www.econstor.eu/handle/10419/195293*

Whalley, Matthew G. and Chris R. Brewin. 2007. "Mental Health Following Terrorist Attacks." *The British Journal of Psychiatry* 190(2):94–96.

Williams, David R., Jourdyn A. Lawrence and Brigette A. Davis. 2019. "Racism and Health: Evidence and Needed Research." *Annual Review of Public Health* 40:105–125.

Williams, David R. and Selina A. Mohammed. 2009. "Discrimination and Racial Disparities in Health: Evidence and Needed Research." *Journal of Behavioral Medicine* 32(1):20–47.

Woldin, Philipp. 2017. "Hamburg-Harvestehude: Warum Das Villenviertel Seine Flüchtlinge Jetzt Doch Liebt." *Die Welt* . (last accessed: July 31st, 2021).
URL: *https://www.welt.de/regionales/hamburg/article162817746/Warum-das-Villenviertel-seine-Fluechtlinge-jetzt-doch-liebt.html*

Zeit Online. 2016. "Horst Seehofer: "Neue Dimension des Terrors"." *Die Zeit* . (last accessed: July 31st, 2021).
URL: *https://www.zeit.de/politik/2016-07/horst-seehofer-ansbach-attentat-buergerschutz*

Ziller, Conrad and Sara Wallace Goodman. 2020. "Local Government Efficiency and Anti-Immigrant Violence." *The Journal of Politics* 82(3):895–907.

Zippay, Allison and Sung Kyong Lee. 2008. "Neighbors' Perceptions of Community-Based Psychiatric Housing." *Social Service Review* 82(3):395–417.

Zorlu, Aslan. 2017. "Attitudes toward Asylum Seekers in Small Local Communities." *International Migration* 55(6):14–36.