

**Messaging Migration: Media Agenda-Setting,
Immigration Attitudes, and the Effects of
Evidence on Perceptions and Policy Preferences**



William L Allen
Hertford College
University of Oxford

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Abstract

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William L. Allen (Hertford College, University of Oxford)

How do messages impact what people think? Although this broad question speaks to current debates about the role of information in politics, variations of it have appeared throughout political science. My approach draws upon political communication, psychology, and linguistics to demonstrate how information relates to attitudes, perceptions, and policy preferences.

Across four separate studies that use the issue of immigration in the British case, I address several sub-questions. First, how has the British press—itsself a key messenger of political information—portrayed immigration and immigrants over several decades? Applying corpus linguistic methods, I find press coverage about immigration has both increased and been characterised by several sub-agendas. Second, how have these messages at the word-level related to changes in public concern about immigration? Using time series models, I show how specific dimensions of immigration—its sociocultural, geographic, and numerical aspects—and not overall levels of coverage are related to aggregate public concern. These two studies collectively demonstrate how the agenda-setting power of print media is likely more subtle and delimited than commonly expected.

In the third study, I focus on the individual-level impacts of messages. Which qualities of immigrants matter more for public attitudes? Findings from a nationally-representative conjoint survey experiment demonstrate how the British public places greater importance on skill level and language fluency when evaluating individual immigrants. Finally, I broaden my view of messages to include different types of supporting evidence. Do arguments citing numerical or narrative evidence impact public perceptions and policy preferences? A second nationally-representative survey experiment shows how positive messages about immigrants featuring numerical or narrative supporting evidence can positively change perceptions, especially among people who would be expected to hold more negative views. But, the presence of extra information neither raises perceptions more than similarly positive messages lacking evidence, nor influences policy preferences.

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1

Introduction

In August 2016, a campaign called ‘Stop Funding Hate’ was gathering steam in Britain. Its aim: to put public pressure on companies to stop advertising in three specific newspapers, the *Daily Mail*, *The Express*, and *The Sun*. Its motivation: that these publications were producing large numbers of negative headlines about refugees and immigrants, which were thought to contribute to increased hostility towards minority groups and rises in hate crime (Stop Funding Hate n.d.). By November, campaigners had already persuaded Lego to announce it would no longer advertise or offer free giveaways with the *Daily Mail*.

Four years earlier, the Leveson Inquiry into press practices among British newspapers had made a similar argument linking messages about immigrants in the press with public perceptions:

...the evidence of discriminatory, sensational or unbalanced reporting in relation to ethnic minorities, immigrants and/or asylum seekers, is concerning. The press can have significant influence over community relations and the way in which parts of society perceive other parts...[T]here are enough examples of careless or reckless reporting to conclude that discriminatory, sensational or unbalanced reporting in relation to ethnic minorities, immigrants and/or asylum seekers is a

feature of journalistic practice in parts of the press, rather than an aberration. (Leveson 2012, 673)

Putting aside questions about the normative effectiveness of these interventions, both examples draw a clear connection between the content of media messages and subsequent perceptions, behaviours, or actions. This raises a key question, which my thesis aims to address in a series of related but distinct studies: how do messages impact what people think? In the following section, I motivate my choice of mass media—particularly the press—as an especially relevant messenger for contemporary politics and political behaviour.

The Press: Stunningly Successful at Shaping the Pictures in Our Heads?

A long tradition of political communication scholarship has examined the role of media in shaping attitudes and broader politics. Studies over several decades have tended to swing between extremes in their conclusions, either arguing for particularly strong or weak media effects (Cacciatore, Scheufele, and Iyengar 2016). In 1963, the political scientist Bernard Cohen published *The Press and Foreign Policy*, a major work that set the direction for future media research. Indeed, perhaps out of convenience or a feeling of obligation, scholars since then often make passing reference to a particularly pithy quote in that book, where Cohen (1963, 13) states that the press ‘is stunningly successful in telling its readers what to think *about*’.¹

But using his words as a blanket motivation for the presence of many kinds of messaging effects across many kinds of media is not only inappropriate, it

¹ Emphasis in the original. This quotation alone has been used in over 1,300 research documents as of November 2018, according to Google Scholar.

obscures an important point that has deeper implications for public opinion scholarship. Specifically, he distinguished between two kinds of media effects: those that change individuals' actual opinions, and those that change the prominence of the information underpinning those opinions in the first place. Indeed, carrying on for only a few more sentences reveals his argument that the press shapes the mental images people use to make sense of the world:

...the world looks different to different people, depending not only on their personal interests, but also on the map that is drawn for them by the writers, editors, and publishers of the papers they read...It is, more properly, an atlas of places, personages, situations, and events...an atlas of policy possibilities, alternatives, choices. The editor may believe he is only printing the things that people want to read, but he is thereby putting a claim on their attention, powerfully determining what they will be thinking about, and talking about, until the next wave laps their shore. (B. Cohen 1963, 13)

Putting Cohen's strongly causal language of the press singularly 'determining' public attention and behaviour to one side for a moment, I find that his metaphor of a map—or more precisely, an atlas containing multiple maps—invites a range of questions that are relevant for a whole range of information sources, including those beyond mass media. Who creates these maps? What are their contents, and can they change? How do people use them for navigation? Cohen, having dedicated much of his academic career trying to address these questions as they applied in the realm of foreign policy, concluded that press outlets are largely successful mapmakers because they provide readers with the terminology and authoritative sources needed to make sense of complex political issues. What is

more, as future scholarship would demonstrate, these maps are often the only ones available to the public when it comes to major conflicts or scandals involving powerful governments (Bennett, Lawrence, and Livingston 2006; Bennett and Livingston 2003; Entman 2004).

Yet, over 40 years earlier, another political commentator had made a very similar point about the influence of media. Walter Lippmann, in his landmark book *Public Opinion*, argued that attitudes as formally expressed in surveys are actually based on prior conceptions that people hold in their minds: ‘what [humans do] is not based on direct and certain knowledge, but on pictures made by them or given to them’ (1922, 28). As Lippman was a journalist as well, it is not surprising that he attributes the sources of these pictures largely, though not exclusively, to messages produced by reporters and the press.

Whether explicitly citing him or not, public opinion scholarship has slowly but surely revived the spirit of Lippman’s argument in order to highlight how perceptions of reality—comprising information as well as the cognitive processes involved in judgments and evaluation—contribute to attitudes typically measured in surveys and of interest to political scientists (Alvarez and Brehm 2002; Zaller and Feldman 1992). This is particularly true in the case of attitudes towards minority groups, including immigrants. For example, several studies have shown how perceptions of who ‘prototypical’ immigrants are, or of the proportion of local people belonging to a given ethnic or racial group, influence subsequent immigration preferences (Blinder 2015; Wong 2007).

The general motivation for my set of studies launches from the foundation laid by Cohen and Lippmann: messages conveyed through mass media—as they contribute to individuals’ stockpiles of assumed knowledge and tacit expectations—

provide some of the raw materials that people draw upon when they think about immigration and immigrants. This process is grounded in established theories and mechanisms from political communication, social psychology, and linguistics. But, here I depart from the strongly deterministic language found in many media studies. Instead, I bring evidence showing how messages conveyed through press media actually have more delimited and subtle impacts on public perceptions than is commonly assumed, at least when it comes to controversial issues like immigration that are politically salient and consequential.

Research Questions and Contributions

By focusing on print mass media as particularly relevant outlets for political information, I seek to address a broad question: how do messages impact what people think? This question matters for several reasons. First, understanding the impacts of information communicated through mass media in general is important for democratic participation and accountability. If news stories can indeed transfer some of their importance to how the public perceives issues, then it is possible that media can stimulate other kinds of behaviours that potentially stem from these perceptions such as seeking information, expressing viewpoints, or taking a stand at all (King, Schneer, and White 2017). But, establishing such a role for media is a necessary preliminary step.

Second, revisiting established ideas with newer data and research methods, as well as different cases, is important for testing the limits of those theories. As I will explain in the following section, immigration in Britain provides a particularly fertile field in which to test for any effects that political messages might have on public attitudes. Bringing the most up-to-date techniques in observational and experimental

research design, as well as best practices in studying large amounts of text from linguistics, enables me to empirically re-examine the hypotheses implied within, and extending from, Cohen's and Lippman's influential statements.

Third, demonstrating the potential and pitfalls of messages involving controversial issues has value for policymakers and practitioners. Especially in a political moment where producing and consuming information has become more polarised and subject to scrutiny, it is crucial to know how (or even if) a communication intervention will affect audiences. This has clear implications for campaigns and strategy both inside and outside politics. Yet, aside from mostly small-scale and student-based studies, public opinion scholars know relatively little about the impacts of messages containing different kinds of 'facts' about politically salient issues like immigration.

Given these motivations, my thesis makes several contributions across four empirical studies. First, it shows how people can indeed respond favourably to messages communicating positive aspects of immigration, even if that information likely runs counter to their existing beliefs (Chapter 5).² Second, it goes beyond mere willingness to admit immigrants by considering how people distinguish among immigrants based on perceptions of their relative economic and sociocultural benefit to the host country (Chapter 4). In this regard, I share new evidence of how the British public perceives some features—such as immigrants' education level and language skills—as being more indicative of economic rather than societal or

² Though, as I point out in Chapter 5, this observed effect has to be set against other studies showing how people tend to respond even more strongly to negatively-framed arguments and information (Soroka 2006).

cultural benefit.³ Third, it provides a picture of media effects differentiated not by the sheer amount of coverage but rather by the specific aspects mentioned within that coverage (Chapter 3). Finally, it demonstrates how theory, tools, and techniques originating in linguistics provide advantages for large-scale text analysis that complement, rather than replace, current trends in political science (Chapter 2). This offers the possibility of enhancing the external validity of other observational and experimental research designs that use measures of ‘typical’ language use.

To be clear, I am not trying to empirically document the presence of different mental ‘pictures’ that people may hold. Indeed, as will become clear in each study, I do not explicitly ask respondents about who or what they have in mind when thinking about a given concept or group of people. Instead, my studies’ designs collectively test whether providing different kinds of messages—some of which are informed by typical media content—results in measurable attitude changes. For example, in my experimental approach in Chapters 4 and 5, the provided messages convey specific portrayals that ‘fill in’ concepts like ‘immigration’ or ‘refugees’, thereby making these considerations more accessible above other portrayals in the moment of responding to the treatments. Therefore, my motivation for examining

³ Precisely defining what comprises ‘social and cultural benefit’, or even ‘sociocultural dimensions’ is difficult. For example, these involve aspects of civics, values, or attachment. As described in later chapters’ study designs, I choose to leave this terminology more open, following the lead of prior research from the British Social Attitudes series (NatCen Social Research 2017) and European Social Survey (2015). These surveys simply ask about the importance of ‘being committed to the way of life in Britain’, given how British respondents tend to struggle in defining characteristically ‘British’ values, traditions, or norms (Heath and Tilley 2005). The important criterion, however, is that this terminology raises different issues compared to ‘economic’ aspects.

these differences in messaging stems from an underlying appreciation of how attitudes, perceptions, and policy preferences can be shaped by changes in the accessibility of information.

Immigration: A Salient Issue on British Press and Public Agendas

In many ways, the topic of immigration offers a useful window into agenda-setting processes. Within Britain, there has been significant variation in the public salience of the issue. For example, prior to 2000, less than 10% of the population rated it as one of the most important issues, compared with over 50% towards the end of 2015 (Ipsos MORI 2015).⁴ Moreover, surveys have repeatedly shown that majorities of the public demand lower rates of immigration, or think immigration has gone too far, even in times when the actual number of immigrants is relatively low (Duffy and Frere-Smith 2014; Blinder 2015). And these opinions are stronger than in other country contexts including the US or continental Europe (Transatlantic Trends

⁴ For many decades, the polling companies Ipsos MORI and Gallup have done this nearly every month with a representative sample in the UK, without prompting respondents with a list of categories. Instead, they group responses together under broad topics. Then, they report the percentage of people who responded with each category, which is called either the Most Important Issue (MII) Index by Ipsos MORI or the Most Important Problem (MIP) index by Gallup in the US. These are commonly used ways of tracking monthly changes in the salience of issues (Jennings and Wlezien 2011; John et al. 2013). I explore the advantages and limitations of this measure in greater detail in Chapter 3.

2014).⁵ Existing scholarship tends to attribute part of this discrepancy to mass media (Finney and Robinson 2008; Threadgold 2009; Balch and Balabanova 2011). But is this the case? I use immigration as a lens through which to examine the link between the information people encounter and their perceptions, preferences, and attitudes.

Britain is also particularly relevant as a specific case for understanding immigration attitudes and the role of messages—particularly emanating from media sources—in shaping them. First, British politicians have arguably been talking about how they are responsive to public demands on immigration, although the extent to which the public has perceived them to be successful at this task is debatable (Ford, Jennings, and Somerville 2015). This heightens the importance of looking for reasons why attitudes about immigration might change. Second, and possibly as a result of these perceived failures by successive governments, the issue is eroding public trust in the political system itself, both in Britain and across Europe (McLaren 2013, 2015). This has significant implications for how democracies function.

Third, as evidenced by the rise (and arguable decline) of the UK Independence Party (UKIP), immigration has contributed towards one of the most significant changes to British party politics in many years (Ford and Goodwin 2014).

⁵ When asking questions about immigration, there is always a possibility that the questions are actually measuring how willing people are to reveal prejudices or biases, not actual opinions (G. P. Freeman, Hansen, and Leal 2013). After all, blatant racism is usually rejected as an acceptable expression in mainstream society (Mendelberg 2001), a kind of ‘anti-prejudice norm’. Indeed, as Blinder, Ford, and Ivarsflaten (2013) find in the European case, voters are sometimes motivated to avoid looking prejudicial against immigrants when they think this norm is at stake. But when the situation is more ambiguous, voters may feel more comfortable expressing negative responses.

Finally, the British press serves as an example of a powerful media environment—one that, despite declines in circulation figures, still retains and is perceived to exert significant influence across politics, society, and culture.⁶ This is indicative of other media environments that are largely market-driven and commercially orientated (Hallin and Mancini 2004).

Given these features, Britain is a case where one would think the effects of media messages about immigration would be especially strong. The issue has been highly salient among the British public for several years. The press, as a vocal and visible feature of the country's mass media landscape, has increasingly produced content about it, too. If there were an instance where researchers would expect to find clear and substantial links between different kinds of messages on the one hand, and public perceptions or attitudes on the other hand, this mixture of case and issue should provide it. Indeed, scholars, commentators, and former practitioners alike have come to varying degrees of this conclusion in their analysis of significant migration events, most notably the publication of the photo of Alan Kurdi in 2015 (Greenslade 2015; Vis and Goriunova 2015). Chapters 3 and 4, in different ways, examine these links.

Yet, at the same time, it is also likely that messaging effects will depend on the types of messages being tested and the audiences receiving them. This is especially relevant for my fourth study (Chapter 5) in which I examine the impacts of messages containing largely positive arguments about immigration to Britain. As several studies have shown, aggregate British attitudes towards immigration tend to be negative, although this trend may be changing (McLaren and Johnson 2004;

⁶ I account for newspapers' decline in circulation in my analysis in Chapter 3.

NatCen Social Research 2017). Moreover, immigration as an issue appears to be especially motivating for specific subgroups within Britain—notably those who voted Leave in the 2016 EU referendum (Hobolt 2016).

Therefore, at first glance, it might be reasonable to expect that positive messages that generally run counter to British opinions would have little effect. This is because of ‘motivated reasoning’ (Kunda 1990), where people discount or disregard new information if it disagrees with their prior beliefs. What is more, if recent work by Brendan Nyhan and Jason Reifler (2010) is correct, these kinds of messages might even ‘backfire’ to produce even more negative attitudes. For these reasons, Britain presents an especially difficult case in which to find messaging effects stemming from positive arguments about immigration. Chapter 5 provides greater detail and discussion about how these mechanisms work.

Distinctions Among Attitudinal Objects

From the start, it is important to distinguish among what or who people express opinions towards (the ‘attitudinal object’). It would seem that, in the case of immigration, it is clear what the attitudinal object is. But Alin Ceobanu and Xavier Escandell (2010) observe that when it comes to how social scientists have studied attitudes on immigration, the category of people (immigrants) is unintentionally elided with the category of phenomenon (immigration). It is possible that people may have different attitudes towards individual immigrants compared to entire groups or policy preferences (Iyengar et al. 2013). But depending on the ways that questions are worded, subsequent analyses might only capture one of these aspects, or confuse one for the other.

Peter Kellner (2015) makes the implications of this distinction for the British context clear. Using YouGov polling data that asked the British public about immigration as a whole as well as about specific immigrant groups, he argues:

When we think of immigrants as individuals, we often see the way they enhance our neighbourhoods, public services and wider economy. When we think of immigration as an issue, we link it to government failure, economic insecurity and Britain's decline from greatness. (Kellner 2015)

Immigrants are visible in communities, neighbourhoods, friendship networks, and professional settings. But immigration, as both a process and aggregated phenomenon, is less immediately accessible. Therefore, he argues, when members of the British public weigh up the perceived benefits of individuals compared to the perceived costs of the scale of immigration, it tends to be the costs that win. This may especially be the case among groups like older and working-class people who may feel more pessimistic about the future and their own security.

It is also worth making a further distinction among asylum seekers and immigrants. On the one hand, reviews of the literature find similar factors affect perceptions towards both groups, particularly available information from media and everyday experiences (Crawley, McMahon, and Jones 2016; Finney and Peach 2006). On the other hand, 'far less is known specifically about attitudes towards asylum seekers and refugees' (Crawley, Drinkwater, and Kauser 2013, 13). In fact, the boundaries between asylum seekers and immigrants are sometimes blurred: studies in linguistics (Gabrielatos and Baker 2008), as well as prior research of mine from migration studies (Blinder and Allen 2016a), demonstrate how refugees, asylum seekers, and immigrants are often conflated and mixed up in public

understandings. And, refugee status can be granted for more than just political reasons: race, religious beliefs, national identity, or membership of particular groups are all possible reasons for claiming asylum and successfully receiving refugee status. The point of raising these distinctions is to reiterate the need to be cautious in interpreting results from research studies that claim to measure attitudes towards ‘immigration’ or ‘immigrants’. The British case speaks to methodological concerns about what is being measured, in addition to substantive questions about immigration attitudes and public opinion formation.

Outline of the Thesis

My thesis is organised as four separate but related empirical studies. Each of them has their own theoretical underpinnings that inform the design and analysis. This is because I intend for them to speak to different scholarly debates. However, they all fit under the organising question of how messages relate to what people think.

At their most basic level, messages comprise words placed together. Whether intentionally or not, these placements reflect choices made by messengers—and, when aggregated, these patterns can give insight into typical and atypical word usages that might signal important portrayals of a concept or group. Therefore, having a clear picture of these usages is not only an empirical contribution in itself, but also an important pre-requisite for making statements about how these messages might matter for public attitudes. Chapter 2 uses corpus linguistic techniques to identify the salience of both immigration-related terms and specific aspects associated with those terms. Furthermore, I make an important empirical advance on prior studies by systematically determining and verifying the *proportion* of total press coverage that immigration-related articles comprise. This results in a more

accurate measure of salience compared to relying on raw frequencies that might be susceptible to fluctuations in the overall amount of printed content—especially when making comparisons over several decades.

Next, in the most explicit use of my media data analysis, I observationally test for a relationship between these language patterns and public concern about immigration. Fitting within a recent and rich vein of work that has taken advantage of longer-term media and survey data now available in several European countries (Boomgaarden and Vliegenthart 2009; McLaren, Boomgaarden, and Vliegenthart 2017; Murphy and Devine 2018), I use time series methods in Chapter 3 to ascertain how changes in press coverage relate to how much importance the public ascribes to immigration at the aggregate level. In a further development of existing work, I also test for reciprocal causation to consider whether public concern has actually been driving changes in press attention.

Using these techniques, I find that increasing press attention to immigration and asylum as a whole has not been associated with public concern, even as the issue skyrocketed to the top of the country’s agenda through the ‘migration crisis’ of 2015. Rather, specific aspects of immigration coverage—its sociocultural dimensions, as well as references to the scale and pace of inflows—are more closely related with greater concern. But even so, this relationship is both small in size and entangled with other factors including messages originating elsewhere in British politics.

The question that arises from the results of Chapter 3 is whether specific portrayals of immigrants have impacts at the level of individuals. To address this, in Chapter 4 I draw upon a nationally-representative conjoint survey experiment of British-born adults (N = 4,445). In the experiment, I present respondents with pairs of hypothetical immigrants that differ along a variety of dimensions which prior

theories of immigration attitudes predict are important for public opinion. Then, I ask them to not only choose which immigrant they would prefer to allow into the Great Britain (a ‘forced choice’ design used by most existing conjoint experiments in political science), but also to consider each immigrant’s likely benefit to Britain’s economy and society.

In a methodological step that enhances the experiment’s external validity, I use specific words that the linguistic analysis in Chapter 2 revealed to be especially typical of the ways that British newspapers describe immigrants and asylum-seekers. Moreover, I test for the impact that terms related to the scale and pace of immigration inflows—another group of words emerging from the linguistic evidence—have on preferences and perceptions. To do this, I conduct an experiment within the experiment by splitting the sample roughly in half, and introducing the tasks to one group using phrases including ‘mass immigration’.

My results indicate that, when it comes to how people evaluate individual immigrants, the sociocultural and numerical language typically used by press outlets turns out to be less impactful overall than words describing immigrants’ occupations and language skills—although these effects do correspond with what existing theories about the determinants of immigration attitudes already predict. Meanwhile, highlighting the gross amount of immigration to Britain causes people to differentiate more strongly among immigrants with varying levels of English, but it does not cause people to become more negative towards all immigrants.

Underlying the studies in Chapters 2, 3 and 4 is a focus on messages at the level of words. Yet messages can also comprise sets of information that span larger units of text. In Chapter 5, I broaden my view of messaging to include a key journalistic technique: the use of supporting evidence to enhance arguments about

immigration. Although scholars in communication studies have examined how the presence of evidence shapes subsequent attitudes, these have various limitations including small sample sizes, use of non-political topics, and consideration of only ideal-type evidence rather than hybrid types.

Addressing these problems, I report findings from another nationally-representative survey experiment among British-born adults ($N = 10,247$). In a first for public opinion scholarship in political science, I vary not only the subject matter of the treatments (to focus on either economic or sociocultural contributions of immigrants in Britain) but also the type of evidence used to support those claims (numerical data, narrative stories, a mixture of the two, or no evidence at all). What I find is that the presence of supporting evidence in pro-immigration messages generally does not cause even more positive attitudes compared to equally positive messages that lack supporting evidence—except when using numbers in an economic argument. Even so, the positive messages were more effective among people who already likely had negative attitudes towards immigrants.

Chapter 6 concludes by summarising the main findings from each study, pointing out their scholarly contributions, and highlighting future areas of work that are outside the scope of this thesis. Notably, these include examining how features that lie above and beyond the level of word patterns in texts also contribute to the ‘pictures in our heads’—features such as sentiment, emotions, and visuals. Finally, the Supporting Information chapter contains additional details related to all of the chapters, including coding schemes, robustness checks, and survey instruments.

Across my four studies, I acknowledge how I am examining different attitudinal objects when measuring the effects of messages. In Chapter 2, I differentiate between immigration and immigrants on the one hand, and asylum-

seekers and refugees on the other hand. Then, I account for this distinction in Chapter 3 through several robustness checks that I report in the Supporting Information. Chapter 4 focuses on perceptions about individual immigrants and asylum-seekers, given different messages about immigration as a phenomenon. Finally, Chapter 5 shifts attention to attitudes about immigration as a phenomenon while varying the forms of information provided.

Overall, I find that the words used in the press to describe immigration and immigrants do matter for public perceptions. Moreover, in contrast to popular assertions that ‘facts do not matter’ in modern politics, my results suggest that people can and do engage with messages expressing viewpoints running counter to their own, even on controversial subjects like immigration. But the larger picture I am presenting is one where information contained within messages and transmitted through press media likely has more subtle effects on what people think about immigration than might be expected—especially in the British case where the largely right-leaning national press is often cited as directly contributing to broader anti-immigrant rhetoric (Greenslade 2005; Crawley, McMahon, and Jones 2016). In the next chapter, I present a comprehensive analysis of what British press outlets—themselves being key messengers in the country’s political landscape—have said about immigration over several decades.

2

How Has the British National Press Portrayed Immigration and Asylum? Using Linguistics to Identify Changes in Agendas

Introduction

This chapter's study addresses two questions that aim to establish both the overall visibility of immigration and immigrant groups in the British press, as well as the attributes associated with those groups. First, how has the salience of articles containing migration-related terms changed over time? Although several studies have attempted to show how and to what extent press outputs exert agenda-setting effects, they rely on raw frequencies of content relating to a given issue rather than its proportion of total press content (the so-called 'news hole'). This is a significant problem for making statements about the visibility of an issue—and, in turn, how changes in visibility might relate to changes in public attitudes. What is missing, therefore, is a systematic and reliable measure of salience. To address this gap, I use a constructed week method that randomly samples and scales up a specific mixture of days per year. Then, I use these constructed weeks to estimate the number of items and words published by newspapers. This forms a baseline for establishing how the visibility of immigration has changed over time.

Second, how have the attributes ascribed to immigration and asylum in the British press changed over time? A challenge facing scholars is how to reliably extract attributes from large amounts of text that do not readily lend themselves to manual or small-sample coding. Contemporary approaches to text analysis, particularly those harnessing the efficiencies afforded by digital methods, potentially offer ways of addressing this challenge. However, in order for the outputs to be useful for questions about communication that are of interest to political scientists, the attributes identified by the analysis need some kind of theoretical link to the ways that language contributes to how individuals make sense of concepts and ideas.

In this chapter, I argue that the theory of lexical priming—and its empirical manifestation through non-random word relationships—provides this link. Patterns of words appearing together (‘collocations’) indicate prime-target relationships, which people learn and store in memory. Over time, this knowledge of how words typically appear accumulates to the point where certain collocations are more accessible than others. In turn, highly accessible collocations comprise, but do not necessarily determine, the ‘pictures’ that people draw upon when they are asked to express opinions about target concepts or groups.

Deriving from this theory, I use methods from corpus and computational linguistics to identify sets of attributes that are grammatically associated with key target words like ‘immigration’, ‘migration’, ‘asylum-seekers’, and ‘refugees’. This makes a substantive contribution to understanding how press coverage of immigration-related issues has changed. It also makes a methodological contribution by demonstrating how linguistics can provide systematic and reliable ways of identifying patterns in texts that are grounded in the ways that words work in real

life. For certain questions, this approach may complement—rather than displace—current approaches to large-scale text analysis in political science.¹

Besides its methodological and theoretical contributions, this chapter also has the substantive aim of providing a comprehensive overview of the content and dynamics of British press coverage about immigration over a longer period of time. Although numerous studies that have documented specific dimensions of newspaper portrayals (Smith and Deacon 2018), they tend to exhibit several limitations. Either they lack sufficient detail for replication, or they are relatively narrow in scope with respect to the publications or time periods analysed. This chapter attempts to make improvements on both of these counts by adhering to established and transparent methods, as well as capitalising on the advantages of computer-assisted analysis that enable larger-scale data collection while preserving qualitative access for validation and disambiguation among terms.

Agenda-Setting Theory and Its Implications for Text Analysis

Although this chapter's study primarily aims to provide a comprehensive picture of how immigration and related subjects have appeared in the British press, this contribution is situated within a larger goal across Chapters 2 and 3 of identifying how patterns of portrayals relate to changes in the importance that the British public has ascribed to immigration over several years. Since I conceptualise this notion of 'importance' as a signal for immigration being on the public 'agenda', this section

¹ I would not go as far as the linguist Michael Halliday who famously claimed that 'a discourse analysis that is not based on grammar is not an analysis at all, but simply a running commentary on a text' (Halliday 2004, xvi).

briefly outlines the main aspects of ‘agenda-setting’ as the idea has developed in political science and communication studies. It is important to note that here I discuss agenda-setting only to the extent necessary to motivate my argument that corpus linguistic methods are the most appropriate for identifying agendas. In the next chapter, I will explore agenda-setting in greater depth, particularly with respect to how other political actors—not just media—can shape perceptions of importance, as well as how causality runs in multiple directions.

Two Levels of Agenda-Setting

In its simplest and uni-directional form, agenda-setting typically refers to the process by which media signal to people what is important by covering some issues more prominently or frequently than others. As applied to political communication, this idea originates in Maxwell McCombs and Donald Shaw’s (1972) study of voters in Chapel Hill, North Carolina during the 1968 US presidential campaign. The researchers asked 100 undecided voters what they thought were the most important issues of the campaign, and then compared the responses to the content of media they used. They found that media coverage correlated with voters’ responses, leading them to conclude ‘the evidence is in line with the conditions that must exist if agenda-setting by the mass media does occur’ (McCombs and Shaw 1972, 184).

Later research identified how this happens at two different levels (McCombs and Ghanem 2001).² First-level effects occur when people respond to the salience of an attitude object. When someone identifies the National Health Service or the European Union as the most important issue in surveys, this is an example of a first-level agenda. But, when someone talks about the EU in terms of sovereignty, immigration, or economic benefits, these are all examples of second-level agenda-setting because they are specific attributes of a single issue. According to McCombs and Ghanem, attribute agenda-setting ‘suggests that the media also tell us *how to think* [emphasis original] about some objects’ (2001, 69). This should sound familiar: Bernard Cohen’s words in the Introduction chapter express nearly the same conclusion. Moreover, it is a conclusion reached in parallel research from social psychology about how people generally process information in social environments: as Shelley Taylor and Susan Fiske (1978) observed decades ago, results from ‘top of the head’ measures typically used in experimental psychology settings tend to be related to the salience of stimuli as well as the state of the receiver.

But does this link between the visibility of an issue in media messages and how people respond bear empirical scrutiny? Existing research seems to conclude that it does (Slater 2004). For example, a significant body of work by Stuart Soroka and Christopher Wlezien (2010) systematically examines this relationship. One of their main observations is that media heighten differences in how people respond to

² Guo, Vu, and McCombs (2012) propose a third-level of agenda setting, where media bundle together different attributes and objects, then make all the elements in these bundles more salient to the public simultaneously. This level of agenda-setting, while conceptually interesting, is beyond the empirical scope of my thesis.

positive or negative events (Soroka 2006). This is especially the case on issues where people may not have direct experience—such as foreign policy—and therefore rely more on media content (Soroka 2003). In the next chapter, I address some alternative explanations, notably those having their origins in the role of political actors.

Agenda-Setting Questions and ‘Text as Data’ Approaches

A pre-requisite for identifying agenda-setting effects, either at the first- or second-level, is a clear sense of what these agendas are in the first place: their content, scale, and dynamics. Determining these kinds of features points to more general problems that confront many empirical researchers. Due to the proliferation of digital archives and text mining techniques, political scientists have a wealth of textual data available to them. Developments in statistical methods have enabled researchers to study these texts along many dimensions: their topics (Rossignol and Sebillot 2005), positive or negative sentiment (Young and Soroka 2012), relationships with other texts (Lim 2010), speakers’ policy positions (Laver, Benoit, and Garry 2003), and the frames contained within them (Baden 2010). In their landmark paper summarising the state of text analysis under the banner of ‘text as data’ approaches, Justin Grimmer and Brandon Stewart (2013) argue that automated methods can add value to, and significantly speed up, analyses. This is particularly the case when the objective is either to classify items (into known or unknown categories) or to place them along some kind of ideological scale (such as left-right policy preferences).

One of their main points is that any quantitative approaches to text ‘should be evaluated on their ability to perform some useful social scientific task’ (Grimmer and Stewart 2013, 270). Perhaps the goal is to measure the tone of articles to see

whether some articles are more positive than others (Young and Soroka 2012). In this case, dictionary-based methods might be useful: researchers consult (or construct) lists of words that ‘belong’ to a given category, such as ‘positive connotation’.³ Other approaches, such as supervised learning methods, require researchers to hand-code a ‘training set’ of documents for whichever feature they are looking for, and then use statistical techniques to ‘learn’ how the given feature operates in that training set. Then, the model applies this learning to a new group of previously unseen documents (a ‘test set’) to divide them along the desired categories. Ideally, the model’s results match hand-coded results of the same test set.

But perhaps the desired categories or features are not known beforehand. This may be the case in instances where researchers want to identify emergent topics or subjects within texts. By using models that cluster documents together, unsupervised learning methods aim to identify these underlying aspects of texts without necessarily fitting them to a pre-determined coding scheme. They are especially useful in situations when ‘the categories of interest in a new project or a new corpus are usually unclear or could benefit from extensive exploration of the data’ (Grimmer and Stewart 2013, 281).

Across all these tasks, Grimmer and Stewart emphasise that the assumptions about language use driving these quantitative analyses are wrong, but useful.⁴ For

³ The dictionary eventually consulted needs to reflect how words are actually used in that topical domain. Otherwise, there is a risk that ‘positive’ words in one context may actually have negative connotations in another. See Loughran and McDonald (2011) for an example of this in the case of finance.

⁴ They highlight a classic pair of sentences that are similar in structure, but drastically different in meaning: ‘Time flies like an arrow. Fruit flies like a banana’.

example, a major assumption used in pre-processing texts is that documents are ‘bags of words’: word order does not matter (Jurafsky and Martin 2009). Obviously, sentences in real life derive meaning from word order. But if the goal is to identify the topic of an article, or establish its tone, then a list of highly frequent words may be sufficient. Therefore, choices about which model or technique to use must be linked to a clear understanding of the intended objective and domain: ‘there is no globally best method for automated text analysis’ (Grimmer and Stewart 2013, 270).

In the case of agenda-setting research, the task that confronts researchers is how to identify and measure the salience of certain attributes, or larger categories of attributes. Some of these may already be known through previous research and theory. Others may be unknown beforehand, emerging from the corpus itself. Furthermore, agenda-setting theory suggests that attributes express properties or characteristics of a given attitudinal object (McCombs 2014). I argue that these expressions manifest themselves most explicitly at the word-level through specific and predictable patterns of usage.⁵

Given these challenges, an ideal approach tailored to the task of identifying agendas in texts would have four characteristics: (1) it would draw upon previous topic-specific attribute categories where they exist; (2) it would refine and modify them if needed based on empirical observations of language use in similar texts to account for domain-specific connotations; (3) it would create new categories if emergent patterns from the dataset demand them; and (4) it would rely on clear,

⁵ Though, as observed in subsequent sections, it is possible attributes may also appear in larger units of texts: the approach used in this chapter does not claim to capture *all* attributes, but rather the most explicit and immediately-relevant ones.

robust, and theoretically sound measures of object attribution to establish the existence of second-level agendas.

Corpus Linguistic Approaches

Approaches based in corpus linguistics potentially provide advances on each of these four characteristics. Corpus linguistics does not refer to a discipline. Rather, it is ‘an approach that facilitates empirical investigation of language variation and use, resulting in research findings that have much greater generalizability and validity that would otherwise be feasible’ (Biber and Reppen 2015, 1). It is distinguished by several characteristics: (1) it is empirical, based in actual patterns of language use in real-world texts; (2) its objects of study (corpora, or collections of texts) are relatively large and principled in collection; (3) it extensively uses computers and semi- or fully-automated methods for analysis; and (4) it includes room for qualitative as well as quantitative techniques that often complement each other.

Although computer-based techniques may have recently popularised and enabled quantitative analyses of texts, scholars have actually used corpora for many years. Linguists Douglas Biber and Randi Reppen observe that ‘the standard practice in linguistics up until the 1950s was to base language descriptions on analyses of collections of natural texts: pre-computer corpora. Dictionaries have long been based on empirical analysis of word use in natural sentences’ (2015, 2). In practice, these characteristics enable analyses that can rely on patterns emerging from the data (a

‘corpus-driven’ approach), test pre-determined hypotheses (a ‘corpus-based approach), or a mixture of both (Tognini-Bonelli 2001).⁶

What advantages does a corpus linguistic approach afford to the task of identifying agendas in large amounts of text? First, it is grounded in empirical observations about how language works in real life. Instead of relying on hypothetical examples or researchers’ own (and necessarily limited) experiences to generate codes or candidate word lists, corpus methods can comprehensively identify all examples of a given pattern—whether it is frequent or not.⁷ These observations, in ‘corpus-driven’ settings, can be as domain-specific as the corpora used.⁸

Second, it gives guidance about how to identify ‘attributes’ of concepts using reliable measures. Linguistics provides tools for figuring out how words relate to one another in ways that go beyond looking for co-occurrences within whole articles. Instead, by looking at the level of words for patterns of nouns and adjectives—concepts that are well-specified for the purposes of automated searching (Marcus, Marcinkiewicz, and Santorini 1993)—researchers can be reasonably sure that the attributes they identify are actually referring to the desired object.

⁶ Many corpus linguists use both approaches in iterative ways: emergent findings inform hypotheses which are tested further. See Baker (2006) for examples.

⁷ This feature of ‘comprehensiveness’ can reveal relatively rare or unusual language use: see Baker (2006).

⁸ One of the most well-known corpora available for research use is the British National Corpus (of British English, with subcorpora containing different genres of writing). Other corpora can be very specialist, from those that contain the works of Charles Dickens (Mahlberg 2007) to letters from companies to their shareholders (Pollach 2011).

Third, it removes some human subjectivity and error by taking advantage of recent developments in computing, but still enables efficient, qualitative validation. For example, disambiguation of similar terms (such as ‘asylum’ in mental health contexts and ‘asylum’ in forced migration contexts) is an important step in confirming that the quantitative results reflect the intended object.

Fourth, and related to all of the above reasons, a corpus linguistic approach provides a rationale for why seeing repeated patterns of words matters for what individuals and groups may perceive to be important. This perception of importance is central to claims about how media exert influence through agendas. In the next section, I turn attention to this rationale and its specific mechanism: lexical priming.

Linking Corpus Analysis and Public Agendas: Accessibility and Lexical Priming

Agenda-setting relies upon information being *accessible*, which refers to ‘the likelihood that an available consideration will be activated for use in an evaluation’ (Chong and Druckman 2007, 108). As people use a given consideration more frequently, or are prompted to use it through the messages they receive, it becomes more available in their minds. By increasing the amount of coverage, for example, media outlets send signals about what is important (Iyengar and Kinder 1987).

How does this happen at the individual level? Psychologists have developed several models that try to identify how different factors impact the chances of people engaging with information—and, in turn, changing their attitudes. One of the most well-known is the elaboration likelihood model (ELM), proposed and developed by Richard Petty and John Cacioppo (1986). The ELM tries to model how opinions can change, putting forward a central route and a peripheral route. The central route

involves conscious, meaningful cognitive activity (‘elaboration’) on the part of whoever is receiving a message. Meanwhile, the peripheral route relies on heuristics (e.g., cues such as ‘an expert says this, so it must be true’) or group validation (e.g., the ‘bandwagon effect’ that gives the impression that lots of people already agree with a statement and it would be socially acceptable to do so as well).

Although the ELM provides a general set of steps through which messages can impact attitudes, it does not provide a micro-level explanation of how patterns of words relate to the ‘pictures’ in people’s minds. This is a central concern for my thesis as I make the case that messages—comprising words that have been chosen to fit together—somehow contribute to the information that people draw upon as they form their opinions. To make this link, I turn to insights from psycholinguistics, specifically Michael Hoey’s theory of lexical priming.

Lexical priming (Hoey 2005) refers to the way that certain words (called ‘primes’) provoke some subsequent words (‘targets’) more readily than others. Simple word association games are an example of this. If I choose the priming word ‘pitch’, a listener is likely to recognise the target word ‘football’ more quickly compared to a seemingly unrelated word like ‘button’.⁹ Of course, these primings depend on individuals’ prior experiences with given words: since speakers of American English might be more likely to use the word ‘field’ in reference to an area

⁹ Research in psychology confirms this: see the overview in Connell and Lynott (2016).

of sports play, the priming word ‘pitch’ may not elicit a connection to the target word ‘football’.¹⁰

This theory is useful because it derives from real-world instances of language use that researchers can observe. Relationships between primes and targets manifest themselves through collocation, or the greater-than-random chance of two words appearing near each other (McEnery and Hardie 2011).¹¹ Collocations reflect speakers’ own understandings while simultaneously shaping how receivers understand the words. Tellingly, Hoey explains this theory using the analogy of a computer, and specifically invokes the mechanism of accessibility:

...[T]he mind has a mental concordance of every word it has encountered, a concordance that has been richly glossed for social, physical, discoursal, generic and interpersonal context. This mental concordance is accessible and can be processed in much the same way that a computer concordance is, so that all kinds of patterns, including collocational patterns, are available for use. It simultaneously serves as a part, at least, of our knowledge base. (Hoey 2005, 11)

To be clear, the presence of lexical priming does not suggest a deterministic, one-way link between experiences of language and language use that follows. Implied within the priming process is that primes are not permanent: they can change

¹⁰ Moreover, in this example, the priming of ‘field’ may lead to ‘soccer’ rather than ‘football’ for some people. Equally, for those who are more musically inclined, ‘pitch’ might lead to a target of ‘tune’.

¹¹ I spend much more time in Chapter 3 explaining the mechanics of collocation—both in general and as applied in my specific case. For now, this definition suits my purpose of explaining how lexical priming works.

through experiences of different usages, or through explicit correction via education.

But, the strengths of primes do partly depend on the extent to which an individual has experienced a particular collocation, or prime-target relationship:

...[A]s a word is acquired through encounters with it in speech and writing, it becomes cumulatively loaded with the contexts and co-texts in which it is encountered, and our knowledge of it includes the fact that it co-occurs with certain other words in certain kinds of context.

(Hoey 2005, 8)

How does lexical priming link with the micro-level mechanics of agenda-setting? I argue that collocations are an important means—though not the only one—by which messengers communicate information and recipients make sense of that information. Specifically, experiencing particular prime-target patterns more often leads people to be more likely to view target words in terms of their primes rather than other non-collocated words. This knowledge gets added to individuals' mental stores of how those words are 'typically' used. The greater the stores (or 'cumulative loading' in Hoey's terminology) for a usage, the more accessible that information is for a person. And, the 'pictures in our heads' about a given target word are most likely formed from the pieces of information that are most readily available.

What this implies is that groups of primes that are both highly collocated with a target word *and* highly frequent could be conceived as a kind of second-level agenda. This is because they are strongly primed to appear with that target word (being collocated) as well as more visible relative to other terms. Therefore, lexical priming provides a strong case for focusing on collocation as a specific way that words find their way into individuals' minds via the accessibility mechanism.

Up to this point in the chapter, I have outlined the motivation for using linguistic analysis as a way of identifying first- and second-level agendas in large amounts of media outputs. In the remaining sections, I will demonstrate how this process works in my chosen case of British press coverage mentioning terms related to immigration and refugee issues. This makes three important contributions: (1) it provides a comprehensive view of how this politically salient issue has appeared in mass media coverage over a period of time that has been significant for public perceptions and government policymaking; (2) it illustrates the viability of using this set of techniques for other topics of interest to political scientists; and (3) it sets the empirical foundation for more sophisticated agenda-setting analysis in Chapter 3.

Data, Measures, and Analytical Strategy

Data Sources and Collection Procedures

The main source of data for this chapter is a corpus of migration-related articles from nine UK national daily newspapers, spanning 1 January 1985 to 31 December 2015 where available. It contains the daily versions of nine national British newspapers, divided into tabloids and broadsheets in Table 1. These publications cover the breadth of the British press, with the exception of the Independent.

To access the texts, I used Nexus UK and Factiva. These are online archival services that cover many international periodicals and other publications. I chose them because they can deliver full-text versions of newspaper content in standardised formats that enable large-scale data collection. For major publications like those used in this study, most content is readily available. However, it does leave the possibility of duplicates—such as multiple editions—entering the corpus and artificially inflating the results if publishers decide to provide them. To

counteract this problem, I removed any duplicate articles appearing on the same day and in the same publication.¹²

Table 1. Publications Included in the Corpus

Tabloids	Years (Timespan)	Broadsheets	Years (Timespan)
Daily Mail	24 (1992-2015)	Financial Times	30 (1985-2015)
Daily Mirror	20 (1996-2015)	The Guardian	30 (1985-2015)
Daily Star	15 (2001-2015)	The Daily Telegraph	15 (2001-2015)
The Express	16 (2000-2015)	The Times	29 (1986-2015)
The Sun	16 (2000-2015)		

Using a search string developed by Costas Gabrielatos (2007), I retrieved items from these publications that contained a selection of migration-related terms: [refugee! OR asylum! OR deport! OR immigr! OR emigr! OR migrant! OR illegal alien! OR illegal entry OR leave to remain) NOT (deportivo OR department)]. The ‘!’ symbol is a wildcard, which includes variations of terms such as plural forms (‘refugee’ and ‘refugees’) and verb forms (‘immigrating’ as well as ‘immigration’).¹³

¹² Journalists often rely on widely-circulated press releases. These usually contain pre-approved quotes or other background material. Therefore, removing all articles that contained similar text on the same day could remove individual articles from two different publications—a problem for trying to measure overall visibility. This is the reason I included the criterion of duplicates within the same publication: two -similar articles in the same newspaper on the same day are likely to be copies. De-duplication was done within the Sketch Engine using techniques developed in Pomikálek (2011).

¹³ ‘Deportivo’ is a Spanish football club, while ‘department’ refers to etiquette. The specific term ‘migration’ is not included because it might result in retrieving articles not related to human migration, such as the movement of animals (‘bird migration’) or information (‘data migration’).

Table 2. Dimensions of the Corpus by Publication Type

Publication	Total Items (Percentage)
<i>Daily Mail</i>	28,204 (9.4%)
<i>Daily Mirror</i>	18,415 (6.2%)
<i>Daily Star</i>	7,477 (2.5%)
<i>The Express</i>	19,367 (6.5%)
<i>The Sun</i>	22,671 (7.6%)
Tabloids Subtotal	96,134 (32.1%)
<i>Financial Times</i>	43,631 (14.6%)
<i>The Guardian</i>	73,213 (24.5%)
<i>The Telegraph</i>	26,655 (8.9%)
<i>The Times</i>	59,795 (20.0%)
Broadsheets Subtotal	203,294 (67.9%)
TOTAL	299,428 (100.0%)

Note: Percentages may not match subtotals because of rounding.

I included all sections of each newspaper in the search for two reasons. First, it is difficult to presume where migration-related content will appear among each publication. Second, people may encounter information about migration in many ways besides typical current affairs reporting: through mentions of athletes’ backgrounds, reviews of films involving refugees, or opinion columns talking about asylum-seekers.¹⁴ In total, the corpus contains 299,428 items. Table 2 shows how these are distributed among the nine publications.

I chose to specifically analyse national print media for several reasons. Since this chapter is concerned with tracking changes in visibility over a longer period of time, limiting the dataset to newspaper texts that were stored digitally was a practical

¹⁴ For example, discussions about immigration appeared with coverage mentioning British athletes’ performances during the 2012 Olympics—particularly around Mo Farah, born in Somalia, and Jessica Ennis-Hill whose father is of Jamaican/Afro-Caribbean origins (W. Allen and Blinder 2012).

choice.¹⁵ But there are also good reasons to view newspapers as being more indicative sources of media agendas compared to broadcast and social media. To be sure, there are open questions about how, where, and when people access news (McCombs 2014; de Zuñiga, Correa, and Valenzuela 2012). Yet, communication research has demonstrated how newspapers in particular play especially strong roles in setting agendas among media types such as television (Vliegenthart and Walgrave 2008). Also, many articles circulating online or posted to news websites are similar to versions appearing in traditional print publications (Ghersetti 2014). On the consumption side, cross-national research finds that, despite the popularity of social media for other uses, people still report using print newspapers as their main source of news more than social media, including in Britain (Nielsen and Schrøder 2014).

Establishing the Monthly ‘News Hole’ Using the Constructed Week Method

A limitation of prior studies is that they do not include a measure of the total amount of non-advertising content in each publication—the ‘news hole’ (Jones and Carter, Jr. 1959). Rather, these studies count up raw frequencies of mentions, or the number of items mentioning a given term, as a measure of salience. This is a problem because changes in the gross amount of immigration coverage may actually be meaningless once the overall number of items published is taken into account. In order to claim that immigration is more salient compared to other issues, researchers

¹⁵ In my concluding chapter (Chapter 7), I return to this decision and consider its implications for the thesis as a whole. As part of that reflection, I analyse a smaller corpus of more recent online news and social media data from the eve of the EU Referendum vote.

need to measure the proportion of all coverage that immigration-related items comprise.

For example, assume Newspaper X published 100 articles that mentioned ‘immigration’ in both January 1995 and January 2015. Based on these equivalent raw figures, one might conclude that Newspaper X gave similar levels of priority to immigration across those 20 years. But, if Newspaper X published 2,000 items in January 1995, and 4,000 items in January 2015, then the picture is different. Salience, as measured by the proportion of items mentioning ‘immigration’, would have actually declined from 5% of items in January 1995 to 2.5% in January 2015.

This extreme example illustrates the potential problems that the lack of a baseline introduces to the task of making claims about how the visibility of some aspect of language has changed over time. To address this problem, I use a constructed week method (Jones and Carter, Jr. 1959) to estimate the number of items that each publication produced every month. The underlying principle of this method is that randomly selected days, when summed and scaled up to match the actual distribution of days observed in a given month, create a baseline that approximates the actual news hole.¹⁶

¹⁶ In their 1959 Public Opinion Quarterly research note, Jones and Carter, Jr. report on a study done by the Association for Education in Journalism (AEJ) that analysed three weeks’ worth of news in 90 US newspapers comprising about 70,000 pages. The sizes of many of these newspapers’ news holes were already available, but for four publications that did not have news hole data available, the AEJ study used a similar ‘constructed week’ approach used in this chapter. The results, in their words, were ‘gratifying’: after building 30 constructed weeks for each paper, and comparing these results with manually collected ‘true’ measurements, the study found that 85% of the constructed weeks fell within +/- 2% of the actual figures (Jones and Carter 1959, 403).

First, I randomly chose six days per year. These days corresponded with each day of the week, excluding Sundays: one Monday, one Tuesday, and so on. I did this to account for the fact that each year and month has slightly different frequencies of each day. This matters because not all news days are equal: Wednesdays tend to have more content, for example (Lacy et al. 2001). Then, I downloaded all the content held in Nexis or Factiva for each selected day. This produced two numbers: the total articles for that day, and the total word count of those articles.¹⁷

Next, I established how many of each day (Mondays, Tuesdays, etc.) there were in each month between 1985 and 2015. Doing this accounts for variation among months, particularly February that can have up to four fewer weekdays and Saturdays. Then, I multiplied the observed frequencies of each day per month by the corresponding value of items or words for the sampled day. Finally, summing all of these estimated values for all the days in each month produced an estimated baseline number of items and words in the monthly ‘news hole’.

Validating the accuracy of these estimates poses some challenges. Notably, there are few systematically collected and documented datasets of all newspaper content available to researchers. One exception is a corpus of selected UK broadsheet newspaper content, collected by a team of linguists. Called the ‘SiBol/Port Corpus’,¹⁸ this dataset contains all content from five British broadsheets in 1993, 2005, and 2010 (Sketch Engine 2011). It was built in successive waves: the first wave contained texts that the publishers were legally able to release with no

¹⁷ This excluded online content, as my original corpus also did.

¹⁸ For the institutions where its original contributors came from: University of Siena, University of Bologna, and Portsmouth University.

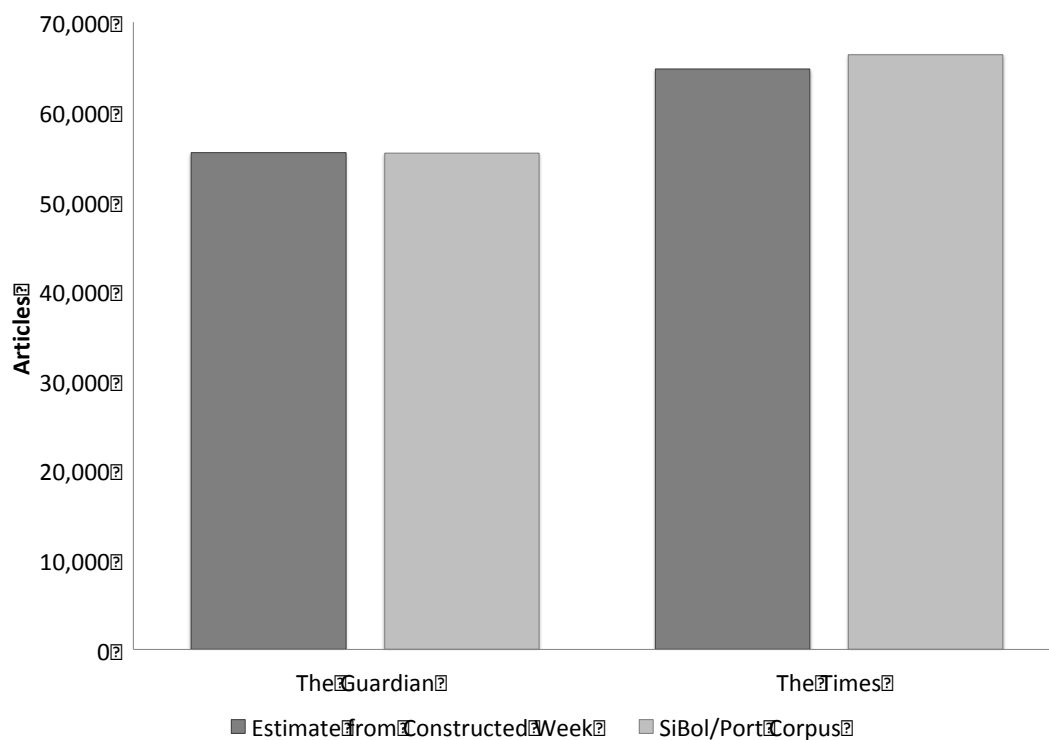
duplicates. However, later waves were manually downloaded from archive services, and as a result required removal of duplicates, multiple editions, or online content.

To test how the constructed week approach compared to the SiBol/Port corpus, Figure 1 compares SiBol/Port data about the number of articles from 1993 for The Guardian and The Times with the estimated baseline totals.¹⁹ The results indicate that the constructed week method produced article estimates that differed 0.07% from the SiBol/Port corpus for The Guardian (55,415 estimated articles in 1993, compared to 55,377 in SiBol/Port). Meanwhile, the difference for The Times was 2.47% (64,757 estimated articles in 1993, compared to 66,357 in SiBol/Port). These differences closely follow expectations found in Jones and Carter, Jr. (1959). Although similar benchmarks for tabloids are not available in SiBol/Port, these results lend support for the systematic approach afforded by the constructed week method.²⁰

¹⁹ I chose 1993 because, upon correspondence with one of the original SiBol/Port authors, this year in the dataset is the closest reflection of the content in the actual printed version. Also, subsequent years' results were collected under largely different conditions to those of the constructed weeks.

²⁰ Also, as explained in the next section detailing analytical procedures, both SiBol/Port and the corpus collected for this chapter are stored and organised within the same software. This lends further support for the claim that the counts are similar: using the same software removes any differences that might have been introduced by different programming schemes.

Figure 1. Number of Articles in The Guardian and The Times, 1993, Constructed Week Method Versus SiBol/Port



Analytical Procedures

I organised, stored, and analysed the corpus using the Sketch Engine (Kilgarriff et al. 2014). This is a comprehensive tool, typically used by lexicographers, that enables researchers to generate snapshots of how a chosen term (called a ‘headword’) functions in a corpus, with links to the headword as it appears in the actual texts. These snapshots are called ‘word sketches’ because they provide the researcher with an initial picture of how a given headword actually operates in real-world language, with the option to go into more detail.

Word sketches rely upon part-of-speech (POS) tagging, a technique that attaches grammatical information about how each word is used. For example, if a word modifies a noun (such as ‘immigrant’), its part of speech would typically be an

adjective. Therefore, if a corpus is POS tagged, researchers can search for all adjectives associated with the word ‘immigrant’.²¹

In this chapter, I use two techniques from corpus linguistics. The first is frequency analysis, where specified terms and the articles in which they appear are totalled up to show how prevalent they are in a given corpus or subcorpus.²² The second is collocation analysis, a method that determines how strongly one word is linked with a target word, as opposed to them appearing together by random chance. Conventionally, linguists define collocation as ‘a co-occurrence relationship between two words’ (McEnery and Hardie 2011), typically a ‘node’ and its ‘collocate’.²³

Figure 2 shows what this analysis looks like by displaying an example word sketch for the headword ‘immigrant’, with the results sorted by frequency.²⁴ Using the POS tagging, word sketches display collocates that are grammatically linked to the headword. In this example, the adjective most frequently associated with

²¹ This would include comparative and superlative adjectives, such as ‘larger’ and ‘largest’. The set of tags used by Sketch Engine appears in Marcus, Marcinkiewicz, and Santorini (1993).

²² A subcorpus is a research- or researcher-defined subset of the larger body of text.

²³ Determining what counts as ‘co-occurrence’ is also debatable: the answer depends on several choices taken by the researcher (Brezina, McEnery, and Wattam 2015; McEnery and Hardie 2011). For fuller discussion of collocation in the linguistics literature, see Lehecka (2015).

²⁴ The third column displays a statistical test for collocation, called logDice, that was developed by Rychlý (2008). This research uses collocations sorted by frequency instead of the logDice measure. This is because agenda-setting relies on the visibility of an object or attribute. Therefore, prioritising collocates’ frequencies in determining which ones to include is more appropriate.

‘immigrant’ or ‘immigrants’ across the entire corpus is ‘illegal’.²⁵ Also, nouns that are frequently modified by ‘immigrant’ include ‘worker’, ‘population’, and ‘labour’.

Figure 2. Word Sketch for the Noun ‘Immigrant’

immigrant *(noun)*
COMPAS 2016 NM_All freq = 110,807 (487.96 per million)

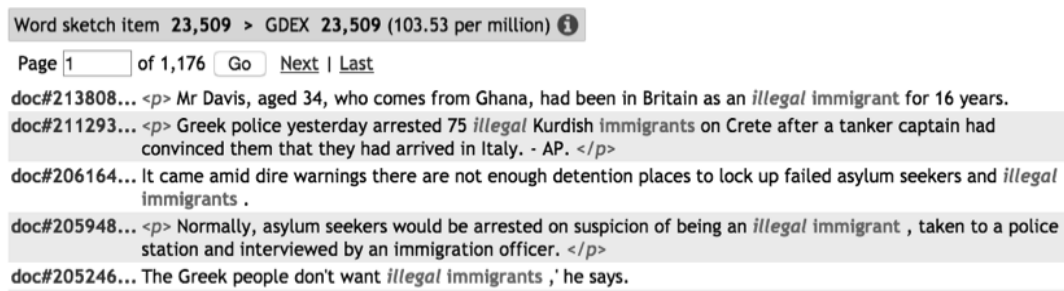
modifiers of "immigrant"			nouns and verbs modified by "immigrant"		
	<u>63,065</u>	0.57		<u>19,840</u>	0.18
illegal +	<u>23,509</u>	12.68	community +	<u>1,864</u>	9.46
many +	<u>1,727</u>	7.84	worker +	<u>1,546</u>	8.79
new +	<u>1,456</u>	7.03	population +	<u>1,168</u>	9.41
jewish +	<u>1,356</u>	8.75	family +	<u>1,106</u>	8.71
irish +	<u>932</u>	8.17	parent +	<u>737</u>	9.36
chinese +	<u>848</u>	8.22	group +	<u>615</u>	6.97
more +	<u>848</u>	7.05	labour +	<u>425</u>	8.20
european +	<u>829</u>	7.48	child +	<u>395</u>	7.41
would-be +	<u>760</u>	8.49	council +	<u>330</u>	7.07
russian +	<u>739</u>	7.91	experience +	<u>291</u>	7.67

Meanwhile, in line with corpus linguistic practice, the Sketch Engine enables researchers to look more closely at how these collocations behave in real texts. Called ‘concordance analysis’, this technique displays collocation results with the surrounding text (Baker 2006). Figure 3 shows what this concordance view looks like. This technique, when used in connection with quantitative approaches, provides an important validity check and an efficient way to see how collocates appear in context. These two relationships—adjective and noun collocations—form the basis of the second-level attribute agenda setting analysis.

²⁵ This confirms results from a previous study I conducted that examined the 2010-12 period (Blinder and Allen 2016a). At that time, I did not have access to the more powerful tagging tools afforded by the Sketch Engine. Therefore, that research used mechanistic rules to identify adjective collocates—such as identifying collocates appearing immediately before a target word.

Collocational analysis directly stems from my choice of lexical priming as the theoretical mechanism for micro-level agenda-setting. But, I acknowledge there are other possible ways to identify attributes associated with target words—such as qualitative coding on the one hand, or dictionary-based methods on the other—and that these attributes might span larger units than words. However, I argue collocational analysis grounded in grammar lends a more systematic and efficient way of handling large amounts of text, while being explicitly connected to the ways that primes are theoretically and empirically connected to their targets.

Figure 3. Concordance View of ‘Illegal Immigrant(s)’



Results

First-Level Agendas: Measuring the Visibility of Immigration and Asylum

The first step towards determining whether an agenda-setting effect exists is to establish how visible an issue or object is. Prior agenda-setting studies tend to lump immigration and asylum together (van Klingeren et al. 2015). Although some evidence does indeed suggest these issues are interchangeable in the eyes of the British public (Blinder 2015), the dynamics of different types of migration have different drivers and policy ramifications (B. Anderson and Blinder 2017).

Furthermore, salience may be driven by flows of migrants which have taken different trajectories in the UK (Blinder 2017; Markaki and Vargas-Silva 2016).

Figure 4, Figure 5, and Figure 6 show the salience of articles mentioning ‘immigration’, ‘asylum seeker(s)’, and ‘refugee(s)’ in all nine publications. ‘Salience’ refers to the number of articles each month containing a given term divided by that month’s estimated baseline as generated by the constructed week method, expressed as a percentage. The dotted lines display monthly data, to accurately indicate peaks, while the solid line is a six-month rolling average to show the trends over time.

Salience of Immigration and Asylum Issues. Looking at the collective story painted by Figure 4, there are a few important points to observe. First, across most publications, there are two periods during which immigration was more salient: around 2005, and from 2012-15. Concordance analysis shows that the notable spike in April 2005 across most publications was explained by discussion about the General Election in the following month. The latter period shows similar, if not higher, monthly spikes compared to the former. Second, immigration appears more in certain broadsheets (*The Guardian*, *Financial Times*) and tabloids (*Daily Mail*, *The Express*, *The Sun*) compared to the others. In these cases, monthly visibility of the specific term ‘immigration’ tended to rise from <1% to 2-3%.

Turning attention to the visibility of asylum-seekers in Figure 5 reveals a different picture. Across the publications, there is a raised period of saliency from 2002-4, especially in *The Guardian*, *Daily Mail*, and *The Express*. A similar trend appears in the other publications. Also, several publications show an upward trend from 2014 onwards. This is particularly pronounced in *The Guardian*, where visibility of ‘asylum seeker(s)’ rose to over 6% thanks to several spikes through

2015, but is also apparent in the *Financial Times* and *The Times* where visibility averaged about 2%. Refugees, meanwhile, tended to receive consistently low levels of visibility in most publications, with the exception of *The Guardian* where typical levels ranged between 1-2%. However, all publications did show raised levels of visibility in 2014-15, around the time of the ‘refugee crisis’.

Looking among these three terms, the terms ‘asylum seeker(s)’ and ‘refugee(s)’ have distinct periods of higher visibility that are more connected with events. This is in contrast to ‘immigration’, which has generally risen in visibility among most publications. The dip in salience between 2009-12, a pattern seen in most publications, is likely explained by the increasing importance of the economic crisis at that point in time: less space in the ‘news hole’ would have been available to immigration stories.²⁶

²⁶ McLaren, Boomgaarden, and Vliegthart (2017) find a similar trend in their study of British immigration news coverage: rising visibility from January 1995 to 2005-6, then declining visibility to May 2011 where their study ends. Their sample included two broadsheets (*The Times* and *The Guardian*) and two tabloids (*Daily Mirror* and the *Daily Mail*). It also included articles containing terms refer to immigration, migration, asylum-seekers, refugees, and race/ethnicity.

Figure 4. Salience of ‘Immigration’ by Publication, 1985-2015

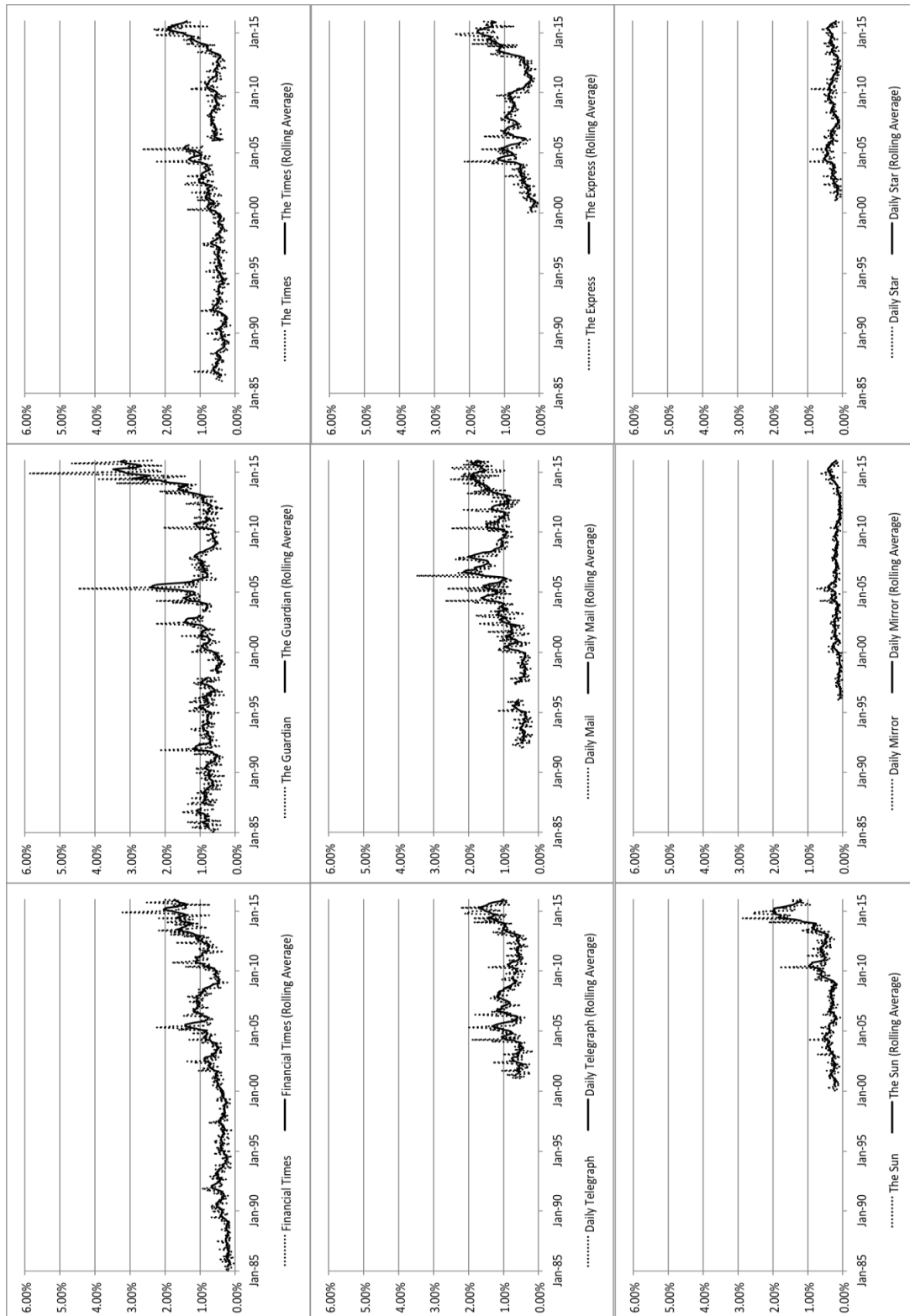


Figure 5. Salience of ‘Asylum Seeker(s)’ by Publication, 1985-2015

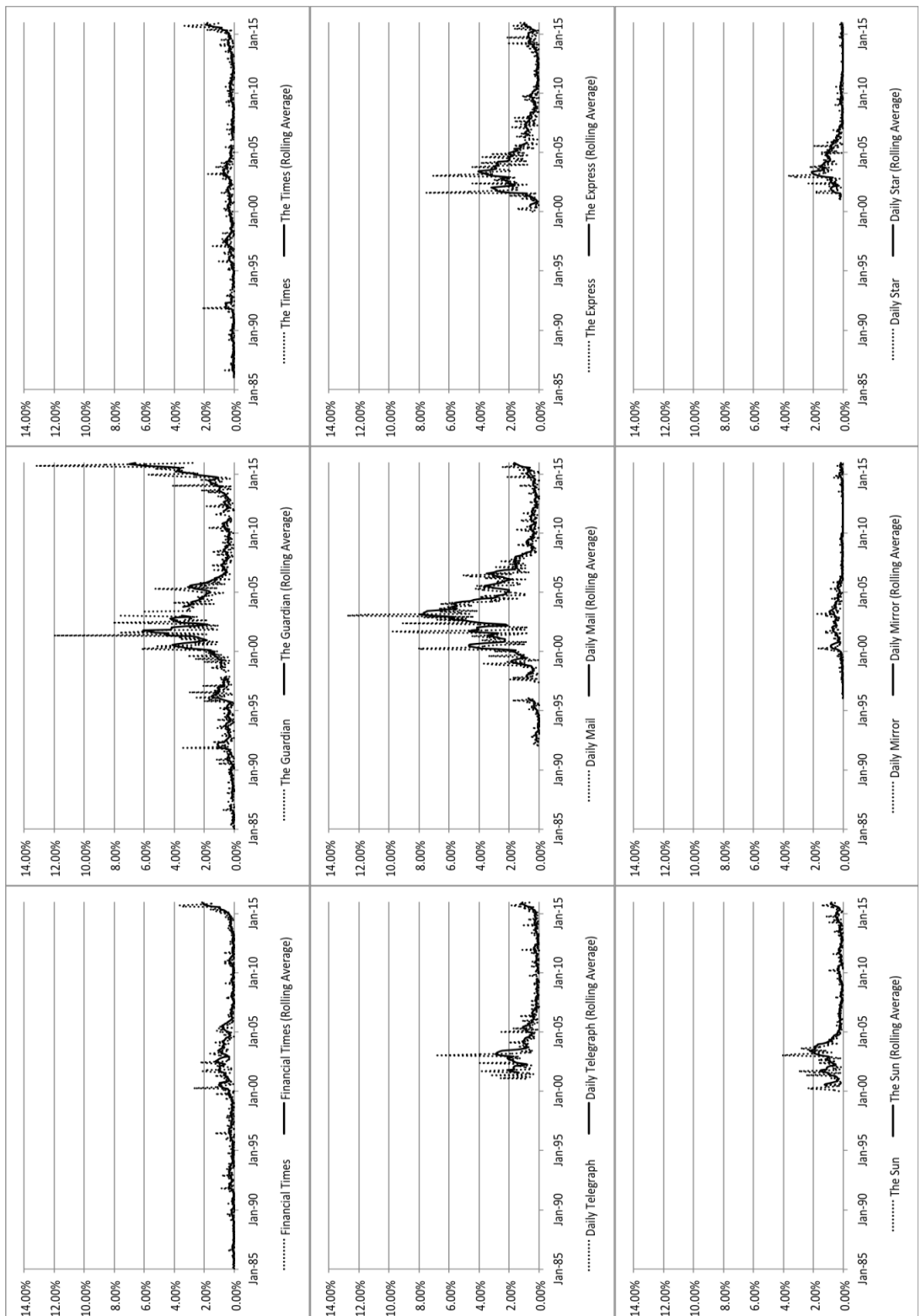
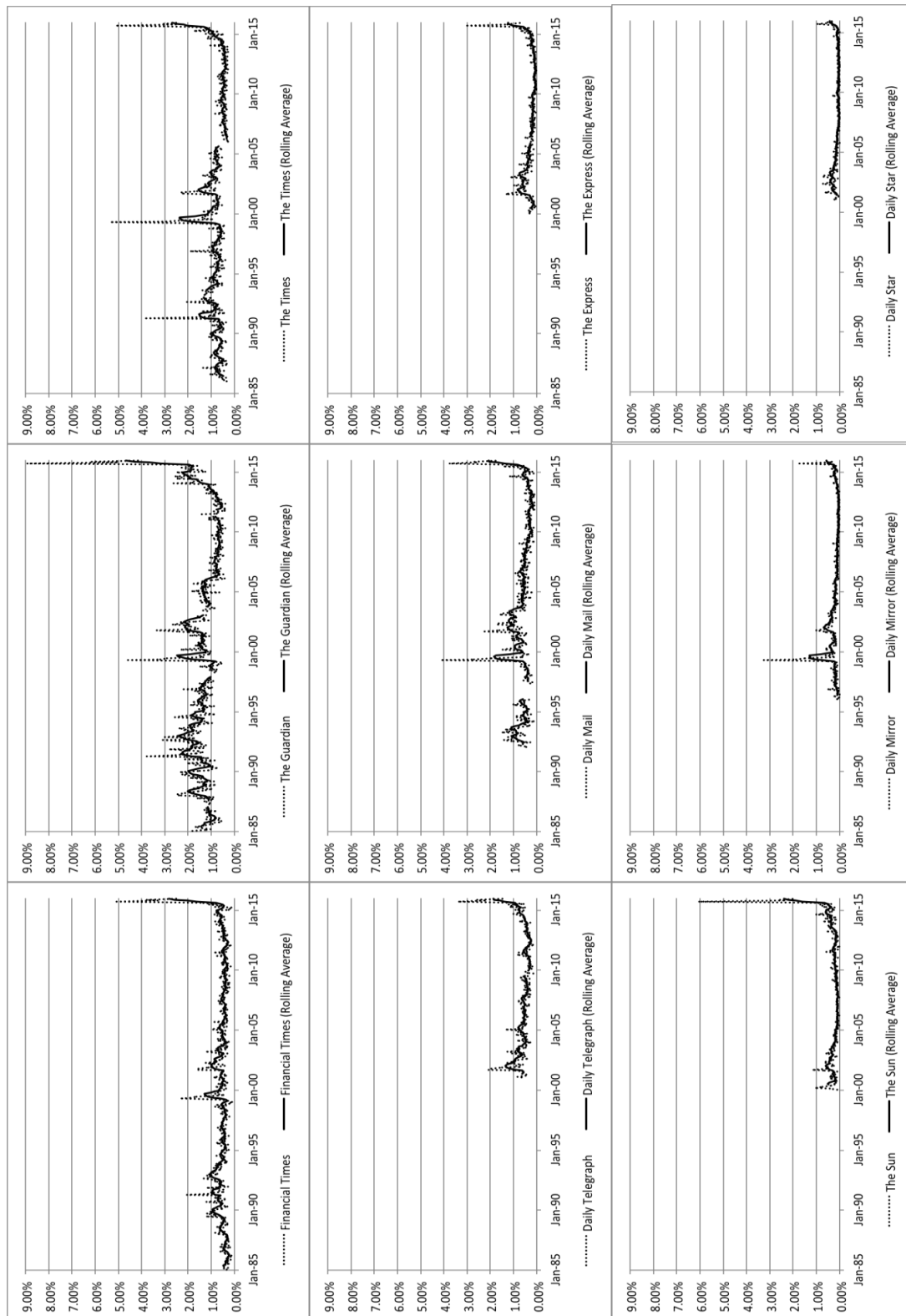


Figure 6. Salience of 'Refugee(s)' by Publication, 1985-2015



Second-Level Agendas: Identifying Attributes Using Collocation Analysis

In addition to sheer saliency of objects and issues, agenda-setting also happens through increased visibility of particular attributes associated with these issues: ‘those characteristics and properties that fill out the picture of each object’ (McCombs 2014, 40). The question is how to efficiently, yet accurately, identify attributes in large amounts of text. The approach I take is collocation analysis combined with POS tagging.

Attributes can link with their objects in several ways. One way is through explicit modification, as in the phrase ‘illegal immigration’. In this example, the word ‘illegal’ modifies the object ‘immigration’. This relationship is an adjective collocation. Another way is when objects are used as modifiers themselves for another object: ‘immigration policy’ is a case where the term ‘immigration’ is now used as a modifier for the object ‘policy’. This is a noun collocation. When a corpus contains POS tags, it is possible to distinguish among collocations that refer to a specific term (such as ‘immigration’ or ‘refugee’) and those that do not. I conceptualise those that do refer to a target term as ‘attributes’ or ‘properties’ in the second-level agenda-setting sense.

Studying adjective and noun collocations of key terms gives a window into the ways that key terms usually appear in a corpus or subcorpus. Those terms that regularly appear more frequently together, as predicted by the theory of lexical priming, should contribute more to how people come to understand those words. Therefore, lists of individual collocations can give some early, exploratory indication of ‘typical’ usages (McEnery and Hardie 2011). However, collocations often fit within broader categories of attributes—whether inferred from the corpus data, or

informed by prior research and theory.²⁷ Tracing these categories' shifts over time can reveal important trends in second-level agenda setting.

Building Attribute Categories: A Corpus Linguistic Approach. Constructing salient and theoretically appropriate attribute categories required several steps. First, I generated word sketches to identify collocation candidates (or 'primes') for two sets of headwords ('targets'): 'immigration', 'migration', 'immigrant(s)', and 'migrant(s)' on the one hand; and 'asylum', 'asylum seeker(s)', and 'refugee(s)' on the other.²⁸ These lists contained up to 200 of the most-frequent noun and adjective collocations explicitly associated with each headword.²⁹ Then, prior linguistic studies and theory—combined with close inspection of the collocation lists themselves—informed the attribute category construction process.

Table 3 provides a summary of the six attribute categories generated by the collocation analysis, a brief description of the categories, and example collocates within them. The descriptions reflect the refinements described above, prior theory, and the two studies already discussed. The chosen collocates are illustrative, not exhaustive, and are not necessarily the most frequently observed in the corpus.

²⁷ Vollmer (2017) also uses this inductive method in the Sketch Engine interface to study how language around the key term 'border' differs between British newspapers and policy spheres.

²⁸ I used concordance analysis to identify instances where 'asylum' and its collocates appeared in the context of mental health. Then, I excluded these from the analysis.

²⁹ Collocations also included plural forms and degrees of intensity: for example, 'high immigration' and 'higher immigration'. Some headwords did not have 200 noun or adjective collocations. In these cases, I examined all collocations that the Sketch Engine identified.

Table 3. Attribute Categories Scheme

Attribute Category	Description	Example Collocates
Economic and Occupational	Relating to real or perceived financial background or situations, either past or present; labour, working, or (un)employment; specific jobs	<i>cleaner, doctor, economic, labour, low-skilled, poor, scrounger, skilled, unemployed, worker</i>
Criminality and Legal Status	Relating to explicit crimes or anti-social behaviour; evaluations of individuals' legal right to be in the country, whether actual or perceived; procedures or activities involved in establishing legal status	<i>abuse, amnesty, criminal, dangerous, failed, fraud, illegal, overstayer, smuggler, would-be</i>
Legislative, Policy, and Governmental	Relating to actions, individuals, or procedures occurring in policy, legislative bodies, or government; references to organisations, bodies, or associations operating in these areas	<i>advisor, application, bill, department, minister, official, procedure, regulation, scheme, system</i>
Demographic and Sociocultural	Relating to characteristics used to differentiate along dimensions of age, sex, family structure, education, relationships, ethnicity, health status, religion, sexual orientation, or ability; references to collective views, attitudes, activities, shared cultural artefacts and ideas, or emotions	<i>ancestor, black, child, culture, experience, gay, history, husband, mother, Muslim</i>
Geographical	Relating to national origins, countries, or regions	<i>Afghan, British, Chinese, EU, European, Indian, non-EU, Pakistani, Polish, Romanian</i>
Scale and Pace	Relating to the speed or amounts of mobility, whether real or perceived; references to the ways in which mobility happens	<i>boom, chaotic, excessive, flood, mass, number, stock, substantial, unlimited, unrestricted</i>

Two studies were particularly informative in building this scheme of attribute categories, especially since they focus on different aspects of migration in the UK press context. Lauren McLaren, Hajo Boomgaarden, and Rens Vliegenthart (2017) aimed to identify second-level agenda setting about migration in four UK newspapers. After identifying the most frequent words in their corpus, omitting stopwords such as ‘and’ or ‘the’, they used four human coders to determine whether these words were relevant to the topic of immigration. Then, they reserved words that at least three out of four coders thought were relevant to immigration, for a total of 350 terms.

After using statistical clustering methods,³⁰ they concluded that there were five coherent issues (‘factors’) present in the corpus: the economy, crime/security, government policymaking, foreign wars/rising numbers of refugees, and education. Crucially, the unit of analysis was at the level of articles: ‘an issue is considered to be present in a story if at least three of the words loading on a given factor occur in the story’ (McLaren, Boomgaarden, and Vliegthart 2017, 10).

Their study provided guidance on sets of attributes that also were likely to appear in the corpus used in this chapter, given the similar newspaper sources. They found that the issue of ‘economy’, for example, was signaled by terms such as ‘employment’, ‘job(s)’, and variations of ‘work’. Also, the issue of ‘government policymaking’ comprised words including ‘application’, ‘convention’, ‘department’, and ‘order’.³¹ These words were also salient in my collocation lists. Therefore, I retained these categories in the final scheme.

The second study on which this chapter draws inspiration comes from Paul Baker, Costas Gabrielatos, and Tony McEnery (2013b).³² Their study examined the term ‘Muslim’ in over 200,000 articles that appeared in British national newspapers from 1998 to 2009. They also used collocation analysis in combination with POS tagging within the Sketch Engine interface to generate a comprehensive list of noun collocates associated with ‘Muslim’. Manual concordance analysis of all 1,256

³⁰ They refer to Hellsten et al. (2010) as being representative of their clustering techniques.

³¹ However, their issue of ‘government policymaking’ also included the terms ‘asylum’ and ‘seeker/seekers’. This illustrates a problem with lumping together all types of migration together: the argument in this chapter is that differentiating among ‘migrants’ and ‘asylum-seekers’ may reveal important differences in attribution.

³² Expanded findings also appeared in book form (Baker, Gabrielatos, and McEnery 2013a).

collocates produced a scheme of categories and subcategories. These included ‘culture’, comprising social practices, education, and attitudes; and ‘characterizing/differentiating attributes’, which combined demographic features such as age and sex with other references to kinship, occupation, or nationality.

To a certain extent, their scheme is useful because it was grounded in a close reading of portions of newspaper articles that specifically refer to the term ‘Muslim’ in some way: ‘the categorization does not rely so much on the dictionary meaning of the noun collocates, as on the topics they index in the corpus articles’ (Baker, Gabrielatos, and McEnery 2013b, 262). The categories emerging from the concordance analysis also have some relevance to, and consonance with, general press coverage about immigrants.

Taking these observations into account, I combined some of their subcategories referring to ‘characterizing/differentiating attributes’ into a larger set comprising demographic, religious, social, and cultural features.³³ Also, I narrowed their subcategory of ‘ethnicity/race/nationality’ to a set of ‘geographic’ terms referring to specific countries or regions, such as ‘Afghan’, ‘EU’, or ‘Pakistani’. This

³³ Initially, I kept ‘cultural/social’ and ‘demographic’ terms as separate second-level agendas. However, subsequent analysis revealed these categories were too infrequent on their own to warrant this approach. Moreover, as indicated by other survey research, the term ‘sociocultural’ has different dimensions, including ethnicity, values, civic participation, and feelings of attachment (NatCen Social Research 2017). In this study, I group these aspects together. Yet, in Chapter 4, I differentiate between these kinds of terms in an experimental design.

differs from McLaren, Boomgaarden, and Vliegenthart (2017), where national terms including ‘Polish’ were subsumed into other categories.³⁴

Using noun collocates—and collocation analysis more generally—also informed other key differences from the attribute scheme developed by McLaren, Boomgaarden, and Vliegenthart (2017). For example, ‘crime’ was a prominent category in their scheme, as indicated by terms such as ‘officer/officers’ and ‘association’. However, when I examined the noun collocates of ‘officer’ and ‘association’, I found that these terms are usually modified by ‘immigration’, ‘border’, or ‘refugee’, and moreover do not connote an explicit sense of criminality. Therefore, while the scheme used in this chapter does include a category of attributes related to criminality based on McLaren, Boomgaarden, and Vliegenthart (2017), the terms in that category differ. At the article level, it is likely that a range of words would indeed appear alongside other crime-related terms. But, collocation analysis at the word level enables me to draw a more specific, grammatically precise relationship between target terms such as ‘immigration’ and its primes.³⁵

A final category of terms that does not appear in either of these studies relates to the scale or pace of migration. These terms, illustrated by words such as ‘excessive’, ‘flood’, and ‘mass’, emerged from the collocation lists. Prior studies into the drivers of immigration attitudes debate the extent to which the sizes of

³⁴ In the case of ‘Polish’, McLaren, Boomgaarden, and Vliegenthart (2017) place articles mentioning this term in the ‘economic’ attribute category.

³⁵ Potentially, there are ways of combining the statistical approaches used in McLaren, Boomgaarden, and Vliegenthart (2017) with those used by corpus linguists: see McEnery (2015) for some provocations on this point of balancing expertise and theory with algorithms.

outgroups—whether real or perceived—matters for public preferences (Blinder 2015; Herda 2010; Pottie-Sherman and Wilkes 2017). Accounting for collocates referencing the rate at which migration happens, as well as its gross levels, is an important addition to the attributes already considered, especially when linking these second-level agendas to public concern.³⁶

Descriptive Features of the Attribute Categories: Comparing Migration Types. How are these categories distributed across the corpus, and how well does this scheme cover the observed variations in collocations? Table 4 displays the number of noun and adjective collocations contained within each attribute category, broken down by each set of headwords. Each cell displays the total number of collocations observed within a given attribute category, as well as the percentage of all collocations that category comprises. Adding up the percentages within each set of headwords shows this scheme captures 77.3% of all noun and adjective collocations for immigration-related terms, and 53.6% of all similar collocations for asylum-related terms.

Table 4. Distribution of Attribute Categories by Migration Type

Reference Terms (Headwords)	Economic, Occupational	Criminality, Legal Status	Legislative, Policy, Governmental	Demographic, Sociocultural	Geographic	Scale, Pace
Immigration Migration	19,828 instances	39,306 (17.9%)	53,160 (24.2%)	12,066 (5.5%)	17,915 (8.2%)	26,738 (12.2%)
Immigrant(s) Migrant(s)	(9.0% of all collocations)					
Asylum Asylum-Seeker(s) Refugee(s)	1,566 (1.2%)	11,003 (9.5%)	22,565 (17.4%)	9,059 (7.0%)	16,867 (13.0%)	7,102 (5.5%)

³⁶ In previously published work covering January 2006-May 2015, I found that the proportion of collocates referencing the scale or pace of migration had grown in the British press (W. Allen 2016).

At a broad level, mentions of terms related to both immigration and asylum were most often attached to ‘legislative, policy, and governmental’ attributes. This makes some intuitive sense: mainstream newspapers tend to report and rely on ‘official’ government sources or activities for much of their content (Entman 2003).³⁷ This finding matches McLaren, Boomgaarden, and Vliegthart (2017) who found the issue of ‘legal processes’ was the most visible from 1995-2012 with few exceptions.

However, distinguishing between types of migration reveals differences in levels of the remaining attribute categories. Regarding (im)migration and (im)migrants, the second most visible category was ‘criminality and legal status’: when there was a noun or adjective collocation of one of these four terms in the corpus, about 18% of the time it related to crime or legality. This also converges with McLaren, Boomgaarden, and Vliegthart (2017) whose ‘crime’ issue remains in second place until the mid-2000s before declining to third place. But this level was not observed in mentions of asylum/asylum-seekers/refugees, where only about 10% of collocates related to this category, placing it in third. This difference suggests that the press agenda links immigration and immigrants with criminality or breaking established procedures more than it does asylum seekers or refugees.

In fact, the second-most frequent category associated with asylum seekers and refugees was ‘geographic origins’. These attributes relate to identifying places of

³⁷ Manual content analysis of British newspaper coverage between 2006-15 also showed politicians and other government officials were the actors that were most visible—and blamed for perceived problems—in articles relating to either ‘illegal immigration’ or ‘EU/European immigration’ (W. Allen 2016).

origin or association. In one way, this could be interpreted as simply statements of facts. When reporting on flows of people out of a country due to potentially visible and international conflicts, for example, it makes sense to refer to these people in relation to the country or countries they are from—especially when reporting from the perspective of an external country like the UK. However, in another way, the observation that these attributes are not nearly as strongly associated with (im)migration and (im)migrants suggests how mentions of geographic origins could be working to establish difference or distance between British audiences on the one hand and asylum-seekers or refugees on the other.³⁸

‘Scale and pace’, as an emergent set of attributes not necessarily predicted by prior studies or theory, was the third-most frequent category applied to immigration. About 12% of the time when a noun or adjective collocate appeared with one of the four immigration reference terms, it was within this set of words. This was not the case in collocations of asylum terms, where they appeared only about 5.5% of time, behind four other categories.

It is also revealing to turn attention towards those categories that were not as visible. For example, ‘economic and occupational’ attributes were the fourth-most frequent in relation to immigration, only comprising about 9% of observed collocations. It was even more infrequent in reference to asylum, appearing in only about 1% of collocations and making it the least visible category for that reference

³⁸ Scholars of discourse analysis call this ability to establish and maintain (often unequal) relations among groups ‘social power’ (van Dijk 2008). Other media and communication scholars have documented how this approach has been a staple feature of British coverage of asylum issues for decades, particularly among tabloids: see Greenslade (2005).

group. Similarly, ‘demographic and sociocultural’ attributes were relatively infrequent in relation to both groups of terms.

On the one hand, this result is somewhat surprising given the enormous debate in public opinion research about whether economic or sociocultural concerns drive attitudes (Ceobanu and Escandell 2010; Hainmueller and Hopkins 2014). It would be reasonable to expect economic considerations about immigration, such as competition over jobs or lowered wages, to feature more prominently in press coverage.

On the other hand, it may be that the relatively specific tests of noun or adjective collocation as indicators of attributes may be missing ways of talking about immigration or asylum in economic and sociocultural terms that do not necessarily occur via explicit attribution in a single word. Instead, they may arise through more complex phrases, sentences, or larger sections of text. Including all such constructions, while possible to do in relatively simple cases, would likely require other quantitative and qualitative methods in my case. This chapter argues that looking for nouns and adjectives appearing with an object is a simpler, yet effective, way of identifying attributes.³⁹ Nevertheless, despite this methodological point, it is striking that McLaren, Boomgaarden, and Vliegenthart (2017) also find the issue of ‘economy’ ranks third (out of four categories) with few exceptions until mid-2006.

³⁹ Of course, it is possible to imply economic attributes via the phrase ‘asylum-seekers who take benefits’, the attribute being ‘someone who in receipt of financial payments from the state’. The point of using noun and adjective collocations is that they are theoretically grounded and practically efficient ways of accurately identifying explicit characterisations or properties ascribed to an object or issue—a key part of the second-level attribute agenda-setting concept. This chapter does not claim to capture *all* variations of attributes.

Changes in Attribute Agenda Setting: Analysing Trends and Variation

In addition to showing snapshots of attributes, it is important to examine how these attributes' have changed—or remained constant—over time. Figure 7 and Figure 8 display how the visibility of three selected attribute categories changed over time from 2001-15,⁴⁰ divided by both migration type and publication type (tabloids versus broadsheets).⁴¹ The frequencies indicate how often attributes related to each category appear as a proportion of the estimated total number of words in tabloids or broadsheets.⁴² Also, the series are six-month rolling averages to make them clearer. Finally, the charts have the same axes to enable easier comparison of levels.

⁴⁰ 2001-15 is used because this is the period for which all nine publications appear in the corpus.

⁴¹ These figures plot the three most-visible categories for each broad type of migration. Both figures display 'Legislative' since it was the top overall category for both reference groups. 'Criminality' is also included as the second- and third-most frequent category for immigration and asylum respectively. 'Scale and pace' is included in Figure 7 because it was the second-most frequent category in reference to 'immigration', while 'geographic' is included in Figure 8 because it was the second-most frequent category for 'asylum'.

⁴² For clarity, the numerator is the number of times collocates in a given category appear in either tabloids or broadsheets. The denominator is the estimated number of words (based on the constructed week method) that appeared in the same publication type. Displaying results per million words is standard, corpus linguistic practice (McEnery and Hardie 2011).

Figure 7. Selected Attributes of Immigration by Publication Type, 2001-2015

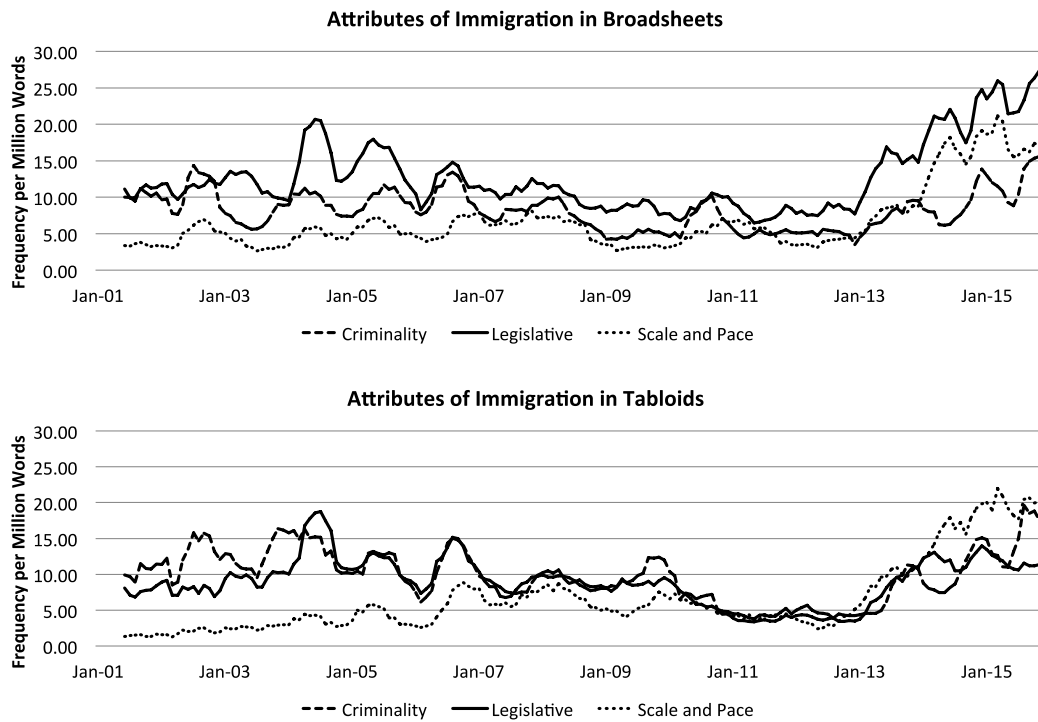
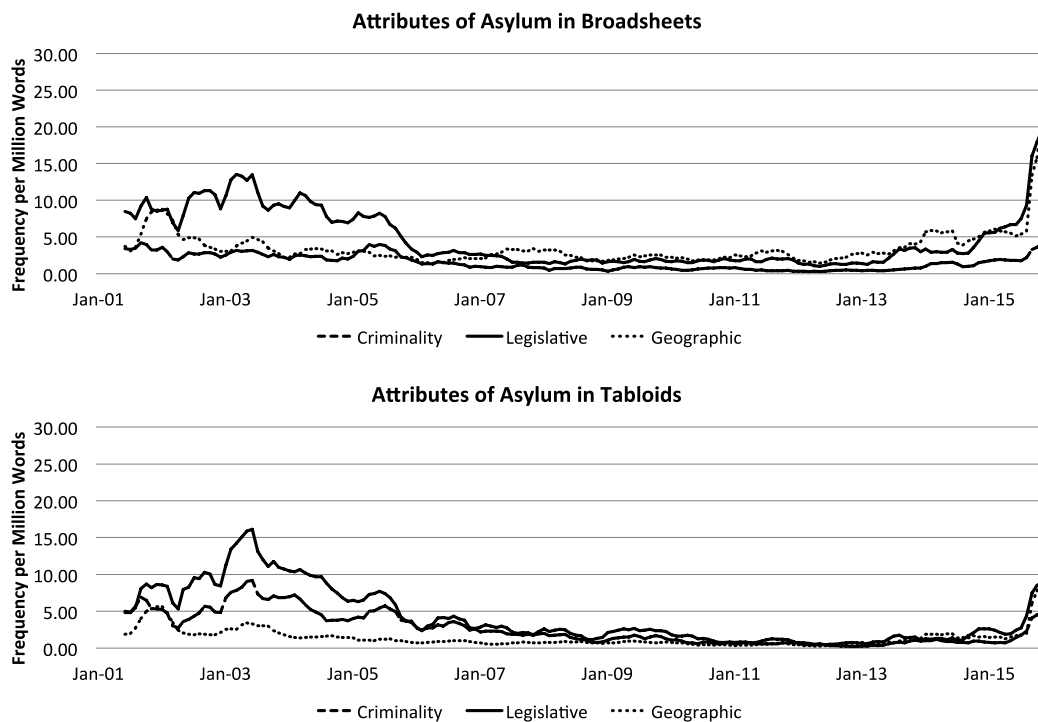


Figure 8. Selected Attributes of Asylum by Publication Type, 2001-2015



Immigration in Broadsheets and Tabloids. Focusing on Figure 7, there are a few key trends and differences to note. First is the prominence of the ‘legislative, policy, and governmental’ category over time. For the press, this is one of the main sets of attributes associated with immigration and immigrants since 2001. Also, the visibility of this category has increased since 2013 in the broadsheets while remaining relatively level during the same period in the tabloids. However, ‘criminality and legal status’ in tabloids closely matches levels of ‘legislative’, even exceeding them in the early 2000s.

Second, the ‘scale and pace’ category has risen dramatically over the last 15 years in both tabloids and broadsheets. The relative frequency of these terms increased over five times in the broadsheets between 2001 and 2015 (from about 3.4 instances per million words in June 2001 to about 18 per million words in December 2015), and over 16 times in tabloids (from about 1.4 instances per million words to about 22.9 per million words).⁴³ Interestingly, much of this increase actually occurred from 2013 onwards, moving this category into second-place among broadsheets and first-place in tabloids—although the actual levels are similar between the publication types.

What might explain this rise in ‘scale and pace’ attributes? One possibility is a similar rise in the actual numbers of immigrants entering the UK. Figure 9 shows the annual frequencies of ‘scale and pace’ attributes for all publications, displayed as a proportion of all estimated newspaper content for that year. It plots these

⁴³ Breaking down these figures by publication reveals that *The Express*, the *Daily Mail*, and *The Sun* contributed most to this increase.

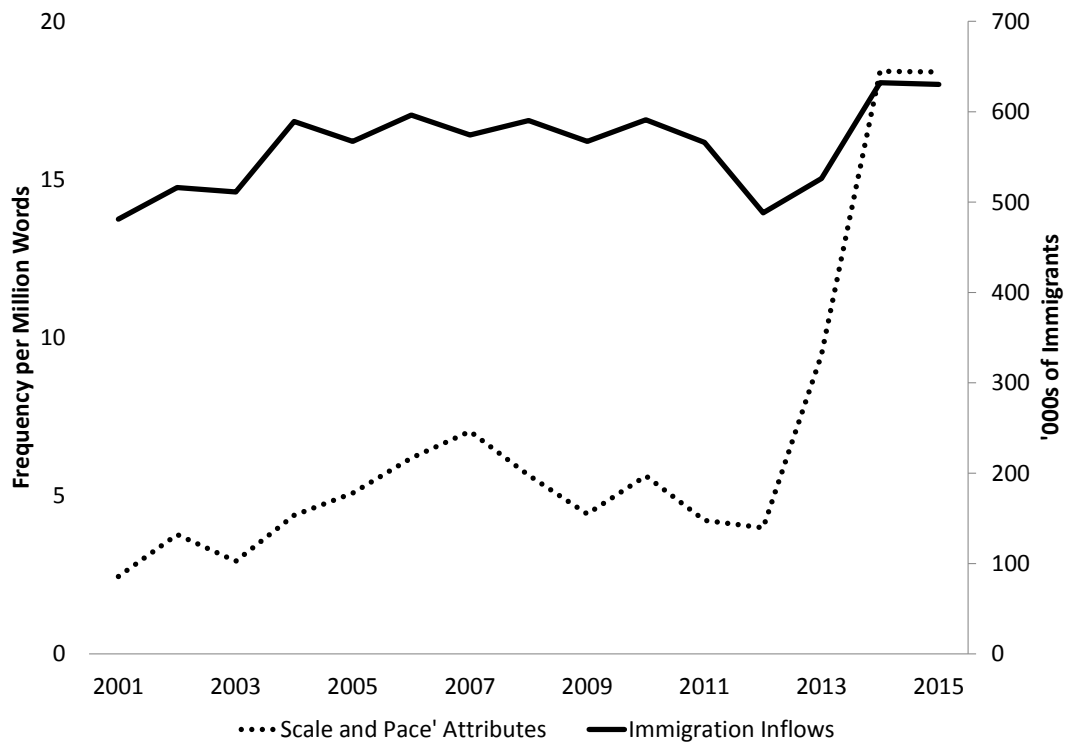
frequencies against the annual number of immigrants entering the UK as reported in Home Office data (Markaki and Vargas-Silva 2016).⁴⁴

Although the results are correlational, they do suggest two different possibilities. On the one hand, the dramatic rise in scale and pace terminology between 2012-14 coincided with a 30% increase in immigration inflows (from 488,000 to 632,000). This could be taken as evidence for news coverage about immigration being linked to real-world developments, as the macro-level agenda-setting model acknowledges. On the other hand, the salience of scale and pace terms increased year-on-year between 2003-7 anyway, even as immigration inflows remained largely stable between 560,000 and 600,000. In this period, increases in the amount of coverage referencing the quantity and rate of immigration did not necessarily correspond with similar increases in actual immigration flows.

These contrasting conclusions demonstrate how political scientists using an agenda-setting framework should include, wherever possible, data on external factors. In the next chapter, I model how scale and pace attributes relate to changes in public concern while also considering factors such as asylum applications and the foreign-born population.

⁴⁴ Note that these are different from ‘net migration’ figures that report the number of immigrants minus the number of emigrants.

Figure 9. ‘Scale and Pace’ Attributes and Immigration Inflows, 2001-15



Asylum in Broadsheets and Tabloids. Meanwhile, Figure 8 shows how the three most-frequent attribute categories actually tend to remain fairly invisible for much of the 2001-15 period, with fewer than 5 instances per million words.⁴⁵ When attributes are present, they tend to appear in the early 2000s and in late 2015, periods when asylum and refugee policies—as well as external conflicts—were particularly high in public awareness (Gabrielatos and Baker 2008; Greenslade 2005). Indeed, during the 2001-06 period, ‘legislative’ attributes were the most visible in both broadsheets and tabloids, referring to government policies and agencies involved in dealing with asylum-seekers. However, midmarkets and tabloids (particularly the *Daily Mail*,

⁴⁵ This is a result of the relatively low salience of asylum-related terms for most of 2001-15 anyway: in my lexical priming framework, an object that is not present in the press cannot have an attribute.

Daily Express, and *The Sun*) linked ‘criminality’ attributes with asylum issues more than broadsheets.

The large spike in 2015 demands attention, too. This increase was driven by the 2015 refugee ‘crisis’ and the worldwide release of the photo of Alan Kurdi, finding confirmed by concordance analysis: most ‘geographic’ mentions refer to Syria.⁴⁶ Both tabloids and broadsheets attributed more ‘legislative’ and ‘geographic’ properties to mentions of asylum and refugee groups that year. This was particularly pronounced in broadsheets: ‘legislative’ attributes nearly quadrupled from about 5.6 instances per million words in January 2015 to about 20.2 instances by the end of the year. Similarly, ‘geographic’ attributes rose in broadsheets from about 5.8 instances per million words to about 23.3 instances—by far their highest levels. Although broadsheets used both sets of attributes more often than tabloids, the ‘geographic’ category had moved into first-place for both publication types by the end of 2015.

Discussion

Scholars, practitioners, and policymakers often identify the British press as a major source of public attitudes towards immigration and asylum (Duffy and Frere-Smith 2014; Threadgold 2009). Recent agenda-setting research observes that the kinds of properties associated with objects, as well as their sheer visibility, can impact how much importance people attach to those objects (McCombs 2014; McLaren, Boomgaarden, and Vliegenthart 2017). However, what a great deal of media

⁴⁶ Comparative analysis of Greek, German, and British newspaper coverage of the refugee crisis confirms that national press outlets in these countries focused on the numbers of asylum-seekers, as well as their geographic origins (Fotopoulos and Kaimaklioti 2016).

analyses lack is a comprehensive, longer-term view of their objects of study that accounts for the proportion of migration-related content—not just raw frequencies.

Given this backdrop, I sought to answer two questions in this chapter. First, how has the salience of articles containing migration-related terms changed over time? Second, how has the visibility of attributes ascribed to immigration and asylum changed over time? Identifying these trends and variations is crucial for linking media agendas to public agendas. Also, differentiating between different migration types is an important step that prior studies tend not to take for either methodological or conceptual reasons.⁴⁷

With respect to each migration type, the results paint two different pictures. Immigration has generally risen in press visibility, particularly between 2012-15. While the press, particularly broadsheets, have tended to link the issue most strongly with governmental or policy attributes, this has been challenged—if not eclipsed—by rising concerns about the speed and rate of immigration. When the press brings attributes related to criminality or legal status into discussion about immigrants or immigration, it tends to be more prevalent among tabloids, a trend that has somewhat grown in recent periods. Meanwhile, issues of asylum and refugees tend to be most visible in specific periods: the early- to mid-2000s, and most recently in 2014-15. While references to these groups are linked with governmental attributes, they also display a degree of sensitivity towards external events: for example, during the

⁴⁷ McLaren, Boomgaarden, and Vliegenthart do acknowledge that future agenda-setting research could ‘focus more specifically on asylum and/or refugees to understand in greater detail how this topic is framed’ (2017, 18). This chapter, along with Chapter 4, aimed to build upon their work.

recent ‘crisis’ the press attributed asylum-seekers and refugees with references to both their geographic origins as well as their overall numbers.

This chapter, while broadly consistent with prior analyses of the British press and the ways it presents immigration and asylum issues (W. Allen 2016; Crawley, McMahon, and Jones 2016; Gabrielatos and Baker 2008; McLaren, Boomgaarden, and Vliegenthart 2017), goes further in several ways. It shows how coverage clusters around certain attribute categories, and how these have changed in visibility over time. For example, it reveals how the speed and size of immigration and asylum flows alike is also increasingly salient in the press. Also, it uncovers some important differences among publication types: tabloids tend to highlight criminal attributes when referencing immigration, whereas broadsheets have consistently linked the issue with governmental or policy aspects. These differences have implications for the ways that researchers using agenda-setting theory might handle and subdivide their datasets.

The chapter also makes methodological contributions to the study of texts and corpora in political science. First, it demonstrates the need for, and viability of, establishing a baseline of newspaper content using existing digital archives and relatively straightforward sampling. Second, it shows how established tools and techniques from linguistics can quickly identify key relationships that serve as reliable indicators of attributes at the word-level. Where there is a good body of theory and empirical work that can inform category building, as in the case of migration in the media (Baker, Gabrielatos, and McEnery 2013b; Balabanova and Balch 2010), this approach likely complements current trends in text analysis that typically use articles as the unit of analysis to induce categories.

Producing a more detailed picture of how the British press has talked about immigration and asylum over time is a necessary and important step towards answering broader and deeper questions about how media relate to the wider world—particularly members of the public. The following chapter uses the trends and patterns found in this chapter as inputs for more sophisticated time series analyses that explicitly test for relationships between press agendas and levels of public concern about immigration.

3

How Do Different Aspects of Immigration News Relate to Public Concern? Assessing Attribute Agendas in the British Press

Introduction

The previous chapter produced a comprehensive picture of how the British press has portrayed immigration and immigrant groups from 1985 to 2015, establishing the dynamics of salient terms like ‘immigration’, ‘asylum-seekers’, and ‘refugees’. It also identified six key sets of attributes associated with these terms: economy and work; criminality; policy, legislation, and government; sociocultural aspects; geographic origins; and the scale or pace of immigration. These findings contribute towards a better understanding of press coverage over a key period in British politics, as well as a way of measuring first- and second-level agendas that is reliable, efficient, and grounded in evidence from real-world language use. However, as I explained in the motivation for the previous chapter, they naturally lead to the key question in agenda-setting research: how do these different agendas relate to dynamics in public concern about immigration?

Empirically addressing how media content and public attitudes relate is important because journalism as practised in an independent press environment plays a critical role in normative theories of how democracies work. Whether through

holding politicians to account, or raising citizens' abilities to make sense of public issues, mass media are often viewed as conduits of information that voters can subsequently act upon (Schudson 2011).¹ But does information communicated through the press actually shift perceptions?

Recently, several scholars in political science and communication studies have coupled the growing availability of longer-term media data with the strength of time series methods to model the relationships between media message content on the one hand with a range of political outcome variables—including public concern—on the other hand (McLaren, Boomgaarden, and Vliegenthart 2017; Murphy and Devine 2018; van Klingeren et al. 2015; Vliegenthart, Boomgaarden, and Van Spanje 2012). Using evidence drawn from sophisticated techniques, several of these studies argue that changes in press agendas lead to changes in how much salience people ascribe to immigration.

My study in this chapter displays some differences to this existing vein of research into the agenda-setting power of media messages. On the subject of research design, my analysis relies on the linguistic outputs of Chapter 2 as measures

¹ This position has its critics within the study of press-state relations. Objections include observations that media are often 'indexed' to powerful political elites (Bennett, Lawrence, and Livingston 2006), or rely on information that comes from 'higher up' official sources in a process of 'cascading activation' (Entman 2003). Although these critiques are valid—and I have explored them further in published work stemming from Chapter 2 (W. Allen and Blinder 2018)—I view them as being secondary to the immediate aims of this chapter: to look for an association between press content (wherever or whoever it may come from) and public concern about immigration. But, I will return to this point in the concluding chapter to consider what it might mean for scholarly understandings of messaging effects.

of press agendas. As I explained in the previous chapter, this confers greater validity to the press content in terms of identifying modifiers and accounting for the proportions—rather than raw frequencies—of migration-related terms. Also, through additional empirical analysis, I consider the distinct possibility that changes in public concern actually lead to changes in press attention.

I argue that the level of public concern about immigration is not significantly associated with either the overall amount of immigration press coverage or even several specific aspects of immigration. Rather, I find that attribute agendas expressing sociocultural and numerical dimensions of immigration are more closely related to public concern. And, this relationship differs by subsets of the press. For example, sociocultural terms are associated with higher levels of concern, but only when appearing in right-leaning publications. Yet it is important to note that the substantive sizes of these relationships are quite small, suggesting that the ability of the British press to decisively impact public perceptions about immigration's importance is surprisingly limited.

Then, I explore the direction of this relationship. As I show in my robustness checks through a series of Granger causality tests, public concern does not contribute to changes in overall press attention. But, subsets of the press do influence each others' agendas. For example, broadsheets' immigration attention appears to be led by midmarkets' (i.e., the *Daily Mail* and the *Daily Express*) levels of coverage. Meanwhile, shifts in the visibility of criminality attributes inform changes in all other attributes except the economy.

In summary, although some of my conclusions echo prior studies' key findings—most notably those of Lauren McLaren, Hajo Boomgaarden, and Rens Vliegenthart (2017) whose design and data closely match my own—there are some

important differences, too. First, it uses measures of press agendas that are derived from empirically informed linguistic phenomena rather than semi- or fully-automated text analysis. This lends more external validity to the results. Second, it explicitly deals with the problem of reverse or mutual causality using the best tools available. Third, it acknowledges and demonstrates how different subsets of the press—as well as different agendas—not only relate to a main dependent variable of interest, but also to each another. Overall, it cautions against claims of broad media effects, instead providing evidence of delimited and subtle associations between press messages and public concern.

Theory: Attitudes and Public Agenda-Setting

Theoretically, the first step is to relate messages in press media to public attitudes. I began doing this in the previous chapter by using the idea of agenda-setting as it has developed in political science and communication studies. Specifically, I discussed agenda-setting in terms of its micro-level foundations: how patterns of words make certain attributes more accessible in individuals' minds. Now, in this chapter, I turn attention to the macro-level aspects of agenda-setting, and in particular how agendas relate to public attitudes. In this section I explain what attitudes are, where they may come from, and the role that media potentially play in their formation. This discussion informs several hypotheses about how the saliences of general issues—as well as specific dimensions they contain—are associated with subsequent changes in concern as one kind of attitude.

Defining Attitudes

Psychologists define attitudes as ‘an evaluative integration of cognitions and affects experienced in relation to an object’ (Crano and Prislin 2006, 347). They are the combined thoughts and feelings (‘cognitions and affects’) people have towards something or someone (‘experienced in relation to an object’). The ‘object’ of an attitude can be concrete (e.g., foods, sports), abstract (e.g., democracy, scientific expertise), individuals (e.g., a parent, one’s supervisor), or groups such as politicians and foreigners (Vogel and Wänke 2016).

Beyond the question of what people think about these subjects, attitudes research also looks at why and how people think the way they do. In the Introduction chapter, I grounded my broad research question in Walter Lippman’s argument that attitudes as formally expressed in surveys of public opinion are actually based on ‘the pictures in our heads’. Coming from communication studies, Maxwell McCombs and Salma Ghanem restate this idea as they explain ‘much of the behavior underlying public opinion is a response to mental images of event, an imagined pseudoenvironment that is treated as if it were the real environment’ (2001, 67). Psychologists Alice Eagly and Shelly Chaiken are even more explicit about how attitudes form:

Attitudes develop from evaluative responding to an attitude object...[People] do not have an attitude until they first encounter the attitude object and respond evaluatively to it on an affective, cognitive or behavioral basis...Once an attitude is formed, a mental representation of it would be stored in memory. (Eagly and Chaiken 2014, 414)

Based on these definitions, it is clear that a pre-requisite for an attitude is the possession of some image or representation of whatever is being evaluated. This representation is subsequently held in individuals' minds, ready to be activated somehow at a later point in time. Therefore, what contributes to these pictures?

Sources of Attitudes

One important source of what people think is personal experience. Humans gain lots of information through their senses that, in turn, can shape perceptions and attitudes. In the context of evaluating other people, this idea goes back to Gordon Allport's (1954) theory of intergroup contact. According to him, as people from different groups interact and opportunities for friendship between groups emerge, there is a greater chance of mutual understanding. More recent research shows that even imagining or simulating contact with someone foreign, either through role-play or reading, can change attitudes and behaviours (Vezzali et al. 2015; Vezzali, Stathi, and Giovannini 2012).

Other factors relate to the social and economic conditions that people experience. Friends, acquaintances, or those to whom people present themselves matter for attitudes. Sociological and psychological research has regularly demonstrated how people can change their opinions based not only on a desire to evaluate themselves favourably, but also to earn favour with others who can provide both rewards and punishments depending on the opinion expressed (W. Wood 2000). In other words, perceptions about images in *other* people's minds influence the images in our own heads that are called upon.

These perceptions are also influenced by economic conditions at both individual and national levels (Gabel and Palmer 1995; Lewis-Beck and Paldam

2000). For example, people who are economically vulnerable, measured as having fewer occupational skills, less education, or lower incomes, tend to be more negative about European integration issues (Gabel 1998; Hobolt 2014). This is because they stand to lose the most from further liberalisation: ‘EU citizens in different socioeconomic situations experience different costs and benefits from integrative policy’ (Gabel 1998, 336). Furthermore, studies in the stream of ‘economic voting’ claim that national economic indicators influence people’s attitudes towards the government in power—and, in turn, subsequent behaviour at the polling station (Lewis-Beck and Stegmaier 2000).

But there are some important limitations to the extent that economic considerations shape attitudes (C. J. Anderson 2007). Notably, translating seemingly factual economic observations into perceptions takes multiple steps, and assumes people have accurate information on which to make decisions in the first place (C. J. Anderson and O’Conner 2000). Moreover, welfare policy regimes may mitigate the effects of economic conditions on attitudes (Kulin and Svallfors 2013). Given these limitations, other sources that extend beyond one’s immediate and directly felt experiences must come into play.

When considering political attitudes, some of those external sources might be elites such as politicians. Using the concept of ‘cueing’, a great deal of research indicates that members of the public can take on the positions of leaders by responding to signals such as party positions (Popkin 1991; Steenbergen, Edwards, and de Vries 2007). However, this approach has its limitations, too. First, members of the public often disagree with partisan leaders, suggesting that cueing is conditional on other factors (Darmofal 2005). Second, related to the previous discussion of immediate experience being a possible source of information, people

might choose to treat politicians' statements differently when their lived experiences are at odds with what they hear. And third, cue-taking is usually conceived as a passive rather than active activity on the part of recipients. The theory predicts that the less people pay attention either to politics or debate about a specific policy, the more likely they are to adopt cues from elites. But if those same people are so uninterested in the minutiae of policy anyway, it is unlikely they would pay active attention to what partisan elites have to say.²

To be clear, I am not arguing that these factors play no role in attitude formation. Indeed, to differing extents, they *all* potentially contribute to the 'pictures in our heads' about concepts, people, and objects. But what about situations in which people lack direct personal experience, or are asked about broad phenomena that have multiple dimensions to consider simultaneously? In these instances, I argue what people read from mass media plays an important role in shaping not only the pictures people have, but also the likelihood of them accessing those pictures.

As people encounter messages containing different kinds of information, their attitudes towards a given object may change. Researchers in political science, sociology, psychology, and communication studies offer several ways this can happen. In this chapter, I focus on a mechanism called agenda-setting. It is important to highlight that I do not look at priming, another kind of media effect. Often, this is treated as an extension of agenda-setting because of its similar causal mechanisms (Scheufele and Tewksbury 2007). In the context of politics, priming suggests that as media generate more coverage, they raise the salience of an issue in people's minds.

² To do so, according to Darmofal, 'is akin to assuming that citizens who aren't baseball fans pay close attention to the announcers' calls' (2005, 382).

This results in ‘changes in the standards that people use to make political evaluations’ (Iyengar and Kinder 1987, 63). Therefore, I see priming as a consequence of agenda-setting: if an issue is not made more salient in the first place, it cannot be primed.³

The Macro-Level View of Agenda-Setting

In the previous chapter, I focused on collocational patterns as important ways by which given terms (‘targets’) become connected with other terms (‘primes’) in individuals’ minds. This process, called lexical priming, provides a micro-level explanation of how certain words can become more readily accessible by virtue of being associated with other more salient terms. Then, aggregating these collocations into larger groups results in second-level agendas referring to more specific dimensions of a general term like ‘migration’.

Agendas, in these larger forms, do not sit in isolation. Rather, they usually relate to public attitudes and policy-making. I express these macro-level relationships in Figure 10, which I adapted from Stuart Soroka’s (2002) expanded model of agenda-setting. There are a few key points. First, for most cases, causality runs in multiple directions among the elements. In bold, I have highlighted the specific scope of my thesis: to test for a public agenda-setting relationship between the press (which constitutes part of the media agenda) and what people think (part of the public agenda). Between these boxes runs a double-headed arrow, signaling how

³ But, other work relying on panel data suggests that people actually use information to *learn* about candidates or issues (Lenz 2009). In this regard, media are not determining how people evaluate political issues, but rather enabling people to subsequently update their opinions.

public perceptions and press attention may inform each other. A similar story exists between media and policy agendas, although this is outside the scope of my specific research questions.⁴ Notably, as indicated by a single-headed arrow, Soroka assumes that the policy agenda—set by and expressed through politicians and other elites—does not directly influence the public agenda. Rather, political actors tend to exert influence either through media or through real-world activities like implementing policies that, in turn, directly affect members of the public.

Second, each broad agenda comprises different elements. This implies the possibility of intra-agenda setting. For example, different kinds of media might lead and lag in their attention towards issues. Individual politicians might follow what their party says on important electoral concerns. Individuals might pay more attention to their friends on some locally-felt issues, while listening to pressure groups on others. Third, messages and messaging processes exist within real-world situations. These factors, grouped in the centre of the model, potentially contribute to all three agendas.

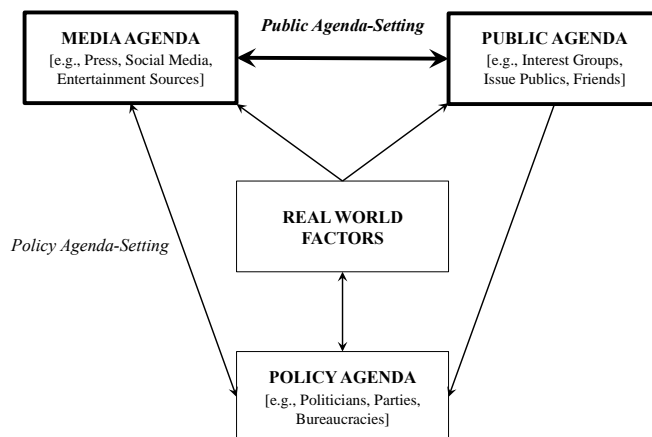
Externally-felt events may also originate from within policy agendas. After all, a major source of messaging comes from the world of policymaking, broadly comprising politicians, parties, and bureaucracies. Media sometime take the lead of key, powerful government figures in determining what is newsworthy and significant (Bennett, Lawrence, and Livingston 2006; Entman 2003). Deriving from the general

⁴ Although I do not formally model the press-policy relationship in this chapter's study, I do draw upon original data and analysis separate from this thesis to explore how this mechanism worked with respect to the specific issue of 'net migration' in Britain (W. Allen and Blinder 2018). This also appears in the concluding chapter.

concept of agenda-setting, another line of research focuses on policy agenda-setting, in which political elites are able to impact both media and public agendas. Most paradigmatic examples of this process have tended to use the US (Baumgartner and Jones 1993) or Canadian (Soroka 2002) cases, although newer work has investigated British politics, too (John et al. 2013).

But, media can also inform political elites. It is not hard to imagine mainstream media taking on a more active role in agenda-setting when they exist within environments that are either strongly commercial, historically independent from the state, or culturally predisposed towards investigative journalism. Daniel Hallin and Paolo Mancini’s (2004, 2011) detailed analyses of different media systems suggest these kinds of factors contribute towards the ability of media to exert influence over either the public or politics. Other work by Luzia Helfer (2016) in Switzerland and Stefaan Walgrave (2008) in Belgium demonstrates how media coverage can indeed raise the salience of issues among politicians, although this depends on factors including the nature of the issues themselves as well as politicians’ own perceptions and status.

Figure 10. A Multidirectional Model of Agenda-Setting



Why Not Framing? Accessibility Versus Applicability, and Equivalency Versus Emphasis

It is worth explaining here why I do not choose to use the concept of framing to capture the relationship between press messages and public perceptions. Framing effects differ from agenda-setting in an important way: they emphasise applicability, rather than accessibility, as the mechanism that shapes attitudes. Applicability refers to the qualities of information and how it is packaged, not its quantities, that make people perceive it to be more relevant for the situation at hand (Chong and Druckman 2007; Price, Tewksbury, and Powers 1997).

Modern approaches to framing effects extend from two different traditions: one rooted in psychology, and the other rooted in sociology. In psychology, researchers point to Amos Tversky and Daniel Kahneman's (1981) famous 'Asian disease' study as clear evidence for framing effects. Their paper describes a fictional situation in which a disease is expected to kill 600 people. Then, they present sets of programmes aimed at combatting the disease.

Crucially, the interventions only differ in how they are described: in terms of lives saved (a gain) or lives lost (a loss). One programme will save 200 people, while another programme has a 33% chance of saving everyone and a 67% chance of saving no one. This is contrast to another presentation that pits one programme, which will result in 400 people dying, against another programme where there is a 33% chance that no one will die and a 67% chance that everyone will die.

Clearly, these are equivalent sets of statements: '200 out of 600 people saved' is the same as '400 out of 600 people dying'. However, their results showed that 'choices involving gains are often risk averse and choices involving losses are often risk taking' (Tversky and Kahneman 1981: 453). Subsequent work (Kahneman

2011) replicated these results to demonstrate that how choices are described—not the actual outcomes—impacts the decisions people eventually make. James Druckman (2001b) calls this process ‘equivalency framing’ because they present situations that are logically the same but differently worded to generate effects.

Despite its strong internal validity, equivalency framing is probably not so useful for applied questions in political communication, particularly those concerning messages conveyed through mass media. Instead, what most scholars tend to focus on is how messengers organise information as they present information to audiences. This comes from sociological approaches to framing that stretch back to Erving Goffman (1974). Working on the assumption that people cannot fully understand all the information they encounter, he argued that people interpret, categorise, and make sense of their worlds through schemas or ‘primary frameworks’ (Goffman 1974, 24).

Scholars following in Goffman’s footsteps identify how messengers, including media, emphasise some pieces of information over other (Gamson and Modigliani 1989). When organised into a set, this information becomes a ‘frame’. Therefore, this sociological approach is often called ‘emphasis framing’ (Druckman 2001b). Subsequent research identifies how frames can be ‘thematic’, or placed in a general context, and ‘episodic’, where an issue is treated separately (Gross 2008; Iyengar and Kinder 1987).

Psychology-rooted ideas of equivalency framing are concerned with effects brought about by differences in *how* the same information is presented, while sociology-oriented ideas of emphasis framing highlight the effects caused by differences in *what* information is presented (Cacciatore, Scheufele, and Iyengar 2016). In both cases, however, messages’ effects are transmitted through the

applicability mechanism: some *quality* of the information generates higher or lower amounts of attention.⁵ In contrast, my approach from agenda-setting and lexical priming draws on the accessibility mechanism to argue that highly frequent collocations make these patterns more readily available as the ‘pictures’ in an individual’s mind.

Here it is important to acknowledge some potential conceptual overlap between second-level (‘attribute’) agenda-setting and emphasis framing. There is some debate in communication studies as to how an instance of emphasis framing differs from an attribute. McCombs and Ghanem (2001, 74) helpfully characterise emphasis frames as ‘bundling devices’ or ‘macro-attributes’ that comprise several ‘lower order’ attributes grouped together. In this way, a humanitarian emphasis frame in the context of immigration would group several second-level attributes together, such as ‘vulnerable refugees’ and ‘rights-based policies’. However, individual instances of the terms ‘vulnerable’ or ‘rights-based’ would not necessarily indicate an emphasis frame. Therefore, I have focused on documenting descriptive modifiers, applied to discrete terms like ‘immigration’ and ‘migrants’, in order to measure the salience of different groups of second-level attributes.

So far in this chapter, I have used agenda-setting theory to link newspaper outputs with public attitudes, focusing on two kinds of agenda-setting processes (McCombs 2014). The first involves raising the sheer salience of an issue in the media to subsequently raise levels of audiences’ awareness—and therefore move it

⁵ One such quality might be sentiment or tone, which as I explained in the previous chapter, falls outside of my collocational framework for theoretical and methodological reasons.

further up on the public agenda. To test this possibility, my first hypothesis considers the relationship between overall coverage and public concern.

H₁: An increase in the salience of immigration in the press will be associated with higher levels of public concern.

The second process operates at a deeper level through the salience of particular aspects, properties, or characteristics of an issue. By linking an attitudinal object (e.g., ‘immigration’, ‘refugees’) with different attributes, the press can make the object seem more or less important to the public. This chapter tests for the presence of both processes in the case of UK press reporting on immigration. It also goes further by differentiating among types of ‘second-level’ agendas, as well as accounting for publications’ ideological leanings, as ways of explaining why some aspects have more impact over others.

Obtrusive and Unobtrusive Issues

Agenda-setting research across multiple countries identifies several types of issues (Soroka 2002). *Obtrusive* issues are those which are most directly felt or experienced by the public (Zucker 1978). Since people can draw upon personal experiences when they encounter these issues, they are less vulnerable to media influence. In contrast, *unobtrusive* issues are less directly felt by the public—and, as a result, offer more potential for media to influence perceptions.

As a national, aggregate-level issue, prior scholarship considers immigration to be relatively unobtrusive. Although immigration is highly salient, relatively small proportions of the British public directly encounter migrants or migration-related

issues in their daily lives. As a result, ‘without this first-hand experience and the ability to form an opinion on this basis, the public becomes more open to media influence’ (McLaren, Boomgaarden, and Vliegenthart 2017, 3). But not all unobtrusive issues are equal. Instead, they can have different dimensions. Some of these dimensions are more immediate and less abstract, meaning that they are ‘concrete with tangible consequences for the population’ (Walgrave, Soroka, and Nuytemans 2007, 819). In contrast, other dimensions are less immediate and more abstract—and, as a result, possibly perceived to be less consequential for people.

I argue the six second-level agendas contained within British immigration coverage vary in terms of their immediacy and abstractness. On the one hand, prior research suggests economic and crime-related dimensions of immigration are more immediately consequential for the public (Sniderman, Hagendoorn, and Prior 2004). The same can be said of sociocultural dimensions, which can include the impacts of immigrants on schools as McLaren, Boomgaarden, and Vliegenthart (2017) argue.

The language surrounding the scale and pace of immigration is also more immediate and, although more abstract in the sense that imagining millions or masses of anything is difficult, still implies clear consequences for the British economy and society. Moreover, perceptions of large migrant populations, even if different from reality, are associated with more negative views on migration (Hooghe and de Vroome 2015). Therefore, properties related to the gross number and rate at which people immigrate may activate this tendency.

On the other hand, legislative activity, even if legally consequential, is largely abstract and separated from people’s daily experiences. Also, mentions of migrants’ geographic origins are potentially less immediately relevant, while also

being more abstract for members of the public. The second and third hypotheses test for different effects among these types of issues.

H₂: An increase in press emphasis on aspects of immigration that have clear, tangible outcomes or consequences will be associated with an increase in levels of public concern. These kinds of aspects include the economy, crime, sociocultural change, and the scale or pace of migration.

H₃: An increase in press emphasis on abstract aspects of immigration will have little to no association with levels of public concern. These kinds of issues include legislation or government policymaking and the geographic origins of immigrants.

Political Ideology and Media Reporting

Media effects research also argues that the ideological leanings of messengers also matter for how much information matters. In the US, right-leaning newspapers tend to frame migration policies in terms of security or economic threat (Fryberg et al. 2012). These patterns, also observed in the UK news media context (Crawley, McMahon, and Jones 2016; Threadgold 2009), suggest there may be important differences in the agenda-setting potential of different media. Moreover, if negative news has greater effects on public perceptions than positive news (Soroka 2006), then coverage of immigration in right-leaning sources—taken to be more negative towards immigrants compared to left-leaning sources—should have greater effects when compared to left-leaning ones. Additionally, dividing British press media into right- and left-leaning publications has the effect of turning ideology into a proxy

measure of circulation—a feature that McLaren, Boomgaarden, and Vliegenthart (2017) acknowledge and of which they take advantage.⁶ Right-leaning newspapers in Britain have much greater readerships than left-leaning newspapers. Therefore, in the absence of individual-level data, making this distinction is an attempt to roughly simulate what effects (if any) arise when taking circulation into account.

H₄: When the salience of directly-felt and less abstract aspects of immigration increases in right-leaning publications, this will be associated with a greater increase in subsequent public concern than when the same type of coverage appears in left-leaning publications.

Data, Measures, and Analytical Strategy

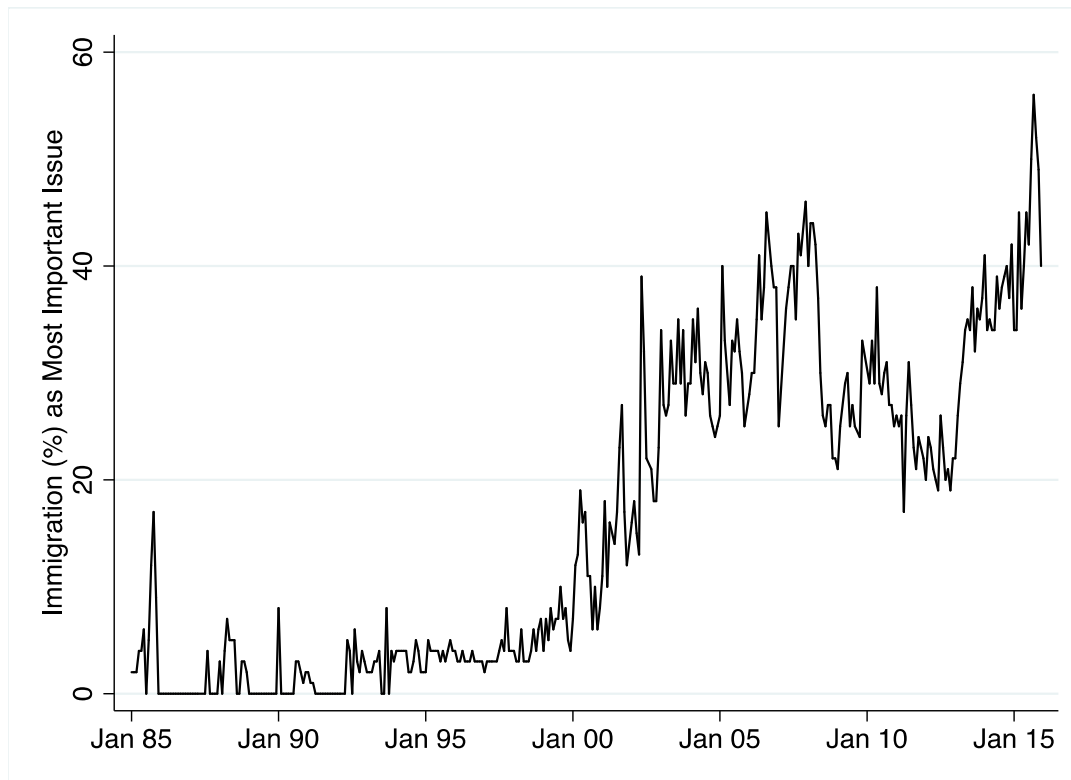
Dependent Variable: Most Important Issue Index

I use monthly data from the Most Important Issue (MII) index, produced by Ipsos MORI, as the dependent variable. This series asks respondents to name the issue they feel is of greatest importance for the country that month. Figure 11 shows how immigration has risen and fallen as an issue of concern over the past 30 years.⁷

⁶ In my robustness checks, I make a small advance on prior studies by explicitly including monthly circulation figures. The results do not significantly differ from the main findings.

⁷ Prior to January 2015, the category used by Ipsos MORI was ‘immigration/race relations’. After this point, the two issues were separated.

Figure 11. Immigration in the Most Important Issue Index, 1985-2015



There are several aspects of this series that are important to highlight.

Notably, immigration was not a high priority for the British public during much of the 1990s. Then, beginning in the early 2000s, the issue began to rise to the point where nearly half of all Issue Index respondents were listing it as important. As the financial crisis pushed the economy to the top of the index from 2008, immigration declined in importance—although it remained among the top issues. Finally, from 2012 onwards, the issue rose again, peaking at nearly 60% of respondents naming it as the most important facing the country by the autumn of 2015.⁸

There are some possible concerns with using the Most Important Issue index that are worth highlighting. First, on a conceptual level, what does ‘importance’

⁸ Since the 2016 EU referendum, immigration has dropped in public importance—replaced, not surprisingly, by Brexit as well as the NHS.

mean in the context of a survey? An issue might be a problem, but not important. It could also be important, but not a problem. Therefore, inferring that people who consider an issue to be highly ‘problematic’ also view it as important could be incorrect: ‘we simply do not know’ (Wlezien 2005, 555). Moreover, it is not necessarily the case that assigning importance to an issue reveals negative preferences or attitudes. This is a wise warning to scholars who might turn to indices of issue importance in other countries.

At least on immigration in Britain, however, empirical analysis does bear out the conclusion that when people think of immigration as being important, they are viewing it as a problem—and therefore as a negative attitude object. For example, Will Jennings and Christopher Wlezien (2011, 550) found that immigration or asylum as ‘problem’ and ‘important issue’ correlated about 94% of the time between 1977 and 2001. Earlier, Jennings (2009) argued that when the British public views immigration as more important, it strongly correlates with immigration ‘mood’. And, the most recent test of whether the MII question indicates specifically negative preferences, which used 15 survey items between 1994 to 2010, concluded that people who view immigration as more important also view it more negatively (McLaren, Boomgaarden, and Vliegenthart 2017).

Independent Variables

The media independent variables are the salience of overall press coverage as well as the six second-level agendas identified in the previous chapter. Measures of overall salience are given in percentage terms: the numerators are the numbers of articles mentioning any migration-related terms, while the denominators are the estimated baselines produced by the constructed week method. Meanwhile, measures of the six

aspects are given in terms of frequencies per million words. Again, the denominators in these measures are the estimated number of words per month produced by the constructed week method.⁹

First, I test for an association using basic models without controls. Then, I add several control variables. Economic conditions are often cited as factors that may impact attitudes towards immigration. I represent these by the quarterly unemployment rate. Also, as I discussed in the previous chapter, real-world immigration levels may be an important factor for agenda-setting. Therefore, I include the monthly number of asylum applications and annual percentage of the population that is foreign-born as rough representations of these levels. I also include factors related to the political environment, such as periods of Labour government, General Elections, and the periods of campaigning preceding them. Finally, the models feature several event-related variables including terrorism attacks, key migration policy changes, successive EU enlargements, and regular migration statistics releases. A full list of these events appears in the Supporting Information.

⁹ One concern relates to the popularity of each publication: some newspapers have much higher circulation rates than others. Therefore, it is possible that some subsets of the press could exert greater influence by virtue of being more widely read. Although most agenda-setting studies do not include this feature in their modelling, I have replicated the analysis reported in this chapter while accounting for the monthly circulation figures of each newspaper as reported by the Audit Bureau of Circulations (ABC). I did this by rescaling the salience frequencies of each press subset using broadsheets as the baseline, since they have the lowest circulation figures. This effectively inflates the salience levels for tabloids and midmarkets relative to broadsheets. The results, which appear in the Supporting Information, are not substantially different from those I present in the chapter. The coefficients for midmarkets and tabloids increase in line with their larger circulations, although they remain statistically insignificant at the 0.05 level.

For each model, I lagged most variables by one month. I chose this agnostic approach, rather than establishing lags using statistical techniques, because there is little theoretical reason to suggest that some informational factors exert influence over longer periods. The exceptions related to several event types: rioting, terrorism, foreign wars, migration statistics releases, and migration-related tragedies. I did not lag these events because they are more likely to have effects within the same month of news coverage. Terrorist attacks and highly visible tragedies, for example, might be more immediately newsworthy than legislative changes or EU enlargements.

Time Series Methods: The Box-Jenkins Approach

The main task of this chapter is to identify any relationship between press reporting and levels of public concern about immigration. Since the main measures of press coverage and issue saliency are available on a monthly basis, time series models provide a valuable way of estimating the relationships between these variables. The results rely on ARIMA (Auto-Regressive Integrated Moving Average) time series modeling, using the Box-Jenkins approach (Pickup 2015). This approach systematically identifies, fits, and validates each element of the ARIMA model in order to best describe the properties of a given time series.

The first step is to identify the characteristics of the dependent variable's time series—in this case, public concern about immigration as measured by the MII index. ARIMA models require that all variables have stationary means and variances. In other words, they must have some kind of equilibrium point, and cannot have trends or seasonal patterns. The augmented Dickey-Fuller test identifies whether a series has a unit-root ('is non-stationary'). The test statistic for the immigration salience series is -2.38 ($p = 0.15$; $N = 340$), which is within the 5%

critical value of -2.88. Therefore, the null of a stationary process cannot be rejected.¹⁰ Producing a stationary series requires differencing, or taking the value of one time point and subtracting the value immediately before it ($t_n - t_{n-1}$). When this is done once, it is called single differencing. The Dickey-Fuller statistic on the differenced MII series is -22.79 ($p \leq 0.001$; $N = 340$), well outside the 1% critical value of -3.45. This means that the null hypothesis of a unit-root (non-stationary process) is rejected. All other variables are similarly differenced to ensure their stationarity.

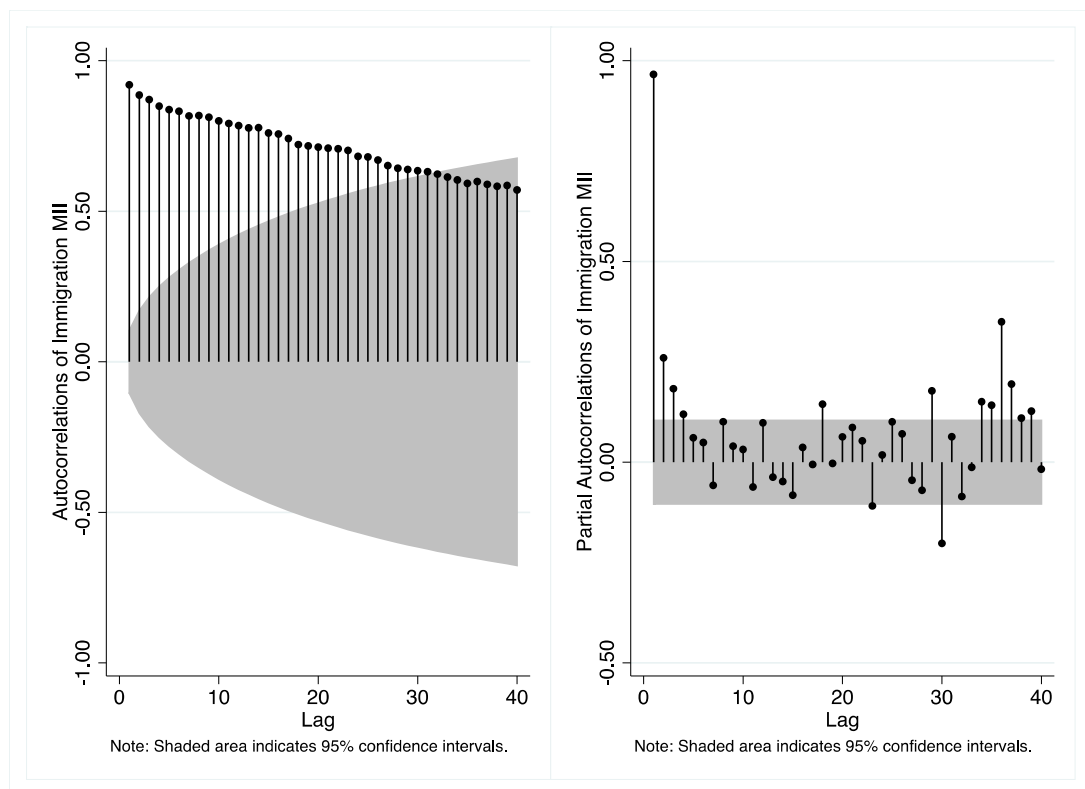
The next step involves identifying the auto-regressive and moving average components of the univariate ARIMA model. This is done by examining the autocorrelation (ACF) and partial autocorrelation (PACF) plots of the immigration MII series, shown in Figure 12. ‘Autocorrelation’ is the extent to which a variable linearly depends on other values of itself at different points in time. ‘Partial autocorrelation’ is the extent to which any autocorrelation remains in the series after accounting for this linear dependence. A truly random (‘white noise’) process should exhibit values near zero for all time lags.

Since the ACF plot for immigration MII does not exponentially decrease to zero, this suggests there is no auto-regressive element in the series. Also, since the PACF plot quickly decreases to zero, with the first lag noticeably and statistically significant, this suggests the presence of a moving average element at lag 1. What this means is that a given month’s value is only correlated with the previous month’s

¹⁰ The MII series suggests an overall upward trend in public concern. Here it is important to note that the Dickey-Fuller test has less power to identify unit-root processes when the number of time periods is relatively small. Given the MII immigration series has 340 observations, this is of less concern.

value. ARIMA models are notated in the form $AR(p)$, $I(d)$, $MA(q)$, where p , d , and q indicate the order (number) of each element respectively. The diagnostic results produced by the Dickey-Fuller test, ACF plot, and PACF plot suggest an ARIMA(0,1,1) model.¹¹

Figure 12. Auto- and Partial Autocorrelation Plots for MII Series



The next step in the Box-Jenkins process is to estimate each parameter in the model. Running the ARIMA(0,1,1) model produces a statistically significant MA component with a coefficient of -0.40 (SE = 0.05; $p \leq 0.001$). Finally, the Box-Jenkins process ends with a diagnostic check to ensure that the residuals of the ARIMA model are white noise, meaning that there is no remaining autocorrelation.

¹¹ This is the same specification that McLaren, Boomgaarden, and Vliegthart (2017) use in their analysis of British media coverage about immigration.

This is done by using the Q-statistic: in this case, the test produces a statistically insignificant value of 35.58 ($p = 0.67$), meaning that the null hypothesis of this model's residuals being a white noise process cannot be rejected.

Results

First-Level Agenda-Setting, 2001-15

Having reached an appropriate specification for the ARIMA model of immigration concern, the next step is to fit a basic model of first-level agenda-setting over the 2001-15 period without any controls.

Table 5. How News Salience Relates to Public Concern by Press Subset, 2001-15

Media Variable	Model 1: All Press	Models 2A-C: Press Subsets		
		2A: Broadsheets	2B: Midmarkets	2C: Tabloids
Migration news salience, L1	0.52 (0.99)	-0.12 (0.74)	1.01 (0.78)	2.43 (1.50)
Constant	0.16 (0.26)	0.15 (0.28)	0.10 (0.25)	0.11 (0.25)
ARMA				
MA, L1	-0.41** (0.09)	-0.39** (0.09)	-0.45** (0.09)	-0.44** (0.09)
AIC	947.69	936.25	934.52	933.38
BIC	959.89	948.40	946.66	945.53
Log-likelihood	-469.85	-464.13	-463.26	-462.69
LBQ	30.22	17.95	16.60	15.57
<i>N</i>	156	154	154	154

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

The results, shown in Table 5, do not indicate any statistically significant relationship between the visibility of migration in the press and the level of public concern. This is the case whether considering all publications at once (Model 1), subsets of the press (Models 2A, 2B, and 2C), or different migrant reference groups

(i.e., the salience of ‘immigrants’ compared to ‘refugees’ or ‘asylum-seekers’ as explored in the previous chapter).¹²

These null findings also remain even after including the controls and real-world events, as shown in **Table 6**. Whether considering all newspapers in aggregate (Model 3) or subdivided by type (Models 4A, 4B, and 4C), changes in the amount of migration-related content do not appear to have statistically significant effects on public concern about immigration between 2001-15. Although the press salience coefficients for midmarkets (4B) and tabloids (4C) are positive, and actually increase after including the controls and events, they still fall short of conventional significance levels. Therefore, this does not lend strong support for H₁. Moreover, with the exception of foreign wars, none of the controls appear to have a significant effect on public concern.¹³

¹² In this chapter, I use the term ‘midmarkets’ to refer to publications that produce content that tends to mix celebrity and entertainment content (associated with tabloid) with more traditional news journalism (associated with broadsheets). This is a term commonly used in the press industry, including by the UK’s Audit Board of Circulations. In Britain, only the *Daily Mail* and *The Express* are considered to be midmarket. The ARIMA results for each migrant reference group appear in the Supporting Information. The number of time points for Models 2A-C is slightly smaller due to months dropping out after differencing.

¹³ The significant result about foreign wars in the tabloid model (4C) is likely due to other issues such as defence or national security pushing immigration down the list of important issues.

Table 6. How News Salience Relates to Public Concern by Press Subset, with Controls, 2001-15

Media Variable	Model 3: All Press	Models 4A-C: Press Subsets		
		4A: Broadsheets	4B: Midmarkets	4C: Tabloids
Migration news salience, L1	0.86 (1.10)	0.06 (0.85)	1.42 (0.83)	2.94 (1.60)
Control Variables				
Unemployment, L1	-2.92 (4.20)	-2.91 (4.33)	-3.00 (4.05)	-2.79 (4.05)
Asylum apps (thousands), L1	0.18 (0.81)	0.34 (0.82)	0.25 (0.79)	0.19 (0.80)
Percent foreign-born, L1	3.41 (3.15)	2.99 (3.26)	3.11 (3.14)	2.99 (3.25)
Labour Party government, L1	2.96 (24.90)	2.87 (27.14)	2.86 (23.00)	2.53 (26.17)
General Election period, L1	-0.27 (2.49)	0.22 (2.55)	-0.58 (2.45)	-0.42 (2.45)
Rioting	-2.77 (3.86)	-2.80 (3.78)	-2.68 (4.05)	-2.74 (3.96)
Terrorism attack	0.94 (1.88)	0.94 (1.93)	0.94 (1.93)	0.94 (1.96)
Foreign war	-5.24 (2.78)	-4.70 (2.73)	-5.75 (2.99)	-5.65* (2.86)
Migration policy change, L1	0.97 (2.72)	1.09 (2.58)	0.99 (2.90)	0.59 (2.80)
Migration statistics release	0.22 (1.11)	0.16 (1.10)	0.18 (1.15)	0.17 (1.10)
Migration-related tragedy	1.52 (2.42)	1.23 (2.46)	1.07 (2.62)	1.72 (2.52)
EU enlargement, L1	-0.06 (3.05)	0.41 (3.43)	-0.29 (2.84)	-0.09 (2.72)
Constant	0.05 (0.29)	0.07 (0.31)	0.00 (0.28)	0.03 (0.28)
ARMA				
MA, L1	-0.44** (0.10)	-0.42** (0.10)	-0.49** (0.10)	-0.47** (0.10)
AIC	962.77	952.28	949.03	948.22
BIC	1011.57	1000.87	997.63	996.81
Log-likelihood	-465.39	-460.14	-458.52	-458.12
LBQ	21.86	18.82	18.93	17.31
N	156	154	154	154

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Second-Level Agenda-Setting, 2001-15

Perhaps it is certain aspects of immigration that are related with public concern, as predicted by second-level agenda-setting, rather than the sheer volume of coverage.

Table 7 tests for this possibility without any controls. At the level of the entire press (Model 5), mentions of the sociocultural aspects of immigration are positively and significantly related with public concern. The opposite is true for geographic aspects.

These results lend mixed support for H₂ and H₃. On the one hand, the concrete

sociocultural dimension of immigration—a category containing highly frequent terms like ‘Muslim’—is indeed related to higher levels of public concern.

Meanwhile, the abstract dimension of policymaking does not display any significant relationship with public concern.

Table 7. How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, 2001-15

Media Variables	Model 5: Aspects Emphasised (all press)	Models 6A and 6B: Ideology	
		6A: Left-Leaning (Guardian and Mirror)	6B: Right-Leaning (five papers)
Economy and work, L1	-0.03 (0.23)	0.00 (0.16)	0.06 (0.27)
Crime and illegality, L1	0.09 (0.09)	-0.03 (0.11)	0.03 (0.08)
Legislation and policy, L1	-0.14 (0.09)	-0.13 (0.09)	-0.08 (0.08)
Sociocultural aspects, L1	0.52* (0.20)	0.29 (0.21)	0.45** (0.17)
Geographic aspects, L1	-0.25* (0.12)	-0.27 (0.14)	-0.16 (0.09)
Scale and pace, L1	0.18 (0.14)	0.31* (0.14)	0.08 (0.11)
Constant	0.24 (0.28)	0.23 (0.28)	0.14 (0.27)
ARMA			
MA, L1	-0.36** (0.10)	-0.35** (0.10)	-0.47** (0.10)
AIC	943.97	944.92	937.72
BIC	971.42	972.37	965.05
Log-likelihood	-462.99	-463.46	-459.86
LBQ	29.04	25.57	18.19
N	156	156	154

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Yet, on the other hand, abstract dimensions like immigrants’ geographic origins should not have the substantial association with public concern that I observe. In the discussion, I consider this result in the context of using responses to the Most Important Issue index as my dependent variable. Meanwhile, other dimensions considered to be more sensational and directly felt did display significant relationships with public concern as expected. These included sociocultural

attributes, as well as the scale and pace of immigration—a category featuring evocative terms like ‘mass’ and ‘flood’.

Dividing these publications by ideological leanings, as compared in Models 6A and 6B, reveals further differences. In these models, ‘left’ leaning publications comprise *The Guardian* and *Daily Mirror*, while ‘right’ leaning publications include *The Times*, *Daily Telegraph*, the *Daily Mail*, *Daily Express*, and *The Sun*.¹⁴ The scale and pace of migration is significantly related to increases in concern in left-leaning publications only (Model 6A), while sociocultural aspects in right-leaning outlets only are significantly related to increases in concern (Model 6B). Meanwhile, the geographic dimension ceases to be significantly related to concern.

My findings hold when the controls and event dummies are added to the models, as indicated in Table 8. Even after accounting for these factors, sociocultural aspects in the press as a whole are still significantly associated with higher concern, while geographic aspects are associated with lower concern (Model 7). Also, as in the basic model, sociocultural aspects in right-leaning outlets only are associated with increasing concern (Model 8B), whereas scale and pace aspects in left-leaning outlets only are related to increased concern (Model 8A).

¹⁴ The *Financial Times* is excluded because, although its content and editorial line may lean towards the right, its stance on immigration is more open. Therefore, it is unlike the other publications that fall more neatly into ‘left’ and ‘right’ categories. Also, *The Star* is excluded because it has few articles about immigration, and has rarely shown clear support of any party or leader.

Table 8. How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, with Controls, 2001-15

	Model 7: Aspects Emphasised (all press)	Models 8A and 8B: Ideology	
		8A: Left-Leaning (<i>Guardian</i> and <i>Mirror</i>)	8B: Right-Leaning (<i>five papers</i>)
Media Variables			
Economy and work, L1	-0.03 (0.26)	0.01 (0.19)	0.13 (0.32)
Crime and illegality, L1	0.17 (0.11)	0.02 (0.13)	0.09 (0.09)
Legislation and policy, L1	-0.20 (0.11)	-0.17 (0.10)	-0.12 (0.10)
Sociocultural aspects, L1	0.48* (0.21)	0.25 (0.22)	0.47* (0.19)
Geographic aspects, L1	-0.33* (0.16)	-0.28 (0.15)	-0.18 (0.15)
Scale and pace, L1	0.29 (0.16)	0.37* (0.15)	0.07 (0.16)
Control Variables			
Unemployment, L1	-3.74 (4.18)	-4.29 (4.34)	-3.23 (4.07)
Asylum apps (thousands), L1	-0.07 (0.86)	0.29 (0.78)	0.04 (0.84)
Percent foreign-born, L1	3.28 (3.15)	3.19 (3.40)	1.86 (3.38)
Labour Party government, L1	4.42 (24.17)	4.18 (23.59)	3.22 (22.70)
General Election period, L1	-1.26 (3.02)	0.06 (2.53)	-0.52 (2.86)
Rioting	-2.99 (3.47)	-3.43 (3.51)	-3.26 (3.90)
Terrorism attack	1.65 (4.60)	0.96 (2.87)	1.19 (3.36)
Foreign war	-3.26 (2.74)	-3.29 (2.94)	-4.35 (2.96)
Migration policy change, L1	0.90 (2.36)	0.72 (2.22)	1.28 (2.46)
Migration statistics release	0.18 (1.01)	0.40 (0.99)	0.25 (1.09)
Migration-related tragedy	-3.67 (2.96)	-0.98 (2.57)	-0.84 (3.92)
EU enlargement, L1	5.70 (3.79)	2.88 (3.32)	3.95 (3.92)
Constant	0.15 (0.32)	0.14 (0.32)	0.09 (0.30)
ARMA			
MA, L1	-0.39** (0.12)	-0.38** (0.12)	-0.47** (0.10)
AIC	955.45	958.65	952.30
BIC	1019.50	1022.69	1016.08
Log-likelihood	-456.72	-458.32	-455.15
LBQ	22.14	24.25	19.41
<i>N</i>	156	156	154

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

These results paint a mixed picture when it comes to H₄. They suggest some of the less abstract and more directly-felt dimensions in right-leaning publications are indeed more strongly related to increases in public concern. But, this is not true across all of the dimensions. For instance, the scale and pace of immigration is more

closely related to increases in public concern when it appears in left-leaning publications only. And, like the previous models, terms expressing economic or criminal dimensions of immigration simply are not related with changes in concern. It is also important to stress that even though I find differences between partisan subsets of the press, they are not strikingly large compared to either each other or to the press as a whole. The coefficients may differ in significance between left- and right-leaning publications, but the actual sizes (particularly when looking at the sociocultural attributes) are not hugely different. Nevertheless, at the level of the whole press, it is clear that only some second-level agendas are related to public concern, while the sheer salience of immigration is not a significant factor.

Robustness Checks

To test the strength of these findings, I conducted several robustness checks that aimed to address potential limitations. First, my results—particularly those relating to real-world events—could be specific to the 2001-15 period. Notably, asylum applications dramatically rose in the early 2000s, and press coverage around asylum-seekers was higher during this period. Increasing the number of time points would not only add more data and improve the statistical power of the models, but it would also enable me to check whether my key findings are sensitive to this key period in recent British immigration history.

Table 9 reports findings from models using a subset of four publications that were available over this longer period. *The Guardian* and *Daily Mirror* represent left-leaning publications, while *The Times* and *Daily Mail* represent right-leaning

publications.¹⁵ Again, in the basic model without controls, increases in the visibility of sociocultural aspects of immigration are associated with increases in concern in right-leaning publications (Model 10B), as are scale and pace aspects in left-leaning publications (Model 10A). These coefficients remain significant, and in the same directions, when taking the controls and events into account as seen in Table 10 (Models 12A and 12B). The results also reinforce the observation that none of the controls or event types appear to be significantly related with public concern.

Table 9. How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, 1997-2015

Media Variables	Model 9: Aspects Emphasised (four papers)	Models 10A and 10B: Ideology	
		10A: Left-Leaning (<i>Guardian and Mirror</i>)	10B: Right-Leaning (<i>Times and Mail</i>)
Economy and work, L1	0.01 (0.14)	0.00 (0.13)	0.16 (0.13)
Crime and illegality, L1	-0.00 (0.07)	-0.00 (0.09)	-0.03 (0.05)
Legislation and policy, L1	-0.08 (0.06)	-0.11 (0.07)	-0.01 (0.04)
Sociocultural aspects, L1	0.40** (0.15)	0.28 (0.17)	0.34** (0.11)
Geographic aspects, L1	-0.24** (0.09)	-0.25* (0.11)	-0.11 (0.06)
Scale and pace, L1	0.17 (0.09)	0.27* (0.12)	0.04 (0.06)
Constant	0.20 (0.23)	0.20 (0.23)	0.15 (0.21)
ARMA			
MA, L1	-0.34** (0.09)	-0.34** (0.09)	-0.42** (0.09)
AIC	1162.32	1164.30	1165.18
BIC	1191.91	1193.90	1194.77
Log-likelihood	-572.16	-573.15	-573.59
LBQ	22.45	25.74	21.04
<i>N</i>	198	198	198

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

¹⁵ Not only are these publications available for similar periods in the archives, they also correspond with the design of McLaren, Boomgaarden, and Vliegenthart (2017).

Table 10. How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, with Controls, 1997-2015

	Model 11: Aspects Emphasised (four papers)	Models 12A and 12B: Ideology	
		12A: Left-Leaning (<i>Guardian and Mirror</i>)	12B: Right-Leaning (<i>Times and Mail</i>)
Media Variables			
Economy and work, L1	0.00 (0.18)	-0.01 (0.15)	0.21 (0.16)
Crime and illegality, L1	0.03 (0.08)	0.03 (0.11)	-0.01 (0.06)
Legislation and policy, L1	-0.09 (0.06)	-0.13 (0.08)	-0.03 (0.05)
Sociocultural aspects, L1	0.42** (0.16)	0.26 (0.18)	0.38** (0.12)
Geographic aspects, L1	-0.28** (0.11)	-0.26* (0.13)	-0.12 (0.09)
Scale and pace, L1	0.21* (0.09)	0.31* (0.12)	0.04 (0.07)
Control Variables			
Unemployment, L1	-2.01 (3.45)	-2.25 (3.39)	-1.72 (3.23)
Percent foreign-born, L1	3.75 (2.92)	4.25 (2.78)	3.21 (2.83)
Labour Party government, L1	3.81 (16.87)	3.77 (20.00)	3.79 (16.70)
General Election period, L1	-0.19 (2.39)	-0.07 (2.17)	-0.33 (2.30)
Rioting	-3.39 (2.88)	-3.13 (2.86)	-3.76 (3.55)
Terrorism attack	1.54 (2.69)	1.06 (2.31)	1.32 (2.19)
Foreign war	-2.14 (2.21)	-2.43 (2.15)	-3.05 (2.09)
Migration policy change, L1	0.11 (1.88)	0.01 (1.84)	0.08 (2.13)
Migration statistics release	0.15 (0.83)	0.39 (0.83)	0.09 (0.89)
Migration-related tragedy	-1.09 (2.18)	-0.74 (2.19)	0.27 (2.94)
EU enlargement, L1	4.01 (2.84)	2.40 (2.69)	2.61 (2.74)
Constant	0.09 (0.24)	0.07 (0.25)	0.06 (0.23)
ARMA			
MA, L1	-0.37** (0.10)	-0.36** (0.10)	-0.44** (0.09)
AIC	1173.36	1176.35	1176.77
BIC	1239.12	1242.11	1242.53
Log-likelihood	-566.68	-568.17	-568.38
LBQ	22.02	25.19	19.93
<i>N</i>	198	198	198

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Another concern relates to an assumption built into ARIMA modeling: that a unit-root, or random walk, process generated the data. Mathematically, this is indicated by the ‘integrated’ value of ($d = 1$) in the (p, d, q) ARIMA notation. Practically, an ARIMA model assumes that the best prediction of a value at some

point in the future is the current value, because there is no equilibrium point (Pickup 2015, 165). Compare this to a stationary process, for which the best prediction of a future value is its equilibrium point. To make a stationary series, ARIMA modelling takes the first difference of the data.

But this is a strong assumption, particularly when using public opinion data—including those of the sort I use in this chapter. Given a long enough period, most monthly and quarterly data series of interest to political scientists turn out to be generated by fractionally integrated rather than completely integrated processes. What this means is that they have ‘long memories’: statistical dependence between two time periods decays very slowly as the distance between those periods increases, and as a result, changes due to one-off shocks are not permanent.¹⁶ For example, governing party support and prime ministerial approval in Britain (Clarke and Lebo 2003), as well as gender differences in US partisanship (Box-Steffensmeier, DeBoef, and Lin 2004), have all been shown to have this property. This implies that using an integration (d) parameter of 1 may actually over-difference the series and generate incorrect estimations.

To address this concern, I repeated the analysis using ARFIMA (Auto-Regressive Fractionally Integrated Moving Average) models. This approach allows the d parameter to vary between 0 and 1, which accounts for the long-run characteristic of a series’ data generating process. Table 11 replicates the analysis of news salience, divided by press subset. The statistically significant d parameters

¹⁶ Visually, this is indicated by an autocorrelation function with many coefficients that decline very slowly.

across the models indicate that public concern about immigration, as captured in the MII series, is indeed fractionally integrated.

Table 11. An ARFIMA Model of How News Salience Relates to Public Concern by Press Subset, with Controls, 2001-15

Media Variable	Model 13: All Press	Models 14A-C: Press Subsets		
		14A: Broadsheets	14B: Midmarkets	14C: Tabloids
Visibility of migration news, L1	0.64 (0.89)	0.07 (0.60)	1.15 (0.72)	2.13 (1.37)
Control Variables				
Unemployment, L1	-3.81** (1.27)	-4.13** (1.27)	-3.52** (1.16)	-3.78** (1.17)
Asylum apps (thousands), L1	-0.37 (0.61)	-0.41 (0.60)	-0.46 (0.59)	-0.51 (0.61)
Percent foreign-born, L1	4.36** (1.17)	4.30** (1.16)	3.90** (1.08)	3.95** (1.12)
Labour Party government, L1	3.48 (3.32)	2.98 (3.34)	3.05 (3.11)	3.18 (3.22)
General Election period, L1	0.11 (1.97)	0.43 (1.99)	-0.06 (1.92)	-0.06 (1.92)
Rioting	-1.90 (2.16)	-2.00 (2.15)	-2.03 (2.16)	-2.14 (2.15)
Terrorism attack	0.14 (1.65)	0.06 (1.63)	0.09 (1.66)	0.04 (1.65)
Foreign war	-4.71* (2.16)	-4.51* (2.15)	-5.13* (2.15)	-5.01* (2.14)
Migration policy change, L1	0.62 (1.56)	0.60 (1.54)	0.65 (1.57)	0.47 (1.56)
Migration statistics release	0.26 (0.80)	0.24 (0.79)	0.30 (0.80)	0.28 (0.79)
Migration-related tragedy	0.18 (2.83)	-0.17 (2.80)	-0.20 (2.80)	0.45 (2.80)
EU enlargement, L1	-1.13 (2.28)	-0.84 (2.26)	-1.27 (2.28)	-1.07 (2.26)
Constant	3.85 (15.39)	8.41 (15.39)	6.60 (14.36)	7.92 (14.94)
ARFIMA				
MA, L1	0.19 (0.11)	0.23* (0.11)	0.20 (0.12)	0.19 (0.12)
<i>d</i>	0.40** (0.09)	0.39** (0.09)	0.36** (0.09)	0.38** (0.09)
AIC	1079.79	1073.25	1070.67	1070.84
BIC	1134.07	1127.43	1124.86	1125.02
Log-likelihood	-522.90	-519.62	-518.33	-518.42
LBQ	25.77	24.65	27.26	26.08
<i>N</i>	180	179	179	179

Note: *d* = Order of integration. MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Turning attention to the main media variable, the ARFIMA models still show no relationship at conventional significance levels between the sheer visibility of immigration and public concern, although the direction and size of the coefficients

continues to match what I found using the ARIMA modeling.¹⁷ Meanwhile, unemployment and the percentage of foreign-born people in the population become highly significant and in opposite directions: an increase in the unemployment rate is associated with a decrease in public concern about immigration, while an increase in the proportion of foreign-born people is associated with an increase in concern. Foreign wars are also associated with a decrease in public concern. In the discussion, I explore why these results might be explained as an artefact of using the MII question, which asks respondents to rank issues rather than give a specific rating.

I also replicated the analysis of the second-level agendas over the 2001-15 and 1997-2015 periods using ARFIMA models. As seen in Table 12, over the 1997-2015 period, the same media variables remain significant and in similar directions to the ARIMA models. Moreover, the unemployment rate and percentage foreign born remain significant, corresponding with the earlier ARFIMA model. But there were some differences. Notably, the sociocultural second-level agenda in right-leaning publications lost its statistical significance over the 2001-15 period.¹⁸ This difference suggests that, although my results are substantively similar under more restrictive assumptions about the underlying data generating process, they may be sensitive to the time period included in the analysis.

¹⁷ Gaps in the series were linearly interpolated, as ARFIMA modeling requires complete series. This explains the increase in the number of time periods.

¹⁸ The full regression table for the 2001-15 period, including controls, appears in the Supporting Information.

Table 12. An ARFIMA Model of How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, with Controls, 1997-2015

	Model 15: Aspects Emphasised (four papers)	Models 16A and 16B: Ideology	
		16A: Left-Leaning (Guardian and Mirror)	16B: Right-Leaning (Times and Mail)
Media Variables			
Economy and work, L1	-0.02 (0.15)	-0.01 (0.12)	0.15 (0.12)
Crime and illegality, L1	0.03 (0.07)	0.04 (0.08)	-0.00 (0.05)
Legislation and policy, L1	-0.07 (0.05)	-0.10 (0.06)	-0.03 (0.04)
Sociocultural aspects, L1	0.27 (0.17)	0.16 (0.17)	0.29* (0.12)
Geographic aspects, L1	-0.21* (0.08)	-0.22* (0.09)	-0.09 (0.07)
Scale and pace, L1	0.18* (0.09)	0.27** (0.09)	0.03 (0.06)
Control Variables			
Unemployment, L1	-4.10** (1.15)	-4.23** (1.15)	-3.73** (1.13)
Percent foreign-born, L1	5.37** (1.01)	5.54** (1.00)	5.19** (1.00)
Labour Party government, L1	3.96 (3.26)	4.12 (3.28)	4.07 (3.22)
General Election period, L1	0.14 (1.65)	0.15 (1.65)	0.18 (1.66)
Rioting	-2.27 (1.94)	-2.00 (1.93)	-2.47 (1.98)
Terrorism attack	0.98 (1.40)	0.73 (1.37)	0.64 (1.42)
Foreign war	-2.39 (1.66)	-2.54 (1.65)	-3.09 (1.67)
Migration policy change, L1	-0.09 (1.22)	-0.17 (1.22)	-0.04 (1.24)
Migration statistics release	0.07 (0.71)	0.19 (0.70)	-0.02 (0.72)
Migration-related tragedy	-1.63 (2.71)	-1.72 (2.65)	-0.67 (2.99)
EU enlargement, L1	0.70 (2.14)	0.41 (2.08)	0.10 (2.21)
Constant	-6.49 (15.58)	-6.99 (15.42)	-8.56 (14.94)
ARMA			
MA, L1	0.16* (0.08)	0.17* (0.08)	0.14 (0.09)
<i>d</i>	0.46** (0.05)	0.46** (0.05)	0.46** (0.05)
AIC	1299.37	1299.19	1301.78
BIC	1370.92	1370.74	1373.33
Log-likelihood	-628.68	-628.59	-629.89
LBQ	29.82	33.81	27.28
<i>N</i>	223	223	223

Note: *d* = Order of integration. MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Finally, it is possible that public concern may be driving news coverage.

Political scientists have found some evidence for this proposition (Walgrave, Soroka, and Nuytemans 2007; Soroka 2002). But others, using voting behaviour rather than public concern, do not find such a two-way relationship: for example, increased

media coverage about the UK Independence Party (UKIP) led to a small increase in preferences for the party, not the other way around (Murphy and Devine 2018). In the case of immigration, it is plausible that public concern might contribute to further press coverage, especially in a commercial media environment.

To address this possibility, I conducted Granger causality tests between the MII series and the salience of immigration coverage in each of the press subsets. Originating in economics, Granger causality refers to the idea that a given variable X ‘Granger causes’ another variable Y if ‘present Y can be better predicted by using past values of X and Y than by not doing so, all other information available (including past values of Y) being used in either case’ (Pierce 1977, 12). Specifically, it generates Wald statistics to test the hypothesis that all coefficients (including those of any lags) of an independent variable X are jointly zero when applied to the dependent variable Y . This produces F -statistics that, if they are significant, lead the researcher to reject the hypothesis and instead claim that X ‘Granger causes’ Y .¹⁹

With more data available to social scientists, this kind of statistical testing has become part of the standard toolkit available to researchers using time series methods (Soroka 2002). Crucially, it affords ‘assessments of the character of direction of relationships over time’ (J. R. Freeman 1983, 327).²⁰ Numerous studies have taken advantage of this feature to ascertain the presence and direction of relationships among agendas produced by different media (Groshek 2011; Groshek and Groshek 2013; Tan and Weaver 2007; Meraz 2011).

¹⁹ Note the specific usage of ‘Granger causes’ rather than ‘causes’ in this and following statements.

²⁰ In his AJPS article, Freeman provides the mathematical basis for Granger causality testing, and applies its main ideas to questions in political science and international relations.

Table 13. Granger Relationships Among Public Concern and Immigration News Salience by Press Subgroup, 2001-15

Variable Impacted	<i>F</i>	<i>p</i>
Public Concern		
Broadsheet Salience → Public Concern	0.03	0.87
Midmarket Salience → Public Concern	2.94	0.09
Tabloid Salience → Public Concern	0.02	0.88
Salience of Immigration in Broadsheets		
Public Concern → Broadsheet Salience	2.18	0.14
Midmarket Salience → Broadsheet Salience	0.14	0.71
Tabloid Salience → Broadsheet Salience*	5.62	0.02
Salience of Immigration in Midmarkets		
Public Concern → Midmarket Salience	1.66	0.20
Broadsheet Salience → Midmarket Salience	0.02	0.89
Tabloid Salience → Midmarket Salience	0.37	0.54
Salience of Immigration in Tabloids		
Public Concern → Tabloid Salience	0.06	0.80
Broadsheet Salience → Tabloid Salience	0.10	0.75
Midmarket Salience → Tabloid Salience	0.37	0.54

Note: *F* = F-statistic. *p* = p-value. Arrows indicate direction of Granger causality. * $p \leq .05$; ** $p \leq .01$

First, I test for Granger causality at the level of overall salience in Table 13. The results in the first section labelled ‘Public Concern’ confirm my main ARIMA findings: changes in immigration-related coverage do not Granger cause changes in responses to the Most Important Issue question, although midmarkets are closest in terms of statistical significance. Moreover, changes in public concern does not Granger cause subsequent shifts in the amount of coverage in any press subset. This rules out reverse causality at the level of sheer salience. However, an interesting subsidiary finding emerged from this analysis. The share of immigration coverage in tabloids appears to Granger cause changes in the share of coverage that broadsheets publish. This suggests that midmarket publications (comprising the *Daily Mail* and *Daily Express*) ‘lead’ broadsheets in terms of the proportion of immigration coverage over this period.

Table 14. Granger Relationships Among Public Concern and Second-Level Agenda Salience, All Publications, 2001-15

	MII		Economic		Crime		Legislative		Sociocult.		Geographic		Scale/Pace	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
MII			14.72	0.0002	0.16	0.69	0.03	0.87	3.96	0.05	3.83	0.052	5.70	0.018
Econ.	0.01	0.91			0.94	0.33	0.53	0.47	1.54	0.22	3.58	0.06	0.29	0.59
Crim.	0.44	0.51	0.10	0.75			6.02	0.02	5.49	0.02	6.80	0.01	6.14	0.014
Legis.	2.16	0.14	0.91	0.34	2.54	0.11			1.31	0.26	1.57	0.21	4.70	0.03
Socio.	2.08	0.15	0.01	0.91	4.52	0.04	0.83	0.36			0.20	0.65	0.39	0.53
Geog.	6.55	0.012	0.24	0.63	2.41	0.12	2.53	0.11	0.12	0.73			0.44	0.51
Scale	2.58	0.11	1.16	0.28	1.54	0.22	0.56	0.46	2.85	0.09	5.26	0.02		

Note: *F* = F-statistic. *p* = p-value. To see if *X* ‘Granger causes’ *Y*, choose a variable on the left-hand side (*X*) and read across to the desired column (*Y*). Intensity of shading indicates statistical significance, based on .05/.01/.001 levels.

I repeated these tests for each second-level agenda at the level of the whole press. The results, displayed as a grid in Table 14, show how the relationships among agendas and public concern are sometimes bi-directional.²¹ Reading down the column labelled ‘MII’ reveals, at the level of the whole press, the geographic second-level agenda Granger causes changes in public concern. While this corresponds with Model 5 in Table 7, the Granger testing does not suggest that the sociocultural second-level agenda Granger causes changes in public concern. Meanwhile, reading across the row labelled ‘MII’ shows how public concern Granger causes changes in the economic, sociocultural, and scale/pace second-level agendas. This suggests that, at least for these second-level agendas, public concern is more of a driver of coverage than the other way around. But these results need to be cautiously interpreted, not least of all because other issues—notably the economy—have displaced immigration over the MII series.

²¹ Or, exhibit ‘mutual reciprocal Granger causation’ (Neuman et al. 2014, 204)

Discussion

Summary of Results

My analysis supports some, but not all, of the hypotheses proposed in this chapter.

H₁ set out the classic first-level agenda setting expectation: as immigration becomes more salient in the press, it should bear a relation to similar increases in public concern. At either the aggregate level of the whole press, or within newspaper types (broadsheet, midmarket, tabloid), I did not find this to be true.

H₂ and H₃ compared the effects that different kinds of unobtrusive issues have on levels of concern. They proposed that aspects having more tangible and less abstract outcomes (economy/work, crime/legality, sociocultural aspects, and scale/pace aspects) would be associated with increasing concern, while those with less tangibly felt and more abstract outcomes (legislative/policy and geographic origins) would have little impact either way. The results from Model 7 (over the 2001-15 period) and Model 11 (over the 1997-2015 period) partially support these claims. On the one hand, mentioning sociocultural aspects of immigration, as well as the scale and pace of migration, is indeed associated with higher levels of concern. But, this was not observed for other similarly tangible aspects that were linked to immigration, notably the economy and crime. On the other hand, mentioning geographic aspects with immigration was associated with lower levels of concern, though policymaking aspects do indeed have little effect as predicted.

Why might mentioning migrants' geographic origins be related to lower public concern later on? At first glance, an immigrant's country or region of origin should not necessarily raise or lower concern in a systematic way: it is a relatively abstract characteristic with few tangible consequences for the public. However, interpreting this finding alongside the linguistic evidence sheds some light on this

phenomenon. Within the ‘geographic’ category, some of the terms that contributed most to this figure were ‘Palestinian’, ‘Syrian’, and ‘European/EU’. As I found in prior research, each of these terms were especially visible in connection with migration during particular moments in time after 2006: ‘Syrian refugees’ from 2012-2015, ‘EU immigrants’ from 2013 onwards, and ‘Palestinian refugees’ in 2007 (W. Allen 2016). It is possible that mentions of these terms were actually associated with increases in other responses to the Most Important Issue question: foreign affairs in the case of Syrian or Palestinian refugees, and the European Union in the case of EU immigrants.²²

What may explain the influence of language related to the scale and pace of migration? It is possible this kind of quantitative language contributes to even greater levels of innumeracy among the public about levels of migration (Herda 2010) because people base their opinions on this information. It is important to remember how this category of terms includes words casting immigration (and immigrants) either in terms of their gross numbers (‘millions of migrants’; ‘mass migration’) or the speed at which they are arriving (‘uncontrolled immigration’; ‘net migration’). Meanwhile, as shown in Europe and the US, individuals become more opposed to immigration when they believe there are many migrants in their country (Strabac 2011). Although my data and design in this study cannot conclusively confirm or rule out this possibility, I use an experimental design in the next chapter to try to address whether language that signals quantitative dimensions of immigration causes individuals to change their opinions towards immigrants.

²² See footnote 13 in this chapter for a similar observation involving the apparent significance of foreign wars.

Another possibility is that this relationship is actually more specific to the dynamics of coverage around the ‘refugee crisis’ in 2015. The linguistic analysis in the previous chapter’s study showed how asylum and refugee-related terms comprised a much larger share of broadsheet coverage. In September 2015 alone, broadsheets used scale and pace language in association with the terms ‘asylum’, ‘asylum-seekers’, and ‘refugees’ over twice as frequently (about 87 times per million words) as midmarkets (38 times per million words) or tabloids (31 times per million words). This marked difference was not present among the same publications’ language around ‘immigration’, ‘immigrants’, and ‘migrants’. Given these observations, it is possible that some coverage of refugee and asylum-seekers, mostly comprising items in *The Guardian* in my corpus design, is contributing to the observed relationship between left-leaning publications’ use of scale and pace terms and higher levels of public concern.

Finally, H₄ considered whether the six issue aspects would have different effects depending on the ideological leanings of the newspaper in which they appeared. Specifically, it proposed that more immediately-felt and less abstract aspects of immigration would increase concern to a greater degree in right-leaning publications rather than left-leaning ones. Again, my results provide mixed evidence for this claim. Sociocultural aspects of immigration are indeed significantly associated with increases in concern only when they appear in right-leaning publications, while similar mentions in left-leaning publications did not have significant effects. But, the models also indicate that the scale and pace of immigration was associated with greater concern when it appeared in left-leaning publications only.

Alternative Explanations: Political Elites and Individual Preferences

In this chapter, I have primarily examined the relationships between press content (including various subsets within it) and public concern about immigration.

Although time series methods powerfully address a major concern for making causal claims—namely, that an event must have happened prior to an observation in order for it to have caused the observation—they do not deal with the problem of confounding variables. Other unobserved external factors may explain shifts in either press attention towards immigration or public concern about the issue.

One such factor involves the messaging strategies and activities of political elites. As I explained in Chapter 2, media and public agendas connect with each other and with agendas originating in policy and government. For example, when politicians make statements about a new immigration policy, media often report this information. Therefore, instead of media acting solely as agenda-setters, it is possible their role is actually more dynamic in certain circumstances.

Recent British debate about immigration has focused on the subject of achieving numerical targets. During the 2010 General Election, the Conservative party pledged to bring ‘net migration’, or the difference between those entering and leaving the country, down to the ‘tens of thousands’ (Conservative Party 2010). Arguably, this was in response to rising public demand for greater controls on immigration levels. In related research to this thesis, I compared the content of Home Office press releases and news items published between 2010-15 with national press content over the same period (W. Allen and Blinder 2018). Did the language of ‘net migration’ originating among politicians subsequently filter into press content?

Initially, no. Between 2010-13, press mentions of ‘net migration’ were relatively rare compared to the frequency with which the Home Office talked about

this prominent policy objective. But, these mentions dramatically rose from 2014 onwards. Why? Examining the press coverage both quantitatively and qualitatively reveals that newspapers were publishing content citing quarterly migration reports released by the non-partisan Office for National Statistics (ONS). These reports showed, among other figures, that net migration was actually rising rapidly despite several interventions by the government.

In effect, these reports served as convenient, predictable, and reliable sources of information for journalists. As migration levels continued increasing, newspapers across the political spectrum continued to use this information, typically highlighting the government's failure to achieve its campaign promise.²³ Not surprisingly, the Home Office ceased using the term in its online publications as it became increasingly clear that the target was practically unachievable.

Tracing the development of this particular issue as it travelled between policy and press agendas reiterates my theoretical point that the causal relationships among media, the state (comprising both partisan politicians and bureaucratic institutions like statistical authorities), and public attitudes are actually dynamic and bi-directional. When it came to the language of 'net migration', politicians perceived the public mood and generated policies in response. But this key plank of the government's policy agenda did not immediately materialise in media. Rather, it arguably only took hold once routine, bureaucratic mechanisms started making information available about the magnitude of migration. The ARFIMA models

²³ The four publications that cited the ONS net migration figures most frequently between 2014-15 were, in order, *The Guardian/The Observer*, *The Times/Sunday Times*, *Daily Mail/Mail on Sunday*, and *The Daily Telegraph/Sunday Telegraph* (W. Allen and Blinder 2018, 218)

(Table 12) and Granger causality tests (Table 14) provide further evidence suggesting a bi-directional relationship for the scale and pace attribute agenda—within which ‘net’ prominently features.

Another set of factors lie at the level of individuals. My design does not account for either media preferences or demographic features that can impact how people engage with news information. Given my data for this chapter, empirically testing alternative pathways using ARIMA modeling is not possible. But, I acknowledge that such confounding factors limit the extent to which I can claim that the press causes changes in public concern.²⁴ Nevertheless, showing the conditions under which associations do exist is an important step for establishing causality. Future research could take advantage of panel data (or pseudo-panel data like repeated cross-sectional time series) to more directly test for individual-level effects (Lebo and Weber 2015).

Conclusion

Several decades of research into media effects have come to varying conclusions about how strongly media impact perceptions (Cacciatore, Scheufele, and Iyengar 2016). Most observational studies examining the impacts of media tend to focus on shorter time periods. This means that political scientists have, until recently thanks to advances in media data collection and analytical techniques, known comparatively little about how media content and public concern relate to one another.

²⁴ This is why I have been careful to only claim the presence of an association or relationship between these two variables—and, where I used Granger tests, to describe any significant relationships as evidence of ‘Granger causality’.

Harnessing the power of time series methods, and informed by text analysis originating in computational and corpus linguistics, I sought to address this problem using theories of first- and second-level agenda-setting. I focused on two key questions. First, is an increase of British press attention to immigration associated with more public concern? My results show that such a significant relationship between overall proportions of British newspaper coverage and levels of importance ascribed to immigration did not exist over 2001-15. This is somewhat surprising, given that previous studies—including ones using similar methods, data, and model specifications—find some effects.

Second, are certain aspects of immigration more closely related to public concern, and if so, does the ideology of the newspaper they appear in matter? I found evidence that greater visibility of sociocultural aspects of immigration is associated with higher public concern. But, this relationship only appears in right-leaning publications. This should be tempered with the observation that crime—which Chapter 2 showed to be one of the most salient features of immigration news coverage, particularly among British tabloids—does not appear to have similar effects despite being tangible and consequential for the public. This may be because criminality, reflected in language indicating immigrants' 'illegal' status, has been so dominant that the public is less affected by further mentions of this aspect (Blinder and Jeannet 2018).

Taken together, this chapter's findings illustrate how it is not sheer salience, but the visibility of certain second-level agendas within broad immigration coverage that matters for public concern. Yet, despite the statistical significance of these relationships, what is striking is how their substantive sizes are relatively small. The question this study raises is how information changes attitudes at the individual

level. In the next chapter, I present results from a survey experiment that has greater causal power.

4

How Language Describing Immigrants Impacts Individual Perceptions and Preferences: Evidence from a Conjoint Experiment

Introduction

The previous chapter's study aimed to show how the words used by the British press to talk about migration and migrants related to shifts in public perceptions about the importance of immigration. Although time series methods have advantages for showing how media and perceptions might influence each other over a longer period, one of the key limitations I encountered was that the data reflected an aggregate level of public concern. Showing how some second-level agendas are more strongly related to increases in overall levels of concern has its scholarly value, particularly for making claims about the potential roles for media in politics. But it does not deal with the question of whether different kinds of language impact individuals' preferences towards and perceptions of different kinds of immigrants.

Addressing this question is important for public opinion and policymaking in several ways. In public debate about what should be done about immigration, the question of 'who do we let in?' is often central. Theoretically, it highlights how different kinds of factors—economic, sociocultural, informational—shape how

people think about this issue. Practically, policymakers often use the answers to this question as justifications for sets of immigration requirements, as seen in Britain's points-based visa system that prioritises education, evidence of employment, and language skills for people from non-EU countries seeking to work in the UK. However, testing for the effects that multiple immigrant characteristics might have on public perceptions and preferences is difficult using conventional experimental methods. Typically, this involves a trade-off between the number of characteristics being considered and the practical feasibility of implementing complex experiments with many conditions.

To overcome this challenge, I use a conjoint design, or factorial survey experiment (Auspurg and Hinz 2015). This format enables researchers to simultaneously test multiple attributes to determine which of them, if any, cause shifts in preferences or attitudes. It involves asking respondents to engage in multiple trials or tasks, such as rating profiles or choosing between competing variations of a product. Then, through simple regression analysis, researchers can derive respondents' preferences for each individual attribute. My design draws upon a population-based sample of 4,445 British-born adults to ask two questions: which attributes are more important in individuals' evaluations of immigrants, and do people perceive immigrants as being more economically or sociocultural beneficial depending on the attributes they possess?

To be sure, I am not the first to address these questions, or to use a conjoint design. On the first question, prior conjoint research points to the importance of immigrants' education levels, occupations, and reasons for migrating for determining how likely the public will receive them (Hainmueller and Hopkins 2015; Hainmueller and Hiscox 2010). These qualities, as well as migrants' religious

affiliation, are also important when people evaluate asylum-seekers (Bansak, Hainmueller, and Hangartner 2016). But a major weakness of these kinds of designs involves the selection of attributes to test in the first place. Although the broad dimensions within conjoint experiments usually derive from theory, the specific terms used to distinguish among levels within each dimension often come from researcher intuition or prior studies.

Instead, I argue my design has stronger external validity because it includes options that come from the descriptive press analysis in Chapter 2. Specifically, it uses some of the most frequently observed adjectives relating to age ('young', 'older'), country of origin ('EU', 'non-EU', 'Commonwealth'), occupation ('skilled', 'unemployed'), and religion ('Christian', 'Muslim'). Not only do these qualitative terms reflect typical press language applied to immigrants and asylum-seekers, but they also enable me to disentangle one of the main findings in the previous chapter: attributes related to immigrants' sociocultural and demographic backgrounds are more strongly related to increases in public concern. The question I aim to address in this chapter involves asking whether this heightened importance cause more negative perceptions towards immigrants, and if so, which dimensions are most relevant.

To do this, I break up the broad second-level agenda of sociocultural aspects into several parts, including age, sex, and religious affiliation. I find that, although collectively these aspects may significantly relate to issue importance, they do not have the strongest causal effects on evaluations of individual immigrants. Instead, the British-born public prefers immigrants who have more education or work in skilled occupations, corresponding with other observational and experimental

studies. Interestingly, the British are more likely to admit an asylum-seeker over a person with a job or a student.

Yet, what is not clear from previous conjoint studies is how specific attributes relate to perceptions about immigrants' potential economic or sociocultural impacts. This is partly due to the predominance of forced-choice admission questions that does not differentiate between these kinds of impacts. To address this gap, my design asks respondents to consider not only whether they would admit different immigrants with varied sets of personal attributes, but also how these people could impact the British economy and society. The results suggest that immigrant features perceived as beneficial for Britain's economy, such as higher education and skilled occupations, command significantly lower (although still positive) ratings for their perceived benefit to British culture and society. And, despite their relative willingness to admit asylum-seekers, British respondents did not perceive this group as particularly beneficial in economic or sociocultural terms.

Finally, this study expands upon a key finding from the previous chapter: that language related to the scale and pace of immigration is related to higher levels of concern about immigration. I speculated on the importance of this finding by observing how, as people over-estimate the actual proportion of foreign-born people in their country, they tend to express even more negative views. Yet this phenomenon, called 'innumeracy' and widely studied in several immigrant-receiving countries (Herda 2010; Nadeau, Niemi, and Levine 1993), has not yet been tested alongside either preferences for certain types of immigrants or perceptions of immigrants' impacts. Therefore, in this chapter I address whether mentioning how many immigrants there are in Britain, and how quickly they arrive, causes people to become more negative towards individual immigrants.

My design examines whether information about the scale of immigration at-large changes perceptions of, and preferences towards, individual immigrants with different characteristics. I randomly assigned the 4,445 participants to one of two conditions that contained different introductory text preceding each set of tasks: either a generic statement about the importance of immigration as a contemporary issue in Britain (N = 2,191) or a statement emphasising the scale and pace of immigration to Britain using language like ‘mass immigration’ and ‘more immigrants’ (N = 2,254).¹ The results indicate that numerical language did not systematically lower perceptions of immigrants and their impacts across the attributes. But, it did increase the range of preferences for immigrants based on their language skills: people with no English skills were perceived as being even less beneficial for Britain’s economy and society, while those with fluency were perceived even more favourably.

This chapter makes three contributions to political scientific understanding of attitudes towards immigrants. First, it improves upon existing conjoint studies by linking choices of levels with real-world media language. Second, it sheds light on how characteristics perceived to be economically positive are not always perceived as equally positive for society and culture. Third, it suggests that information drawing attention to aggregate immigration levels does not universally make people either less willing to admit immigrants or more negative towards them. Rather, the effects of this information are conditional on the sets of attributes mentioned.

¹ The results reporting overall preferences for particular immigrant attributes come from the subsample of respondents who saw the generic introductory statement, which would normally appear anyway to motivate participation in the survey.

Theory: Explaining Attitudes Towards Immigration

Social scientists have generated many hypotheses about the main factors that contribute towards immigration attitudes in typically destination countries. These reasons fall into three broad groups: economic and material factors; sociocultural and symbolic factors; and informational factors.

Economic and Material Reasons

The main rationale that economists use to explain attitude formation begins with the observation that immigrants impact different sections of the labour market and welfare recipients (Hampshire 2013). Depending on the skill levels of immigrants, they affect wages and welfare payments for 'native' residents and therefore change perceptions about immigrants' favourability (Facchini, Mayda, and Puglisi 2013). Therefore, people tend to have negative attitudes towards immigrants who are perceived to either be competitors for jobs requiring similar skills or people who reduce the amount of welfare benefits paid to each worker. It is their material interests that matter. This conclusion echoes some of the logic contained within the economic voting literature (Lewis-Beck and Paldam 2000) as well as studies examining attitudes to European integration (Gabel 1998): lived economic experiences shape individuals' priorities and perceptions.

Debates about immigrants' impact on welfare, public resources like schools, job availability, and wages are based, in part, on threats to interest. Labour market and welfare competition with immigrants seems to significantly increase anti-immigrant attitudes (Mayda 2006). Therefore, lower-skilled non-immigrants should have more negative attitudes towards immigrants who are similarly skilled, but not

towards highly-skilled engineers and IT professionals who would not compete for the same jobs (Facchini and Mayda 2009, 2012).

Yet others (Hainmueller and Hiscox 2007, 2010) dispute these results because they depend on a large number of assumptions, including about the nature of labour markets in different countries and how easily migrants can move jobs. Labour markets work differently across countries: demand for certain kinds of workers could suddenly drop, meaning that skilled immigrants might have to downscale—temporarily—to other jobs. And, even if that happens, foreign workers might not be able to easily move between jobs because of visa regimes or other domestic policies. Elisa Rustenbach (2010) found that higher unemployment rates in European countries were related to *lower* anti-immigrant preferences at the individual level, an observation also found by Yvonne Markaki and Simonetta Longhi (2013) at the regional level across Europe. This could be for two reasons: perhaps immigrants are seen as new spenders and workers in a weak economy, or they take jobs that native-born workers would not want.

To test how economic interests matter for public perceptions and preferences, I vary immigrants' profiles by their education levels and occupations. Both are related: generally, higher skilled jobs require more advanced education.² The British public, as in other typically developed destination countries across North America and Europe, tends to prefer immigrants with higher education and skill levels than

² Therefore, I restricted profiles' assignments so that higher-skilled jobs ('computer programmer', 'nurse', 'doctor', and the general term 'skilled') only appear with education levels of at least a university degree.

those with lower levels (Hainmueller and Hiscox 2010, 2007; Sniderman, Hagendoorn, and Prior 2004).

I also vary immigrants' stated reasons for entry, particularly by differentiating between those who have a job already in hand, and those who are seeking work. Implied within the economic threat idea is that immigrants who are prospectively looking for work may not eventually succeed in this goal. As a result, they may end up relying even more heavily on the state. Based on these assumptions, immigrants who state they are entering the UK to look for work should be viewed more negatively than those who already have jobs upon arrival. Moreover, immigrants stating they are entering to study in the UK should be viewed most positively, while those entering to claim asylum should be viewed most negatively. Indeed, public opinion research routinely shows how the British public tends to view asylum seekers very negatively, while being relatively approving towards students.³

Finally, I include information about immigrants' age. Theories of economic threat suggest how differently-aged immigrants could potentially represent different threats to Britain's material well-being in at least two ways. Either they replace native British workers in the labour market, or they burden the welfare state by claiming more public benefits than they pay in through taxation or other contributions. Younger migrants are more likely to be working, or at least looking for work, compared to older migrants. Meanwhile, older migrants are more likely to use public services such as medical care. In the case of asylum seekers in European countries, older candidates were rated more negatively than younger candidates

³ British respondents are unlikely to perceive students as 'immigrants' in the first place, which might account for students' relatively favoured status (Blinder 2015).

(Bansak, Hainmueller, and Hangartner 2016). Therefore, all other characteristics equal, profiles featuring immigrants who are older should be perceived as being more economically threatening than those featuring younger migrants.

Sociocultural and Symbolic Reasons

The second set of factors relate to ‘sociocultural’ aspects of immigration that are connected to perceptions about the nation-state, group identities, or a shared geopolitical history (Sides and Citrin 2007). This perspective argues ‘ideal interests’ such as values or shared beliefs override economic ‘material interests’ (Sears 1993) because immigrants—being outsiders by definition—threaten the integrity or cohesiveness of the nation-state, a unit that carries a great deal of symbolic value for citizens (Huddy 2001).

In a key study for immigration public opinion, Paul Sniderman, Louk Hagendoorn, and Markus Prior (2004) considered which kinds of immigrant characteristics were more threatening or problematic for the idea of ‘fitting into’ Dutch society. These included economic (interest-based) factors such as skill-level, and sociocultural (identity-based) factors such as speaking Dutch. Their findings concluded that ‘not fitting in culturally evokes significantly more opposition to immigration than not fitting in economically, while fitting in culturally promotes significantly more support for it than fitting in economically’ (Sniderman, Hagendoorn, and Prior 2004, 43). Evidence from Switzerland also shows that perceptions of social and cultural threats from immigrants had a greater impact on attitudes towards immigration than individuals’ assessments of the economic situation of either themselves personally or the country as a whole (Ackermann and Freitag 2015).

But this is not a settled conclusion, as Shanto Iyengar et al. (2013) found in their experimental study involving members of the public in Australia, Canada, Japan, South Korea, Norway, the UK, and the United States. Despite these countries' variations in the overall immigrant population sizes, national cultures, and political saliency of immigration, lower occupational status as well as the presence of family dependants consistently elicited lower levels of deservingness. Meanwhile, attributes such as religious affiliation or distinctively foreign appearances—which the sociocultural argument would use to suggest greater social and symbolic differences from host countries—did not impact how people evaluated immigrants. Earlier research among the Norwegian public also found that immigrants' economic background mattered more for admission (Aalberg, Iyengar, and Messing 2012).

To test for effects generated by these kinds of characteristics, I vary immigrants' stated countries of origin, religion, and language proficiency in English. Perceived cultural difference or distance is an important sociotropic dimension that people use when evaluating immigrants. Previous conjoint studies use specific countries as ways to test for the effect of national origin on public attitudes. At face value, this appears reasonable as 'an imprecise indicator of cultural differences' (Hainmueller and Hopkins 2015, 537). For example, in the British case, the public might view immigrants from countries that have historical, colonial links with Britain as more preferable than those coming from countries without those links. But, empirically, this indicator does not seem to produce either clear or large effects (Hainmueller and Hopkins 2015; Bansak, Hainmueller, and Hangartner 2016). Therefore, when it comes to countries of origin, I hypothesise that profiles featuring people with Western European origins similar to Britain will be given highest preference, followed by Commonwealth, Eastern European, and Middle Eastern

countries in that order.⁴ But, the size of these effects will be smaller than other sociocultural factors.

In a similar way to national origins, religious affiliation can be a rough signal of cultural distance. I hypothesise that immigrants with explicitly Christian profiles will be rated more highly than those with non-Christian profiles. Moreover, I expect that Muslim profiles will be rated most negatively of the options provided. In the experimental design, I excluded combinations of religions and countries where less than 1% of the population reported belonging to a given religion, according to the most recent data available in the CIA Factbook.⁵

Finally, language skills can indicate social or cultural integration: the British public strongly associates being able to speak English as an important part of fitting into public life (NatCen Social Research 2017). However, speaking the host country language also confers valuable economic benefits in terms of being able to work and access the labour market more easily. Prior conjoint designs find that members of the public place greater value on immigrants who possess higher language skills (Bansak, Hainmueller, and Hangartner 2016; NatCen Social Research 2017). But, it

⁴ The survey experiment was fielded after the Windrush scandal broke, which revealed how immigrants from Commonwealth countries—who had been granted citizenship and rights to entry and settlement in the UK under the British Nationality Act of 1948—were being deported by the Home Office despite having legal residence. People from Jamaica and India were likely to be most affected, while others came from countries including Pakistan, Kenya, and South Africa (Migration Observatory 2018). This timing may have influenced respondents' perceptions of profiles that mentioned Commonwealth-country origins.

⁵ Profiles from Iran only featured Muslim and non-religious categories. Romanian and Polish profiles only featured Christian and non-religious categories.

is unclear whether this is because the public views language fluency as a stronger economic or sociocultural benefit. My design considers how immigrants' different levels of English fluency impact respondents' willingness to admit them to the country, as well as perceptions of their benefit to Britain's economy and society.

Informational Factors

Whether real or perceived, these threats exist in informational contexts (Sides and Citrin 2007). People receive information about immigration and immigrant groups from a variety of sources: interpersonal contact, everyday experiences, and media. Depending on what aspects of immigration or immigrants are most salient in a given context, whether economic or sociocultural concerns, it is possible that attitudes may change accordingly (Hainmueller and Hopkins 2014). If people already perceive immigrants as competitive threats to their economic standing or national unity, then receiving information about immigrants' increasing numbers could trigger more anti-immigrant sentiment. In other words, people's understandings about the number of immigrants influence the degree to which they feel anxiety or threatened.

People usually think there are more immigrants than there actually are, an observation well-documented in studies that look at the phenomenon of 'innumeracy' in European (Herda 2010) and US (Sigelman and Niemi 2001) contexts. As a result, these misperceptions contribute to greater opposition to more immigration. In contrast, when members of the public are presented with actual immigration figures for their own country, the likelihood of them saying there are 'too many' immigrants tends to decrease (Transatlantic Trends 2014).

These findings can be extended to consider mistaken evaluations about both who immigrants really are and what they supposedly do (Herda 2015). This is

especially important when looking at the distinctions among migrants and asylum seekers—two very different categories. In the British case, Blinder (2015) found that nearly 2/3 of respondents thought that people were coming to the UK for asylum-related reasons, although asylum made up only 3-4% of the estimated immigrant total in 2010. Meanwhile, only about 3 in 10 people associated immigrants with study, despite students making up about 45% of all migrants that year.

These observations demonstrate a gap between how the public perceives the composition and scale of immigration on the one hand, and actual migration flows on the other hand. Crucially, as theorised by Lippman and later public opinion researchers, members of the public act on these perceptions when they respond to questions about immigrants. Therefore, the amount and content of information available to people potentially contributes to the importance they place on different kinds of threats—and, as a consequence, may change opinion: ‘perception of size of the foreign population can be seen as an indicator of perceived threat – an intervening variable between actual size of the foreign population and attitudes toward foreigners’ (Semyonov, Raijman, and Gorodzeisky 2008, 22). This leads to the question of whether language emphasising quantities can make people feel more negatively towards immigrants—even if these people possess characteristics typically favoured by the British public.

But it is also plausible that, at least for the innumeracy phenomenon, causation could work the other way. Negative views of immigration and immigrants could generate greater degrees of innumeracy: if I do not view immigrants favourably, I may inflate my estimate of the foreign-born population to justify my view. Nevertheless, whether innumeracy is a cause or effect of immigration attitudes, the theory of lexical priming would predict that making people aware of

the scale and pace of immigration inflows will make the quantitative dimension of immigration more accessible in individuals' minds.

The time series results from the previous chapter suggested how an increase in the salience of scale and pace language has been associated with increases in public concern about immigration. But, by design, it separated this kind of language from sociocultural and demographic terms. Moreover, Hainmueller and Hopkins (2015, 533) explicitly tried to 'neutraliz[e] attitudes about overall levels of immigration, enabling us to focus on the attributes that make immigrants more or less attractive to the native-born'. Although this decision suited their research questions and objectives, I take a different direction in this chapter by including information about aggregate immigration. Demonstrating whether and how this kind of language interacts with specific characteristics in an experimental setting would help reveal the limits of innumeracy for shaping public perceptions towards immigrants.

Hypotheses

Based on the theoretical expectations surrounding each of these characteristics, I propose the following hypothesis regarding overall preferences to allow different types of immigrants into Britain:

H₁: Profiles will be given less priority for entry if they feature immigrants with lower education levels; working in lower-skilled occupations; seeking jobs; or whose ethnic and religious characteristics are further removed from Britain.

Going a step further, I propose two related hypotheses that attempt to show which characteristics have greater links with either economic or sociocultural threats. Theories of what drives immigration attitudes predict that some traits, such as occupation, will be clearly related to the perceived economic impacts of immigration. Meanwhile, other traits such as religion will be related to perceived sociocultural impacts. But some traits, particularly education and language skills, conceivably operate through both pathways (Hainmueller and Hopkins 2014). For example, if a group of immigrants to Britain speak fluent English, they might be perceived as being either less economically threatening because they can work more easily or less socioculturally threatening because they can fit into British society more easily.

By distinguishing between profiled immigrants' economic and sociocultural impacts, I aim to identify which factors are more important for shaping different kinds of perceptions. On the one hand, finding evidence for these hypotheses would demonstrate how individuals are able to distinguish among immigrants and their potential impacts. On the other hand, finding evidence that characteristics have similar impacts on perceptions across both threat types would demonstrate how those dimensions of immigrants' backgrounds override other considerations.

H_{2A}: Profiles that feature immigrants with lower education levels, working in lower skilled occupations, or are seeking jobs will be rated as having more negative impacts on the British economy than those with higher skilled jobs or jobs in hand.

H_{2B}: Profiles that feature immigrants whose ethnic and religious characteristics are further removed from Britain, including less fluency in English, will be rated as having more negative impacts on British society and culture than those whose ethnic and religious characteristics are more closely linked with Britain.

Finally, in line with the previous chapter and prior studies surrounding innumeracy, I hypothesise that making people aware of the scale and pace of immigration will heighten concern about immigration. This, in turn, will cause individuals to rate some immigrant attributes more negatively.

H₃: Introducing immigration in terms of its scale and pace will heighten negative preferences and perceptions ascribed to immigrants who have lower-skilled occupations, less education, and ethnic or religious traits that are further removed from Britain.

Experimental Design and Data

I use a conjoint, or full factorial, survey experimental design. Political scientists have successfully used this approach to study immigration attitudes in the past (Bansak, Hainmueller, and Hangartner 2016; Hainmueller and Hopkins 2015). The key contribution of conjoint designs is their ability to simultaneously examine multiple dimensions (such as traits or characteristics) that are systematically varied (Auspurg and Hinz 2015). Typically, short vignettes or tables present respondents with a set of characteristics that make up a unit for consideration: a policy, candidate, immigrant. Then, respondents make a judgment based on this collection of features: '[factorial

surveys] force respondents to consider possible trade-offs... Thus, compared with the classic item-based survey, the description of a situation in a [factorial survey] resembles real life much more closely' (Auspurg and Hinz 2015, 11). Each judgment between a pair of profiles represents one trial.

Choosing an appropriate number of trials per respondent depends on several considerations: how many are needed to generate enough responses per dimension; how fatiguing the task is; how quickly people learn the format and begin using heuristics or shortcuts instead of engaging with the task; and how much survey time and budget is available. In their handbook on factorial survey experiments, Auspurg and Hinz (2015, 55) recommend no more than 10 trials per respondent. In practice, conjoint studies on immigration attitudes use around five or six trials per respondent (Hainmueller and Hopkins 2015). For this experiment, I decided to ask respondents to complete only three trials, or about half as many as typically done. Although this decision resulted in collecting less data per participant, and was possibly less efficient than other studies, I wanted to raise the quality of the ratings I would get by limiting the overall time and energy required of participants.

Treatment Design

The treatments are short, narrative profiles of immigrants, comprising about 30-35 words each. Using the template shown in Figure 13, they combine an element from each of the seven dimensions identified by prior theory. I chose to use vignettes rather than lists or tables because I wanted to heighten the realism of the task, and by association the level of engagement among respondents with the immigrant profiles (Mutz 2011). To reduce the possibility that the order of characteristics might influence respondents to give greater consideration to traits mentioned at the end of

text (Scanlan 2008), I randomised the order of all sentences except the first one for each pair of profiles.⁶

Figure 13. Template for Immigrant Vignette Treatments with Example Pairing

Person [PROFILE NUMBER] is a(n) [AGE] [ORIGIN] [‘ASYLUM-SEEKER’ if stated reason for entry is ‘to escape religious or political persecution’; ‘IMMIGRANT’ for all else]. [‘SHE/HE’ determined by sex] has [EDUCATION]. [SHE/HE] [STATED REASON FOR ENTRY]. [SHE/HE] is currently working as a(n) [JOB]. [SHE/HE] is [RELIGION]. [SHE/HE] speaks [LANGUAGE SKILLS] English.

‘Person 1 is a young Nigerian asylum seeker. She is Muslim. She speaks good English. She has come here to escape religious or political persecution. She is currently a nurse. She has vocational training.’

‘Person 2 is an older Polish immigrant. He is not religious. He speaks little English. He has come here to take up a job offer in Britain. He is currently a builder. He has vocational training.’

Scale and Pace Statement

In addition to seeing a random selection of characteristics, each respondent was randomly assigned to see one of two statements at the beginning of the first trial. The statement stayed visible at the top of each subsequent task. The first option was a generic introductory statement: ‘The issue of immigration is important for the British

⁶ Using this treatment format in a conjoint setting—one that is typically used for testing the desirability of products—raises ethical questions about whether it is appropriate to either describe people in such a way or ask respondents to evaluate these profiles as though they are competing ‘products’. This might especially be the case for experiments involving portrayals of potentially marginalised groups like asylum-seekers. While acknowledging this as a potential concern, I would argue that my experiment not only avoids this problem by adhering to prior researchers’ designs that were independently approved by ethics boards, but actually potentially humanises these hypothetical people by converting lists of traits into narrative descriptions. This is a difference from most existing conjoint studies of immigrants that typically communicate profiles through tables of characteristics.

public.’ The second option modified the generic statement by adding information, displayed in italics, that highlighted the scale and pace of immigration: ‘The issue of *mass* immigration is important for the British public. *As more migrants have arrived, immigration levels have rapidly risen.*’⁷ The terms ‘mass’, ‘more’, and ‘rapidly’ were among the most frequently observed language patterns related to the scale and pace of immigration, as reported in Chapter 3.⁸

Dependent Variables

I use three dependent variables: (1) a decision-to-admit question that requires respondents to choose between the two profiles who they would give priority for admission, without options to skip the question or answer ‘not sure’ or ‘do not know’; (2) a rating of the economic impacts of people like those described in each profile; and (3) a rating of the social and cultural impact of the same people.⁹ The first dependent variable is the same one used in Hainmueller and Hopkins (2015). It forces respondents to make a choice using competing sets of information. Then, the

⁷ I provide the full text of the survey in the Supporting Information.

⁸ Although the linguistic analysis in Chapter 2 produced examples of instances where scale and pace language appeared with another second-level agenda—such as criminality—I did not include other kinds of words in the introductory statement for this experiment. This enabled me to focus on identifying any effects that numerical language has on attitudes above and beyond mentioning specific sociocultural, geographic, or economic terms.

⁹ The decision-to-admit question is worded: ‘If you had to choose between them, which of these two people should be given priority to come to Great Britain?’ The rating questions are worded: ‘On a scale from 0 to 10, how would you rate the impact of people like Person 1 and Person 2 [on the British economy/on British society and culture]? 0 indicates a very negative impact and 10 indicates a very positive impact’.

second and third dependent variables ask respondents to think about the potential impacts of each person with respect to the two main types of threat—economic and sociocultural—that theories about public opinion identify as being important to immigration attitudes.

It is important to acknowledge the possibility that my design, by asking respondents about each immigrant immediately after requiring them to choose between the profiles, may have prompted some consistency bias in which answers to the forced choice question might influence responses to the rating questions (Schacter 1999). This is an obvious issue for survey research more generally: people may respond differently to questions about similar topics when they are presented together versus separately. Practically, when Hainmueller and Hiscox (2010) conducted their survey experiment testing how skill level influences immigration attitudes, they completed a follow-up experiment showing how addressing potential concerns about consistency bias did not substantively change their results. More theoretically, the reason I included these follow-up questions was to give individuals the chance to distinguish between admission and potential impact.

Analysis and Estimation Procedures: Marginal Means

Conjoint experimental designs usually involve far more unique individual profiles than the number of profiles that are actually tested. A key feature of the design is that all dimensions, and the characteristics contained within them, are randomly selected. Therefore, profiles with a given characteristic such as ‘having a university degree’ will have the same distribution of other characteristics on average as profiles featuring ‘vocational training’. This allows direct comparison of means in order to estimate ‘average marginal component effects (AMCEs)’ (Hainmueller, Hopkins,

and Yamamoto 2014). Political scientists using conjoint designs interpret these effects as the expected change in how a profile is rated when one attribute is compared to another attribute that the researcher chooses as the baseline.

The key point when interpreting AMCEs is that they are always relative to a reference category. For example, a positive AMCE for someone with a bachelors degree means this person is rated more highly *compared to someone having the baseline attribute*, all other attributes being equal. In principle, this quantity is perfectly useful for communicating how a given attribute has a causal effect on the dependent variable, such as a favourability rating. However, it does not convey descriptive differences in preferences: although a treatment may have different effects on different subgroups (say, Leave and Remain voters, or Republicans and Democrats), these differences do not necessarily indicate that each group assigns different overall levels of favourability.¹⁰ Moreover, since AMCEs are quantities relative to a chosen reference category, results for subgroups can widely vary

¹⁰ A hypothetical example illustrates this point. Imagine that a researcher asks Leave and Remain voters how positively or negatively they rate the effects of immigration on Britain, ranging from 0 (very negative) to 10 (very positive). After applying an experimental treatment, the researcher finds that Leave voters rate immigration as being two points more positive compared to those who did not receive the treatment (the causal effect), while treated Remain voters rate immigration one point higher from their untreated equivalents. It is correct to interpret this result as a difference in the size of the causal effect between the two groups. However, the researcher cannot use this information to claim that Leave voters are more positive (or have more positive preferences) towards immigration than Remain voters as a result of the treatment. It is possible that Leave voters may have moved from a mean rating of four on the scale to a rating of six between the conditions, explaining the two-point causal effect, while Remain voters moved from a five to a six. Therefore, the underlying preferences are actually identical after the treatment, not different as the researcher may have mistakenly claimed.

depending on which attribute the researcher chooses as the baseline. This decision, if not completely arbitrary, is often strongly guided by intuition rather than a systematic analysis.

To overcome this problem, and to generate results that are more easily interpretable as statements about levels of preferences, I report conditional marginal means (abbreviated MM) rather than AMCEs for all attributes and subgroups. This technique shows descriptive quantities that better indicate any changes in underlying preferences caused by a treatment (Leeper, Hobolt, and Tilley, n.d.).

Data and Population

The dataset contains responses from 4,764 participants recruited through YouGov's online panel between 8-13 June 2018. This sample aimed to be nationally representative of the British population, although YouGov also provided survey weights. In the estimations that follow, I use the unweighted data.¹¹ For the analysis, I restricted the sample to only those people who were born in the UK, which produced a final sample N of 4,445. This decision fits with my overarching theoretical argument that people draw upon prior concepts and understanding in order to respond to questions about immigrants. Therefore, people born outside the UK may have different sets of experience that inform their responses. Each respondent read and evaluated three pairs of profiles, generating a total of 26,670

¹¹ Recent work demonstrates how results using nationally-representative unweighted data from reputable polling companies (including YouGov) do not typically differ in meaningful ways from those that do use survey weights (Miratrix et al. 2018).

ratings. There were 2,191 respondents assigned to the generic statement condition, and 2,254 assigned to the scale/pace condition.

Results

Main Effects: Immigrant Attributes and the Probability of Admission

The marginal means of different attributes, given a generic introductory statement, are plotted in Panel A of Figure 14 with accompanying 95% confidence intervals. Across the figures, Panel B reports results from those respondents who saw the information referring to the scale and pace of immigration. Later, I will compare Panels A and B later. Since this dependent variable takes two values, the overall marginal mean is equal to 0.5. The higher the marginal mean, the more likely that an immigrant with a given attribute would be chosen, all other attributes being equal.

In line with previous research, the results broadly indicate that the British public differentiates migrants' acceptability along several characteristics. Economically, migrants working in skilled professions were more favoured for admission than those working in lower or unskilled professions. These included doctors (about 65% likely to be admitted, all other characteristics being equal), nurses (63%), teachers (55%), and computer programmers (54%). Cleaners (43%) and shop assistants (44%) were less likely to be chosen, while immigrants described as unemployed were only chosen about 39% of the time. These findings for specific occupations match the results for each general skill-level category: people described as 'skilled workers' are about 55% likely to be admitted with all other characteristics being equal, while 'unskilled workers' are only 38% likely to be admitted. When compared to other dimensions, the range of values for occupation is remarkably

wide. This suggests that respondents are very sensitive towards perceived differences in occupational skill level.

Turning to migrants' reasons for entry reveals that people escaping persecution—who were explicitly described as 'asylum seekers' within the experiment—were about 58% likely to be admitted, all other attributes being equal. Interestingly, this was more than any other entry category, suggesting that the British public is willing to admit people from this vulnerable group. Meanwhile, immigrants taking up an offer of employment were about 52% likely to be admitted with all other characteristics being equal, followed by people joining family (48%), students (46%), and those seeking work (46%).

Immigrants' education levels also matter for their likelihood to be admitted. Those having university (bachelor) or postgraduate degrees were respectively about 52% and 54% likely to be allowed entry, all other attributes being equal. People with either vocational training or some secondary education were both about 45% likely to be chosen. Meanwhile, people with less language proficiency were significantly penalized: immigrants unable to speak English, or with few English skills, were respectively only 35% and 43% likely to be admitted.

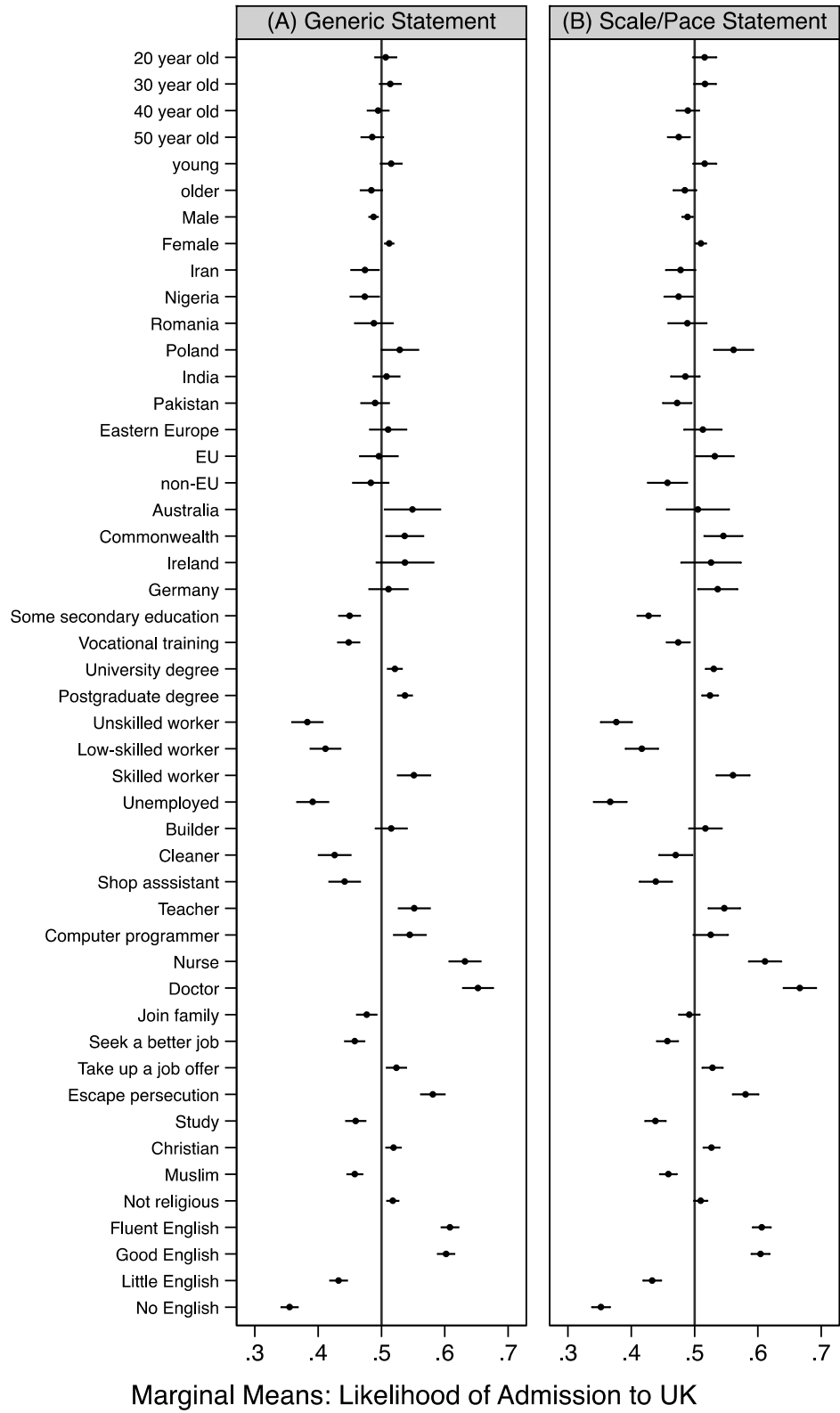
The results also indicate that migrants' religious affiliations matter, though not as much as other characteristics. Muslim migrants were about 46% likely to be allowed to enter the UK, all other characteristics being equal, but this is relatively similar to the likelihood that people described as Christian or irreligious (both 52%) would be admitted. Females were also about 51% likely to be admitted, compared to males (49%).

Finally, the results show that immigrants' geographic origins had some influence on the likelihood of being admitted, although less than other dimensions.

For example, the most favoured immigrants were from Australia (55% likelihood of admission, all other characteristics being equal), Ireland (54%), and Poland (53%). Meanwhile, immigrants from Iran and Nigeria (both 47% likely to be chosen) were least preferred. Among the broader regional categories, people described as being from the Commonwealth were about 54% likely to be accepted. In contrast, non-EU immigrants were about 48% likely to be chosen.

In summary, some dimensions of the profiles were more important for individuals' preferences for admitting immigrants to Britain. All other characteristics being equal, immigrants' skill level—whether explicitly stated ('unskilled' or 'skilled') or implied through an occupational title ('cleaner' or 'doctor')—were most important. This was closely followed by English language skills. Meanwhile, immigrants' reasons for entry and education levels were moderately important, as were their geographic origins and religious affiliations. Finally, attributes related to age and gender had the smallest effects. These results broadly match other recent surveys that show how 'achieved qualifications' such as work skills or English language abilities matter more for British public attitudes, whereas identity characteristics that are difficult or impossible to change—religious affiliation or geographic origins, for example—matter much less for evaluations of immigrants (NatCen Social Research 2017).

Figure 14. How Immigrant Attributes Impact Admission Preferences



Main Effects: Perceptions of How Different Immigrants Benefit Britain

Deciding who to admit to Britain through a forced choice question implicitly reveals which kinds of attributes people perceive to be more desirable for a country.

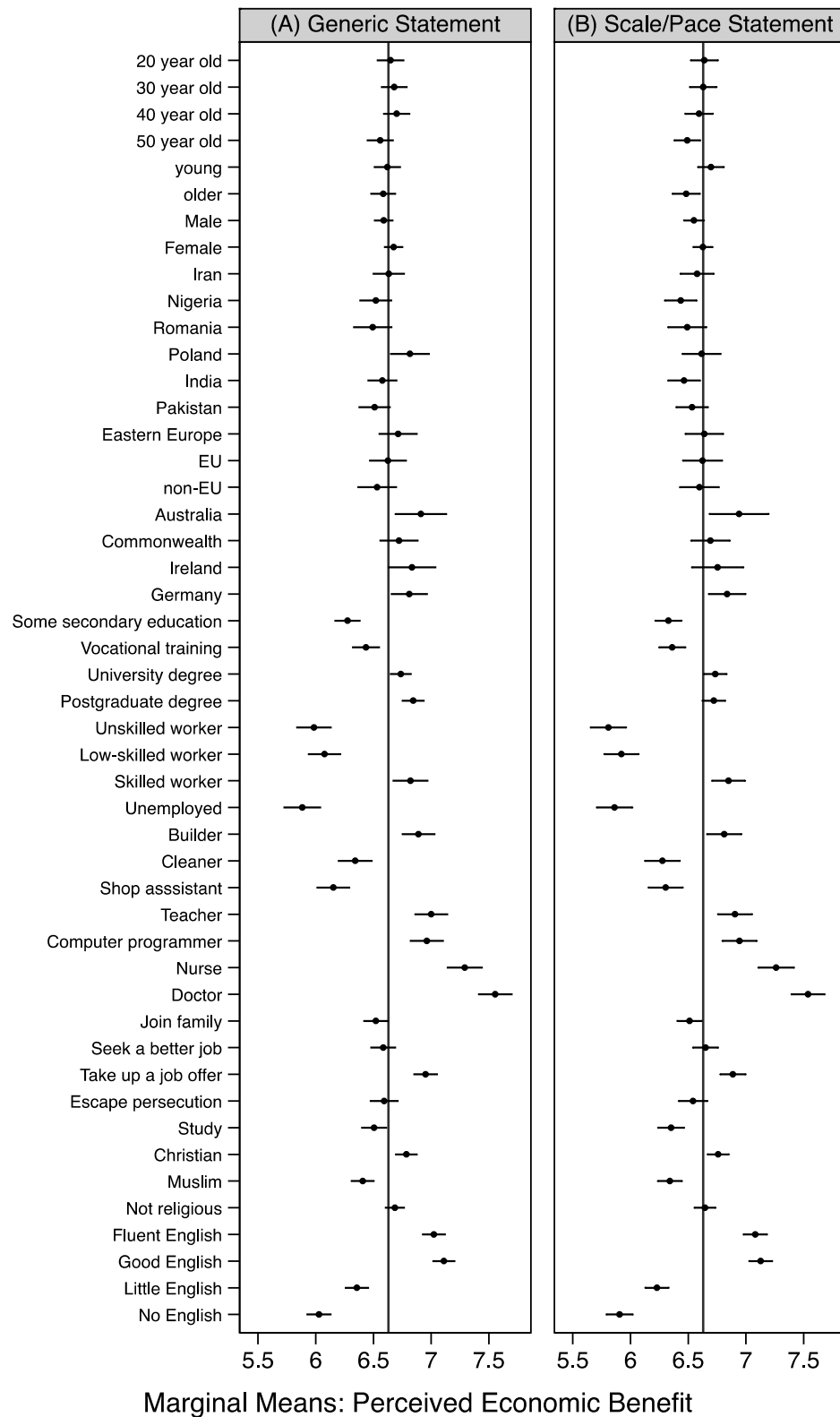
However, it does not differentiate between the kinds of impacts that people imagine immigrants might have. Are some traits more closely related to certain impacts than others? In this section, I show how migrant attributes impact the likelihood of British respondents saying that immigrants with those attributes make a positive contribution to either the British economy or British culture and society.

Panel A in Figure 15 plots the results with respect to migrants' perceived economic benefit as expressed through the rating question. The central line corresponds with the mean rating given to all profiles that appeared in the generic introduction condition. It is worth highlighting that the mean rating among the UK-born sample was about 6.6. This corresponds with a slightly positive view of the hypothetical immigrants' economic benefit to Great Britain. What is more, all of the individual attributes had marginal means above the midpoint rating of 5.

Focusing on the different dimensions, immigrants' occupations had some of the greatest effects on perceptions of economic benefit. People described as doctors were rated the highest at 7.6, while nurses (7.3), teachers (7.0), and computer programmers (7.0). At the other end, shop assistants (6.2) were rated as the least economically beneficial occupation, followed by cleaners (6.3). Unemployed immigrants were rated least economically beneficial with a marginal mean of 5.9.¹²

¹² However, it is surprising that this result is still above the midpoint.

Figure 15. How Immigrant Attributes Impact Perceptions of Economic Benefit



Meanwhile, the largest penalties were given to immigrants who had little or no English skills: respondents rated the economic benefits of these groups as respectively 6.4 and 6.0, while immigrants who were described as able to speak ‘good’ English were rated the most economically beneficial (7.1). Immigrants’ education levels also mattered, though to a smaller degree: profiles describing immigrants having a postgraduate or university degree had marginal means of 6.8 and 6.7 respectively, while those with only some secondary education were rated 6.3. When it comes to reasons for migration, people taking up a job offer were rated the most economically beneficial (7.0), followed by those seeking asylum (6.6). Finally, Muslim immigrants were perceived to be less economically beneficial (6.4) than Christian immigrants (6.8).

As I found with the admission dependent variable, few of the attributes relating to age, gender, or national origin caused respondents to view migrants as being significantly more or less beneficial than the average. To be sure, Australians were rated as being slightly higher than average economic benefits to the country (marginal mean of 6.9), while Romanians (6.5) were perceived as slightly lower than average economic benefits. But on the whole, these dimensions did not cause strong differences in economic perceptions compared to the overall mean. Rather, immigrants’ skill levels and command of English were most important.

Next, I turn attention to how respondents viewed these attributes as being beneficial to British culture and society. Panel A in Figure 16 shows the marginal means for each attribute, as well as the overall mean rating among UK-born respondents of all the profiles in the generic statement condition (about 6.5) indicated by the central line.

The results show how many of the attributes viewed as benefitting Britain's society and culture are the same as those seen to be economically beneficial. Respondents rated immigrants working in skilled professions like doctors (7.0) and nurses (6.9) as being more beneficial to society compared to unskilled jobs like shop assistants (6.2) and cleaners (6.3), all other characteristics being equal. Language skills are also important: being unable to speak English was the attribute that caused respondents to rate profiles as the least socioculturally beneficial (6.0), all other attributes being equal, compared to those who spoke good English (6.9). Meanwhile, people perceived immigrants with more education as being more socioculturally beneficial, although the highest level (postgraduate degree) only had a marginal mean slightly above the overall average (6.6). Finally, when it comes to religious affiliation, Muslims were perceived to be less beneficial to Britain's culture and society (6.2) compared to Christians (6.7).

However, despite the fact that some levels within dimensions (such as higher-skilled occupations and greater language skills) consistently caused respondents to rate profiles as both more economically and socioculturally beneficial, the actual means were not equally positive. Indeed, all attributes being equal, people viewed immigrants as being about 0.2 points more beneficial to the economy compared to society and culture.¹³

¹³ This is where using marginal means, rather than AMCEs, usefully reveals differences in individuals' preferences for some attributes over others without needing to rely on a reference category.

Figure 16. How Immigrant Attributes Impact Perceptions of Social and Cultural Benefit

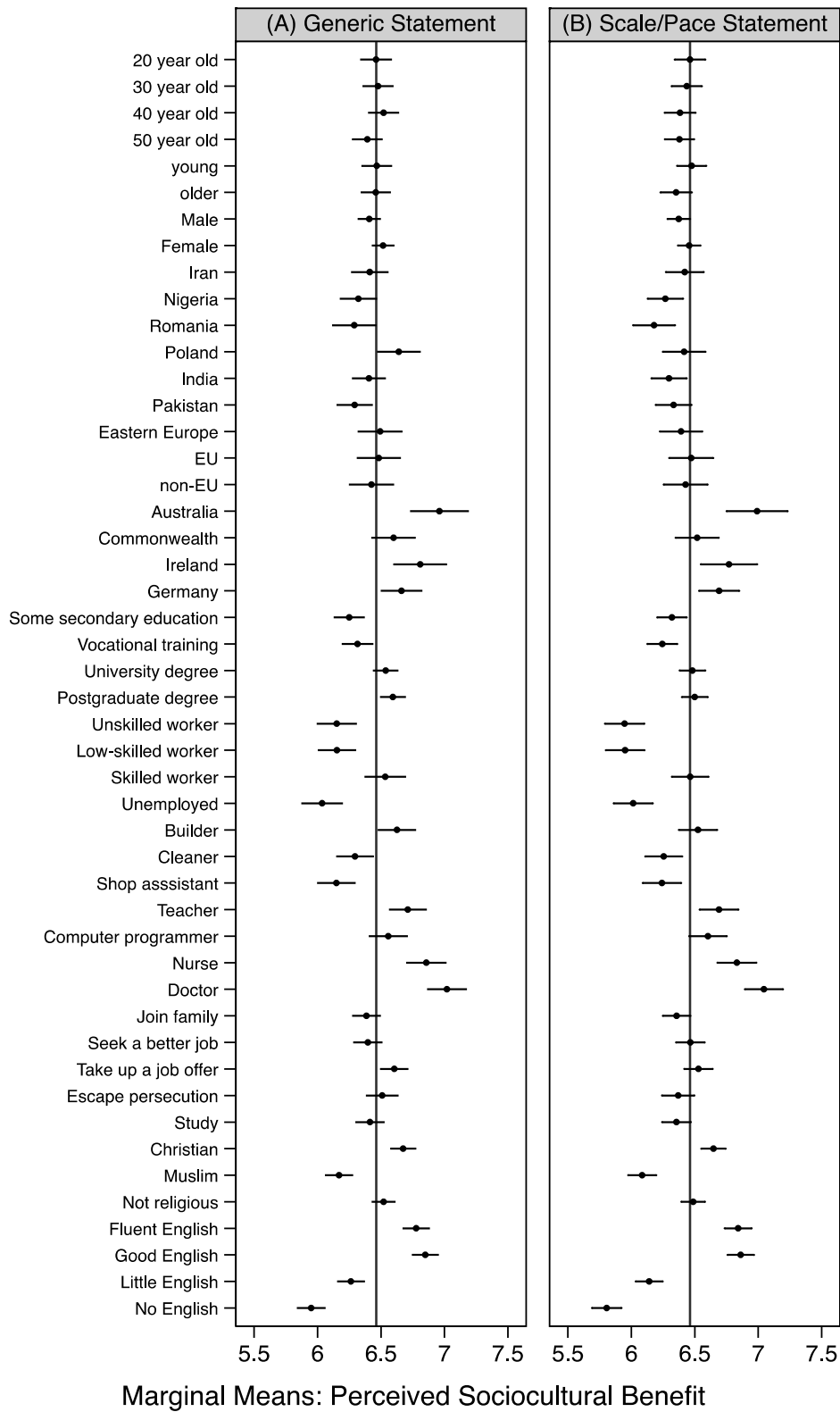


Table 15 compares the economic and sociocultural marginal means for each immigrant attribute, all others being equal, by testing whether they are significantly different from each other. The results clearly show that the marginal means for most immigrants' economic benefits were significantly higher than their corresponding sociocultural marginal means. Some of these were much higher than the overall average difference of 0.2. For example, the economic marginal mean for doctors was about a half point higher than its equivalent sociocultural marginal mean. This means that the British public perceives skilled occupations as being more economically rather than socioculturally beneficial, compared to unskilled occupations. I also observed this pattern for people who are arriving to take up a job offer in Britain: these immigrants were seen as more likely (by about 0.35 points) to contribute to the economy rather than British culture and society.

Conversely, the differences in economic and sociocultural perceptions associated with language skills were less than the mean of 0.2. This suggests that respondents perceive the lack of language fluency as being detrimental to both the economy and society. Students and asylum-seekers also received similar ratings for economic and sociocultural benefit. An immigrant being unskilled or unemployed, all other characteristics being equal, were the only cases in which people perceived these profiles to be less economically beneficial than socioculturally beneficial—although it is important to note that these kinds of immigrants were still seen as having negative impacts in both ways.

Table 15. Attributes Perceived as Economically or Socioculturally Beneficial

Dimension	Attribute	MM _{economic} – MM _{sociocultural}
Age	20 year old	0.19*** (0.03)
	30 year old	0.20*** (0.03)
	40 year old	0.18*** (0.03)
	50 year old	0.17*** (0.03)
	young	0.15*** (0.03)
	older	0.13*** (0.03)
Sex	Male	0.18*** (0.02)
	Female	0.16*** (0.02)
Origin	Iran	0.22*** (0.04)
	Nigeria	0.20*** (0.04)
	Romania	0.20*** (0.05)
	Poland	0.17*** (0.05)
	India	0.17*** (0.04)
	Pakistan	0.22*** (0.04)
	Eastern Europe	0.22*** (0.05)
	EU	0.14** (0.05)
	non-EU	0.11* (0.05)
	Australia	-0.05 (0.08)
	Commonwealth	0.12* (0.05)
	Ireland	0.03 (0.08)
Germany	0.15** (0.05)	
Education	Some secondary education	0.03 (0.03)
	Vocational training	0.12*** (0.03)
	University degree	0.20*** (0.02)
	Postgraduate degree	0.25*** (0.02)
Job	Unskilled worker	-0.16*** (0.05)
	Low-skilled worker	-0.08 (0.04)
	Skilled worker	0.29*** (0.05)
	Unemployed	-0.15*** (0.04)
	Builder	0.26*** (0.04)
	Cleaner	0.05 (0.05)
	Shop assistant	0.00 (0.05)
	Teacher	0.29*** (0.04)
	Computer programmer	0.40*** (0.05)
	Nurse	0.43*** (0.05)
Doctor	0.54*** (0.05)	
Reason for Entry	Join family	0.14*** (0.03)
	Seek a better job	0.19*** (0.03)
	Take up a job offer	0.35*** (0.03)
	Escape persecution	0.08** (0.03)
	Study	0.09** (0.03)
Religion	Christian	0.11*** (0.02)
	Muslim	0.24*** (0.03)
	Not religious	0.16*** (0.02)
Language Skills	Fluent English	0.25*** (0.03)
	Good English	0.26*** (0.03)
	Little English	0.09*** (0.03)
	No English	0.08** (0.03)

Note: MM = Marginal Mean. Standard errors clustered by respondent in brackets. Positive coefficients indicate higher marginal means for economic impacts compared to sociocultural impacts. Results using data from the generic introduction condition. * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Relatedly, a final difference involves the degree to which people distinguish among attributes depending on whether they are asked about immigrants' economic or sociocultural impacts. Comparing the range of values within each dimension, but between the two kinds of impacts, suggests that respondents differentiate between some characteristics more strongly along economic perceptions. To test this, Table 16 takes extreme pairs of attributes within each dimension, and then compares their differences in economic ratings with their differences in sociocultural ratings. The results indicate that opposing attributes for education level, occupation, entry reason, and language skills have significantly greater ranges in perceived economic benefit. Meanwhile, attributes for origin and religion have significantly greater ranges in perceived sociocultural benefit. The ranges of attributes related to age and sex were not significantly different between the two kinds of impacts.

Table 16. Differences in the Ranges of Economic and Sociocultural Ratings for Selected Pairs of Attributes Within Each Dimension

Dimension	Attributes Compared	MM Range_{economic} – MM Range_{sociocultural}
Age	20 year old vs. 50 year old	0.02 (0.05)
	young vs. older	0.03 (0.05)
Sex	Female vs Male	-0.02 (0.03)
Origin	Australian vs. Romanian	-0.25** (0.09)
Education	Postgraduate vs. Some secondary	0.22*** (0.04)
Job	Skilled vs. Unskilled	0.45*** (0.07)
	Unemployed vs. Doctor	0.69*** (0.06)
Reason for Entry	Take up a job vs. Join family	0.21*** (0.04)
Religion	Christian vs. Muslim	-0.13*** (0.04)
Language Skills	Fluent English vs. No English	0.17*** (0.04)

Note: MM = Marginal Mean. Standard errors clustered by respondent in brackets. Positive coefficients indicate a larger range in economic ratings compared to sociocultural ratings. Results using data from the generic introduction condition. * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 15 and Table 16 suggest two key points about British public opinion towards different kinds of immigrants. First, people consistently ascribe greater

economic value to most attributes. The exceptions are if an immigrant is described as unskilled or unemployed: in these cases, people are more likely to view them as less socioculturally rather than economically beneficial. Second, people express a wider range of economic preferences for and against attributes particularly related to immigrants' occupations and education. At the same time, they also express a wider range of sociocultural preferences depending on immigrants' origins and, to a lesser degree, their religious affiliation.

Does Scale and Pace Language Change Perceptions of Immigrants?

Up to this point, I found that immigrants' occupational skill levels and language abilities are the most important factors for determining both the likelihood of the British public preferring them for admission, and perceiving them as economic and sociocultural benefits to the country. But does language asserting quantitative dimensions of migration change this picture? In this section, I turn to my experiment within the experiment. By comparing respondents who saw an introductory statement that mentioned the scale and pace of immigration and those who did not see this statement, I can measure whether these terms had any effects. Specifically, the presence of these words should lexically prime associations with immigration that, if the innumeracy phenomenon is correct, should make overestimations of the actual foreign-born population more accessible in individuals' minds. These overestimations should cause more negative evaluations of immigrants.

Comparing Panels A and B in Figure 14, Figure 15, and Figure 16 suggests that the scale and pace statement did not have global effects across the dimensions as hypothesised: the coefficients are similar in scale and direction.

Table 17. Differences in Marginal Means Between Information Conditions

Dimension	Attribute	Likelihood of Admission	Economic Benefits	Sociocultural Benefits
Age	20 year old	0.01 (0.01)	-0.01 (0.08)	0.00 (0.09)
	30 year old	0.00 (0.01)	-0.05 (0.08)	-0.04 (0.09)
	40 year old	-0.01 (0.01)	-0.11 (0.09)	-0.14 (0.09)
	50 year old	-0.01 (0.01)	-0.07 (0.08)	-0.01 (0.09)
	young	0.00 (0.01)	0.08 (0.08)	0.01 (0.09)
	older	0.00 (0.01)	-0.10 (0.08)	-0.11 (0.09)
Sex	Male	0.00 (0.01)	-0.04 (0.06)	-0.03 (0.06)
	Female	-0.00 (0.01)	-0.05 (0.06)	-0.06 (0.06)
Origin	Iran	0.00 (0.02)	-0.06 (0.10)	0.01 (0.11)
	Nigeria	0.00 (0.02)	-0.09 (0.10)	-0.05 (0.10)
	Romania	0.00 (0.02)	-0.00 (0.12)	-0.11 (0.12)
	Poland	0.03 (0.02)	-0.20 (0.12)	-0.22 (0.12)
	India	-0.02 (0.02)	-0.11 (0.10)	-0.11 (0.10)
	Pakistan	-0.02 (0.02)	0.02 (0.10)	0.04 (0.10)
	Eastern Europe	0.00 (0.02)	-0.01 (0.12)	-0.10 (0.12)
	EU	0.04 (0.02)	-0.00 (0.12)	-0.01 (0.13)
	non-EU	-0.03 (0.02)	0.06 (0.12)	0.00 (0.13)
	Australia	-0.04 (0.03)	0.03 (0.17)	0.03 (0.17)
	Commonwealth	0.00 (0.02)	-0.03 (0.12)	-0.08 (0.12)
	Ireland	-0.01 (0.03)	-0.08 (0.16)	-0.04 (0.16)
Germany	0.03 (0.02)	0.03 (0.12)	0.03 (0.12)	
Education	Some secondary education	-0.02 (0.01)	0.05 (0.08)	0.07 (0.09)
	Vocational training	0.03 (0.01)	-0.07 (0.08)	-0.07 (0.09)
	University degree	0.01 (0.01)	-0.00 (0.07)	-0.06 (0.07)
	Postgraduate degree	-0.01 (0.01)	-0.12 (0.07)	-0.09 (0.07)
Job	Unskilled worker	-0.01 (0.02)	-0.18 (0.11)	-0.20 (0.11)
	Low-skilled worker	0.01 (0.02)	-0.15 (0.11)	-0.20 (0.11)
	Skilled worker	0.01 (0.02)	0.03 (0.11)	-0.07 (0.11)
	Unemployed	-0.02 (0.02)	-0.02 (0.11)	-0.02 (0.11)
	Builder	0.00 (0.02)	-0.08 (0.11)	-0.10 (0.11)
	Cleaner	0.04* (0.02)	-0.07 (0.11)	-0.04 (0.11)
	Shop assistant	-0.00 (0.02)	0.15 (0.11)	0.09 (0.11)
	Teacher	-0.00 (0.02)	-0.10 (0.11)	-0.02 (0.11)
	Computer programmer	-0.02 (0.02)	-0.02 (0.11)	0.05 (0.11)
	Nurse	-0.02 (0.02)	-0.03 (0.11)	-0.03 (0.11)
Doctor	0.01 (0.02)	-0.02 (0.11)	0.03 (0.11)	
Reason for Entry	Join family	0.01 (0.01)	-0.01 (0.08)	-0.03 (0.08)
	Seek a better job	-0.00 (0.01)	0.06 (0.08)	0.07 (0.08)
	Take up a job offer	0.00 (0.01)	-0.07 (0.08)	-0.08 (0.08)
	Escape persecution	-0.00 (0.01)	-0.05 (0.09)	-0.14 (0.09)
	Study	-0.02 (0.01)	-0.15 (0.08)	-0.06 (0.08)
Religion	Christian	0.01 (0.01)	-0.03 (0.07)	-0.03 (0.07)
	Muslim	0.00 (0.01)	-0.07 (0.07)	-0.08 (0.08)
	Not religious	-0.01 (0.01)	-0.04 (0.06)	-0.03 (0.07)
Language Skills	Fluent English	-0.00 (0.01)	0.06 (0.07)	0.06 (0.07)
	Good English	0.00 (0.01)	0.02 (0.07)	0.01 (0.08)
	Little English	0.00 (0.01)	-0.13 (0.07)	-0.12 (0.08)
	No English	-0.00 (0.01)	-0.12 (0.08)	-0.14 (0.08)

Note: Standard errors clustered by respondent in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Means testing, as reported in Table 17, confirms that only one attribute for one dependent variable was significantly different between the two conditions. This seems to discredit H₃, which suggests quantitative language—as a way of lexically

priming the scale and pace of immigration to Britain to stimulate overestimation of immigrant numbers—would cause people to express more negative opinions.

Another possibility is that scale and pace language lexically primes only certain kinds of immigrants—most likely those who have attributes that are already perceived to be less favourable or beneficial for the country. This might impact the *range* of ratings that respondents give within each set of attributes. To test this possibility, I calculated the difference between the highest and lowest coefficients within each dimension, in both conditions. Then, I tested whether these differences—representing the range of favourability or perceived benefit—were themselves significantly different between the two conditions.

I found that the scale and pace language significantly increased the range of ratings with respect to only one dimension: language skills. People differentiated between immigrants with no language skills and fluency more strongly after seeing the introductory text containing words related to the scale and pace of immigration. This was the case for these attributes' perceived economic benefit ($b = 0.18$, $SE = 0.092$, $p = 0.049$) as well as their perceived sociocultural benefit ($b = 0.21$, $SE = 0.093$, $p = 0.024$).

Why might this be? Research into the innumeracy phenomenon demonstrates when people perceive the foreign-born population to be larger than reality, they become more negative towards immigration (Semyonov, Raijman, and Gorodzeisky 2008). At the same time, people likely already imagine certain types of people who contribute to 'mass immigration': in the British case, for example, asylum-seekers who typically come from countries with Muslim majorities and non-English speaking backgrounds are seen as more prototypical immigrants than students or European skilled workers (Blinder 2015).

In my design, the quantitative statement may actually have generated *more* accurate, rather than innumerate, perceptions of immigration. Official migration statistics continue to show how immigration levels have grown to, and remain at, near-record levels. Therefore, claims about immigration numbers rising are not in themselves necessarily inaccurate. The lack of significant differences in negativity could actually be demonstrating how higher levels of perceptual accuracy, activated via additional information, correspond with attitudes about immigration that are no more negative than those elicited after a neutral prompt. Of course, as I mentioned in the previous chapter, another possibility is that the causal arrow presumed by the innumeracy phenomenon is actually reversed: people overestimate the actual immigrant population because they already hold negative opinions about immigration and immigrants. This is a theoretical point that prior work into innumeracy acknowledges (Herda 2010).¹⁴

Discussion

Which kinds of immigrants are the British public more likely to favour, and do these preferences change in the face of language that emphasises quantitative dimensions of recent migration trends? Public opinion research into the drivers of immigration

¹⁴ Respondents may have also missed the scale and pace treatment altogether. I tried to mitigate this possibility by placing the control or treatment statement, in bold type, as the first sentence each respondent would see upon beginning the experiment. This makes it unlikely that a respondent would inadvertently miss it. If this did happen on the first trial, then the design displayed the same treatment text at the beginning of every subsequent task.

perceptions shows that economic and sociocultural threats perceived to be presented by immigrants, as well as shifts in available information about the issue itself, are key factors. But testing the effects of multiple threats and information conditions is difficult if not impossible with conventional survey experiments due to the number of treatments required. Conjoint designs present the advantage of being able to simultaneously test multiple immigrant attributes to determine which features evoke more positive and negative responses.

Using a nationally-representative sample of British-born adults (N = 4,445), this chapter made three important advances on existing conjoint experiments involving immigration attitudes (Hainmueller and Hopkins 2015; Bansak, Hainmueller, and Hangartner 2016). First, it tested for the effects of attributes that have been highly prevalent in recent British press coverage about immigration and immigrants. This greatly enhanced its external validity. It found that migrants' occupations and language abilities had the greatest impacts on their likelihoods of being admitted: respondents preferred skilled people and those who could speak English well. Respondents also preferred migrants from countries with previous connections to Britain, particularly via the Commonwealth (notably Australia). They also preferred asylum-seekers over those joining family or seeking work. Muslim immigrants were also less preferred than Christian or non-religious immigrants, although the effect size was less than those for geographic, occupational, and language skill attributes.

Second, it differentiated between immigrants' perceived contributions to either the British economy or to culture and society. Although immigration has several kinds of impacts, limiting the analysis to a forced-choice question potentially obscures how people might hold different perceptions about which attributes are

more (or less) likely to be beneficial in different ways to a host country. I found the traits that matter most for admission also matter for how the public perceives immigrants' potential benefit to the economy and society.

But, my results also show that respondents rated immigrants on average as being more economically rather than socioculturally beneficial by about 0.2 points. This difference was even greater among immigrants with higher levels of education or working in skilled occupations (builders, teachers, computer programmers, or nurses). This means that, although immigrants having arguably positive attributes like higher levels of education and occupational skill are perceived as being significantly more economically beneficial, these qualities do not have the same degree of effect on perceptions of sociocultural benefit.

Third, it explored whether information relating to the quantitative dimension of immigration interacts with different sets of attributes, specifically looking for a more negative effect on preferences. It did this by including a treatment condition in which respondents saw a statement containing some of the most frequent attributes in the press that related to the scale and pace of immigration to Britain. The findings suggest that, contrary to expectations, emphasising large quantities of immigration does not cause respondents to become less likely to admit individual immigrants. And, with the exception of language fluency, this language generally does not cause people to differentiate among positive and negative attributes more strongly.

Conclusion

My study contributes to public opinion scholarship in three ways. First, the design harnesses the power of corpus linguistics to bring a higher degree of external validity to the increasingly-popular conjoint design. One of the key strengths of conjoint

experiments is their ability to simultaneously and efficiently test how multiple attributes exert causal influence over a dependent variable like individual preferences. But deciding which attributes to include, and how to operationalise them through language, is often left up to the researcher. My design demonstrates how empirical linguistic analysis can inform more realistic and typical levels within conjoint dimensions, if a goal of the design is to closely match terms used in a particular domain.

Second, it reiterates how individuals in destination countries differentiate among immigrants based on key dimensions including occupation and language skill, as well as education, reason for entry, and religious background to somewhat lesser degrees. But, this differentiation goes beyond a hypothetical decision to admit an immigrant, extending to perceptions about how likely an immigrant is going to benefit a country's economic or sociocultural life, too. For example, although British respondents may be more sympathetic to asylum-seekers claims' relative to family reunification, they do not perceive this group to be any more likely to be either an economic or sociocultural benefit to the country. In fact, looking more broadly across all the dimensions, attributes perceived to be more economically beneficial—higher education, skilled occupations, an employment contract in hand—do not attract the same degree of positivity from British respondents with regard to potential sociocultural benefits.

Third, the results demonstrate how language making the scale and pace of immigration more accessible to people does not make individuals less likely to allow individual immigrants into the country, or perceive them as less beneficial. Rather, by mentioning the quantity of immigrants entering Britain, these terms may activate individuals' pre-existing conceptions of which types of migrants comprise 'mass'

migration. At least with respect to language fluency, this generated more negative responses towards immigrants with no English skills. Confirming the existence of this phenomenon—and, if it exists, how and under which circumstances it works—warrants further empirical investigation.

Up to this point in the thesis, I have concentrated on the words and word patterns that characterise messages about immigration conveyed by press media. But what about different messaging techniques contained within them? Journalists have a range of rhetorical tools available to them as they create news products. One of the most fundamental resources is supporting evidence. In the final empirical chapter, I consider how different types of information—when brought together in support of an argument—may impact what people think.

5

Numbers, Narratives, Neither, Both? The Impact of Different Types of Evidence on Immigration Attitudes

Introduction

The previous three chapters have aimed to empirically document shifts in language surrounding immigration and immigrant groups in the British press, and then relate differences in word choices about migration to what people think. Owing to my choice of lexical priming as a micro-foundational theory that motivated my analysis of collocations at the word-level, so far I have focused on determining whether differences in words are related to differences in attitudes. Using different methods at different levels of analysis, my results so far collectively paint a picture of messaging effects that are significant yet rather small. At the aggregate level (Chapter 3), time series analysis showed how some second-level agendas such as the language of scale and pace have been more strongly related to concern about immigration in Britain. Yet, at the individual level (Chapter 4), the experimental results suggest that not all second-level agendas work in the same way: skill level and occupations matter, but highlighting the amount of migration is less relevant for opinions about individual migrants.

Now, in this chapter, I turn attention to other techniques that messengers—including journalists—use in the process of crafting arguments and writing articles.

Specifically, I focus on one of the most fundamental resources available to journalism: supporting evidence. I consider how different kinds of evidence—expressed through numbers, narrative vignettes, or a combination of the two—impact what people think about immigration. These approaches often span units of text above the level of words, usually involving whole phrases or sentences in the service of a broader argument.

Why does evidence and an understanding of its impacts matter for political behaviour? There is an ongoing debate about whether and in what directions factual information moves public attitudes. This stems from a well-established body of work in social psychology that examines ‘motivated reasoning’, a phenomenon where people look for information that aligns with their prior beliefs in order to minimise negative feelings that arise when encountering counter-attitudinal positions (Kunda 1990). In a key paper, Nyhan and Reifler (2010) observe a particularly strong version of motivated reasoning: when people encountered articles containing misleading political information as well as a correction, the corrections actually increased levels of misperceptions. They called this a ‘backfire effect’. But a subsequent study by Thomas Wood and Ethan Porter (2018) disagreed. After experimentally testing corrections across 52 polarising issues, they could not find any evidence for such an effect.

Having a clearer sense of how, when, and in which circumstances people respond to new information—such as in the forms of factual information like research evidence—would foster a better understanding of which kinds of communication interventions might be more effective for changing perceptions or building consensus for policies. For example, Heather Rolfe and her colleagues (2018) used qualitative focus group methods to identify how British respondents in a

Leave-voting area of the country held a hierarchy of credible evidence about European migration, with personally-held anecdotes at the top. Yet, as I will show in later sections, the relatively few existing empirical studies on the subject come to contradictory conclusions about the impacts of messages containing different kinds of evidence, despite obvious scholarly and practical benefit. This chapter aims to address this problem by contributing larger-scale survey data to the questions of whether and how supporting information matters for public attitudes on politically salient issues.

Evidence Use in Political Messaging: Two Contrasting Examples

In 2013, the Joint Council for the Welfare of Immigrants (JCWI) and the Movement Against Xenophobia (MAX) launched a poster campaign called ‘I Am An Immigrant’. The campaign’s website states that its aim was to ‘challenge the negative rhetoric against immigrants, celebrate them, and provide them with a platform to share their story’ (Joint Council for the Welfare of Immigrants n.d.). Visible at 400 London tube stations and 550 national rail stations across the country, these posters featured 15 immigrants who described what they saw as their contributions to Britain’s economy and society. Each of them listed the person’s occupation, country of origin, and a personal quotation.

Compare this approach to that of MigrationWatch UK (2018), an organisation that campaigns for, among several aims, ‘reducing net migration...to less than 100,000 a year’ through ‘more effective immigration control and enforcement of immigration law’. Its website contains a large portfolio of briefings and reports across a host of topics that highlight publicly available statistics, academic studies, and datasets. This approach is most clearly seen in its regularly-

updated report '20 Bogus Arguments for Mass Immigration', which features extensive use of figures and quantitative measures of immigrants' fiscal and population impacts, among many others (MigrationWatch UK 2017).

The point of placing these two examples next to each other is to consider the importance of messaging techniques to public understandings of immigration and its impacts. Both outputs, as sets of products containing messages about immigration, are aimed at members of the public who—at least in the national aggregate—tend to express negative views towards immigrants and their impacts (Duffy and Frere-Smith 2014). Both outputs, to different degrees of explicitness, have objectives of influencing perceptions and behaviours. Both outputs appeal to evidence in order to justify and strengthen their arguments.

These aims and techniques are not dissimilar from those in the world of journalism. Academic research, as well as practical guides, show how reporters sometimes use individuals' stories, called 'exemplars' (H. S. Kim et al. 2012), either as illustrations of, or contrasts to, an overall picture. Meanwhile, journalists also draw upon numbers and statistics, even more so now with the development of 'data journalism' and data visualisation, to show the scale or scope of an issue (Kennedy, Hill, Allen, et al. 2016).¹ These particular types of evidence, besides being important to study in their own rights, also link with previous empirical chapters. In my design, the numerical evidence exemplifies second-level agendas relating to the economy as well as the scale and pace of immigration. Meanwhile, the narrative evidence

¹ Popular examples include websites such as FiveThirtyEight and The Guardian Datablog, as well as fact-checking services like Full Fact UK and the BBC's 'Reality Check' series.

touches upon sociocultural dimensions of immigrants' experiences, including their language fluency.

In this chapter, I turn attention to the ways that information, when connected into larger structures, affects what people think. The approaches used by the JCWI and MigrationWatch exemplify how messengers can call upon different types of information to support their claims. To be sure, the use and impact of supporting evidence has a long history in communication studies (Reinard 1988). Academic and practical advice emerging from these studies suggests evidence of any type enhances the quality and value of an argument (Perloff 2008). But in a fast-moving, mediatised world of politics—where resources like time, funding, and public attention are often limited—this advice is not especially helpful. Neither does it afford researchers, including political scientists, guidance as to how they can better communicate their work to users.

Beyond this general statement, the evidence on whether numbers or narratives are more persuasive is mixed at best: it appears both have their merits depending on the circumstances (M. Allen et al. 2000; Braddock and Dillard 2016). Given this backdrop, I aim to address a key question: how do different types of evidence impact attitudes towards immigration? In a similar way to prior work in communication studies, I use an experimental research design to systematically identify the effects that numerical and narrative evidence have on individuals' attitudes towards immigrants. But, to my knowledge, this is the first large-scale example within political science that tests for the impacts of different kinds of evidence on attitudes about a controversial issue.

Specifically, my study is characterised by four features. First, I use arguments about the economic and sociocultural impacts of immigration on Britain,

an issue I have argued throughout this thesis that has obvious consequences for politics and political behaviour. Second, I consider the effects of messages that combine evidence types, a widespread practice in journalism and mass media yet one that is not empirically well-understood. Third, I use a much larger and nationally representative sample (N = 10,247 British-born respondents) that enables drawing more robust conclusions about the impacts of messaging strategies relative to each other and among subgroups of people. Fourth, I include several control groups that test conditions where either no information is provided or messages lack evidence claims altogether.

Theory: Messaging Effects of Numerical and Narrative Evidence

Message Effectiveness: Insights from Communication Studies

Research from communication studies suggests some features that make messages more persuasive than others. A key finding across many studies is that messages containing evidence are consistently rated as more persuasive than those without supporting evidence—and, in an additive way, this persuasiveness increases with the amount of evidence provided (S.-Y. Kim et al. 2012). Based on this body of work, I propose a baseline hypothesis.

H₁: Messages containing any type of evidence will have greater effects on attitudes than those lacking evidence.

But what types of evidence have greater impact? Two main types that are often compared against each other include statistical evidence and narrative evidence. Theoretically, statistics and numerical evidence derive their power from

their ability to support claims about the extent or typicality of a phenomenon (Wojcieszak and Kim 2015). Moreover, quantification lends itself to appeals for impartiality and comprehensiveness (Porter 1995): ‘the use of a large number of cases provides a sense of objectivity in the analysis’ (M. Allen and Preiss 1997, 126). Meanwhile, forms of narrative evidence, which may include stories or individual cases, contain elements such as characters, sequences of events (plot), and location (Kreuter et al. 2007). Messengers often use these vivid examples to argue for a particular conclusion.

On the question of which type of evidence has greater effects on what people think, prior studies provide mixed results. Early meta-analyses suggested numerical evidence has slightly greater effects (M. Allen and Preiss 1997), while other studies, comparing the impacts of evidence in Western and Eastern cultures indicate that both types are equally persuasive (Hornikx and Best 2011). Later work distinguished among argument types, suggesting that statistical evidence is more effective when it is used to support generalization (Hoeken and Hustinx 2009). Meanwhile, research from public health settings differentiates between outcome variables: statistical messages may have greater impact on beliefs and attitudes, whereas stories and qualitative evidence have greater impact on intentions and behaviours (Zebregs et al. 2015). But another meta-analysis suggests that narratives exert consistent effects, though small- to medium-sized, across all four types of outcomes even after accounting for various moderators such as the medium of the message (Braddock and Dillard 2016).

Of course, both types of evidence can appear together. News articles might lead with a national statistic about crime rates, and then provide observations from local residents in an area where the rates are particularly high. Alternatively, a

vignette featuring the experiences of victims of certain crimes might lead to statements about how their stories exemplify (or differ from) broader trends occurring across the rest of the country. To date, there is very limited experimental research that has considered the persuasiveness of these kinds of hybrid messages (Hornikx 2018). The work that does exist comes to differing conclusions: on the one hand, messages containing both types of evidence are more persuasive than either type in isolation (M. Allen et al. 2000), while on the other hand, combining these evidence types—even in systematically varied proportions—makes no difference to changing attitudes (Good 2010; Hornikx 2018).

These mixed and contradictory results may be due to several limitations in previous studies' designs. Most rely on small student samples, or deal with relatively non-controversial or non-political issues. For example, a recent meta-analysis identified only 15 studies published between 1993 and 2012 that experimentally tested the impact of evidence use (Zebregs et al. 2015). These studies ranged from 45 to 1,140 respondents, and 12 (80%) of them were based on student samples. Moreover, topics included tanning bed use, product reviews, seatbelt use, and switching general practitioners. My study, in contrast, used a much larger and nationally representative sample of the British public in order to test the impact of different messages on a politically salient topic. Moreover, in another departure from prior studies, I included a true control in which respondents received no information. This enables me to make statements about the gross messaging effects of evidence.

Why are Different Types of Evidence More Effective?

Studies from communication and persuasion suggest a number of reasons why and when different types of evidence might have greater impacts specifically on beliefs and perceptions.

Statistical Evidence: Generating Inference and Credibility from Large Numbers.

Statistical claims are about probabilities: they state the likelihood or typicality of a phenomenon (Wojcieszak and Kim 2015). In the realm of public health, examples might include ‘X% of smokers eventually develop certain types of cancer’ or ‘X% of U.S. adults are overweight’. The power of these kinds of statements lies in the argument that, since a given outcome has been observed in a large number of cases, the reader is more likely to have a similar outcome if they engage in similar behaviours (Zebregs et al. 2015). If a high proportion of smokers eventually suffer from cancer, the implication is that readers should avoid smoking if they want to avoid these kinds of health problems later in life.

The logic holds for social and political data, although in a modified form. Presenting statistics about populations—whether they are immigrants, ethnic minority groups, workers, students—gives a sense of the extent or typicality of these populations’ characteristics or behaviours. As a result, this information should make the reader more likely to accept the claims or proposed actions that the numbers seem to support, especially when these claims are linked to the same group or population (Hoeken and Hustinx 2009).

For example, I could provide statistics claiming 64% (or ‘nearly two-thirds’) of British young people under the age of 25 engage in dangerous levels of binge drinking, while at the same time only 9% (or ‘fewer than one in ten’) do any

voluntary work at all. The implication is that young people as a group don't seem to be particularly concerned with others' welfare. I could amplify this message by providing parallel statistics comparing them to other age groups that had lower rates of drinking and higher rates of volunteering. As a result, it would be reasonable to expect that respondents might have a more negative view of young people in general after they consider these pieces of evidence.²

Moreover, statements using statistics convey a sense of comprehensiveness and authority 'that appeal by claims to objectivity by quantification' (Wojcieszak and Kim 2015, 787).³ Communication and political psychology scholars observe how objectivity is an important part of credibility because it signals the messenger's good intentions, relevant knowledge for the discussion at hand, and trustworthiness (Lupia 2002; Mackiewicz 2010). Then, when readers perceive a messenger to have greater credibility, they are more likely to modify their beliefs in line with the messenger: in the context of making sense of political claims, for example, 'citizens delegate to credible elites for guidance' (Druckman 2001a, 1061).

In the short articles I used as treatments, I use statistics to support my argument by generalization which makes claims about the aggregate characteristics and impacts of an entire population—in this case, immigrants from non-European countries. Therefore, my second hypothesis relates to numerical evidence:

² Fortunately, these are made-up. In reality, 18% of 16-24-year-olds reported binge drinking in 2013 (Office for National Statistics 2015), and 49% of 16-25-year-olds reported engaging in formal voluntary activities at least once during 2014-15 (National Council of Voluntary Organisations 2017).

³ In a related way, this is an alternative pathway that relies on the presence of numbers as a heuristic for argument quality and correctness.

H_{2A}: Numerical evidence will have a greater impact on attitudes compared to narrative evidence.

Narrative Evidence: The Role of Exemplars and Person-Positivity Bias. However, other theories of information processing suggest a counterhypothesis. Narrative evidence impacts perceptions in different ways than numerical evidence. Narratives often rely on vividness, whether through concrete exemplars or experiences, as well as personally familiar situations or characters (S.-Y. Kim et al. 2012; Kreuter et al. 2007). Psychologists argue these aspects may reduce individuals' ability or willingness to counter-argue with the message because they are concentrating on processing the extra details (Petty and Cacioppo 1986). Also, a highly personal story about someone's real-life experiences might be more difficult to discount (Chung and Slater 2013; Wojcieszak and Kim 2015).

Moreover, exemplars can foster feelings of positivity among respondents, especially if they are portrayed as engaging in similar activities or having similar aspirations or intentions. This 'person-positivity bias' (Sears 1983) causes people to view individuals of a group more favourably than the aggregated group. Prior experimental research shows the presence of this bias across many immigrant-receiving countries, particularly when the immigrants in question are relatively skilled, single, and willing to integrate (Iyengar et al. 2013; Kobayashi et al. 2015).

The expectations from this causal pathway might also be conditional on a variety of individual factors. In my design, respondents engaged with explicitly pro-immigrant messages—a stance that, based on recent public opinion polling (Blinder and Allen 2016b), was likely to be at odds against large subsets of the British public. Specifically, more negative immigration attitudes are related to a range of political

characteristics, such as having voted Leave in the 2016 EU referendum or voted Conservative in previous general elections (Hobolt 2016).

To my knowledge, there is only one other study that explicitly tests the effects of supporting evidence in the context of counter-attitudinal claims. In their experiment among 601 US citizens, Magdalena Wojcieszak and Nuri Kim (2015) found that narrative evidence about immigration and same-sex marriage was more effective at convincing individuals to accept messages involving people they did not like. So, in opposition to H_{2A}, I offer a counter-hypothesis:

H_{2B}: Messages containing exemplars who report their personal experiences and observations will have a greater impact on attitudes than numerical data.

Hybrid Messages: Is More Evidence of Different Types More Effective? An obvious question that arises from these counter-hypotheses is whether combining different types of evidence would result in even greater impacts on attitudes. Within journalism and media settings, this is a commonly used strategy: ‘anecdotal evidence is often an example taken from the sample of cases presented as statistical evidence’ (Hornikx 2018, 325).

Yet there is surprisingly little research examining the effects of hybrid evidence on attitudes. Those few studies that do exist come to different conclusions. Mike Allen et al. (2000) found that messages with both narrative and numerical evidence generated more agreement with their conclusions compared to messages only containing numerical or narrative evidence. Later work that considered whether individual pieces of evidence about climate change could contribute to an overall

persuasion effect in an additive way found support for this idea (S.-Y. Kim et al. 2012). But both of these studies relied on relatively small student samples.⁴

It may be, again, that the designs and limited sampling of the few single-case studies that explicitly considered combinations of these evidence types contributed to the mixed findings. Therefore, given the lack of empirical guidance from prior studies, I combine the theoretical expectations surrounding narrative and numerical statements. When respondents engage with messages containing both types of evidence, statistical information contributes both an awareness of the typicality of a phenomenon and a sense of objectivity that conveys credibility. Meanwhile, the narrative information—especially when delivered by an individual exemplar whose experiences match the statistical reality—provides relatable images that activate the person-positivity bias while also reducing tendencies to counter-argue the message. This reasoning leads me to my final hypothesis:

H₃: Messages with hybrid evidence will have greater impacts on attitudes compared to messages only containing either evidence type in isolation.

⁴ In contrast, Hornikx (2018) did not find a similar effect in his study of environmental taxation messages (which communicated intentions of municipal councils to increase taxes on either litter bags or plastic drink bottles) among 286 citizens in two Dutch cities. Even systematically varying the proportions of narrative and numerical information that respondents encounter in a given message, as Good (2010) did in her study of attitudes towards intensive meat production, does not appear to produce stronger effects than either evidence type in isolation.

Experimental Design and Data

Choices of Migrant Population and Argument Direction

Two choices were especially key in designing my experiment: the immigrant population to which my evidence would refer, and the direction of the arguments (whether they promoted positive or negative aspects of immigration). On the first issue, I chose to focus on immigrants from outside the European Union because I wanted to minimise any potential associations with Brexit. If, for example, respondents read an article talking about EU migrants—even without explicit mention of the 2016 referendum or the government’s subsequent negotiations—they might interpret the arguments in the context of their opinions about Brexit.⁵

On the second issue, all of the treatments make positive arguments about immigration. I made this decision for two reasons. First, positive arguments are more likely to be counter-attitudinal (i.e., against what people think) in the British context. Historically, a majority of the British public has expressed negative views towards immigration, although this partly depends on which types of immigrants are mentioned (Blinder 2015). Testing the limits of message effectiveness towards out-groups, especially on controversial topics, is an important empirical contribution (Wojcieszak and Kim 2015).

⁵ Of course, mentioning ‘non-EU immigration’ could still lexically prime the concept of the ‘EU’ within respondents. To help deal with this issue, I compare respondents based on how they voted in the EU referendum in the empirical section.

Comparing Economic or Sociocultural Threats

My treatments feature statements dealing with either economic or sociocultural aspects of non-European immigration. The economic treatments mention three ‘facts’ or pieces of information: (1) most non-EU migrants come to the UK for work or study; (2) they contribute to the economy through their spending activities; and (3) they have a positive net impact on public finances. As described in the previous chapter’s theoretical section, these statements correspond with the kinds of economic threats extensively studied in public attitudes towards immigration, namely that immigrants are a burden on the state and negatively impact individuals’ material well-being (Hainmueller and Hopkins 2014; Ceobanu and Escandell 2010).

Meanwhile, the sociocultural treatments mention three other pieces of information: (1) that a large proportion of non-EU migrants self-identify as British; (2) most speak English; and (3) they understand and take part in British traditions. These correspond to the kinds of sociotropic threats previously identified as key for shaping immigration attitudes. Specific to the British case, survey data has indicated that being committed to the way of life in Britain as well as speaking English are among the most important qualifications for respondents thinking about which immigrants to select (NatCen Social Research 2017).

In such a short survey setting, a key challenge involves turning the relatively vague idea of ‘being committed to the way of life in Britain’ into more concrete activities or beliefs. Self-identifying as British seems to be one reasonable test of commitment to a country. Another might include taking part in shared activities that involve outward expressions of solidarity.

Evidence Types

Within each of these broad topics, I manipulated the types of evidence called upon to support each of the claims. The numerical-only condition used percentages and quantities to illustrate the scale and typicality of non-EU migrants' behaviours. They also emphasised the need for 'hard numbers' and 'more data' at the beginning and end of each treatment, in order to appeal to a sense of objectivity conferred by statistics relating to an entire population.

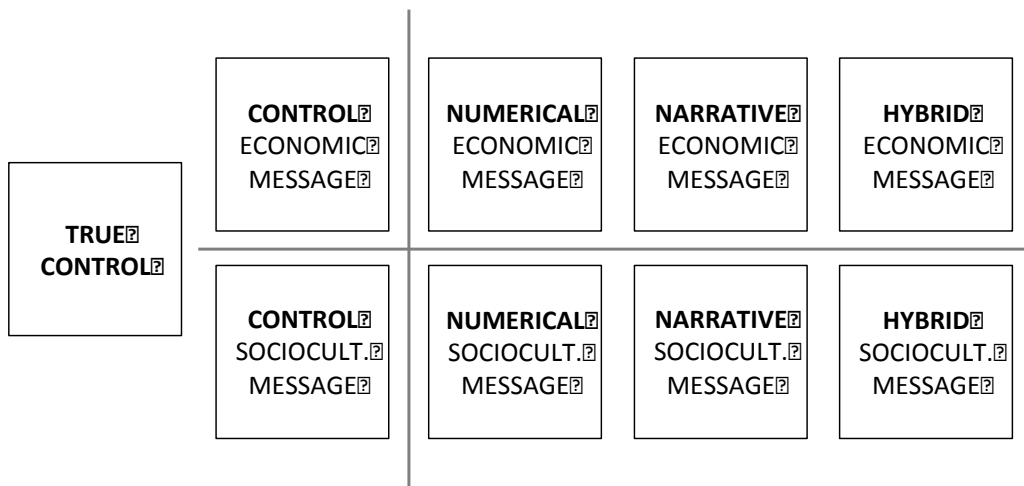
In contrast, the narrative-only condition used references to the speaker's own experiences and opinions (indicated by words and phrases like 'personally', 'like me', and the first-person pronoun 'I'). This technique aims to establish an exemplar—a character with a singular voice. I also included a rhetorical question ('and what do I do now?') to create a small amount of plot tension, invite a degree of personal engagement from the respondent, and signal an order of events that moves from 'then' to 'now'.

Experimental Design

The topical dimension connects with existing theories about whether economic threats or cultural threats have greater impact on public attitudes about immigration. Then, the evidence dimension connects with theories of message effectiveness from public health, and the person positivity bias from social psychology. Since these theories lead to competing hypotheses about which types of messages are more likely to impact attitudes towards immigrants, the design aims to enable comparison of messages' effects against each other as they appear in different topical arenas. Crossing these dimensions results in a two (topics) by four (evidence types)

experiment with an additional true control where I did not provide a message, totaling nine conditions as seen in Figure 17.⁶

Figure 17. Comparing Evidence Types: The Experimental Design



Stimulus Materials

The treatments are short opinion articles, similar in length and style to leaders that appear in some national tabloids.⁷ Each numerical treatment draws upon publicly

⁶ The reason for including a true control condition was to establish a baseline level of attitudes from which I could measure the effects of incrementally adding evidence of different types, a step not all prior studies include (Wojcieszak et al. 2015). For an example of this practice from health communication, see Niederdeppe et al. (2014).

⁷ Originally, I designed them as comments to online articles about immigration, but opted against this idea for three reasons: (1) respondents may be less familiar with online comments as a genre, and may be distracted by the format and design; (2) those who are familiar with comments may be distracted by controls which are not especially opinionated, a feature that tends to characterise social media compared to traditional journalism; and (3) comments tend to be extremely short (fewer than 100 words or even a couple of sentence fragments) which restricted the amount of evidence I could include in the treatments.

available data related to the factual statements listed earlier. In the economic argument, data on non-EU immigrants' reasons for arrival come from the February 2018 quarterly migration statistics report published by the Office for National Statistics (ONS). Figures on economic contributions and fiscal impacts come from recent briefings published by Full Fact and the Migration Observatory, two independent organisations working on international migration in the UK context.⁸ In the sociocultural argument, data on national identity and proficiency in English come from the 2011 UK Census, while statistics on ethnic minority participation in British traditions comes from the 2010 Ethnic Minority British Election Study (EMBES) survey. I use the rate at which ethnic minorities reported wearing poppies, a symbolic British tradition that I thought was indicative of an individual's understanding of and willingness to commit to British life.^{9, 10}

⁸ For full disclosure, I have been continuously employed by the Migration Observatory since 2012, including through the submission of this thesis. Although the Observatory funded part of the media data collection (specifically the newspaper subcorpus comprising 2006-15), it did not impose any restrictions on subsequent research into the effectiveness of different messaging strategies.

⁹ As opposed to other general activities mentioned in the EMBES, such as sending Christmas cards.

¹⁰ The choice to use data on ethnic minority groups' self-reported behaviours is worth explaining. Good data about the views of people who are explicitly identified as non-EU immigrants are not readily available. I needed some kind of dataset(s) that would enable me to make accurate, quantitative statements for the purposes of the treatments. Of course, it is clear that there are plenty of non-EU immigrants who would not be classified as ethnic minorities. However, the fact that information about what this subgroup thinks is difficult to publicly find or calculate for oneself suggests it is unlikely to feature in either media coverage or in the information people would consult as they make up their minds about immigration.

I designed the treatments to be relatively short (100-150 words), of similar length, and manipulating the same pieces of information while holding much of the remaining text constant. This helps address concerns about wide differences of length or content among the stimuli possibly causing any effects.¹¹ The full text of all treatments appears in the Supporting Information.

Dependent Variables

The dependent variables come from responses to three questions. The first two ask the respondent to rate the impact of immigrants to Britain on the economy, as well as society and culture. This is done on a scale ranging from 0 (very negative) to 10 (very positive). These measures use the same 11-point scales as those used in the European Social Survey (ESS), though my question wording asks about generalised ‘economic impact’ or ‘social and cultural’ impact rather than the four used in the

¹¹ In order to keep the treatments as similar as possible and enhance internal validity, I intentionally avoided making large-scale changes between the evidence types. This meant that I did not include overtly evocative language and stories, which would likely have not only required longer vignettes compared to the other conditions but also would introduce emotion as a factor that might explain any subsequent effects. Many communication studies demonstrate how emotions are an important component of understanding how and why people engage with information (Petty and Cacioppo 1986; Lecheler, Bos, and Vliegenthart 2015). It could be that other narrative treatments that explicitly include an emotional appeal would have stronger effects. Moreover, I only focus on one type of narrative evidence—an exemplar—that I kept constant across the relevant treatments. Therefore, my results only speak to the effectiveness of one particular kind of narrative strategy.

ESS.¹² The third outcome variable asks respondents to choose their policy preference on immigration levels to Britain, again on a 0-10 scale.

Data, Population, Sampling

Participants were drawn from an online panel of British adults maintained by YouGov, during the period 30 May-7 June 2018. The sampling was conducted to closely match the demographic characteristics of Great Britain. Overall, a total of 10,994 individuals participated in the survey experiment.¹³ Table 18 reports key descriptive statistics about the respondents assigned to each condition.

¹² I had to consider the trade-off between including more dependent variable questions that considered specific aspects of immigration's impact like the ESS does (e.g., on jobs, crime levels) and the costs (both financial and respondents' attention) associated with adding more questions. According to the 2014 ESS results (NatCen Social Research 2017), British respondents viewed immigration as slightly good for the economy (+4 net percentage points), and immigrants as slightly enriching Britain's cultural life (+4 percentage points). But, they also viewed immigrants as slightly more likely to take away jobs (-4 net percentage points), and as much more likely to worsen crime problems (-37 percentage points).

¹³ Power calculations, informed by prior studies, generated a minimum required sample size of 7,956 comprising 884 respondents in each condition. Meta-analyses of quantitative communication research consistently show that effect sizes in messaging experiments tend to be small to moderate, with d ranging from 0.2 to 0.5 (Valkenburg and Peter 2013; Rains, Levine, and Weber 2018; J. Cohen 1992). Therefore, I applied the more conservative assumption of finding smaller effects. Moreover, prior research comparing numerical and narrative messages about integration issues reported differences in mean attitudes between treatment groups, measured on a 6-point scale, of about 2-3% (Wojcieszak et al. 2015). Based on this observation, I was more cautious in assuming about a 1.8% difference in the means between two groups, or 0.2 points on my 11-point scale.

Table 18. Descriptive Statistics Among Conditions

	True Control	Economic Message				Sociocultural Message			
		No Info	Numerical	Narrative	Both	No Info	Numerical	Narrative	Both
Age (mean)	49.7	49.1	49.2	49.0	49.1	49.4	50.0	49.1	49.7
Gender									
Female	57.8%	55.2%	60.0%	55.0%	55.0%	56.1%	56.5%	56.5%	56.3%
Male	42.1%	44.8%	40.0%	45.0%	45.0%	43.9%	43.6%	43.5%	43.7%
Country of Birth									
UK	93.6%	92.9%	93.0%	92.7%	93.4%	94.0%	94.0%	92.7%	92.7%
Non-UK	5.5%	6.2%	6.3%	6.8%	5.8%	5.1%	5.0%	6.6%	6.5%
Ethnicity									
White British	89.2%	89.7%	90.1%	88.0%	88.6%	89.8%	88.9%	88.7%	89.7%
Other	9.8%	9.2%	8.8%	10.8%	10.5%	9.3%	9.5%	10.4%	9.8%
EU Ref Vote									
Leave	41.1%	41.5%	42.8%	42.7%	41.8%	41.4%	43.0%	42.0%	39.8%
Remain	44.9%	45.5%	43.8%	42.3%	42.9%	44.4%	43.3%	43.0%	45.9%
GE2017 Vote									
Con	36.6%	34.2%	34.5%	33.5%	35.5%	34.9%	35.3%	36.5%	36.2%
Lab	31.4%	34.3%	32.6%	32.9%	31.1%	34.3%	33.0%	30.2%	31.0%
LD	7.2%	6.6%	6.3%	5.3%	6.6%	5.7%	6.4%	7.0%	7.1%
UKIP	1.7%	2.0%	2.1%	1.3%	1.7%	1.6%	1.7%	2.1%	1.3%
Green	1.7%	1.5%	1.4%	1.6%	0.9%	1.8%	1.4%	1.9%	1.6%
N	1,214	1,236	1,248	1,107	1,218	1,204	1,302	1,199	1,266

Note: Figures may not add up to 100% due to rounding, or excluding other responses.

It shows how each treatment group was similar not only to the control group for each message topic (economic versus sociocultural), but also to the true control group that did not see any message. It is worth reiterating, however, that the treatment assignment procedure was random. This means that features about individuals, even those that are unmeasured, are randomly distributed across the groups. Therefore, the researcher does not typically need to account for them in the analysis. This is a key

strength of experimental designs for making causal claims (Gerber and Green 2012; Mutz 2011).¹⁴

Results

Manipulation Checks

The first step is to determine whether the treatments worked in the ways I intended. After completing the main dependent variable questions, respondents rated the extent to which they thought the message they saw used either numbers and statistics, as well as personal stories and experiences. A rating of 0 meant ‘did not use at all’, while 10 meant ‘used a lot’.

Means testing confirmed that all of the treatments worked in the ways that I expected, with all differences being significant to levels below $p = 0.001$. In both the

¹⁴ One example of an individual-level characteristic that may have influenced the results is confidence with numbers, a feature for which previous studies explicitly control (Wojcieszak et al. 2015).

Perhaps the presence of numbers acts as a heuristic for argument quality, particularly among those people who are less numerate. To address this possibility, I compared the average amount of time that lower- and higher-educated respondents took to read the treatments containing numerical evidence. If numbers are indeed being used as a heuristic, then I would expect that lesser educated people would take less time reading the text compared to more educated people. Instead, I find that the means are statistically indistinguishable from one another. People with less than a bachelors degree who saw an economic message containing numbers took an average of 46.5 seconds to read the text, while those having at least a bachelors degree took 49.9 seconds ($p = 0.345$, $SE = 3.56$). Meanwhile, people with less than a first degree took an average of 47.3 seconds to read a cultural message containing numbers, compared to people with at least a first degree who took an average of 64.9 seconds ($p = 0.172$, $SE = 12.88$).

economic and sociocultural topics, people in the numerical treatment groups reported seeing numbers and statistics ($M_{economic} = 6.79$; $M_{sociocultural} = 6.78$) significantly more than those who saw messages with no evidence ($M_{economic} = 4.39$; $M_{sociocultural} = 4.13$). Conversely, people in the narrative treatments reported seeing stories and experiences ($M_{economic} = 7.23$; $M_{sociocultural} = 7.13$) significantly more than those in the control groups ($M_{economic} = 4.80$; $M_{sociocultural} = 4.90$).

Since the hybrid treatments contained both numerical and narrative evidence, I expected that people in these groups would meet two criteria: they would report agreement with seeing numbers at a rate in between the controls and numerical-only conditions, *and* stories at a rate in between the controls and narrative-only conditions. The means testing confirmed this expectation. People in the hybrid economic condition had a mean rating of 6.16 on the presence of numbers (which was between *and* significantly different from both 4.39 and 6.79) and 6.55 on the presence of stories (between *and* different from 4.80 and 7.23). Meanwhile, people in the hybrid sociocultural condition had a mean rating of 5.42 on the presence of numbers (between *and* different from 4.13 and 6.78) and 6.60 on the presence of stories (between *and* different from 4.90 and 7.13).

Features of the True Control Group

Since the design included a true control group whose participants did not see any message, I can establish a baseline from which to measure the effects of each evidence type. Table 19 reports the means for each of the dependent variables. When asked about each broad type of impact that immigration has on Britain, UK-born respondents have slightly positive views as indicated by the means that are above the midpoint of 5. Between these impacts, respondents see the economic impacts as

being more positive than the sociocultural impacts. These fit with recent British Social Attitudes research indicating that the British public has recently tended to view immigration more positively, particularly its economic dimensions (NatCen Social Research 2017). Turning to the question about preferences for immigration levels, the control group results indicate that respondents would like to see slightly fewer immigrants arriving into Britain. This is also in line with much public opinion research in Britain, as well as internationally, showing how people tend to prefer reducing or keeping immigration levels the same (Blinder 2015).

Table 19. Control Group Results for Dependent Variables

Dependent Variable	Mean	Standard Deviation	Minimum	Maximum
Economic Impacts	5.78	2.69	0	10
Sociocultural Impacts	5.45	2.84	0	10
Immigration Level Preferences	4.22	2.60	0	10

Note: N = 1,214. Control group respondents answered the questions without seeing a message.

In all of the estimations that follow, I have excluded non-UK born respondents who comprised about 6.8% of the full sample. This leaves a final sample of 10,247 respondents. Prior research shows how immigrants tend to have different opinions from those born in the hosting country (Pérez 2015). Moreover, in line with my theoretical assumption that respondents’ attitudes about immigration are based on information given to them—particularly, though not exclusively, through media—I assume that people born outside of the UK will draw on a different set of information partly gained through personal experiences of immigration. In the Supporting Information, I replicate the analyses on the full sample, which does not change the substantive results.

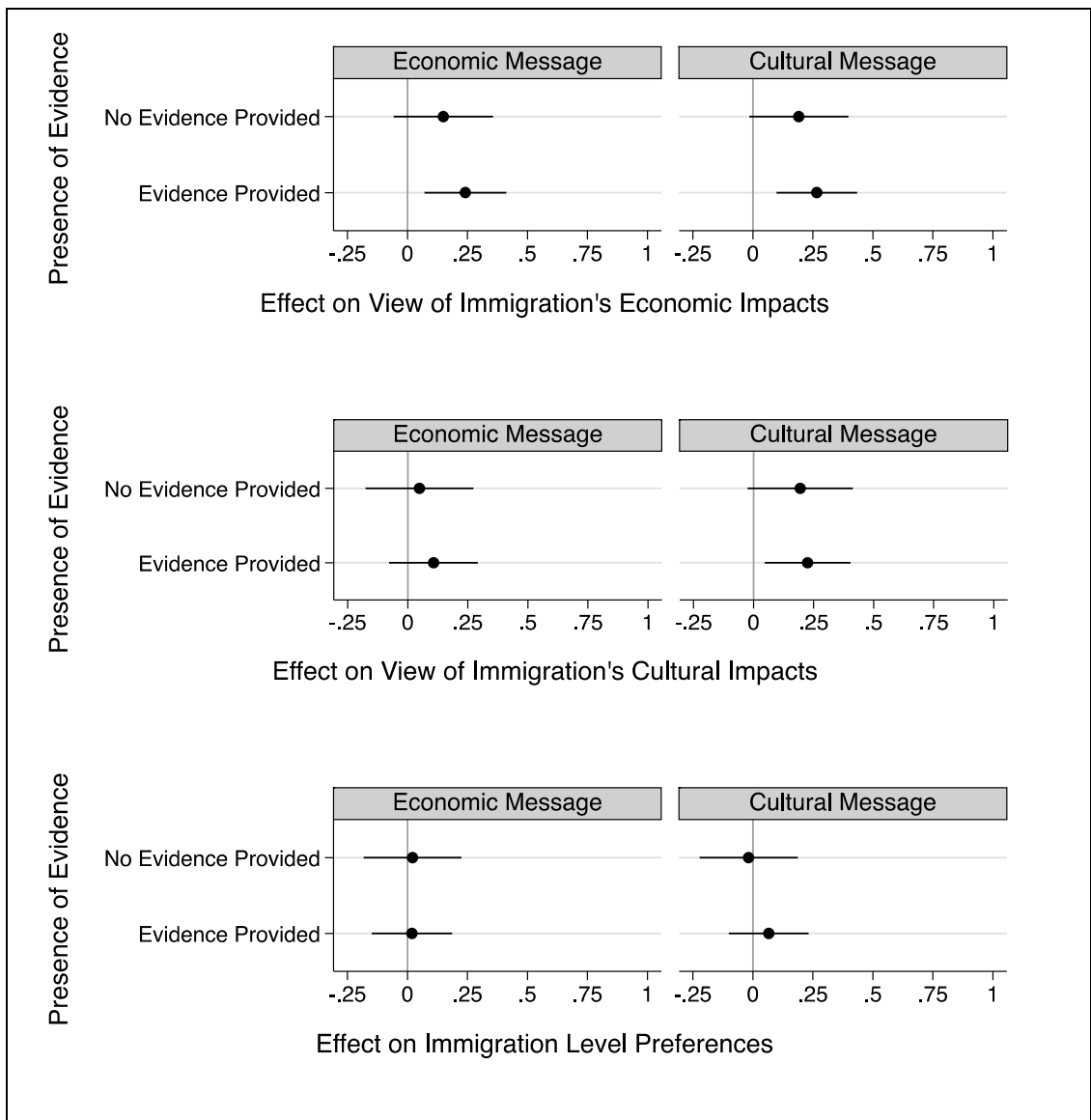
Does the Presence of Evidence Have an Impact on Attitudes?

My first hypothesis predicts that messages with supporting evidence will have greater impacts on attitudes compared to messages without evidence. To directly test this, I combined responses in the numerical, narrative, and hybrid evidence conditions. Figure 18 displays the treatment effects of this combined category and the control categories for both topics against the baseline true control. The x-axis displays the sizes of the treatment effects. The figure is divided into two panels corresponding with each topic. All results use the true control group as a baseline, and display 95% confidence intervals.¹⁵

The presence of economic or sociocultural evidence caused people to become more positive towards the economic impacts of immigration compared to those who saw no message. Sociocultural evidence also caused people to become more positive towards the cultural impact of immigration compared to the true control. But, when compared to the control conditions that made similarly positive statements yet lacked supporting evidence, the treatments containing evidence did not have significantly greater results.

¹⁵ Unless otherwise stated in the text, all results reported as ‘significant’ have $p \leq 0.05$.

Figure 18. How Evidence Impacts Immigration Perceptions and Preferences



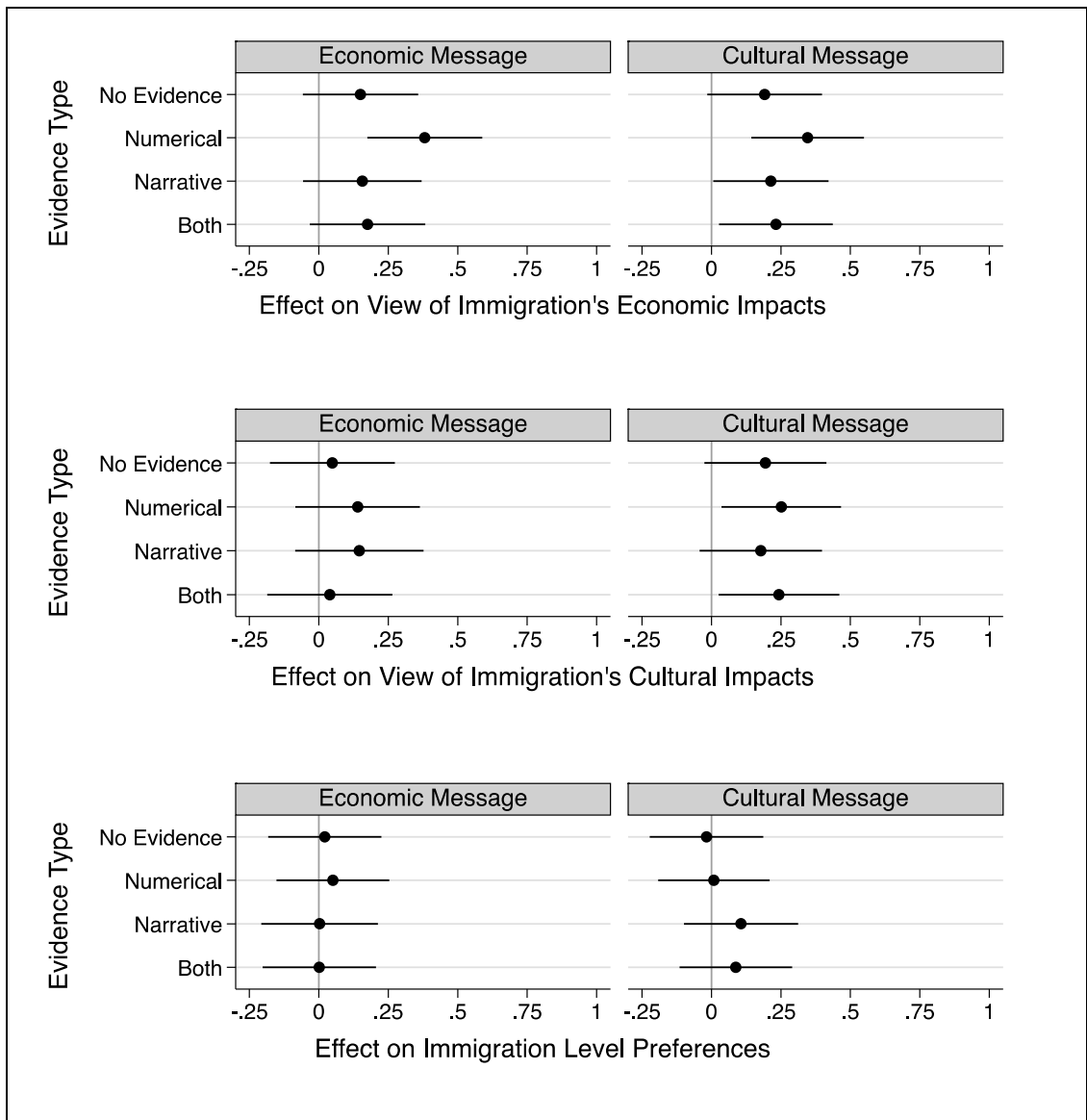
These initial results suggest that it is positive messaging—not extra supporting information—that caused people to express more positive attitudes about immigration. The effects of this messaging appear to depend on the topic within which the evidence appears, as well as the type of impact being considered. Positive messages did not impact attitudes about the appropriate level of immigration to Britain regardless of whether they used economic or sociocultural evidence.

Differentiating Among Evidence Types: Main Effects

My second hypothesis compares the effects of each evidence type. Figure 19 displays the main treatment effects of each condition across the three dependent variables. Compared to seeing no message, both messages containing only numerical evidence significantly raised respondents' view of immigration's economic impacts. Meanwhile, messages about immigrants' sociocultural contributions that contained either an exemplar or an exemplar with supporting numbers also raised economic perceptions. Interestingly, the cultural message with no supporting evidence was marginally effective ($p = 0.069$, $SE = 0.105$) at raising economic perceptions. But, only the numerical economic message had effects that were significantly different from its equivalent control message ($p = 0.028$, $SE = 0.105$).

When it came to perceptions about the sociocultural impact of immigration, only the numerical and hybrid cultural messages had significantly positive effects on cultural perceptions compared to seeing no message. All four variations of the economic messages did not have statistically significant effects on respondents' perceptions about the cultural impacts of immigration. Again, as found earlier, the cultural message containing no supporting evidence was marginally effective at raising respondents' cultural perceptions of immigration ($p = 0.083$; $SE = 0.112$). However, unlike for the economic topic, none of the treatments had significantly different effects compared to their equivalent control conditions.

Figure 19. How Evidence Types Impact Immigration Perceptions and Preferences



The last dependent variable measured preferences for decreasing or increasing immigration levels. My results demonstrate how none of the treatments had significant effects compared to the true control of seeing no message. Furthermore, the treatments containing evidence did not significantly differ from their topical control groups. This suggests that the presence of evidence of any type, even in addition to the effects of a pro-immigration message, does not cause people to change their immigration policy preferences. These results do not provide strong

support for H₁ that predicted statements with any type of evidence should be more effective than messages without evidence. Only a few treatment conditions had a significant impact on either economic or cultural perceptions of immigration compared to the true control.

Furthermore, most results had effects that were statistically indistinguishable from the control conditions where respondents saw statements that lacked supporting evidence. Numerical economic evidence significantly improved economic perceptions compared to a generic economic message, but this was the only situation I observed of a treatment containing evidence having greater effects than its equivalent topical control. It suggests that the presence of numbers has an effect on individuals' economic perceptions over and above a generally positive message.

Finally, H₃ predicts that messages containing both types of evidence should have even stronger effects than either evidence type appearing in isolation. The main effects do not support this hypothesis. At best, the hybrid evidence had similarly sized effects to the numerical evidence when compared to the true control: for example, this was the case for respondents who had read a cultural message and were asked about the cultural impacts of immigration. But for the other topics and dependent variables, the treatment effects of messages containing both types of evidence were statistically no different from either seeing a generically positive message with no evidence or no message at all.

Effects of Counter-Attitudinal Evidence: Results for Subgroups

Going beyond the main effects, I expect that claims containing evidence will have different effects depending on whether the message is incongruent with respondents' prior attitudes. Here, I focus on subgroups divided by political partisanship

(Conservative versus Labour voters) and EU referendum vote. H_{2B} predicts that narrative evidence will be more effective among those groups whose attitudes are incongruent with the positive messages about immigration. Since my design did not pre-test individuals' opinions about immigration, I relied on prior theory and empirical studies to determine which subgroups are more likely to have negative views about immigrants, and then used my true control group to see whether baseline differences existed.

Comparing means confirmed that respondents in each subgroup, on average, do indeed have different attitudes towards immigration. Conservative voters had a mean of 4.97 on the economic benefit question, 4.37 on the sociocultural benefit question, and 3.30 on the immigration level question. These were all significantly lower than Labour voters, who had means of 6.54 (economic), 6.45 (sociocultural), and 4.91 (levels). On the same questions, Leave voters had means of 4.55 (economic), 3.99 (sociocultural), and 3.01 (levels), compared to Remain voters who had means of 6.95 (economic), 6.75 (sociocultural), and 5.19 (levels).

Political Subgroups: Partisanship and EU Referendum Vote

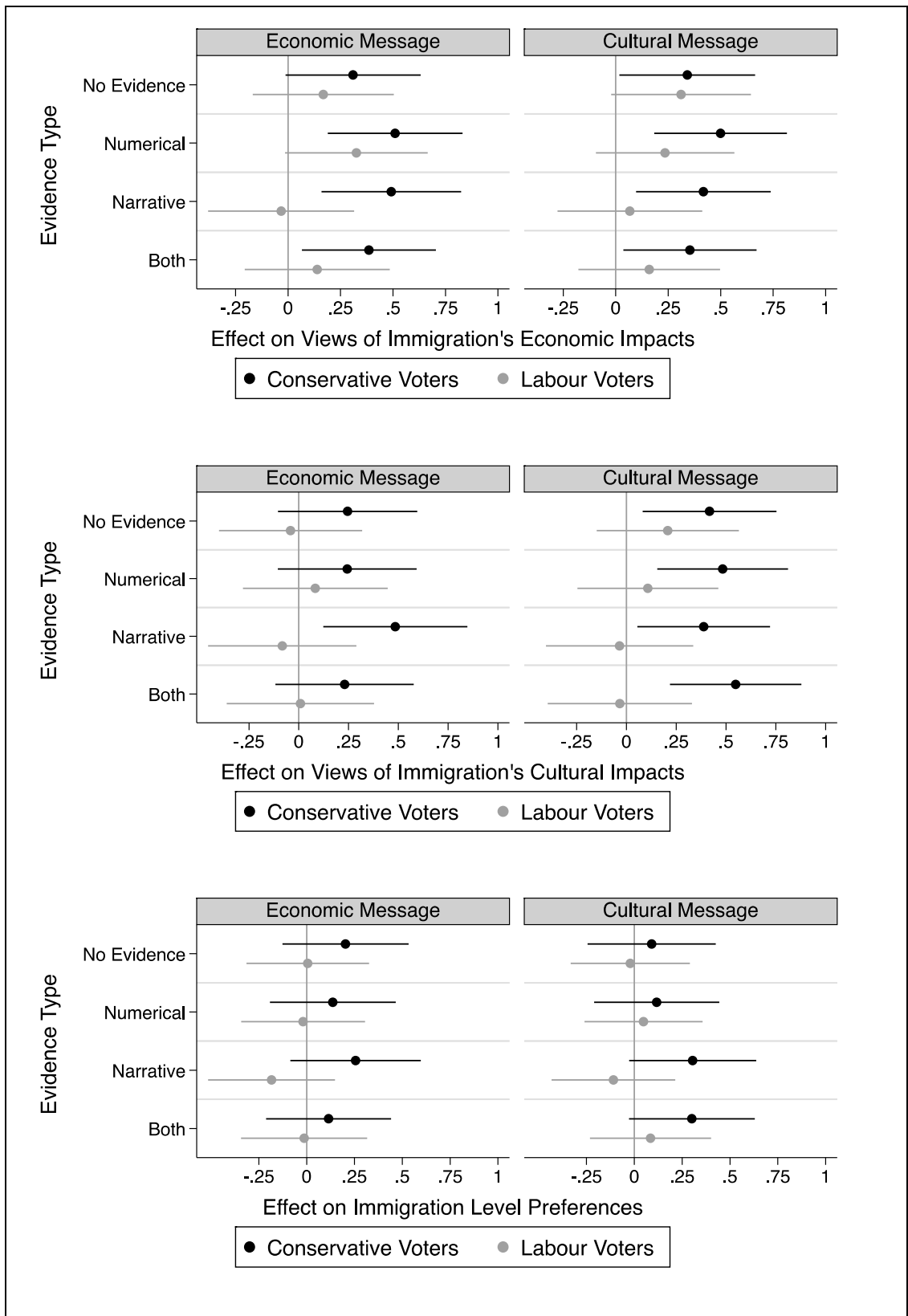
First, I consider partisanship as measured by which party respondents voted for in the 2017 General Election. Figure 20 shows the treatment effects for those people who voted either for the Conservative or Labour party in the 2017 General Election. Among Conservative party voters, positive messages on either economic or sociocultural topics raised perceptions about the economic impacts of immigration compared to seeing no message.¹⁶ This differed from Labour voters, for whom only

¹⁶ The economic message with no evidence was marginally effective ($p = 0.059$, $SE = 0.164$).

the economic message with numerical evidence had a marginal effect ($p = 0.06$, $SE = 0.173$). But, when compared to each topic's control group that lacked evidence, none of the treatments had significantly greater effects for either Conservative or Labour voters.

Meanwhile, my results show that all evidence types, when appearing within a cultural message, raise Conservative voters' perceptions of immigration's cultural impacts as compared to the true control. In contrast, none of the treatments had even marginally significant effects on Labour voters' cultural perceptions of immigration compared to the true control group. And, yet again, none of the statements containing evidence had significantly different effects on either group of voters from those who had seen a generically positive control statement on either topic. The picture is similar for voters' policy preferences, too. Compared to those who saw no message at all, none of the treatments caused significant changes to individuals' willingness to increase the levels of immigration to Britain.

Figure 20. How Evidence Types Impact Immigration Perceptions and Preferences, by Party Vote



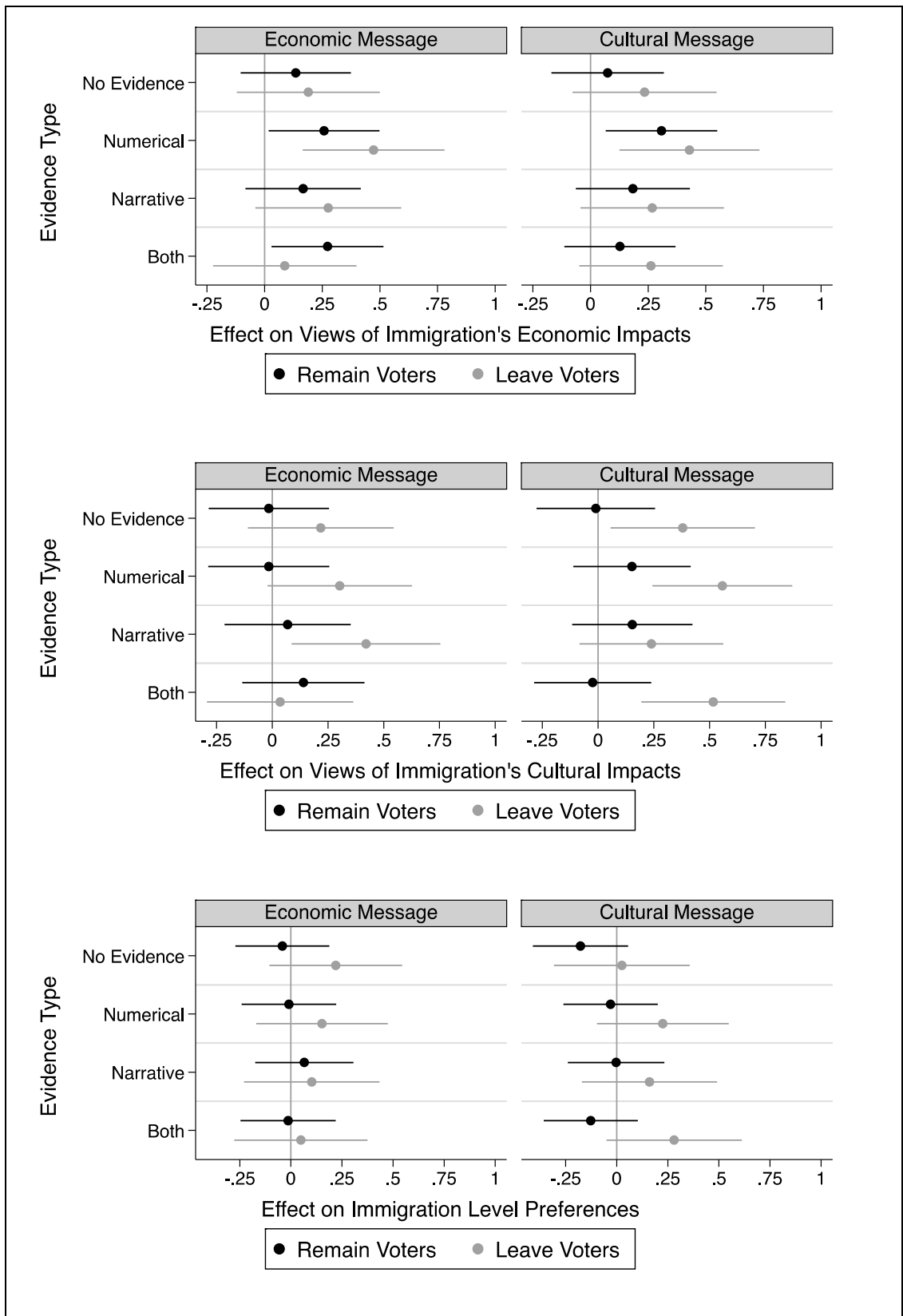
I also compared those people who voted for Leave or Remain in the 2016 EU Referendum. Research since then has shown how immigration was a salient and motivating factor for Leave voters, who typically expressed negative views about the impacts of immigration (Hobolt 2016). Therefore, I expect that the pro-immigration messages contained within each treatment would be more incongruent with Leave voters' prior attitudes rather than Remain voters.

Figure 21 shows the effects that each treatment had on both subgroups. The economic perceptions of immigration held by both Leave and Remain groups significantly rose after seeing numerical evidence compared to those who saw no message. Remain voters' economic perceptions also increased relative to the true control by seeing hybrid evidence appearing within an economic message.

Looking at the impact that evidence had on both groups' cultural perceptions of immigration, compared to those respondents in the true control group, it is clear that the messages had greater effects on Leave voters. This was particularly the case for numerical evidence in the context of a cultural message, as well as narrative evidence in an economic message. Interestingly, none of the treatments had an impact on Remain voters' perceptions of the cultural impacts of immigration. But, in keeping with the trends observed in the main effects as well as those broken down by partisanship, none of the treatments containing evidence had significantly different results from their respective control groups that saw a positive statement lacking supporting evidence.¹⁷

¹⁷ The numerical evidence in a cultural message did have a marginally significantly greater effect on Remain voters' economic perceptions of immigration, compared to the cultural control group ($p = 0.058$, $SE = 0.123$).

Figure 21. How Evidence Types Impact Immigration Perceptions and Preferences, by EU Referendum Vote



These results do not provide strong support for H_{2B} that predicted narrative evidence should be more effective among those groups for whom a positive message about immigration would be incongruent with their prior beliefs. Although narrative evidence did significantly raise Conservative and Leave voters' perceptions compared to the true control, these effects were statistically indistinguishable from those generated by the presence of numerical evidence.

Discussion

What kinds of evidence have the greatest impacts on what people think about immigration? Public debate about the issue in Britain is often characterised as needing more evidence. This has led to the formation of independent bodies such as the Migration Advisory Committee (MAC), designed to advise the UK government on immigration policies by using academic research, as well as the proliferation of organisations committing themselves to different kinds of campaigns and strategies to generate public impact. Yet, despite many assertions about which messaging approaches are most effective, there is little research supporting these claims. Moreover, the few studies that have tried to examine the attitudinal effects of different kinds of evidence have come to different conclusions. Even fewer consider how these statements operate when they relate to politically controversial topics.

As the first large-scale study in political science to investigate whether different kinds of evidence do indeed have effects on political attitudes, this chapter addressed several key limitations of prior experimental research in communication studies. First, it included several control conditions that served as benchmarks from which to measure the effects of each evidence type against not only generically positive statements lacking evidence but also the situation of seeing no message at

all. This is an important addition that enables making claims about overall messaging effects.

Second, it differentiated between the economic and sociocultural aspects of immigration as dependent variables to allow a closer look at whether certain types of evidence are more effective in relation to specific dimensions of immigration. Third, it included a hybrid condition that combined numerical and narrative evidence in a way that more closely reflects actual messaging practices in media. Fourth, it tested these messaging strategies in a large-scale, nationally representative survey sample experiment that enabled breakdowns by key demographic and political groups.

I found that, compared to the true control with no message whatsoever, positive messages about immigration containing numerical evidence were more effective than those containing narrative evidence at raising respondents' perceptions about the economic and cultural impacts of immigration. This pattern held across most subgroups that tend to have more negative views about immigration such as Conservative party voters and those who had voted Leave in the EU referendum. Meanwhile, messages that contained either a narrative exemplar or both types of evidence tended to be no more effective than those containing only numbers—and, in fact, often had smaller or no effects. These results differ from the only other known study that tested counter-attitudinal messages, which found that narrative evidence had greater effects than numerical evidence (Wojcieszak and Kim 2015).

But, across the experimental conditions, the presence of evidence did not have effects that significantly differed from those observed in the generic control groups. The only exception was when people saw an economic message using numerical evidence: this combination caused them to view immigration's economic impacts more positively than those who saw a similarly positive economic statement

without supporting evidence. In other words, positive messages about immigration can indeed change attitudes and perceptions—especially among groups who are typically more opposed to immigrants—but extra evidence within those messages generally does not cause even more positive attitudes. Moreover, supporting evidence does not seem to have any impacts in either direction on individuals’ immigration policy preferences.

What do these results suggest for broader theories about how information impacts attitudes, whether on immigration or other politically important topics? First, the results do not suggest the presence of a widespread ‘backfire effect’ (Nyhan and Reifler 2010), although I acknowledge my design technically prevents a true evaluation of this effect because it lacked a pre-test. However, using the baseline control group as a reference, respondents for whom the positive messages would be incongruent (Leave and Conservative voters) did not reject evidence by expressing even more negative views. Instead, in line with the direction of the message, they either expressed more positive views, or were not affected at all. Information, it seems, can and does matter in certain circumstances. This fits with more current findings that question the existence of the backfire effect as a particularly strong version of motivated reasoning (T. Wood and Porter 2018).

Indeed, that the directions of all significant effects are aligned with the message valence should be somewhat encouraging for scholars and practitioners concerned about whether evidence and ‘facts’ have any role to play in current media and policy debates. My results suggest that, depending on the issue dimension and audience being targeted, interventions containing different kinds of evidence can potentially shift some attitudes even among people holding views running counter to

the message, a conclusion reached by other recent experimental research across many issues (T. Wood and Porter 2018).

But, there is an important distinction to make between attitudes about impacts and attitudes about policy preferences. My findings clearly show that positive messages containing any type of evidence—numerical, narrative, or even a combination—do not have significant effects on British respondents’ attitudes towards the level of immigration they want to see. On the one hand, documenting the lack of a backfire effect has scholarly value. On the other hand, it suggests that such messaging may have little direct political impact: if messages, whether or not they contain evidence, do not affect public demands for changes in policies (in either direction), then they are less likely to drive policymakers and politicians to action. Even so, changing immigration attitudes may have indirect effects on immigration policymaking and politics through community cohesion and integration efforts that rely, in part, on the contributions and participation of citizens in immigration-receiving areas (Spencer and Charsley 2016). This link merits further empirical investigation.

Second, it appears that messages showing either economic or cultural aspects of immigration can improve British attitudes towards the economic impacts of immigration. Figure 19 shows how both economic and cultural messages had positive effects compared to the true control. But, the reverse is not true: highlighting the economic aspects of immigration does not translate into more positive views about how immigration impacts British society and culture.

This observed asymmetry has implications for understanding public opinion about immigration. For the British-born respondents in this experiment, seeing either numbers or an exemplar that created a picture of culturally well-integrated non-EU

immigrants raised economic perceptions of immigration. However, seeing evidence that built up a picture of an economically beneficial immigrant did not change respondents' evaluation of those migrants' impacts on British society and culture. This implies that highlighting economic factors has less effect on British views about the social and cultural impacts of immigration.

Third, for some people, merely presenting a generically positive message without any supporting evidence had a positive effect on their attitudes towards the impacts of immigration, compared to the true control condition. To be sure, the substantive impacts among these groups did not result in an overall change in attitude: for example, Leave voters did not suddenly switch to become pro-immigration after seeing either economic or cultural messages containing numerical evidence. Nevertheless, the messages did move them about $\frac{1}{2}$ of a point in a more positive direction compared to those who saw no message at all—a fairly sizeable result considering the history of communication and media effects research. Generating even a small amount of change leaves open the possibility for subsequent messages that use other techniques of communicating to have further effects.

Now, it is possible that the effects I have found are asymmetric with respect to negative arguments. Prior public opinion research indicates how negative economic information carries more weight than positive information (Soroka 2006), which can change voting behaviours (Aragones 1997). For example, presenting a Remain voter with an anti-immigrant message might have more of a backfire effect than I have found by using a positive message about immigration. Although testing both types of arguments simultaneously by varying treatments based on respondents' prior immigration attitudes would have been ideal, practical constraints prevented me from implementing a pre-test.

Conclusion

By experimentally testing the effects of different kinds of evidence on attitudes towards a politically salient topic, this research makes important contributions to political scientific understandings of public opinion and the extent to which information impacts attitudes. Using evidence for its own argumentative sake, at least in the context of immigration in Britain, sometimes has effects on attitudes about perceived impacts but not on policy preferences. Yet, these effects are generally indistinguishable from those caused by messages that do not contain supporting information but are still similar in valence. However, regardless of the type of evidence used, groups that have more negative views about immigration do not automatically reject positive messages. Instead, in line with work considering other topics (T. Wood and Porter 2018), I find that respondents do consider the information provided to them. In fact, the positive messages had the greatest impact among those groups that expressed more negative attitudes towards immigrants.

My study has practical implications for policymakers, civil society, and researchers who may use different messaging strategies for communicating with the public. On the specific topic of immigration, the results suggest that using numerical evidence—where it is available—to support an economic argument will be more effective across different subsets of the public than other types of evidence. Even so, using other kinds of supporting information does not appear to generate backfire effects. This leaves the door open to the possibility that more evocative, narrative techniques may have complementary effects via mechanisms I have not tested here.

Moving beyond immigration to consider other politically sensitive topics, my findings demonstrate that even relatively simple communication interventions can have some effects on attitudes, even among people for whom the messages might be

challenging. Of course, I am not arguing that public debate about politics can be decisively improved by simply inserting numbers into communication set pieces. Indeed, how individuals engage with information is subject to a variety of other factors that an experiment cannot readily capture (Cairney and Kwiatkowski 2017). Rather, to a small degree, counter-attitudinal messages—regardless of whether they are accompanied by supporting information—can impact what people think.

6

Conclusion

Overview of the Thesis

I began this thesis by questioning assumptions about the power of information to bluntly determine political perceptions, preferences, and attitudes in a uni-directional manner. Using the case of immigration in Britain, and particularly focusing on language used by national press outlets, I aimed to examine a central question: how do different kinds of messages impact what people think? Whether conceiving of messages as specific patterns of word choice, or comprising alternative modes of communicating factual information, I have argued that publicly shared messages about immigration appear to have more subtle and delimited effects on public perceptions and preferences. My evidence comes from three related, but distinct, studies that used observational and experimental methods to examine the relationship between information and immigration attitudes. Moreover, these individual studies were informed to varying degrees by a fourth study that involved comprehensive corpus linguistic analysis of press content spanning up to 30 years.

Chapter 3 examined the relationships among different aspects of immigration press coverage and levels of public concern about immigration in Britain.

Surprisingly, I did not find a significant association in either direction between the sheer visibility of migration-related issues and public concern. Rather, it was only specific sets of attributes—comprising the sociocultural, geographic, and scale/pace

dimensions of immigration—that were significantly related at all with changes in subsequent concern. What is more, these relations did not uniformly display the signs predicted by theories of issue obtrusiveness. At the same time, I found evidence that changes in first- and second-level agendas within the press were not only related with each other, they were also sometimes connected with public concern in the first place.

To be sure, the findings of Chapter 3 suggested that the press has a significant—if small—effect on what people think. But it could not conclusively claim this at the level of individuals. Therefore, in Chapter 4, I used a survey experimental design to determine whether shifts in language that loosely corresponded with the broad set of attributes I identified in Chapter 3 could indeed generate changes in preferences and perceptions. Describing hypothetical immigrants using attributes drawn from real-world press coverage did cause respondents to view some profiles more favourably and likely to contribute to the British economy and society. For example, describing someone as ‘skilled’ or ‘Commonwealth’ generated more positive evaluations than describing someone as ‘unskilled’ or ‘Iranian’.

At the same time, these patterns did not tend to vary from what existing theories about immigration attitudes based in economic and sociocultural threat already predict. Indeed, my experiment confirmed that the British public places greatest importance on immigrants’ occupational skill and ability to speak English, followed by education levels and religious affiliation (specifically being Christian, or at least irreligious). Immigrants’ geographic origins were even less important, and differences in age and gender had little impact. These findings fit alongside other recent survey work in Britain. Moreover, people perceive immigrants as having more

economic value than sociocultural value, and differentiate more strongly among immigrants by their perceived economic benefits.

At the same time, exposing people to language that heightened the scale and pace of immigration—a set of attributes which Chapter 2 demonstrated has been one of the most visible in recent press coverage—did not change perceptions of all immigrants. In fact, when compared to the responses of people who were not exposed to this language, it had little to no effect on overall perceptions. Rather, when it did have effects, it increased the *range* in preferences among immigrant attributes associated with language skills. Therefore, reminding people about the overall state of immigration appears to have also reminded them of the importance of English fluency as a way to differentiate among immigrants.

Finally, in Chapter 5, I shifted my attention away from individual words and phrases as one type of message, and towards supporting evidence as another type of information that might impact what people think. Many types of communication—often, but not exclusively, appearing in media—feature different kinds of evidence in order to bolster the impact of an argument. In a first for political science, I used a large-scale survey experiment to focus on numerical and narrative content as two main varieties of evidence, as well as a hybrid form that combined these techniques, to see whether these larger features of messages impacted individuals' perceptions.

Within the context of broadly positive statements about immigration, I found that numerical evidence caused people to view immigrants more positively compared to those who saw no message at all. Narrative evidence and hybrid approaches had less impact. But, when I compared messages with evidence to messages that did not have supporting information yet were still similar in valence, I

found that the extra information generally did not have any effects over and above the topical control groups.

Meanwhile, as in Chapter 4, respondents differentiated between evidence relating to the economic and sociocultural dimensions of immigration. Statements portraying immigrants as being culturally well-integrated caused people, on average, to rate immigration as being more socioculturally *and* economically beneficial compared to those who saw no message at all. But, similarly positive statements making economic arguments for immigration did not improve perceptions about the sociocultural benefits of immigrants, although they did improve economic perceptions, compared to the true control group. Yet, in line with most political communication research, the sizes of these effects were relatively small.

Scholarly Contributions

Taken together, these separate chapters makes several contributions to different issues across several fields: the study of public opinion, understanding of immigration attitudes, and methodological development in large-scale text analysis. Within the field of public opinion, my experimental design in Chapter 5 is (to my knowledge) the first attempt to empirically test how different types of evidence impact perceptions about a politically salient topic using a large, nationally representative sample. Although the discipline of communication studies has conducted many experiments examining the effects of different evidence types, these are limited in several ways. For instance, they tend to rely on relatively small, student samples; use non-political topics; or do not seriously consider forms of hybrid evidence.

As a result, my findings connect with current debates in political science about whether and how information shapes what people think about controversial issues. There is a relatively large body of evidence showing how people sometimes resist information that conflicts with their prior beliefs (Kunda 1990; Taber and Lodge 2006), which has implications for voting and other forms of political behaviour that involve perceptions (Albertson and Gadarian 2015). Some have even recently argued for a particularly strong version of this phenomenon (Nyhan and Reifler 2010), whereby correct information not only fails to reduce misperceptions but also actually increases them.

In contrast to this story, I found that people do indeed respond positively to correct information about politically controversial issues, even if that information likely runs counter to their existing beliefs.¹ To be clear, I am not claiming that positive messages about immigration *persuaded* people to become pro-immigration. Rather, factual messages—specifically in forms that at least included some numerical information—did improve perceptions, even if only slightly. This also has practical implications for communication interventions, which I explore later in the conclusion.

Meanwhile, Chapter 4 contributes to better understanding of immigration attitudes specifically, and the role of media in driving those attitudes. A key question centres on debates about the relative weight and composition of economic and sociocultural threats for determining attitudes towards immigrants. Recent scholarship suggests that, although symbolic and cultural factors are probably more

¹ This is more in line with the findings of Wood and Porter (2018) who could not find experimental evidence of a backfire effect involving corrections on 52 polarising issues.

consequential (Ceobanu and Escandell 2010; Hainmueller and Hopkins 2014), these explanations are not nearly as clearly defined or differentiated as their equivalent economic arguments.

My conjoint design moves beyond preferences for admission to consider how people differentiate immigrants based on perceptions of their relative economic and sociocultural benefit to the host country. By doing so, it contributes new evidence of how the British public perceives key attributes—such as immigrants’ education level and language skills—as being more indicative of economic rather than societal benefit. Although my design and data do not enable a definitive explanation of whether and why certain dimensions are more closely linked with either of the threat types, they do demonstrate how people are able to distinguish among both a variety of attributes and different kinds of potential impacts as they ‘imagine immigration’ (Blinder 2015). Relatedly, Chapters 4 and 5 also show how attributes and messages conveying immigrants’ economic successes do not necessarily improve perceptions about these same individuals’ sociocultural benefit for Britain.

My results also suggest that the role of media in immigration attitude formation, while sometimes statistically significant, may be less substantively important than is often presumed. Certainly, I did not find experimental evidence of persuasion, or individuals changing their beliefs, caused by exposure to language commonly used in the press. When I did find effects, they were small and fitted within the range researchers have observed for many other kinds of communication interventions over the past 60 years (Rains, Levine, and Weber 2018).

My observational results echo this conclusion. As demonstrated in Chapter 3, increases in the amount of immigration press coverage as a proportion of total news since the early 2000s did not relate to subsequently higher public concern. This is

quite surprising, given the stark rise of immigration on the public agenda, especially between 2013-15. Rather, only certain aspects of immigration appear to be related to public concern—and these, in turn, are sometimes driven by either concern itself, changes in the visibility of other attribute agendas, or even developments in the realms of policy and government (at least in the case of ‘net migration’).

Finally, Chapter 2 exemplifies how theory, tools, and techniques from corpus and computational linguistics can enhance how political scientists identify attribute agendas within large amounts of text. I argued that grammar and parts-of-speech lend more theoretically-sound grounds for reliably identifying attributes, even if they result in more conservative tests for inclusion than those provided by other techniques like topic modelling. Corpus-based methods also provide reliable ways of generating evidence for or against the real-world typicality of an observed pattern, rather than relying on researchers’ own necessarily limited experience.² This potentially enhances the external validity of subsequent designs—be they experimental or observational—that use textual data as inputs (Barabas and Jerit 2010; Blinder and Jeannet 2018)

² Indeed, for some research questions, finding and using *atypical* language patterns might be the goal. In this case, relying on one’s own experience with a language would likely be severely limiting, if not futile: the researcher would need to think of examples that are rarely seen in real-world texts—or at least are less commonly observed. Yet, these kinds of examples, as predicted by Hoey’s (2005) theory of lexical priming, are by definition less immediately available in individuals’ mental language maps.

Future Work

In the Introduction, I set the scope for this thesis as examining how and to what extent messages influence public perceptions, with particular focus on printed mass media as especially salient outlets in the British case. Nevertheless, as I explained in the theoretical discussion of agenda-setting in Chapters 2 and 3, this question involves a variety of dimensions and multidirectional relationships. In this section, I address some of these features where possible—and, when they lie outside the scope of this thesis, explain why they may be well-suited for future work.

Mutual Causation and The Roles of Politicians and Parties as Messengers

First, several confounding variables complicate straightforwardly interpreting my findings in Chapter 3 as evidence of press agenda-setting. Although my theoretical framework in Chapter 2 identifies the potential importance of parties, politicians, and other institutions of the state as additional sources of messages, I do not formally test this in my time series modelling. Moreover, the direction of causality potentially runs both ways: media effects, especially in a highly commercial and competitive environment, may in fact be driven by public demands for certain kinds of content, or even other subsets of the press. Although these questions were not the primary focus of my research, I go to some lengths in addressing this concern through my robustness checks. For example, Granger causality tests indicated that, at least on the topic of immigration from 2001-15, levels of concern were not driving changes in the overall proportion of immigration-related coverage.

I also considered how the press is sometimes a recipient of language and agendas coming from different parts of the state. As I argue in separate research, this was the case with respect to public discussion of the Conservative party's prominent

‘net migration’ pledge between 2010-15 (W. Allen and Blinder 2018). Public concern about immigration informed political prioritisation of bringing numbers down. But real-world migration levels to Britain did not decline to the levels promised by the government—a trend regularly highlighted by the bureaucratic arm of the state through routine statistical reports. Journalists across the political spectrum subsequently came to expect these quarterly reports and used them to hold the government to its campaign pledge. Such behaviour intensified as the Home Office shifted to avoid using the term in its public relations material when it became increasingly clear that the target was practically unachievable (Migration Observatory 2015; Vargas-Silva and McNeil 2017).

This example demonstrates an important theoretical point with implications for research on media and their impacts: ‘the press’, however conceived, exhibits multidirectional relationships with public perceptions, the state, and external events. This means that any conclusions about the agenda-setting power of media should be tempered with a degree of empirical humility. Future work could take advantage of other research designs and datasets in order to more fully disentangle the complex mechanisms underpinning media effects and test the extent to which they travel across both media and political systems.

The Press Versus Other Forms of Media

Another issue that arises in Chapters 2 and 3 relates to my focus on press sources. My decision to use newspapers as opposed to other kinds of media was largely practical: to say anything about the role of media over a long period of time, I had to rely on what was available in digital archive services. Of course, as I explained in Chapter 2, using these services comes with their own health warnings regarding the

internal veracity and consistency of the texts they provide. But at a broader level, my results are limited to the dynamics and content of the press—a potential problem for making strong inferences about agenda-setting in an environment where people increasingly, if not exclusively, access information through broadcast and online sources (Newman et al. 2018).

Studies into intermedia agenda-setting involving the press and other sources come to mixed conclusions about the extent of this problem. Some scholars, focusing on the US case, argue that political blogs have diluted traditional press outlets' influence on the national agenda and instead generate interdependent relationships (Meraz 2011; Wallsten 2007). Meanwhile, work from China indicates that, at least for sudden events, the microblogging service Sina Weibo exerts stronger influence over newspapers (Wu et al. 2013). When it comes to television news, several studies indicate that newspapers tend to influence broadcast sources—but this relationship depends on a range of factors, including whether the issues at hand are exogenous to the country (i.e., non-routine, external events beyond the control of the state) or endogenous (Vliegenthart and Walgrave 2008).

Therefore, an important question is whether content produced by and made available on different media, such as Twitter, differ substantially from each other. Although I cannot conclusively answer this for the entirety of the period I examine in Chapters 2 and 3, I can supply some descriptive evidence of how different media used the terms 'immigration' and 'migration' at a particular moment in time. Finding similarities or differences would not necessarily indicate the presence (or lack) of intermedia agenda-setting—I would need more data over a longer time period to do this. But it would shed light on the distinctiveness of social media content compared to other sources.

To explore this possibility, I draw upon a corpus of 84,783 items that were sampled from online sources between 19-21 June 2016 and related to the EU referendum. Using Brexit as a theme is particularly useful in my case since immigration was one of the most salient issues that contributed to the outcome (Hobolt 2016). The dataset, available via the Sketch Engine interface, was collected as part of a larger project that aimed to see whether natural language processing methods could predict the referendum result (Celli et al. 2016). As I did in Chapter 2, I identified the most frequent modifiers of ‘immigration’ and ‘migration’ in this corpus using part-of-speech tagging. Table 20 displays the top 10 results, divided by the type of media in which they appeared while excluding retweets.

Table 20. Most Frequent Modifiers of '(Im)migration' in Tweets and Non-Twitter Items Relating to Brexit, June 2016

Rank	Modifiers	
	Twitter Immigration Items (N = 2,392)	Non-Twitter Immigration Items (N = 1,003)
1	EU (86)	net (147)
2	uncontrolled (74)	EU (108)
3	mass (48)	mass (86)
4	more (27)	uncontrolled (71)
5	unlimited (17)	illegal (31)
6	control (15)	non-EU/European (18)
7	non-EU/European (14)	more (17)
8	controlling (13)	high (16)
9	controlled (12)	unlimited (12)
10	low (12)	European (8)

Note: Total N = 84,783 (of which Twitter items = 80,369 and non-Twitter items = 4,414). Results are ordered by raw frequencies in brackets. Twitter items do not include retweets. Non-Twitter items include online newspaper content, blogs, and discussion forum posts. Data collected between 19-21 June 2018. The EU referendum occurred on 23 June 2018.

On the one hand, the modifiers appear relatively similar between the two groups. For example, ‘EU’ and ‘mass’ are two of the most highly ranked terms in both lists. Tweets, however, do not seem to feature the phrase ‘net migration’ nearly

as much as content from other media.³ But, in general, these results converge onto the types of attributes I identified in previous press coverage. On the other hand, the results also reveal a difference in the overall salience of immigration between the media types. Only about 3% of original tweets relating to Brexit that were sampled between 19-21 June mentioned ‘immigration’ or ‘migration’. This is contrast to about 23% of items sampled from outside Twitter. These results go some length towards validating my press attribute scheme, as well as suggesting that agenda-setting effects of social media may be somewhat limited if there is not much political content anyway.

Moreover, they provide an opportunity to reflect on what precisely social media data represent for political scientists. For example, there is a significant degree of uncertainty about the actual population of users (Driscoll and Walker 2014). Even so, those studies that have surveyed how members of the public use media indicate that not only do relatively few people regularly use social media sources for news, but also even fewer rely on them as their primary source (Nielsen and Schröder 2014). British Election Study (BES) panel data corroborates this observation, finding that most people—particularly older voters—do not typically get their political information via Twitter or Facebook. For example, in every age group older than 18 that was surveyed in Wave 5 of the BES during the 2015 General Election campaign, pluralities—if not wide majorities—reported that they

³ This is interesting evidence of how (un)important the idea of ‘net migration’ may have been in public debate about immigration in the context of Brexit, at least at the last few days of the campaign.

had not used either Twitter or Facebook to access political information in the previous four weeks (Fieldhouse et al. 2015).⁴

What I am arguing is that, despite the decline of physical newspaper circulation in Britain, the national press still comprises an important source of political information for the public—and particularly among older people who are more likely to vote. Moreover, as studies comparing content provided by traditional print newspapers and social media indicate, news articles shared through online channels including Twitter still tend to broadly match those produced by their press counterparts (Bastos 2015; Ghersetti 2014). This lends further support for my choice of focusing on the British national press in Chapters 2 and 3: it is both indicative of broader media agendas and relevant for the ways that people engage with information about important political issues like immigration.

Additional Dimensions of Message Content: Sentiment, Emotions, Visual Cues

My research designs across the four studies do not account for sentiment, emotions, or visual cues. Given my theoretical interest in Chapters 2 and 3 in testing agenda-setting specifically, which is more concerned with the properties and characteristics attached to attitudinal objects, and empirical desire to trace shifts in language over time, I intentionally excluded tone as a dimension to study. However, even if I had included sentiment, this approach would likely have been less reliable than the rule-based grammatical path I took. Sentiment analysis, while demonstrably useful for analysing political texts (Young and Soroka 2012), is difficult to reliably implement

⁴ Graphs of these results appear in the Supporting Information.

in a fully- or semi-automated manner because it relies on assumptions about positivity and negativity which may not work across topics.

I also did not examine the role of emotions in contributing towards individuals' immigration attitudes. Several studies show that negative emotions, particularly anxiety or fear, mediate how strongly information impacts what people think about immigration, as well as influence how they process that information in the first place (Banks 2016; Brader, Valentino, and Suhay 2008; Gadarian and Albertson 2014; Lecheler, Bos, and Vliegenthart 2015). While this area of research is certainly relevant for understanding why people hold different kinds of opinions, it relies on a different causal pathway than the one proposed by agenda-setting. As I explained in Chapter 2, agenda-setting depends on cognitive mechanisms of accessibility to transfer the world 'out there' into individuals' minds (Scheufele and Tewksbury 2007). In contrast, emotions work in ways that circumvent—or at least differ from—this cognitive approach (Mongeau and Stiff 1993).

Finally, I did not consider the visual aspects of messages and newspaper content. This stemmed from my decision to use digital archival services that typically do not include photographic elements for copyright reasons. Clearly, this limits my understanding of whether and how people engage with information, especially about immigration. Take the photo of Alan Kurdi in September 2015, for example, that initially appeared in Turkish media and then was picked up by the *Daily Mail*. Soon after its publication, a ComRes poll showed 92% of the British public had either seen or heard about the photographs. Among those who had seen them, 42% thought that Britain should take in more refugees, compared to 22% of those who had not seen them (ComRes 2015).

The photo resonated in broader politics, too. Through February 2016, over 450,000 people signed a public petition to accept more asylum seekers and refugees, triggering statements by the Home Office and an emergency debate in Parliament (UK Government and Parliament n.d.). And, only four days after the news appeared on 20 million screens (Vis and Goriunova 2015), then-Prime Minister David Cameron announced new measures to allow up to 20,000 Syrian refugees to enter the UK through 2020 (House of Commons 2015).

Showing the causal effects of this single image—or any image for that matter—on political attitudes and behaviours would require more than anecdotal evidence. Nevertheless, this example demonstrates the potential of visual information, either appearing alongside or in place of text, as a powerful means of communicating.⁵ Documenting this power in different situations, as well as understanding its mechanisms, remains an important task for political communication researchers (Cacciatore, Scheufele, and Iyengar 2016).

At the beginning of my thesis, I revisited Bernard Cohen’s (1963, 13) often-quoted claim that ‘the press is stunningly successful in telling its readers what to think *about*...until the next wave laps their shore’. Messages conveyed by media, in his metaphor of an atlas, constitute maps of possibilities and realities upon which

⁵ Beyond photography, this also applies to visual representations of numerical information, such as the quantitative supporting evidence I considered in Chapter 6. Approaches from ‘data journalism’, which often depict information through infographics or visualisations using media that can be widely replicated and shared, seem to imply that these visual messaging techniques have greater impacts than more traditional, text-based methods. Although colleagues and I have begun qualitatively investigating this possibility in separate research (W. Allen 2018; Kennedy, Hill, Aiello, et al. 2016), whether and to what extent visualisations influence attitudes on issues remain open questions.

people have little choice but to act until they are provided with another map. To be fair, his deterministic language probably reflected the state of communication research at the time, which has tended to oscillate between viewing media effects as either especially strong or weak.

The evidence I have gathered, however, does not entirely fit with Cohen's story. To be sure, the 'atlas' of British press content about immigration may be drawn in indelible ink, showing clear contours and patterns that display a range of preferred paths drawn by editors and journalists. But people do not navigate the world with their eyes firmly held centimetres away from the maps contained within it. Rather, they can distinguish among different pathways on each map, as well as different maps within the atlas.

In total, what this means is that the power of media messengers to determine what people think, at least for politically salient issues like immigration, is likely more delimited and subtle than the assertiveness of Cohen's words would suggest. Going forward, the challenge for political scientists is to understand with greater empirical clarity for whom, to what extent, and in which circumstances messages of all types shape political attitudes and behaviours.

SI

Supporting Information

Appendix A: Chapter 2

Table 21 displays the final list of collocates included in each second-level agenda. As described in Chapter 2, these terms were the most frequently observed collocates of the target words ‘immigration’, ‘migration’, ‘immigrant(s)’, ‘migrant(s)’, ‘asylum-seeker(s)’, and ‘refugee(s)’. They are arranged in alphabetical order.

Table 21. Terms Comprising Second-Level Agendas in British National Newspaper Coverage of Immigration, 1985-2015

	Economic, Occupational Attributes	Criminality, Legal Status Attributes	Legislative, Policy, Government Attributes	Demographic, Sociocultural Attributes	Geographic Attributes	Scale and Pace Attributes
1	artist	abuse	act	.*-year-old	afghan	.*m
2	benefit	abusive	adjudicator	action	african	absorption
3	builder	alleged	advisor	activist	albanian	annual
4	burden	amnesty	agency	adult	algerian	boom
5	business	bid	amendment	ancestor	american	cap
6	businessman	bogus	appeal	arab	armenian	chaos
7	carpenter	bona fide	applicant	background	asian	chaotic
8	cleaner	claimant	application	basque	australian	continued
9	destitute	clandestine	authority	black	austrian	controlled
10	doctor	crime	backlog	boy	azerbaijani	countless
11	driver	criminal	bill	brother	balkan	dozen
12	economic	dangerous	bureau	campaign	bangladeshi	excessive
13	employee	dealer	case	child	belgian	exodus
14	entrepreneur	decision	centre	child	bengali	extra
15	farmer	detainee	claim	christian	bosnian	few
16	hard-working	dodgy	commission	coloured	brazilian	flood

	Economic, Occupational Attributes	Criminality, Legal Status Attributes	Legislative, Policy, Government Attributes	Demographic, Sociocultural Attributes	Geographic Attributes	Scale and Pace Attributes
17	hawker	failed	commissioner	couple	british	flow
18	impoverished	false	committee	culture	bulgarian	further
19	jobless	fraud	court	descent	burmese	heavy
20	labour	fraudulent	debate	determination	burundian	high
21	labourer	gang	decision	disabled	cambodian	horde
22	low-skilled	genuine	department	education	canadian	huge
23	owner	illegal	desk	experience	caribbean	incoming
24	penniless	jailed	director	family	chechen	inflow
25	picker	legal	document	father	chilean	influx
26	poor	legitimate	enforcement	female	chinese	intake
27	professional	non-genuine	file	founder	commonwealth	invasion
28	qualified	offender	form	gay	congolese	large-scale
29	rich	overstay	hearing	generation	croatian	limited
30	scrounger	phoney	judge	gipsy	cuban	limitless
31	seller	police	law	girl	cyriot	low
32	shopkeeper	potential	lawyer	grandfather	czech	many
33	skilled	prisoner	legislation	grandparent	dutch	mass
34	tailor	prostitute	minister	gypsy	eastern	massive
35	teacher	racket	ministry	hispanic	egyptian	more
36	trader	racketeer	offence	history	eritrean	net
37	unemployed	rapist	office	hiv-positive	ethiopian	new
38	unemployment	real	officer	homosexual	eu	number
39	unskilled	refusal	official	household	european	open
40	vulnerable	resident	policy	husband	french	open-door
41	wealthy	ring	procedure	hutu	georgian	out-of-control
42	work	scam	process	influence	german	outflow
43	worker	smuggler	programme	islamic	ghanaian	population
44	workforce	smuggling	protection	jewish	greek	pressure
45	writer	status	quota	kid	haitian	quota
46		successful	record	latino	hungarian	rampant
47		terrorist	reform	leader	indian	rapid
48		trafficker	regulation	lesbian	indo-chinese	recent
49		true	request	lone	iranian	significant
50		unauthorised	rule	male	iraqi	stock
51		undocumented	rules	man	irish	stream
52		unlawful	ruling	mentality	italian	substantial
53		unsuccessful	scandal	minority	jamaican	surge
54		unwanted	scheme	moslem	japanese	target
55		victim	service	most	korean	thousand
56		violation	spokesman	mother	kosovan	tide
57		visa	system	mum	kosovar	unbridled

	Economic, Occupational Attributes	Criminality, Legal Status Attributes	Legislative, Policy, Government Attributes	Demographic, Sociocultural Attributes	Geographic Attributes	Scale and Pace Attributes
58		would-be	tribunal	muslim	kurdish	unchecked
59				neighbour	kuwaiti	uncontrolled
60				origin	lebanese	unfettered
61				orphan	liberian	unlimited
62				parent	lithuanian	unprecedented
63				people	mexican	unrestricted
64				political	moroccan	wave
65				politics	mozambican	widespread
66				pregnant	nicaraguan	
67				protestant	nigerian	
68				pupil	non-eu	
69				race	non-european	
70				rohingya	norwegian	
71				roma	pakistani	
72				shia	palestinian	
73				sikh	polish	
74				single	portuguese	
75				society	romanian	
76				solidarity	russian	
77				son	rwandan	
78				song	senegalese	
79				staff	serbian	
80				struggle	slovak	
81				student	somali	
82				student	soviet	
83				tale	spanish	
84				tamil	sri lankan	
85				teenage	sudanese	
86				teenager	swedish	
87				tradition	syrian	
88				tutsi	tibetan	
89				unaccompanied	timorese	
90				vote	tunisian	
91				voter	turkish	
92				white	ugandan	
93				wife	ukrainian	
94				woman	us	
95				women	uzbek	
96				young	vietnamese	
97				youngster	yugoslav	
98				youth	zairean	

Appendix B: Chapter 3

List of Real-World Events, 1985-2015

Table 22 displays all of the events included as ‘real-world events’ in the time series modelling. This list uses and expands upon the events used in McLaren, Boomgaarden, and Vliegenthart (2017).

Table 22. Real-World Events Between 1 January 1985 and 31 December 2015

DATE	EVENT
6 October 1985	Broadwater Farm riots (London)
1 January 1986	EU Enlargement (Spain and Portugal)
21 December 1988	Lockerbie bombing, Pan Am Flight 103
2-4 August 1990	Invasion of Kuwait
3 October 1990	EU Enlargement (East and West Germany join to form Germany)
17 January to 28 February 1991	Operation Desert Storm
26-27 July 1994	Israeli Embassy bombing by Palestinians
1 January 1995	EU Enlargement (Austria, Sweden, Finland)
13 December 1995	Brixton riots
June 1997	Abolishment of the Primary Purpose rule for spouses
24 March-11 June 1999	NATO bombing campaign (including British involvement) in the Kosovo War
April 1999	David Copeland bombings in London
11 November 1999	Immigration and Asylum Act
26 May 2001	Oldham riots
5 June 2001	Harehills riots
22–24 June 2001	Burnley riots
7-9 July 2001	Bradford Riots
11 September 2001	9/11
7 October 2001-17 December 2001	US invasion of Afghanistan
7 November 2002	Nationality, Immigration and Asylum Act
14 February 2003	Key census data release: figures reveal an increase in the percentage of ethnic minorities from 6% to 9%, that Muslims were the 2 nd biggest religious group, and that in some areas of London, ethnic minorities made up the majority of the population. This was covered heavily by The Times and Daily Mail, for instance.
11 March 2004	Madrid train bombings
17-18 March 2004	Violence and unrest in Kosovo

DATE	EVENT
1 May 2004	EU Enlargement (including Poland)
22 July 2004	Asylum and Immigration Act 2004: Section 19 dealt with the problem of so-called 'sham marriages'
7 July 2005	London bombings
22-23 October 2005	Birmingham riots
30 March 2006	Immigration, Asylum and Nationality Act 2006
1 January 2007	EU Enlargement (Bulgaria and Romania)
30 June 2007	Glasgow International Airport attack by Islamist extremists
30 October 2007	UK Borders Act 2007: provides immigration officers with several police-like powers, such as detention, entry, search and seizure
9 June 2008	UK announces increase in British troops in Afghanistan
May 2009-November 2015	Quarterly migration statistics releases (in February, May, August, November)
21 July 2009	Borders, Citizenship and Immigration Act 2009
23 November 2010	Level of the immigration cap on skilled migrants from outside Europe announced by Home Secretary Theresa May
6-11 August 2011	England riots across London following the death of Mark Duggan
9 July 2012	Implementation of minimum income threshold of £18,600 for spousal/family visas
22 May 2013	Lee Rigby attacks
1 July 2013	EU Enlargement (Croatia)
1 January 2014	Lifting of UK transitional labour controls for Bulgarians and Romanians
14 May 2014	Immigration Act 2014
18 April 2015	Lampedusa migrant drownings (750 dead)
3 September 2015	Aylan (Alan) Kurdi photos published in global media
5 December 2015	Leytonstone Tube Station attack

Replication of ARIMA Models Accounting for Monthly Circulations

Table 23 and **Table 24** display the ARIMA models testing for a first-level agenda-setting relationship between salience of immigration coverage and public concern, but accounting for monthly circulation figures provided by the Audit Bureau of Circulations (ABC). This is mentioned in footnote 9 in Chapter 3. Although the results still demonstrate that there is not a significant relationship between these two variables, it is worth mentioning that the coefficient sizes for midmarkets and tabloids do increase in line with their larger circulation rates.

Table 23. How News Salience Relates to Public Concern by Press Subset, Accounting for Circulation Figures, 2001-15

Media Variable	Model S1: All Press	Models S2A-C: Press Subsets		
		S2A: Broadsheets	S2B: Midmarkets	S2C: Tabloids
Migration news salience, L1	—	-0.73 (3.73)	2.22 (2.81)	4.30 (3.16)
Constant	—	0.17 (0.27)	0.14 (0.26)	0.14 (0.25)
ARMA				
MA, L1	—	-0.41** (0.09)	-0.44** (0.09)	-0.44** (0.09)
AIC	—	907.74	907.10	905.97
BIC	—	919.78	909.14	918.01
Log-likelihood	—	-449.87	-449.55	-448.99
LBQ	—	18.90	17.79	17.37
<i>N</i>	—	150	150	150

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Table 24. How News Salience Relates to Public Concern by Press Subset, with Controls and Accounting for Circulation Figures, 2001-15

Media Variable	Model S3: All Press	Models S4A-C: Press Subsets		
		S4A: Broadsheets	S4B: Midmarkets	S4C: Tabloids
Migration news salience, L1	—	1.13 (4.39)	3.18 (2.98)	4.95 (3.65)
Control Variables				
Unemployment, L1	—	-3.99 (4.16)	-4.00 (4.02)	-3.91 (9.97)
Asylum apps (thousands), L1	—	0.08 (0.83)	0.03 (0.81)	-0.06 (0.82)
Percent foreign-born, L1	—	2.90 (3.14)	3.00 (3.05)	2.94 (3.16)
Labour Party government, L1	—	3.53 (23.74)	3.44 (22.77)	3.15 (24.89)
General Election period, L1	—	-0.44 (2.36)	-0.75 (2.24)	-0.80 (2.30)
Rioting	—	-2.63 (3.80)	-2.54 (3.92)	-2.52 (3.89)
Terrorism attack	—	2.74 (3.61)	2.71 (3.74)	2.62 (3.81)
Foreign war	—	-5.26 (2.82)	-5.74 (2.97)	-5.94 (2.99)
Migration policy change, L1	—	1.07 (2.51)	1.02 (2.68)	0.67 (2.65)
Migration statistics release	—	0.04 (1.11)	0.01 (1.13)	-0.09 (1.12)
Migration-related tragedy	—	-6.12 (14.18)	-5.90 (13.52)	-5.67 (13.00)
EU enlargement, L1	—	0.73 (3.20)	0.37 (2.85)	0.45 (2.68)
Constant	—	0.09 (0.30)	0.05 (0.28)	0.07 (0.29)
ARMA				
MA, L1	—	-0.45** (0.09)	-0.49** (0.09)	-0.47** (0.10)
AIC	—	919.09	917.84	916.96
BIC	—	967.26	966.01	965.13
Log-likelihood	—	-443.55	-442.92	-442.48
LBQ	—	23.10	23.00	21.93
<i>N</i>	—	150	150	150

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Table 25. How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, Accounting for Circulation Figures, 2001-15

	Model S5: Aspects Emphasised (<i>all press</i>)	Models S6A and S6B: Ideology	
		S6A: Left-Leaning (<i>Guardian and Mirror</i>)	S6B: Right-Leaning (<i>five papers</i>)
Media Variables			
Economy and work, L1	—	0.06 (0.94)	-0.02 (0.35)
Crime and illegality, L1	—	-0.29 (0.60)	-0.03 (0.10)
Legislation and policy, L1	—	-0.69 (0.48)	-0.14 (0.11)
Sociocultural aspects, L1	—	1.70 (1.01)	0.83** (0.25)
Geographic aspects, L1	—	-1.23 (0.92)	0.14 (0.15)
Scale and pace, L1	—	1.53 (0.91)	0.12 (0.19)
Constant	—	0.25 (0.26)	0.12 (0.27)
ARMA			
MA, L1	—	-0.37** (0.10)	-0.41** (0.10)
AIC	—	919.98	908.37
BIC	—	947.20	935.47
Log-likelihood	—	-450.99	-445.19
LBQ	—	19.24	19.40
<i>N</i>	—	152	150

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Table 26. How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, with Controls and Accounting for Circulation Figures, 2001-15

Media Variables	Model S7: Aspects Emphasised (all press)	Models S8A and S8B: Ideology	
		S8A: Left-Leaning (Guardian and Mirror)	S8B: Right-Leaning (five papers)
Economy and work, L1	—	0.10 (1.16)	0.02 (0.43)
Crime and illegality, L1	—	-0.03 (0.77)	0.01 (0.12)
Legislation and policy, L1	—	-0.90 (0.56)	-0.14 (0.12)
Sociocultural aspects, L1	—	1.50 (1.24)	0.66* (0.29)
Geographic aspects, L1	—	-1.24 (1.16)	0.14 (0.26)
Scale and pace, L1	—	1.87* (0.94)	0.17 (0.23)
Control Variables			
Unemployment, L1	—	-4.87 (4.47)	-3.79 (4.25)
Asylum apps (thousands), L1	—	0.27 (0.83)	0.05 (0.86)
Percent foreign-born, L1	—	3.34 (3.42)	1.93 (3.15)
Labour Party government, L1	—	4.64 (23.02)	4.06 (13.47)
General Election period, L1	—	-0.33 (2.47)	-0.68 (2.60)
Rioting	—	-3.24 (3.56)	-2.44 (3.66)
Terrorism attack	—	1.55 (3.34)	1.78 (4.00)
Foreign war	—	-3.40 (2.94)	-5.77 (3.13)
Migration policy change, L1	—	0.78 (2.16)	0.66 (2.31)
Migration statistics release	—	0.38 (1.03)	0.07 (1.12)
Migration-related tragedy	—	-7.57 (14.63)	-6.20 (12.58)
EU enlargement, L1	—	2.54 (3.40)	0.23 (4.02)
Constant	—	0.15 (0.33)	0.09 (0.31)
ARMA			
MA, L1	—	-0.40** (0.12)	-0.44** (0.11)
AIC	—	929.42	920.83
BIC	—	992.92	984.05
Log-likelihood	—	-443.71	-439.41
LBQ	—	21.14	21.77
<i>N</i>	—	152	150

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Replication of ARIMA Models Accounting for Different Migrant Groups

These tables test whether the salience of specific migrant groups is more strongly associated with changes in public concern. They demonstrate how differentiating salience by migrant group, a feature that corpus methods enable, still does not reveal significant relationships between first-level agendas in the press and changes in public concern. The only case of marginal significance involves mentions of ‘(im)migration’ or ‘(im)migrant(s)’ in midmarkets (Model S9A), which has a *p*-value of 0.06.

Table 27. How Tabloid Salience of Migrant Groups Relates to Public Concern by Press Subset, 2001-15

Media Variable	Models S8A-C: Migrant Reference Group		
	S8A: (Im)migration, (Im)migrant(s)	S8B: Asylum-Seekers	S8C: Refugees
Migration news salience, L1	4.21 (3.14)	0.82 (1.26)	1.28 (2.52)
Constant	0.16 (0.26)	0.18 (0.26)	0.17 (0.26)
ARMA			
MA, L1	-0.40** (0.09)	-0.41** (0.09)	-0.40** (0.09)
AIC	946.22	947.71	947.61
BIC	958.42	959.91	959.81
Log-likelihood	-469.11	-469.86	-469.81
LBQ	23.45	23.81	23.92
<i>N</i>	156	156	156

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Table 28. How Midmarket Salience of Migrant Groups Relates to Public Concern by Press Subset, 2001-15

Media Variable	Models S9A-C: Migrant Reference Group		
	S9A: (Im)migration, (Im)migrant(s)	S9B: Asylum-Seekers	S9C: Refugees
Migration news salience, L1	2.40 (1.28)	0.23 (0.41)	1.10 (1.68)
Constant	0.13 (0.25)	0.18 (0.26)	0.16 (0.27)
ARMA			
MA, L1	-0.45** (0.09)	-0.41** (0.09)	-0.41** (0.09)
AIC	944.32	947.65	947.49
BIC	956.52	959.85	959.68
Log-likelihood	-468.16	-469.82	-469.74
LBQ	23.89	24.54	24.43
N	156	156	156

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Table 29. How Broadsheet Salience of Migrant Groups Relates to Public Concern by Press Subset, 2001-15

Media Variable	Models S10A-C: Migrant Reference Group		
	S10A: (Im)migration, (Im)migrant(s)	S10B: Asylum-Seekers	S10C: Refugees
Migration news salience, L1	0.17 (1.30)	-0.23 (0.75)	-0.46 (1.46)
Constant	0.17 (0.27)	0.18 (0.27)	0.19 (0.29)
ARMA			
MA, L1	-0.40** (0.09)	-0.38** (0.09)	-0.39** (0.09)
AIC	948.01	947.91	947.79
BIC	960.21	960.11	959.99
Log-likelihood	-470.00	-469.95	-469.89
LBQ	31.20	31.49	31.65
N	156	156	156

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

ARFIMA Modelling for the 2001-15 Period

Table 30 displays the ARFIMA model results for 2001-15, including controls.

Table 30. An ARFIMA Model of How Second-Level Agendas Relate to Public Concern by Newspaper Ideology, with Controls, 2001-15

	Model S11: Aspects Emphasised (all press)	Models S12A and S12B: Ideology	
		S12A: Left-Leaning (Guardian and Mirror)	S12B: Right-Leaning (five papers)
Media Variables			
Economy and work, L1	-0.05 (0.20)	-0.01 (0.13)	0.06 (0.20)
Crime and illegality, L1	0.12 (0.09)	0.03 (0.10)	0.08 (0.07)
Legislation and policy, L1	-0.14 (0.08)	-0.13 (0.08)	-0.10 (0.06)
Sociocultural aspects, L1	0.35 (0.25)	0.14 (0.19)	0.32 (0.21)
Geographic aspects, L1	-0.24* (0.09)	-0.22* (0.10)	-0.13 (0.10)
Scale and pace, L1	0.22 (0.12)	0.31** (0.11)	0.09 (0.10)
Control Variables			
Unemployment, L1	-4.18** (1.25)	-4.36** (1.27)	-3.90** (1.20)
Asylum apps (thousands), L1	-0.28 (0.61)	-0.11 (0.61)	-0.44 (0.61)
Percent foreign-born, L1	4.51** (1.18)	4.72** (1.19)	3.79** (1.16)
Labour Party government, L1	3.54 (3.32)	3.68 (3.38)	2.78 (3.27)
General Election period, L1	-0.47 (1.92)	0.27 (1.93)	-0.04 (1.96)
Rioting	-2.37 (2.07)	-2.42 (2.08)	-2.63 (2.13)
Terrorism attack	0.96 (1.69)	0.59 (1.62)	0.45 (1.70)
Foreign war	-3.19 (2.16)	-3.46 (2.16)	-4.07 (2.23)
Migration policy change, L1	0.40 (1.51)	0.20 (1.51)	0.77 (1.54)
Migration statistics release	0.21 (0.77)	0.32 (0.77)	0.32 (0.79)
Migration-related tragedy	-3.16 (3.00)	-1.57 (2.87)	-1.63 (3.35)
EU enlargement, L1	1.29 (2.27)	0.50 (2.24)	0.65 (2.36)
Constant	5.47 (16.04)	4.76 (16.38)	12.20 (15.38)
ARFIMA			
MA, L1	0.19 (0.10)	0.17 (0.09)	0.20 (0.11)
<i>d</i>	0.43** (0.07)	0.43** (0.07)	0.39** (0.09)
AIC	1077.24	1078.71	1076.01
BIC	1147.48	1148.96	1146.14
Log-likelihood	-516.62	-517.36	-516.01
LBQ	28.33	29.20	25.26
<i>N</i>	180	180	179

Note: MA = Moving Average; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LBQ = Ljung-Box (Q-statistic) Test. * $p \leq .05$; ** $p \leq .01$

Appendix C: Chapter 4

Research Design

In this section, I provide the full conjoint design. First, I present the whole scheme.

Then, I provide screenshots of how the experiment actually appeared to respondents.

Introductory Statement (varied only at the respondent level and visible for all trials undertaken by the same individual)

The issue of immigration is important for the British public.

OR

The issue of mass immigration is important for the British public. As more migrants have arrived, immigration levels have rapidly risen.

Instruction Statement

Please read the descriptions of the two people carefully. Then, indicate which person you would personally prefer to have admitted to Britain.

Vignette Template (first sentence position held constant, with remaining sentences appearing in randomised order; the order is then fixed per respondent across each trial)

Person [1/2] is a(n) [age] [origin] [‘asylum-seeker’ if stated reason for entry is ‘to escape religious or political persecution’; ‘immigrant’ for all else]. (She/he) has [education]. (She/he) [stated reason for entry]. (She/he) is currently [job]. (She/he) is [religion]. (She/he) speaks [language skills] English.

Notes:

Gender pronoun (*she/he*) based on sex dimension

Exclusions to random allocation:

- (1) If origin = ‘Iranian’, then religion = ‘Muslim’ or ‘Not Religious’
- (2) If origin = ‘Romanian’ or ‘Polish’, then religion = ‘Christian’ or ‘Not Religious’
- (3) If stated reason for entry = ‘to escape religious or political persecution’, then origin = ‘Iranian’, ‘Nigerian’, ‘Pakistani’, or ‘Indian’
- (4) If job = ‘skilled’, ‘computer programmer’, or ‘doctor’, then education = ‘a university degree’ or ‘a postgraduate degree’
- (5) If language skills = ‘little’ or ‘no’, then origin cannot = ‘Australian’ or ‘Irish’

[DV1] *If you had to choose between them, which of these two people should be given priority to come to Great Britain?*

Person 1

Person 2

[DV2] *Here are the descriptions again. Now, please think more generally about people like those in the profiles.*

On a scale from 0 to 10, how would you rate the impact of people like Person 1 and Person 2 on the British economy? 0 indicates a very negative impact and 10 indicates a very positive impact.

Person 1: 0 1 2 3 4 5 6 7 8 9 10

Person 2: 0 1 2 3 4 5 6 7 8 9 10

[DV3] *On a scale from 0 to 10, how would you rate the impact of people like Person 1 and Person 2 on British society and culture? 0 indicates a very negative impact and 10 indicates a very positive impact.*

Person 1: 0 1 2 3 4 5 6 7 8 9 10

Person 2: 0 1 2 3 4 5 6 7 8 9 10

YouGov

The issue of immigration is important for the British public.

Please read the descriptions of the two people carefully. Then, indicate which person you would personally prefer to have admitted to Britain.


Person 1
Person 1 is a 30 year old non-EU immigrant. He is Muslim. He has come here to seek a better job in Britain. He is currently a teacher. He speaks good English. He has vocational training.

Person 2
Person 2 is an older non-EU immigrant. He is not religious. He has come here to join family already in Britain. He is currently unemployed. He speaks no English. He has a postgraduate degree.

If you had to choose between them, which of these two people should be given priority to come to Great Britain?

Person 1

Person 2



Here are the descriptions again. Now, please think more generally about people like those in the profiles.

Person 1

Person 1 is a 30 year old non-EU immigrant. He is Muslim. He has come here to seek a better job in Britain. He is currently a teacher. He speaks good English. He has vocational training.

Person 2

Person 2 is an older non-EU immigrant. He is not religious. He has come here to join family already in Britain. He is currently unemployed. He speaks no English. He has a postgraduate degree.

On a scale from 0 to 10, how would you rate the impact of people like Person 1 and Person 2 **on the British economy**? 0 indicates a very negative impact and 10 indicates a very positive impact.

	0 - Very negative	1	2	3	4	5	6	7	8	9	10 - Very positive
Person 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Person 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On a scale from 0 to 10, how would you rate the impact of people like Person 1 and Person 2 **on British society and culture**? 0 indicates a very negative impact and 10 indicates a very positive impact.

	0 - Very negative	1	2	3	4	5	6	7	8	9	10 - Very positive
Person 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Person 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



The previous questions were for an academic experiment carried out on behalf of an academic at Oxford University looking at attitudes towards immigration. Different respondents would have seen profiles of people with different characteristics. Thank you for taking part in these questions, please click the arrow to continue.



Robustness Check: Full Sample Analysis

This section replicates the main effects analysis using the entire sample, including those respondents who were born outside the UK. The overall means for immigrants' perceived economic and sociocultural benefit are slightly different from the UK born-only sample: here, they are 6.67 and 6.49 respectively.

Figure 22. How Immigrant Attributes Impact Admission Preferences, Full Sample

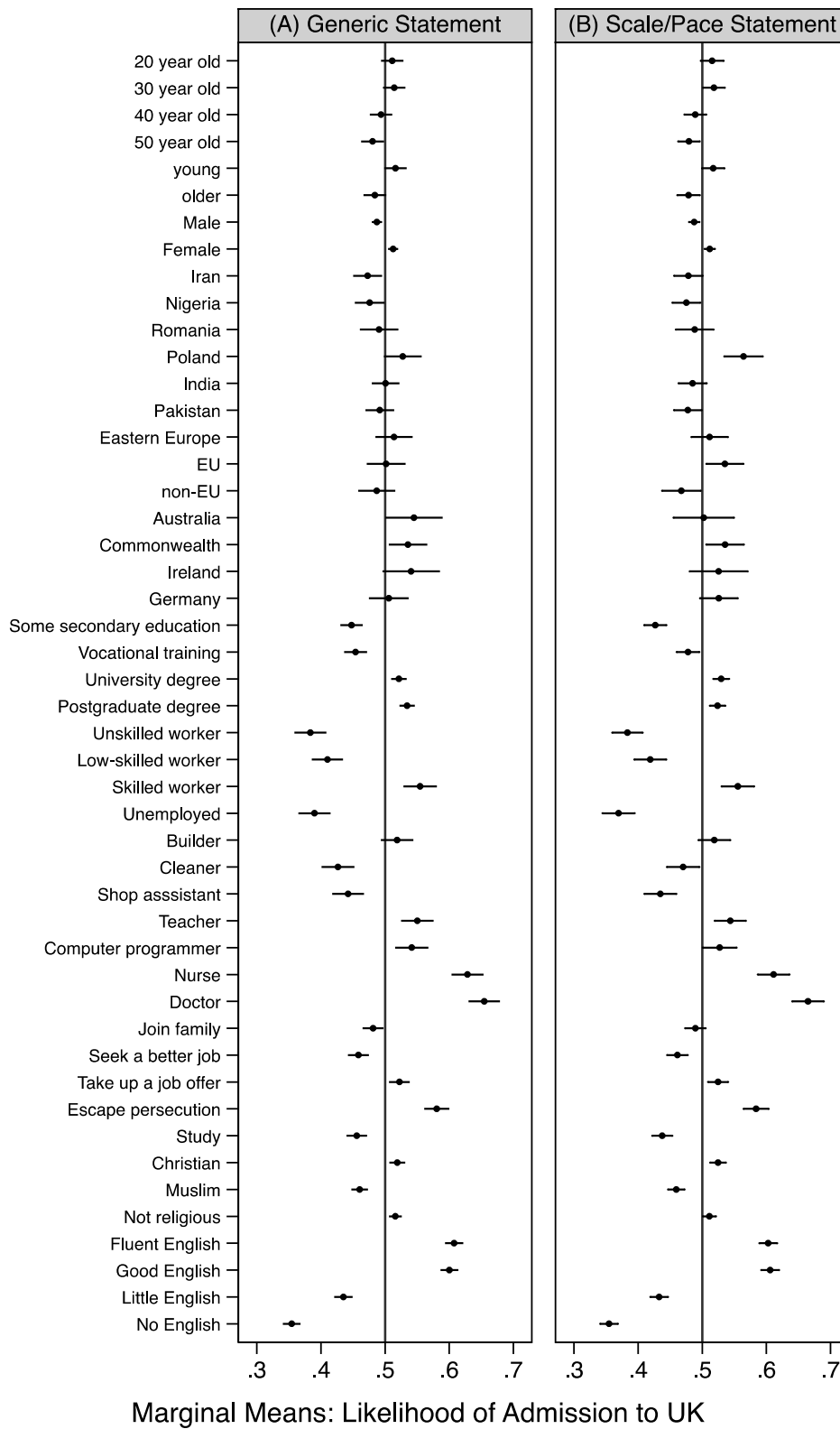


Figure 23. How Immigrant Attributes Impact Perceptions of Economic Benefit, Full Sample

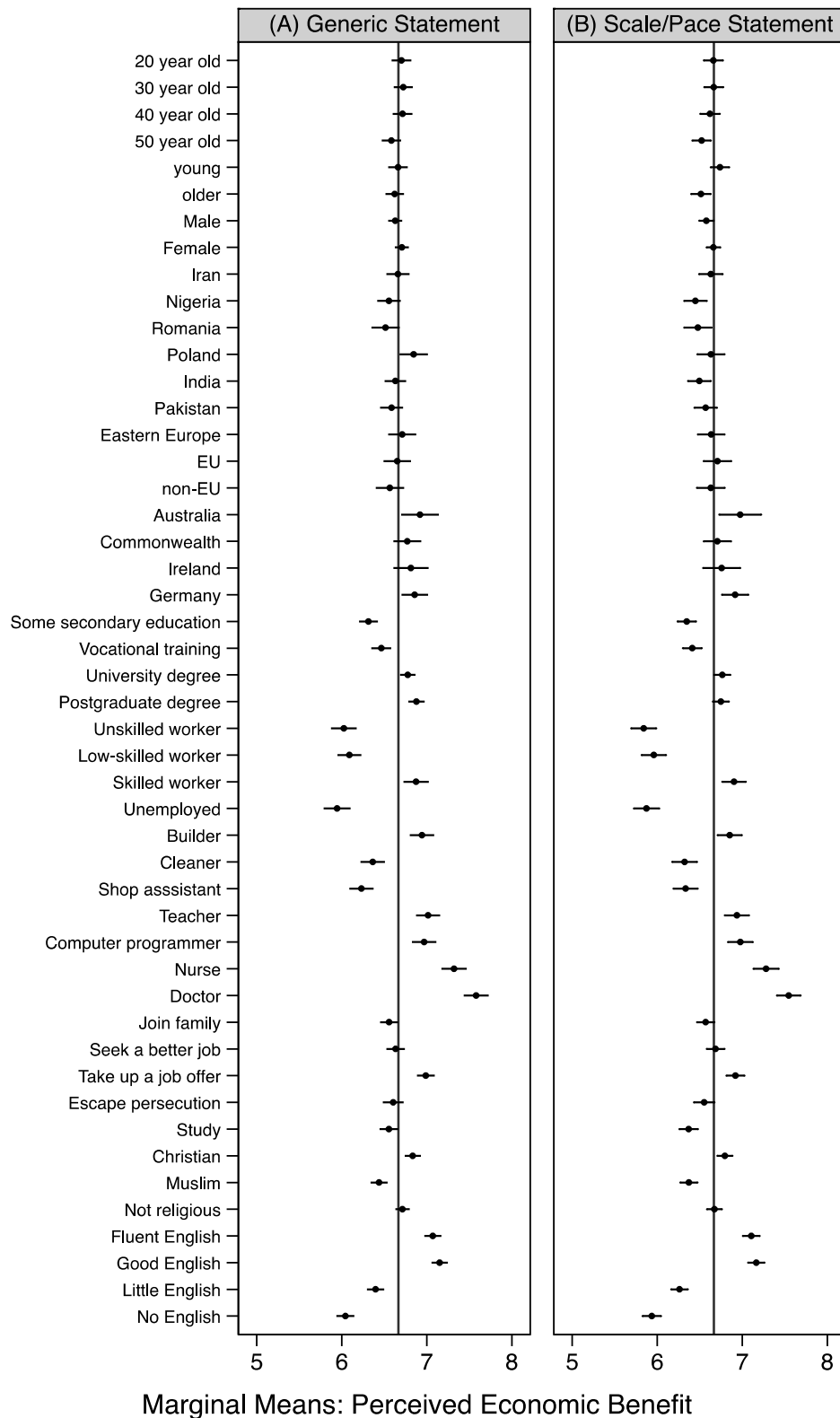
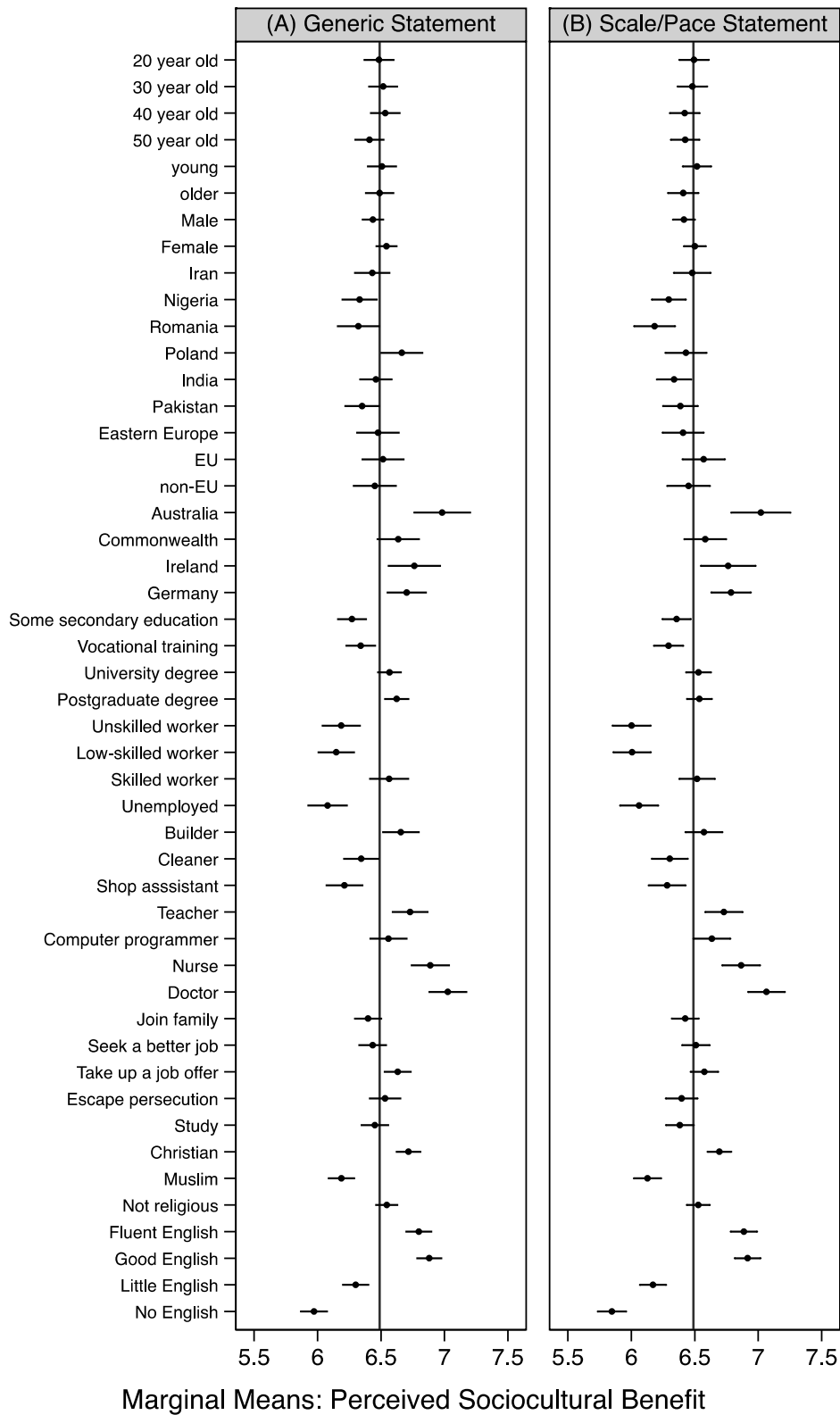


Figure 24. How Immigrant Attributes Impact Perceptions of Social and Cultural Benefit, Full Sample



Full Regression Results: Average Marginal Component Estimates (AMCEs)

This section provides the AMCE measures typically reported in conjoint experiments (Hainmueller, Hopkins, and Yamamoto 2014). Each dimension reports the results compared to its reference category, which is why each dimension is missing one attribute. For example, the results for the ‘age’ dimension are compared to the reference category ‘20 year-old’ in each condition. As discussed in the main text, they should not be interpreted as representing absolute preferences for each attribute, but rather as preferences *relative to the reference group*.

Table 31. AMCEs for Likelihood of Admission

Attribute	(A) Generic Statement	(B) Scale/Pace Statement
30 year-old	0.007 (0.014)	0.001 (0.014)
40 year-old	-0.012 (0.014)	-0.027 (0.014)
50 year-old	-0.021 (0.014)	-0.041** (0.014)
young	0.009 (0.014)	0.000 (0.014)
older	-0.023 (0.014)	-0.031* (0.014)
Female	0.025** (0.008)	0.021** (0.008)
Nigeria	-0.000 (0.018)	-0.003 (0.017)
Romania	0.014 (0.021)	0.0101 (0.021)
Poland	0.055** (0.021)	0.084*** (0.021)
India	0.034* (0.017)	0.007 (0.017)
Pakistan	0.016 (0.017)	-0.005 (0.017)
Eastern Europe	0.037 (0.020)	0.035 (0.021)
EU	0.022 (0.021)	0.054** (0.020)
non-EU	0.009 (0.020)	-0.021 (0.021)
Australia	0.075** (0.027)	0.028 (0.029)
Commonwealth	0.063** (0.021)	0.068*** (0.020)
Ireland	0.063* (0.027)	0.048 (0.028)
Germany	0.037 (0.022)	0.059** (0.021)
Vocational training	-0.001 (0.014)	0.047*** (0.013)
University degree	0.072*** (0.013)	0.103*** (0.013)
Postgraduate degree	0.087*** (0.013)	0.097*** (0.013)
Low-skilled worker	0.029 (0.019)	0.040* (0.019)
Skilled worker	0.169*** (0.020)	0.184*** (0.019)
Unemployed	0.009 (0.019)	-0.010 (0.019)
Builder	0.133*** (0.020)	0.141*** (0.019)
Cleaner	0.043* (0.019)	0.094*** (0.019)
Shop assistant	0.059** (0.019)	0.062*** (0.019)
Teacher	0.169*** (0.019)	0.170*** (0.019)
Computer programmer	0.162*** (0.020)	0.149*** (0.020)
Nurse	0.249*** (0.020)	0.235*** (0.019)
Doctor	0.270*** (0.019)	0.290*** (0.019)
Seek a better job	-0.019 (0.013)	-0.034** (0.013)
Take up a job offer	0.050*** (0.013)	0.037** (0.013)
Escape persecution	0.105*** (0.015)	0.090*** (0.015)
Study	-0.017 (0.013)	-0.053*** (0.013)
Muslim	-0.061*** (0.012)	-0.068*** (0.011)
Not religious	-0.001 (0.010)	-0.017 (0.010)
Good English	-0.006 (0.012)	-0.002 (0.012)
Little English	-0.176*** (0.012)	-0.173*** (0.012)
No English	-0.253*** (0.012)	-0.254*** (0.012)
R ²	0.1092	0.1110
N	13,146 (2,191 respondents)	13,524 (2,254 respondents)

Note: Adjusted robust standard errors appear in brackets. * p ≤ .05; ** p ≤ .01; *** p ≤ 0.001

Table 32. AMCEs for Perceptions of Economic Benefit

Attribute	(A) Generic Statement	(B) Scale/Pace Statement
30 year-old	0.031 (0.071)	-0.010 (0.068)
40 year-old	0.052 (0.071)	-0.046 (0.072)
50 year-old	-0.090 (0.071)	-0.148* (0.070)
young	-0.028 (0.071)	0.056 (0.069)
older	-0.064 (0.071)	-0.157* (0.071)
Female	0.086* (0.041)	0.078 (0.041)
Nigeria	-0.112 (0.089)	-0.142 (0.089)
Romania	-0.139 (0.107)	-0.085 (0.105)
Poland	0.183 (0.106)	0.039 (0.104)
India	-0.056 (0.085)	-0.113 (0.088)
Pakistan	-0.123 (0.089)	-0.043 (0.088)
Eastern Europe	0.081 (0.103)	0.073 (0.104)
EU	-0.007 (0.101)	0.047 (0.105)
non-EU	-0.101 (0.106)	0.020 (0.105)
Australia	0.278* (0.131)	0.363* (0.145)
Commonwealth	0.088 (0.103)	0.116 (0.105)
Ireland	0.202 (0.124)	0.178 (0.132)
Germany	0.178 (0.102)	0.260* (0.103)
Vocational training	0.159* (0.069)	0.033 (0.067)
University degree	0.461*** (0.063)	0.405*** (0.065)
Postgraduate degree	0.569*** (0.064)	0.393*** (0.066)
Low-skilled worker	0.092 (0.099)	0.113 (0.096)
Skilled worker	0.836*** (0.100)	1.041*** (0.098)
Unemployed	-0.101 (0.105)	0.053 (0.100)
Builder	0.906*** (0.099)	1.003*** (0.098)
Cleaner	0.357*** (0.101)	0.468*** (0.096)
Shop assistant	0.168 (0.098)	0.496*** (0.097)
Teacher	1.016*** (0.099)	1.097*** (0.099)
Computer programmer	0.978*** (0.101)	1.136*** (0.098)
Nurse	1.307*** (0.104)	1.453*** (0.100)
Doctor	1.570*** (0.102)	1.723*** (0.100)
Seek a better job	0.065 (0.065)	0.139* (0.063)
Take up a job offer	0.432*** (0.065)	0.376*** (0.063)
Escape persecution	0.072 (0.072)	0.031 (0.072)
Study	-0.015 (0.065)	-0.159* (0.063)
Muslim	-0.379*** (0.058)	-0.418*** (0.056)
Not religious	-0.100* (0.050)	-0.114* (0.048)
Good English	0.086 (0.054)	0.047 (0.055)
Little English	-0.667*** (0.060)	-0.852*** (0.059)
No English	-0.995*** (0.065)	-1.175*** (0.065)
R ²	0.1118	0.1243
N	13,146 (2,191 respondents)	13,524 (2,254 respondents)

Note: Adjusted robust standard errors appear in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

Table 33. AMCEs for Perceptions of Sociocultural Benefit

Attribute	(A) Generic Statement	(B) Scale/Pace Statement
30 year-old	0.016 (0.072)	-0.026 (0.068)
40 year-old	0.060 (0.073)	-0.078 (0.073)
50 year-old	-0.069 (0.073)	-0.083 (0.070)
young	0.006 (0.072)	0.013 (0.069)
older	-0.002 (0.073)	-0.109 (0.073)
Female	0.109** (0.041)	0.082* (0.040)
Nigeria	-0.089 (0.090)	-0.153 (0.090)
Romania	-0.122 (0.107)	-0.242* (0.105)
Poland	0.230* (0.106)	-0.005 (0.103)
India	-0.006 (0.088)	-0.124 (0.089)
Pakistan	-0.119 (0.089)	-0.088 (0.088)
Eastern Europe	0.082 (0.106)	-0.029 (0.104)
EU	0.071 (0.106)	0.051 (0.106)
non-EU	-0.014 (0.107)	0.007 (0.107)
Australia	0.549*** (0.135)	0.570*** (0.141)
Commonwealth	0.187 (0.105)	0.098 (0.107)
Ireland	0.398*** (0.125)	0.348** (0.132)
Germany	0.251* (0.105)	0.261** (0.103)
Vocational training	0.066 (0.068)	-0.076 (0.067)
University degree	0.288*** (0.065)	0.162* (0.064)
Postgraduate degree	0.344*** (0.066)	0.180** (0.064)
Low-skilled worker	0.002 (0.102)	0.004 (0.096)
Skilled worker	0.383*** (0.102)	0.516*** (0.097)
Unemployed	-0.115 (0.105)	0.068 (0.099)
Builder	0.474*** (0.099)	0.578*** (0.098)
Cleaner	-0.145 (0.101)	0.308*** (0.095)
Shop assistant	-0.003 (0.098)	0.294** (0.099)
Teacher	0.560*** (0.099)	0.774*** (0.099)
Computer programmer	0.407*** (0.102)	0.657*** (0.097)
Nurse	0.707*** (0.104)	0.885*** (0.099)
Doctor	0.869*** (0.103)	1.098*** (0.100)
Seek a better job	0.011 (0.065)	0.108 (0.063)
Take up a job offer	0.219*** (0.066)	0.172** (0.063)
Escape persecution	0.125 (0.073)	0.012 (0.073)
Study	0.028 (0.065)	-0.001 (0.062)
Muslim	-0.506*** (0.060)	-0.562*** (0.058)
Not religious	-0.154** (0.053)	-0.160*** (0.049)
Good English	0.072 (0.056)	0.021 (0.056)
Little English	-0.515*** (0.060)	-0.701*** (0.060)
No English	-0.828*** (0.065)	-1.036*** (0.066)
R ²	0.0609	0.0771
N	13,146 (2,191 respondents)	13,524 (2,254 respondents)

Note: Adjusted robust standard errors appear in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

Appendix D: Chapter 5

Research Design

In this section, I provide the full experimental design. First, I present the whole scheme. Then, I provide screenshots of how the experiment actually appeared to respondents.

Instruction Statement

Here's a short article from a British newspaper. Please read it carefully, as we'll ask some questions about it later.

Conditions (each respondent is randomly allocated to one of the nine conditions)

True Control (No Info): *Go directly to post-treatment questions.*

Control (Economic, No Info):

Britain's debate about immigration's economic impact should change

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU have a positive effect on the British economy. Many come here to work or study, and they contribute to the economy.

The more recent arrivals among them also pay more into state coffers than they get.

The overall effect on the economy, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider reality, and not dismiss public concerns about how the country is changing.

Control (Cultural, No Info):

Britain's debate about immigration's social impact should change

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU have a positive effect on British society and culture. Many identify as British, and the recent arrivals among them speak English well.

Ethnic minorities also take part in British traditions like wearing poppies. And they want to do more to fit in.

The overall effect on society, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider reality, and not dismiss public concerns about how the country is changing.

Treatment 1 (Economic, Numerical Information):

Britain's debate about immigration's economic impact should include more data

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU have a positive effect on the British economy. 77% of them come here to work or study, with overseas students contributing about £4.9 billion per year nationally.

The more recent arrivals among them also pay £5.2 billion more into state coffers than they get.

The overall effect on the economy, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider hard numbers, and not dismiss public concerns about how the country is changing.

Treatment 2 (Cultural, Numerical Information)

Britain's debate about immigration's social impact should include more data

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU have a positive effect on British society and culture. 43% of them identify as British, and 90% of the recent arrivals among them speak English well.

Ethnic minorities also take part in British traditions: 61% wear poppies. And 72% want to do more to fit in.

The overall effect on society, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider hard numbers, and not dismiss public concerns about how the country is changing.

Treatment 3 (Economic, Narrative Info):

Britain's debate about immigration's economic impact should include more migrant stories like my own

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU like me have a positive effect on the British economy. I personally came here to work in the area, while others I know arrived to study.

And what do I do now?

I spend my money in the area, trying to support our shops. As a more recent arrival, I also pay more into state coffers than I get.

The overall effect on the economy, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider local migrants' stories like my own, and not dismiss public concerns about how the country is changing.

Treatment 4 (Cultural, Narrative Info):

Britain's debate about immigration's social impact should include more migrant stories like my own

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU like me have a positive effect on British society and culture. I personally identify as British, and as a recent arrival I speak English well.

And what do I do now?

I take part in British traditions like wearing a poppy, and, as an ethnic minority, I also want to do more to fit in.

The overall effect on society, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider local migrants' stories like my own, and not dismiss public concerns about how the country is changing.

Treatment 5 (Economic, Hybrid Info):

Britain's debate about immigration's economic impact should include more data and migrant stories like my own

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU have a positive effect on the British economy. I personally came here to work, while others I know arrived to study. Nationally, overseas students contribute about £4.9 billion per year.

The more recent arrivals among them, like me, also pay £5.2 billion more into state coffers than they get. And, typical of many immigrants here, I spend my money in the area, trying to support our shops.

The overall effect on the economy, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider both hard numbers and local migrants' stories like my own, and not dismiss public concerns about how the country is changing.

Treatment 6 (Cultural, Hybrid Info):

Britain's debate about immigration's social impact should include more data and migrant stories like my own

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU like me have a positive effect on British society and culture. I personally identify as British and know the language. Nationally, 90% of recent arrivals from overseas speak English well.

Typical of many immigrants here, I take part in British traditions like wearing a poppy. And 72% of ethnic minorities also want to do more to fit in.

The overall effect on society, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider both hard numbers and local migrants' stories like my own, and not dismiss public concerns about how the country is changing.

Post-Treatment Questions (randomise order of questions 1 and 2 per respondent)

[DV1] *On a scale from 0 to 10, how would you rate the impact of immigrants on the British economy? 0 indicates a very negative impact, and 10 indicates a very positive impact.*

0 1 2 3 4 5 6 7 8 9 10

[DV2] *On a scale from 0 to 10, how would you rate the impact of immigrants on British society and culture? 0 indicates a very negative impact, and 10 indicates a very positive impact.*

0 1 2 3 4 5 6 7 8 9 10

[DV3] *On a scale from 0 to 10, how would you prefer to see immigration levels to Britain changed? 0 indicates decreased a lot, and 10 indicates increased a lot.*

0 1 2 3 4 5 6 7 8 9 10

[4] *On a scale from 0 to 10, how much do you trust the person who wrote the article? 0 indicates not trustworthy at all, and 10 indicates completely trustworthy.*

0 1 2 3 4 5 6 7 8 9 10

Manipulation Check (all respondents except true control group who didn't see a stimulus)

[MC5] *Thinking back to the article you read, how much do you think it used numbers and statistics, or personal stories and experiences? 0 indicates 'did not use at all', and 10 indicates 'used a lot'.*

Numbers and statistics: 0 1 2 3 4 5 6 7 8 9 10
Stories and experiences: 0 1 2 3 4 5 6 7 8 9 10

YouGov

Here's a short article from a British newspaper. Please read it carefully, as we'll ask some questions about it later.

Britain's debate about immigration's economic impact should include more migrant stories like my own

There's no getting around it: immigration remains one of the biggest issues facing the country.

Which shouldn't be surprising, as a lot of immigrants are still entering Britain.

Immigrants who come from outside the EU like me have a positive effect on the British economy. I personally came here to work in the area, while others I know arrived to study.

And what do I do now?

I spend my money in the area, trying to support our shops. As a more recent arrival, I also pay more into state coffers than I get.

The overall effect on the economy, to be sure, depends on where immigrants come from and what backgrounds they have. Politicians ignore this at their own peril.

But repairing Britain's broken immigration system is possible. It will require leaders to consider local migrants' stories like my own, and not dismiss public concerns about how the country is changing.



YouGov

On a scale from 0 to 10, how would you rate the impact of immigrants **on British society and culture**? 0 indicates a very negative impact, and 10 indicates a very positive impact.

Very negative 0 1 2 3 4 5 6 7 8 9 10 Very positive

On a scale from 0 to 10, how would you rate the impact of immigrants **on the British economy**? 0 indicates a very negative impact, and 10 indicates a very positive impact.

Very negative 0 1 2 3 4 5 6 7 8 9 10 Very positive

On a scale from 0 to 10, how would you prefer to see immigration levels to Britain changed? 0 indicates decreased a lot, and 10 indicates increased a lot.

Decreased a lot 0 1 2 3 4 5 6 7 8 9 10 Increased a lot

On a scale from 0 to 10, how much do you trust the person who wrote the article? 0 indicates not trustworthy at all, and 10 indicates completely trustworthy.

Not trustworthy at all 0 1 2 3 4 5 6 7 8 9 10 Completely trustworthy



Thinking back to the article you read, how much do you think it used numbers and statistics, or personal stories and experiences? 0 indicates 'did not use at all', and 10 indicates 'used a lot'.

	0 - Did not use at all	1	2	3	4	5	6	7	8	9	10 - Used a lot
Numbers and statistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stories and experiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



✖

Regression Results for Main Effects

The tables in this section display the regression results corresponding with Figure 19 in the main text.

Table 34. Treatment Effects on Economic Perceptions of Immigration

	Economic Message	Sociocultural Message
No Evidence	0.150 (0.106)	0.191 (0.105)
Numerical Evidence	0.381*** (0.106)	0.346*** (0.103)
Narrative Evidence	0.156 (0.109)	0.214* (0.106)
Both Types	0.175 (0.106)	0.232* (0.104)
R ²	0.0024	0.0020
Adjusted R ²	0.0017	0.0013
<i>N</i>	5,608	5,775

Note: Coefficients show treatment effects compared to the true control which had no message. Standard errors in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

Table 35. Treatment Effects on Sociocultural Perceptions of Immigration

	Economic Message	Sociocultural Message
No Evidence	0.049 (0.115)	0.194 (0.112)
Numerical Evidence	0.140 (0.114)	0.252* (0.110)
Narrative Evidence	0.146 (0.118)	0.178 (0.112)
Both Types	0.039 (0.115)	0.243* (0.111)
R ²	0.0004	0.0012
Adjusted R ²	-0.0003	0.0005
<i>N</i>	5,608	5,775

Note: Coefficients show treatment effects compared to the true control which had no message. Standard errors in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

Table 36. Treatment Effects on Immigration Level Preferences

	Economic Message	Sociocultural Message
No Evidence	0.021 (0.104)	-0.018 (0.104)
Numerical Evidence	0.050 (0.104)	0.009 (0.102)
Narrative Evidence	0.003 (0.107)	0.106 (0.105)
Both Types	0.002 (0.104)	0.088 (0.103)
R ²	0.0001	0.0004
Adjusted R ²	-0.0007	-0.0003
<i>N</i>	5,608	5,775

Note: Coefficients show treatment effects compared to the true control which had no message. Standard errors in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

Robustness Check: Full Sample Analysis

This section replicates the main effects analysis using the full sample including non-UK born respondents. The effect of the sociocultural hybrid message on sociocultural perceptions drops to marginal significance ($p = 0.051$)

Table 37. Treatment Effects on Economic Perceptions of Immigration, Full Sample

	Economic Message	Sociocultural Message
No Evidence	0.155 (0.102)	0.145 (0.102)
Numerical Evidence	0.389*** (0.102)	0.342*** (0.100)
Narrative Evidence	0.159 (0.105)	0.254* (0.102)
Both Types	0.200 (0.103)	0.222* (0.101)
R ²	0.0025	0.0021
Adjusted R ²	0.0018	0.0015
N	6,023	6,185

Note: Coefficients show treatment effects compared to the true control which had no message. Standard errors in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

Table 38. Treatment Effects on Sociocultural Perceptions of Immigration, Full Sample

	Economic Message	Sociocultural Message
No Evidence	0.037 (0.111)	0.135 (0.108)
Numerical Evidence	0.104 (0.111)	0.236* (0.106)
Narrative Evidence	0.131 (0.114)	0.187 (0.108)
Both Types	0.039 (0.111)	0.209 (0.107)
R ²	0.0003	0.0010
Adjusted R ²	-0.0004	0.0003
N	6,023	6,185

Note: Coefficients show treatment effects compared to the true control which had no message. Standard errors in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

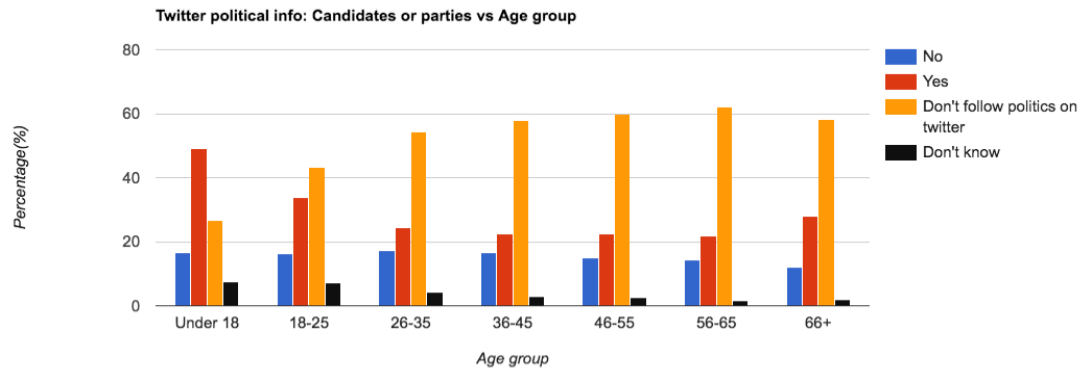
Table 39. Treatment Effects on Immigration Level Preferences, Full Sample

	Economic Message	Sociocultural Message
No Evidence	0.122 (0.101)	-0.044 (0.101)
Numerical Evidence	0.042 (0.101)	-0.003 (0.100)
Narrative Evidence	-0.000 (0.104)	0.126 (0.102)
Both Types	0.018 (0.101)	0.068 (0.100)
R ²	0.0000	0.0006
Adjusted R ²	-0.0006	-0.0001
<i>N</i>	6,023	6,185

Note: Coefficients show treatment effects compared to the true control which had no message. Standard errors in brackets. * $p \leq .05$; ** $p \leq .01$; *** $p \leq 0.001$

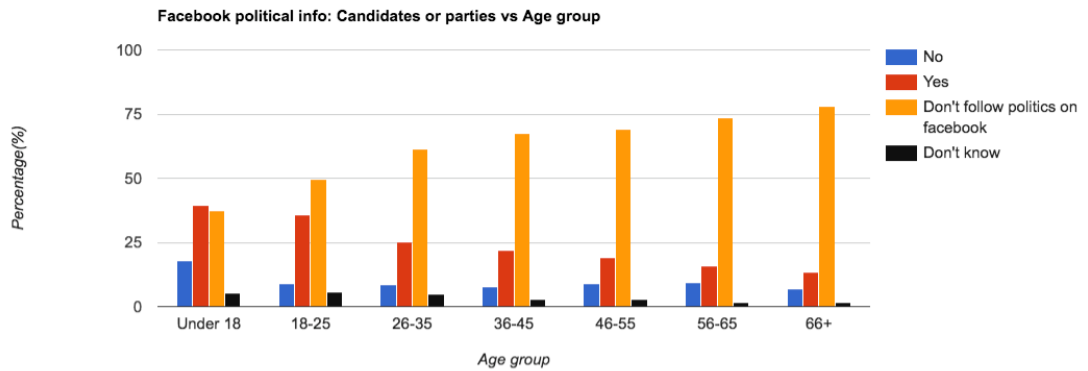
Appendix E: Chapter 6

Figure 25. Information from Candidates or Parties from Twitter, by Age Group



Source: Wave 5 of the British Election Study (Fieldhouse et al. 2015)

Figure 26. Information from Candidates or Parties from Facebook, by Age Group



Source: Wave 5 of the British Election Study (Fieldhouse et al. 2015)

B

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