Numbers and Waves, the Illegal and the Skilled: The Effects of Media Portrayals of Immigrants on Public Opinion in Britain

Scott Blinder and Anne-Marie Jeannet

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Abstract

Public opinion often diverges widely from reality on the size and makeup of immigrant populations but prior research has not established whether the media has any causal role in the construction of these perceptions. This paper examines how actually-occurring media portrayals of immigrants in Britain—drawn from recent large-scale quantitative studies of the British national press—affect attitudes toward and perceptions of immigrants among members of the British public. We report on an original survey experiment that tests the impact of various news frames. Several outcomes are measured including the individual's estimates of the size of the immigrant group, perceptions of who immigrants are, and immigration policy preferences. We find support for the notion that even subtle coaxing can shift public conceptions of immigration, in this case toward more realistic understandings of the overall size and make-up of the immigrant population in Britain. The implications for the link between media frames and public opinion arising from these findings are discussed.

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Introduction

In Britain, as in much of Western Europe and other OECD countries, immigration has become a salient political issue unpopular with broad segments of the public (Duffy and Frere-Smith 2014), and at least arguably changing national politics on issue areas such as European Union membership (Ford and Goodwin 2014) and the welfare state (Alesina and Glaeser 2004). Britain's public seems particularly ill-disposed toward immigration. Britain ranks at or near the top of a group of comparable nations in the proportion of people who see immigration as a problem rather than an opportunity, who think there are "too many" immigrants in their country, and who say they are concerned with both "legal" and "illegal" immigration (German Marshall Fund 2013).

This unpopularity does not have an obvious set of causes, when regarded in comparative context. Britain has a large immigrant population, but so do other Western European and OECD countries. It has not had particularly negative economic outcomes in recent years, relative to the rest of Europe, that might be perceived as attributable to immigration. And it does not appear to have a particularly prejudiced population, or lack a widespread social norm against prejudice (Blinder, Ford, and Ivarsflaten 2013). What then might explain British attitudes toward immigration?

One widely suspected cause of British immigration attitudes is the highly visible and negative coverage of immigration in the British media, particularly in its tabloid press. The population of Britain is approximately 13% foreign-born, meaning that immigration and migrants are part of day-to-day life for many—although this is highly concentrated in London. But, like other objects of political attention and policy-making, immigration is a large-scale and complex phenomenon that cannot be fully apprehended through everyday experience. Beyond everyday experiences, information about immigration and asylum is widely available through various forms of media, as Britain is characterized by a high level of media and public interest in the immigration issue. Immigration has ranked near the top of the public agenda since the early 2000's, spending most of this time among the three issues named most often by survey respondents as a top priority facing the country (Duffy and Frere-Smith 2014).

Britain's newspapers are widely seen as playing a leading role in political discourse in the country. Unlike their American counterparts, they are national scope and overtly partisan or ideological in outlook (Brynin and Newston 2003; Threadgold 2009). Prior research has suggested that the British press, particularly its conservative-leaning elements, played a similar role in creating a gap between the perceived economy (or personal expectations) and the real economy in Britain (Sanders, Marsh, and Ward 1993), a gap that is large in comparative perspective (Duch and Stevenson 2011).

This paper examines how actually-occurring media portrayals of immigrants in Britain—drawn from recent large-scale quantitative studies of the British national press—effect attitudes toward, and perceptions of immigrants among members of the British public. Thus far, research has not established whether the media has any causal role in the construction of these perceptions. We test, in a variety of ways, the proposition that British newspaper portrayals of immigrants influence the way members of the British public view immigration—both in terms of overall policy preferences and in terms of perceptions of the types of people and groups that make up Britain's immigrant population. The studies presented below are designed to combine the strengths of causal inference a controlled experimentation with the strengthened external validity derived from representativeness in not only the participants but also the experimental treatments, drawn from quantitative studies of actual recent British press coverage of immigration.

Media constructions of immigration and the perception-reality gap

We suggest that the press may play a crucial role in migration attitudes by shaping how members of the public perceive immigrants—not simply through positive or negative tone, but more concretely through

portrayals of immigration that emphasize particular sub-groups and largely ignore others. Thus, we expect to find impacts on public perceptions of immigrants (i.e. the composition of the immigrant population). These perceptions—and their imperfect relationship to the reality of immigration—have been argued to be a key element in public opinion toward immigration. Cornelius and Rosenblum (2005) note that public attitudes seem frequently informed by misconceptions about immigration and its impacts. The literature is brimming with examples of public attitudes appearing to respond to a personally or social constructed conception of immigration that diverges from "reality." For example, British people are far more likely to view immigration as a problem at the national rather than local level (Duffy and Frere-Smith 2014) suggesting that their understandings may come from mediated rather than direct experience of migration. Moreover, research across Europe has pointed to "perceptions" of "group threat" as a far more powerful determinant of attitudes to immigrants and minorities than actual threat, often measured by the proportional size of the immigrant population (Ceobanu and Escandell 2010; McLaren and Johnson 2007). At least this is the case for attitudes in the aggregate. For workers in occupations and sectors that actually face large-scale competition from migrant workers, individual economic vulnerability may be a potent cause of opposition to immigration, but this circumstance cannot explain broader opposition to immigration among those who are not similarly situated (Malhotra, Margalit, and Mo 2013).

Most relevant to this paper, public opinion often diverges widely from reality on the size and makeup of immigrant populations. This has been explored mostly in terms of public overestimates of the proportion of populations (national or local) that immigrants comprise (Hjerm 2007; Sides and Citrin 2007; Wong 2007). There is some evidence about that perceived immigrant population size increases perceptions of immigrants as a threat (Alba, Rumbaut, and Marotz 2005; Semyonov, Raijman, and Gorodzeisky 2008; Semyonov et al. 2004), although Herda (2010) has argued that these perceptions are more likely to be an effect of attitudes toward immigration rather than a causal factor shaping such attitudes. Hopkins (2010) argues that at the local level, perceptions come from rapid change in the migrant population rather than large numbers, and are likely to be politically activated only in combination with national attention from politicians and media.

Regarding the composition of immigrant populations, Blinder (2013) has shown that people in Britain tend to choose asylum seekers and workers rather than students and family members when asked who they normally have in mind when thinking about "immigrants." Attitudes toward "immigrants," "immigration", or immigration policy may be constructed by survey respondents with implicit reference to these partial conceptions or imaginings of who immigrants are. In particular, students comprise a large share of recent in-flows but are rarely selected by individuals asked which groups they have in mind when they think about immigrants. On the other hand, asylum seekers represent less than 5% of in-flows in recent years, yet are the most commonly chosen by members of the public when asked, again, who they have in mind (among the official "reasons for migration") when normally thinking about immigrants.

These perceptions are a relatively underexplored phenomenon, given their association with overall attitudes to immigration policy. For example, people who perceive immigrants as asylum seekers are more likely to support reductions to the number of immigrants coming to Britain, while those who think of immigrants as workers are less likely to favor reductions (Blinder 2013). In addition, survey evidence shows that negative attitudes toward immigration often reflect concerns with illegal rather than legal immigration, at least according to self-report measures (German Marshall Fund 2013, Blinder 2014). This may reflect an exaggerated sense of the size of the "illegal" or "irregular" population. Additional work, both experimental and observational, has shown that publics are much more welcoming of immigration of highly-skilled workers than low-skilled workers or immigration in general (Ford 2012; Hainmueller and Hiscox 2010) Blinder 2014).

Media Effects

The influence of media on political attitudes has long been a fertile topic for research, especially since the advent and popularization of media effects experiments since (Iyengar and Kinder 1987)'s pioneering work. The early social scientific consensus that media had "minimal effects" on public attitudes gave way to robust findings of various sorts of effects, often demonstrated empirically by controlled experimentation. Many of these effects were classified as either agenda-setting, priming, or framing. The observation that the media are especially effective at telling people what to think about (McCombs and Shaw 1972) became a well-established cliché, while priming and framing effects showed that media can shape how we think about issues as well (Chong and Druckman 2007b; Entman 1993; Scheufele and Tewksbury 2007). In this paper, we view the media as a contributor to the social and personal construction of people's conceptions of immigrants. This might be construed as a framing or priming effect, but is probably best viewed as an example of political socialization in which individuals develop socially-informed cognitive conceptions of political "attitude objects" (Cook 1985).

Does media coverage contribute to such understandings? It is of course notoriously difficult to demonstrate the causal impact of media on public opinion *in situ*, i.e. outside of a carefully controlled experiments (Chong and Druckman 2007b; Iyengar and Kinder 1987). Correlations between public attitudes or perceptions and media consumption can be chalked up to selection effects rather than media causality, as individuals select media outlets that conform to their pre-existing political views (Stroud 2010). Prior to the development and spread of experimental methods in this area, early media research foundered on this methodological conundrum, yielding an early consensus that media had "minimal effects" on public attitudes.

On the topic of immigration, there is evidence from that coverage of immigration in news media can mold public opinion in both American and European contexts. First, more sophisticated quantitative methods allow for more convincing arguments that correlations exist between media consumption and political views actually reflect a bi-directional causal relationship. The scholarly investigation of impact of the media on immigration policy preferences has applied experimental designs, since causal impact of media influence is notoriously elusive outside of laboratory conditions (Igartua, Moral-Toranzo, and Fernández 2011; Lahav and Courtemanche 2012). For example, Abrajano and Singh (2009) conduct a survey of Spanish speakers living in the United States and show the source of news that individuals choose tends to be endogenous to their their attitudes towards immigration. Since the effects of the news are context-dependent (Valentino, Brader, and Jardina 2013), it does not necessarily follow that similar patterns can be observed in other countries, such as the United Kingdom. In the European context, the media coverage of immigration as also been found to impact opinions about immigration and immigrants in longitudinal studies (Boomgaarden and Vliegenthart 2007, 2009).

A variety of controlled experiments have provided strong evidence for particular causal claims about media and immigration attitudes, especially in the US context. Priming particular ethnic or national origins of immigrants can shape public opinion by strengthening or loosening the relationship between attitudes toward ethnic groups and preferences for immigration policy (Pérez 2010; Valentino, Brader, and Jardina 2013).

But laboratory experiments suffer notably in the area of external validity. Even survey experiments that use representative population samples may use treatments that occur rarely in the real world, or that only occur in the real word in smaller and less concentrated doses (Barabas and Jerit 2010; Gaines, Kuklinski, and Quirk 2007). Thus, they can provide strong grounds for causal inferences about effects on the general population of interest, but for causal factors that occur at rare or unknown rates, at best. Barabas and Jerit (2010) find that survey experiments with media messages show similar, but stronger, effects compared with natural experiments that capture existing variation in media coverage. But this represents a rare effort to match survey treatments directly with variation in the real "information environment." Experimental studies of

media effects on immigration attitudes have often manipulated the ethnic group of immigrants discussed in a news story, whether by changing group label or photographs (Brader, Valentino, and Suhay 2008; Havekes, Coenders, and van der Lippe 2013). Other experimental have manipulated whether information is presented in English or Spanish (Newman, Hartman, and Taber 2012). These sorts of manipulations enable inquiry into the role of attitudes toward out-groups in shaping immigration policy preferences and thus are of strong theoretical interest. However, they are less suited to answering a different question: what is the impact of news coverage of immigration, as it actually occurs?

Furthermore, most experimental studies of immigration attitudes have sought to explain immigration policy preferences, or decisions about whether or not to admit individual migrants through experimentally-manipulated characteristics (Aalberg, Iyengar, and Messing 2012; Hainmueller, Hopkins, and Yamamoto 2014; Iyengar et al. 2013; Newman, Hartman, and Taber 2012). But persuasive effects from media sources are just the tip of the iceberg when it comes to media effects. Even if media coverage can produce shifts in preferences, it may have a more powerful long-term role in shaping collective understandings of immigration and immigrants. This study is designed to look for impacts on these understandings and thus combines the strengths of experiments in enabling causal inference with the strengths of corpus linguistics in providing real-world basis for experimental treatments. By using results from the linguistic analysis to generate experimental 'treatments', we assess whether actually-occurring media messages have causal impact on public attitudes toward immigration and perceptions of immigrants.

Measures of British media portrayals of immigration
One way to address this deficit in external validity is to generate experimental treatments that correspond to actual media coverage (Barabas and Jerit 2010; Druckman 2004; Valentino, Brader, and Jardina 2013). To do so requires an assessment of how British media actually has portrayed immigrants and recent years. Here we draw on recent corpus linguistic studies of British newspapers, which leverage new automated approaches to the analysis of "text as data" (Baker et al. 2008). These approaches permit quantitative assessment of extremely large bodies of text, well beyond what could be read and analyzed by human coders. A key tool for measuring coverage is the "collocation," a relationship in which two words appear in close proximity to one another at a rate higher than would be expected due to chance alone (Stubbs 1995).

Empirical examination of British newspaper coverage of immigration reveals the prevalence of small number of themes that re-appear consistently over time in the words that collocate with "immigrants" or related terms such as "migrants," "refugees," and "asylum seekers" (Baker et al. 2008; Allen and Blinder 2013). From the years 2010 to 2012 in particular, the term "illegal" is by far the most common modifier of "immigrant" in British newspapers, and this holds for the "quality" or broadsheet press (e.g. *Guardian, Times, Financial Times*) in addition to the more sensationalistic tabloids such as the *Sun* and right-leaning partisan "mid-market" newspapers such as the *Daily Mail* (Allen and Blinder 2013(Allen and Blinder 2013)). Other words that consistently co-occur with the word 'immigrants' and its synonyms include references to large quantities of immigrants both literally ("number," "thousands", "million") and figuratively through metaphors relating to water ("flood", "wave", "influx") (Allen and Blinder 2013, Gabrielatos and Baker 2008, see also Charteris-Black 2005).

The increasingly prominent role of movement within the European Union is also evident in British media coerage. Since the expansion of the EU in 2004 to include eight new nations concentrated in Eastern Europe, a larger proportion of immigrants to Britain have come from within the EU, with immigration from Poland to the UK growing especially rapidly. This is reflected in news coverage as well. "Europe" was mentioned regularly in news stories on immigration dating back to the mid-1990s (Baker et al. 2008), but most often appeared in the context of Eastern European immigration. In 2010-2012 coverage, "EU" and related terms were some of a very small number of consistently occurring modifiers of "immigrants" and "migrants" across all types of British newspapers.

Economic themes are also an important part of British newspapers' language of immigration (Allen and Blinder 2013). This language often accompanied the word "migrants" rather than "immigrants" (usually synonymous in the British domestic context, although "migrants" might include emigrants and internal migrants as well as immigrants). Indeed, "economic" was a consistently-occurring modifier of migrants in the 2010-2012 period, and words such as "jobs" also appeared regularly in proximity to "migrants." Many of these mentions had negative connotations (i.e. highlighting debates over whether asylum seekers in Britain were actually "economic migrants" making fraudulent claims in an effort to gain asylum). However, the economic realm also provides one of the few positive frames in the recent discourse around immigration in Britain: discussion of skilled or highly-skilled migrants.

"Skilled", used in this context, is a consistent collocate of "migrants" only for a sub-set of newspapers in Britain, namely the mid-markets and broadsheets, with more frequent mentions in the broadsheets. However, it represents a politically crucial alternative to the usual policy discussions of immigrants, often presumed to be impoverished and in competition with British-born citizens for (primarily low-skilled) jobs, social housing, and public services, or if not then taking advantage of state-provided welfare benefits and health care. These depictions are mirrored in public opinion – asked to give reasons for wanting to reduce immigration levels, people in Britain are most likely to cite pressure on public service provision (for those who give a reason beyond simply restating that the numbers are too high or citing a general negative impact) (Duffy and Frere-Smith 2014).

Thus, empirical examination of the language British newspapers used to discuss immigrants and migrants in recent years suggests several key terms or frames: 1) illegality, 2) large numbers, 3) water metaphors for quantity, 4) Europe or Eastern Europe, and 5) skilled economic migration. The first four frames collectively capture some of the most prevalent terms, which national newspapers employ in conjunction with immigration issues. The skilled migration frame is not as common as the others; however, it provides an important opportunity to test a portrayal that is not only more positive than the others, but also less likely to run into "prior exposure" effects precisely because it is less common and less in sync with the prevailing discourse.

Hypotheses

In general terms, we theorize that British news coverage of immigration has a variety of distinct impacts on public attitudes and perceptions. In particular, we argue that media coverage contributes to perceptions of Britain's immigrant population – who immigrants are, how many there are, and why they have come to Britain. In addition, we suggest that media coverage also may influence preferences in this policy domain.

To move toward more specific hypotheses, our first step has been to draw from the most comprehensive extant studies of British press portrayals of immigrants. Thus, our testable claims refer to the impact not of media coverage overall, but of several particular portrayals of immigration that occurred with regularity in the newspapers in the past two decades, and particularly in the years 2010-2012

Quantity
As discussed above, we are interested in the impact of portrayals of immigrants in terms of quantities, with both the literal language of numbers and the metaphorical language of water through words such as "flood", "wave", and "influx". We hypothesize that these linguistic features of media coverage will generate two primary effects. First, they will contribute to the common phenomenon of overestimating the size of Britain's immigrant population. Second, they will contribute to policy preferences that are more negative toward immigration. Overestimates of the immigrant population are correlated with anti-immigration policy attitudes. Moreover, in Britain in particular, population size is one of the most common reasons chosen by

members of the public as justification for their preference for less immigration (Duffy and Frere-Smith 2014).

Thus, our first set of hypotheses predict that immigration framed in terms of "numbers" or water metaphors will lead to increased estimates of the immigrant population in Britain, and to more anti-immigration policy views.

H1a: The "numbers" frame causes increased estimates of the size of the immigrant population.

H1b: The "numbers" frame causes a shift to more anti-immigration policy preferences.

H2a: The "water metaphor" frame causes increased estimates of the size of the immigrant population.

H2b: The "water metaphor" frame causes a shift to more anti-immigration policy preferences.

Immigration sub-groups

The other empirically-occurring portrayals of immigrants that we selected for analysis all involve focusing on a sub-group of immigrants, each in a different way. The most commonly occurring of these portrayals differentiates immigrants by legal status, focusing on "illegal" immigrants in particular. Another very common set of terms focuses on immigrants' origin from within or outside of the EU; we pay particular attention to the portrayal of immigrants as Eastern European. This is playing an increasingly important role in the political debate in Britain as well as perceptions and attitudes. Finally, we are interested in the impact of one frame—immigrants as "skilled" or "highly-skilled" workers—that is less common and more limited to the lower-circulating broadsheet newspapers. Although less frequent in news coverage, the descriptions of the skill level of immigrants can cause enormous differences in people's responses (Hainmueller and Hiscox 2010; Iyengar et al. 2013). However, prior work focuses on attitudes toward high-skilled migration in particular. Our aim is to whether discussion of high-skilled migration generates a shift in perceptions of the composition of immigration overall.

More generally, rather than shifting policy preferences or estimates of the size of the immigrant population, we expect that portrayals of immigrants in terms of particular sub-groups will shift perceptions of who immigrants are. We hypothesize that media portrayals that focus readers' attention on certain types of immigrants may shift these "pictures in the head" (Lippmann 1932) making recipients of these messages are more likely to perceive of immigrants in terms consistent with common media portrayals. We do not therefore have strong expectations for the impact of these frames on policy preferences, although shifting perceptions of immigrants' identities may have such impact in the long run.

Beginning, then, with the most common language from this set of media portrayals of immigrant sub-groups, our first hypothesis is a straightforward one. We expect that mentions of "illegal immigrants" will make members of the public more likely to think of illegal immigrants when asked about immigration overall. In addition, because illegality is often associated with refused asylum seekers, both in fact (Gordon et al. 2009) and in rhetoric (Baker et al. 2008), we expect that the "illegal" frame will lead to a greater tendency to think of immigrants as asylum seekers or workers.

H3a: The "illegal immigrants" frame increases the likelihood of bringing to mind "illegal immigrants" when think about immigration overall.

H3b: The "illegal immigrants" frame increases the likelihood of perceiving "immigrants" as asylum seekers.

H3c: The "illegal immigrants" frame increases the likelihood of perceiving "immigrants" as workers.

In addition, because illegal immigration is viewed both very negatively and as a critical component of immigration overall in Britain (German Marshall Fund 2013), we expect that this frame will be associated with stronger anti-immigration attitudes.

H3d: The "illegal immigrants" frame will lead to more anti-immigration policy preferences.

Next, we can generate predictions about the impact of the portrayal of immigrants as Eastern Europeans. Again, most straightforwardly, this should increase the likelihood that members of the public will bring Eastern Europeans to mind when thinking about "immigration." In addition, since the 2004 enlargement of the EU to include Poland and other Eastern European countries, immigrants to Britain from this part of thew world are mostly from within the EU and enjoy "free movement" rights, meaning that they can only be "illegal" under very rare circumstances. Thus, we might predict that the "Eastern Europe" frame will dampen the tendency to associate immigration with illegality. Similarly, free movement rights mean that Eastern Europeans within the EU will not be in the position of needing asylum to reside in Britain; moreover, popular conceptions and media portrayals of asylum seekers focus on other parts of the world. (In the past two decades Britain has received relatively large numbers of asylum seekers from places such as Afghanistan, Iraq, Somalia, and Zimbabwe, and the leading contributors in recent years have been countries in Africa, Asia, and the Middle East). Finally, Eastern European immigrants are most associated with work. Statistically, they are highly likely to be in employment; rhetorically, stereotypes developed in the wake of 2004 EU enlargement have focused on work (e.g. the "Polish plumber"), with immigrants often both praised and feared for their supposed strong "work ethic" (Anderson and Ruhs 2012).

H4: The Eastern Europe frame will

   a. decrease the perception of immigrants as "illegal"
   b. decrease the perception of immigrants as asylum seekers
   c. increase the perception of immigrants as workers

The third immigrant sub-group we focus on is skilled workers. People exposed to this frame, we expect, will be more likely to think of immigrants in terms associated with relatively higher status—as workers and perhaps as students—and less likely to imagine immigrants as "illegal" or as asylum seekers, or even as family migrants. In addition, because of the large gulf in public opinion between attitudes toward highly skilled migrants diverge sharply from attitudes toward low-skilled immigrants or toward immigrants overall (Hainmueller and Hiscox 2010; Harell et al. 2012) we expect that exposure to this frame will lead to more positive attitudes toward immigration.

H5: The Eastern Europe frame will

   a. decrease the perception of immigrants as illegal
   b. decrease the perception of immigrants as asylum seekers
   c. increase the perception of immigrants as workers
   d. increase the perception of immigrants as students
   e. increase tolerance of immigration in policy preferences

Furthermore, there is reason to have particularly strong expectations for the effectiveness of the skilled migration frame, as compared to the other, more common media depictions captured in the other treatments. As Gaines and colleagues (2007) argued, the design of experiments on social and political behavior faces a necessary trade-off between risks of prior exposure to treatment and risks of studying non-existent or irrelevant behaviors (Gaines, Kuklinski, and Quirk 2007). Treatments that mimic commonly occurring events might show little impact in an experimental setting because respondents have been "contaminated" by extensive prior exposure. On the other hand, if no respondents have had any prior exposure to the treatment,

the study may be irrelevant for explaining real-world politics because it tests the impact of an event or condition that never actually occur outside the setting of the experiment.

In testing the effects of dominant portrayals of immigration, a key challenge is the potentially overwhelming effect of prior exposure or "pre-treatment". Exposure to dominant media images and portrayals of immigrants may already be widespread among the relevant population, and thus its effects are already incorporated into baseline perceptions and attitudes (Gaines, Kuklinski, and Quirk 2007; Price and Zaller 1993).

The impact of the skilled migration frame may therefore be easier to detect. In addition, it can shed light on the otherwise hidden impact of the dominant terms of media discussion. It is a perennial challenge in political communication research to show the effects of widespread but diffuse background exposure to media messages (Gerbner and Gross 1976). But, if alternative portrayals of migrants can produce changes in public perceptions and attitudes, this suggests that the more frequently used terms do in fact help to maintain status quo perceptions and attitudes. In other words, this latter set of treatments provides a glimpse of how the media might affect attitudes, given a shift in practices to emphasise words and themes that are currently present but much less frequent. These treatments are discussed in further detail below.

Data and Methods

Sample

The experiment was conducted in February of 2014 with a panel of survey respondents maintained by YouGov and selected to capture a representative sample of the British public. More information on YouGov's recruitment and panel maintenance can be found in the appendix. Overall, 1921 people across Britain participated in this experiment (including Wales and Scotland but not Northern Ireland). This sub-sample of invited respondents is representative of British adults by age, gender, social class and type of newspaper readership. Based on this, we find it reasonable to use this sample to draw generalizations about the British public as a whole; certainly the participants are more representative of the national population than the samples of convenience used in many laboratory experiments.

Experimental Design

Experiments are useful in isolating the impact of the media, since real world conditions are complex and exposure to media messages can be both correlated with prior attitudes and conflated with exposure to information from other sources over time. More recently, experimental investigations into public opinion and immigration have tended to be embedded into surveys (Hainmueller and Hiscox 2010; Janus 2010; Knoll, Redlawsk, and Sanborn 2011; Oyamot Jr. et al. 2012; Schildkraut 2009; Sniderman, Hagendoorn, and Prior 2004; Valentino, Brader, and Jardina 2013). Most of these examine the effect of issue frames on public attitudes and preferences. These issue frames primarily fall under ethnic/racial groups frames: (Brader, Valentino, and Suhay 2008; Havekes, Coenders, and van der Lippe 2013; Igartua, Moral-Toranzo, and Fernández 2011; Knoll, Redlawsk, and Sanborn 2011; Newman, Hartman, and Taber 2012; Schildkraut 2009; Valentino, Brader, and Jardina 2013) or economic frames (Aalberg, Iyengar, and Messing 2012; Hainmueller and Hiscox 2010; Harell et al. 2012). A handful of experiments also examine the impact of equivalency (valence) frames (Abrajano and Singh 2009; Brader, Valentino, and Suhay 2008).

The data for this study come from a survey experiment conducted online by YouGov according to the following procedure. First, respondents for the survey were drawn randomly from the YouGov panel and invited to join on the survey. YouGov does not have a per survey response rate, however, the overall response rate for the panel is 21% with the average response time for a clicked email being 19 hours from the point of sending. Panelists who accepted the invitation were told that they will be participating in a survey about social issues in Britain and that a short news article would be selected from them to read, to be

followed by some questions and a short factual quiz based on the article. Next, the participants were randomly allocated a news story—actually a short summary of stories from the recent and more distant past, using the format of an "On this date in history" feature that regularly appears in one of Britain's national newspapers. The news story was altered to correspond to one of the five treatment conditions or the control condition, detailed further below.

After reading the news story, respondents were asked to respond to a factual news quiz that tests their knowledge about the content in the news article. In exchange for answering at least two questions correctly, the respondent is offered a small reward in "YouGov points," equivalent to 25 pence in monetary value, as an incentive to pay enough attention to answer the question correctly.[1] The rationale for administering the quiz is to ensure that the respondents actually receive the experimental "treatment." Finally, after the quiz, respondents were asked questions on immigration as well as a several other social and political issues that were referenced in the news summary (gender equality and foreign policy) in order to avoid bias from demand characteristics (McDermott 2002). This set of questions included the dependent variable measures, again detailed further below.

Experimental Manipulations

The experimental manipulations are derived from corpus linguistic study of media portrayals of immigrants and asylum seekers in British national newspapers. Corpus linguistic methods capture collocations or words that co-occur more frequently than would be expected by chance. Since corpus linguistic methods are automated, capturing collocations has the added advantage of not being based on the subjective interpretation of coders, which is a frequent limitation of media content analysis. Experiments, mainly in the United States, have shown some causal impact of media coverage on immigration attitudes (Hainmueller and Hiscox 2010; Harell et al. 2012; Newman, Hartman, and Taber 2012; Oyamot Jr. et al. 2012; Wright and Citrin 2011) but such studies can only show the effects of particular features of media coverage highlighted by the investigator (Nelson et al. 2011). Since they do not arise from the sort of systematic assessment of the actual media environment we will conduct, in effect they only demonstrate the impact of selectively chosen media messages rather than a representation of the *actual* composition of overall media coverage. By using the analysis of large bodies of real newspaper articles as a basis for experimental treatments, the project will avert standard criticism of lab experiments as artificial and not applicable to real-world situations.

Our manipulations offer subtle alterations of a news article that respondents are asked to read. The pseudo-article we present follows an "on this day in history" format, a style of news article that lists headlines from the newspaper in past years (e.g. important headlines from fifty years ago, twenty years ago, five years ago). The inclusion of headlines regarding other events and social issues in the article creates a deception technique that helps avoid generating demand characteristics. Our pseudo article has the further advantage of having derived its format and some content from a real article found on December 31, 2011 in *The Express*-a tabloid newspaper with a conservative editorial line. We preserved the integrity of the article by keeping the format, structure and several of its headline points.[2] We added a headline about immigration in the control condition which reads: "1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010." A full version of the pseudo-article can be found in the appendix.

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[1] Respondents are allowed to refer back to the news article to answer questions on the factual quiz.

[2] We amended the article by keeping two headlines of the original headlines (telephone company and blizzard headlines) and adding two new ones (gender pay-gap and UK debt repayment to the United States headlines).

Five versions of the immigration headline were then introduced, each with a different frame based on the results of a corpus linguistics analysis of immigration in the British press. Each manipulation adds amends the headline mentioning immigration. The treatments are as follows, with changed text in bold:

Numbers Frame: "1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010. **Over half a million immigrants** were admitted to the UK in 2010."

Flood Frame: "1 year ago: New data released from Office of National Statistics shows that the UK continued to **experience a wave of migration**. Over half a million immigrants **flooded** into the UK in 2010."

Illegal Frame: "1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010. **Estimates also show that an additional 600,000 immigrants reside in Britain illegally**."

Eastern European Frame: "1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010. **This has been driven by an increase in migrants from Eastern Europe**."

High Skill Frame: "1 year ago: New data released from Office of National Statistics shows that **high-skilled migrants made a net contribution to the UK economy in 2010**."

Each respondent read the story with either the control version or one of these five altered sentences. The manipulations was designed this way for two reasons. First, we opted to keep the form and strength of the treatment similar across all conditions. For this reason, all the other headlines in the article unrelated to immigration are held constant across the control and treatment groups. Second, we wished to establish experimental conditions with a high level of "mundane realism" (McDermott 2002) whereby only subtle manipulations are used to reflect the fact that immigration news will compete with many other types of information that people consume on a daily basis. This is in keeping with our aims of testing for the impact of news coverage as it actually occurs empirically, rather than wishing to test whether a certain frame might have an impact if it actually occurred in strong doses in real media coverage

Measures of Immigration Preferences
First, two measures capture preferences on immigration issues. The first measures preferences for changing the level of immigration, following similar measures in prior empirical research (e.g. Brader, Valentino, and Suhay 2008). Respondents are asked what the number of immigrants to Britain nowadays should be. Respondents have been presented with six response options: 1) increased a lot, 2) increased a little, 3) remain as it is, 4) reduced a little, 5) reduced a lot, and 6) stopped completely. Respondents are also given the option to respond that they "don't know".

Since the British public is heavily skewed towards restricting immigration, restricting the degree of variation in preferences on this first question, respondents were also asked about their preferences for immigrant repatriation which allows for a wider range of options. Respondents were asked under what conditions immigrants should be sent back to their country of origin. They were offered the choice of several conditions to which they can answer yes or no: 1) Most of all should be removed from Britain 2) those that do not have permission from the government to stay 3) those who have committed sever criminal offenses 4) those who are not contributing to the economy 5) those who do not have British ancestry and 6) never, immigrants should never forcibly be removed. They must answer yes or no to each of these conditions. These responses are then transformed into a single composite variable which sums the` number of conditions that the respondent thinks are acceptable for immigrant repatriation (i.e. three responses in support for a condition repatriation and three no responses against a condition for repatriation equivalent to a value of 3).

Measures of Immigration Perception

Perceptions of immigrants are captured in several ways. First, we measure two perceptions of the magnitude of immigration. Respondents are asked to measure the size of the foreign born population in Britain as a percentage of the total population. Then, they are asked to estimate the percentage of the foreign born population that is living in Britain illegally. For both measures responses are constrained to be between the values of 0 and 100.

A second set of measures intends to gauge who respondents perceive immigrants to be. Based on previous work on the perceptions of immigrants (Blinder 2013), the respondent is asked what kinds of groups come to mind when thinking about people coming to live in Britain. Five types of immigrants are given: 1) asylum-seekers, 2) workers 3) family members, 4) students and 5) illegal immigrants. Respondents are asked to respond yes or no for each type of immigrant.

Table 1 summarizes our hypotheses, with reference to the measures introduced above.

Table 1. Expected Impact of Experimental Frames on Selected Measures
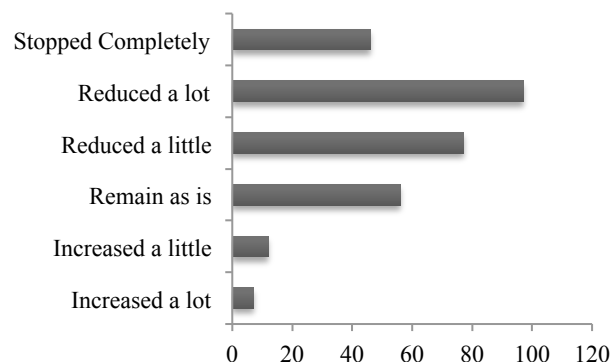
	Perceptions					Estimation		Preferences	
	Asylum	Worker	Family	Student	Illegal	Foreign	Illegal	Immigration	Repatriation
Flood						+		-	+
Numbers						+		-	+
Illegal	+	+			+		+	-	+
E. Europe	-	+			-		-		
High Skill	-	+	-	+	-		-	+	-

Results

Descriptive Results

Table 2 displays the summary statistics of the dependent variables for our experimental control group. As expected, our British participants tend to favour restrictive immigration policies. We find that most people in the control group favour reducing national immigration (mean=4.4), as shown in Figure A. We also observe that the mean respondent in our sample supports the repatriation of immigrants under more than one of the listed conditions (mean=2.4).

Figure A. Immigration Preferences, Control Group (n=305)

The descriptive results from the control group also confirm that Brits mostly perceive immigrants as asylum-seekers or illegal immigrants. Also, as shown in Figure B, a smaller proportion of Brits perceive immigrants as workers, family members or students, which is in line with previous research (Migration Observatory 2011).

Figure B. Perceptions of Immigrants, Control Group (n=305)
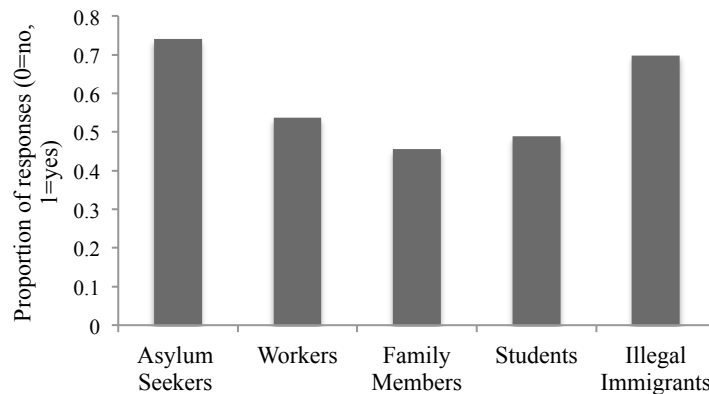
Note: "Don't Know" responses not shown.

On average, the respondents in the control group overestimate the size of the foreign population of Britain today. Table 2 shows that when asked what proportion of the UK population was born abroad, the average response in the control group was 22.2%. This amount is about twice the recent estimate of the actual population of foreign-born population, which is estimated at 11.4 % of the UK population (Rienzo and Vargas-Silva 2013). Respondents also overestimate the proportion of foreigners who are living in the country illegally. We find that when respondents are asked, the average response is that approximately one of out of five foreigners are living in the UK without permission. It is more difficult to find reliable estimates of illegal migrant populations but it can be approximated to between 5 and 11% of the foreign-born population (Gordon et al. 2009). Nevertheless, the average respondents' estimates of the illegal foreign population are at least twice the actual size of the population.

Table 2. Summary Statistics for Measures, Control Group (n=305)

	Min	Max	Mean	S.D.
Preferences				
Immigration	1	6	4.4	1.3
Repatriation Conditions	0	5	2.4	1.1
Estimates				
Foreign Population	0	100	22.2	18.2
Illegal Population	0	100	20.2	22.5
Perceptions				
Asylum	0	1	0.7	0.4
Workers	0	1	0.5	0.5
Family	0	1	0.5	0.5
Students	0	1	0.5	0.5
Illegal	0	1	0.7	0.5

Note: min/max values don't include "don't know" or missing responses

Media Frame Treatment: Skill Frame

We find that framing immigration as highly skilled can change people's perceptions of who immigrants are. We observe in Table 3 that individuals among the skilled treatment group are significantly less likely to think of immigrants as asylum seekers and illegal immigrants and significantly more likely to think of workers than the control group. We also observe that framing immigration as coming primarily from Eastern Europe significantly reduces an individual's perceptions that immigrants are asylum-seekers or family members. More individuals among the Eastern European treatment group perceived immigrants to be workers (mean=0.58) than in the control group (mean=0.54) but this was not statistically different. None of the other treatments, frames, which tend to be more omnipresent in the British media, impacted the perceptions of who immigrants are.

Table 3. The Impact of Experimental Frames on Perceptions of Immigrants

	Asylum	Workers	Family	Students	Illegal	N
Control	0.74 (0.03)	0.54 (0.03)	0.46 (0.03)	0.49 (0.03)	0.70 (0.03)	315
Numbers Frame	0.76 (0.02)	0.61 (0.03)	0.47 (0.03)	0.50 (0.03)	0.70 (0.02)	314
Flood Frame	0.73 (0.02)	0.60 (0.03)	0.50 (0.03)	0.53 (0.03)	0.67 (0.03)	319
Illegal Frame	0.73 (0.02)	0.60 (0.03)	0.50 (0.03)	0.53 (0.03)	0.67 (0.03)	321
Eastern European Frame	0.69† (0.02)	0.58 (0.03)	0.35** (0.03)	0.50 (0.03)	0.65 (0.03)	347
Skill Frame	0.67* (0.03)	0.62* (0.03)	0.42 (0.03)	0.51 (0.03)	0.64† (0.03)	305

Note: Standard errors in parentheses
Significantly different from control condition, one tailed t-test: † $p<0.10$ * $p<0.05$ **$p<0.01$

Next, we see that the skill frame impacts perceptions regarding the magnitude of immigration. In Table 4 there are only two cells that differ from one another. We observe that a high skill frame reduces respondents' estimates of the size of the illegal immigrant population (mean=15.33) compared to the control group

(mean=20.21). Although estimates for the size of the immigrant population in general are lower among those who receive the high skill treatment compared with the control group, the means are not significantly different. Moreover, we do not find that that any of the other treatments impact estimates of the size of the total foreign population or the illegal immigrant population.

Table 4. The Impact of Experimental Frames on Estimating Immigration

	Foreigner Estimates	Illegal Estimates	N
Control	22.24 (1.0)	20.21 (1.3)	315
Numbers Frame	20.78 (1.1)	20.23 (1.3)	314
Flood Frame	21.33 (1.0)	19.52 (1.3)	319
Illegal Frame	21.32 (1.0)	19.53 (1.3)	321
Eastern European Frame	23.03 (1.0)	18.21 (1.1)	347
Skill Frame	23.03 (1.0)	15.33** (1.0)	305

Note: Standard errors in parentheses

Significantly different from control condition, one tailed t-test: † $p<0.10$ * $p<0.05$ **$p<0.01$

We find that when the media frames immigration as highly skilled, this impacts only some types of preferences for immigration. First, we do not find that a high skill frame impacts the respondent's preferences for increasing immigration. The absence of an impact of the other media frames could be due to ceiling effects in this dependent variable since British preferences for restricting immigration are already quite high (control group mean is 4.30 on a scale of 1 to 6, which is between reduced a little and reduced a lot). Table 5 shows the effects of each of the experimental treatments on immigration preferences. We find that the mean score for repatriation among the respondents who received the skill frame (mean=2.23) is significantly lower than the mean score among the control group (mean=2.39). This provides support for our hypothesis that high skilled immigration frames in the media reduce public willingness to repatriate immigrants. The repatriation means for the other treatments, which tend to be more dominant in the media, do not have an impact on immigration preferences.

Table 5. The Impact of Experimental Frames of Immigration Preferences

	Immigration	Repatriation	N
Control	4.30 (0.07)	2.39 (0.06)	315
Numbers Frame	4.30 (0.07)	2.27 (0.07)	314
Flood Frame	4.32 (0.07)	2.38 (0.06)	319
Illegal Frame	4.32 (0.07)	2.38 (0.06)	321
Eastern European Frame	4.13* (0.07)	2.29 (0.06)	347
Skill Frame	4.26 (0.07)	2.23** (0.06)	305

Note: Standard errors in parentheses.

Significantly different from control condition, one tailed t-test.: * $p < 0.10$ ** $p < 0.05$ ***$p < 0.01$

Media Frame Treatment: Eastern European Frame

The results in Table 5 confirm that applying an Eastern European frame, impacts preferences for immigration. In fact, this frame is the only manipulation that we found to have an impact on this measure. We observe that framing immigration as coming from Eastern Europe reduces the preference for restricting immigration (mean=4.13) compared with the control group (mean=4.30). Although the group that was shown the Eastern European frame support a smaller number of repatriation conditions (mean=2.29) than the control group (2.39), this did not achieve statistical significance.

Framing immigration in terms of Eastern European immigration also impacts the way that respondents perceive immigrants. The results in Table 3 show that the Eastern European frame causes individuals to be less likely to perceive immigrants as asylum-seekers (mean=0.69) and family members (mean=0.35) compared with the control group. However, contrary to our expectations, individuals in this manipulation group were not more likely to think of immigrants as workers or students. Finally, the Eastern European frame does not show evidence of decreasing estimates of the proportion of illegal immigrants in Table 4. .

Media Frame Treatment: Other Frames

The remaining three experimental manipulations: flood, number, and illegal media frames do not have an impact on any of our measures. Contrary to our expectations, we do not find in Table 4 that the flood and number frames cause respondents to over-estimate the foreign population or adopt more restrictive immigration preferences compared to the control group as shown in Table 5. Interestingly, framing immigration as illegal does not make respondents more likely to perceive immigrants as illegal or give higher estimates of the illegal population.

Discussion

There is a divergence between the British public's perception and the reality of migration in the United Kingdom. In this study, we have examined a potential source of bias in such perceptions about immigration: the news media. In an original survey experiment, we tested the impact of five prominent news frames in the British media on perceptions of immigration and policy preferences. Some, though far from all, of the treatments had the sorts of impacts we hypothesized. The findings allow us to draw some causal inferences about the impact of the news media on the public's perception of immigration and their policy preferences. While we find that Brits generally see immigrants as non-workers (such as asylum seekers or family

members), our findings corroborate our expectations that these perceptions can be altered through media frames. The findings show that framing immigration as high skilled or from Eastern Europe changes the way that individuals perceive immigration. In particular, the high skill and Eastern European news frames have three important impacts. First, framing immigration in this manner increases the public's perception that immigrants come to the country for work purposes. It also decreases the perception that immigrants are family members, asylum seekers, or living in the country illegally.

The latter two perceptions are common in the British public, despite the fact that most immigrants do not fall into these categories. Further, these perceptions are associated with negative views of immigration overall. Information about frames that change these perceptions is therefore of potential relevance to

While some frames had the sorts of impacts we hypothesized, the non-findings may also aid attempts to theorize why some frames had an impact while others did not. The aim is to use both our findings and non-findings to untangle the conditions under which media frames achieve an impact on the pubic perception of immigration. Somewhat surprisingly, we did not find that flood, numbers, or illegal frames had an impact on measures of immigration perception or immigration preferences. We speculate that the mixed results showing some impact/less impact could be have two possible explanations. One explanation could be that respondents have had prior exposure to some of these frames and which reduce their impact on our measures. This could mean that these frames, which are very commonly found in the British press, are already highly accessible when thinking about immigration and are in effect already "primed" when immigration is merely mentioned. A second explanation might be that the frames have a more muted impact when applied to controversial issues such as immigration. Scholars have understood this to be due to the fact that individuals tend to hold onto their beliefs more steadily in information environments that are more competitive (Bechtel et al. 2014; Jerit and Barabas 2012; Nicholson 2011; Slothuus 2010).

Finally, this study also shows signs of impact on individual policy preferences. That is, framing immigration as being high skilled or from Eastern Europe causes individuals to be less supportive of restricting immigration and less likely to support repatriation under various circumstances. There are several thematic similarities between these two frames and therefore unlikely to be coincidental that they both had a similar impact on perceptions of immigration. Although the Eastern European frame does not explicitly mention the skill level or immigration intentions of this group of immigrants, it is probable that since Eastern Europeans that come to the UK tend to be economic migrants, it is likely that these attributes are implied in the frame.

Notably, an important strength of the study has been in incorporating linguistic research on media portrayals of migrants to overcome the lack of realism that plagues many experimental research designs. While experimental research designs generally have a strong internal validity and can be used to draw causal inferences, many struggle to establish strong external validity since the conditions of the experiment and the characteristics of the respondents are too artificial to be applicable beyond a laboratory. The generalizability of our results is improved by using a nationally representative sample of individuals in the United Kingdom. But national representativeness of the participants is not enough on its own to provide external validity (Barabas and Jerit 2010). Our approach speaks to the previous research about the public's exposure to competing information (Chong and Druckman 2007a; Druckman 2004) by designing our manipulations to be subtle, consistent in form and strength, and presenting them side-by-side with information other social issues. Another important feature of this study is that the media manipulations are derived from real-world frames of immigration in the British news media.

On the basis of our findings, we can draw some inferences about the impact of the media in Britain on perceptions of immigration. But the results suggest a need for further empirical work on the sources of information from which the public learns about immigration, as well as theoretical work on what makes some frames or messages effective while others are not. Messages about high skill immigration are found to

have a causal effect on the perception of immigrants and preferences for immigration policy. However, such frames tend to be disproportionately found in the up-market broadsheet newspapers rather than in the mid-market and tabloid press, the latter of which is the main media source for the general British public. Exposure to high skill immigration or Eastern European frames which imply economically motivated immigrations have consequences for political preferences since we found that they reduce defensive immigration policy preferences.

Conclusion

Scholarship on media effects on public opinion has tended to focus on how frames impact policy preferences and prejudices against immigrant groups. We aim to extend our knowledge of how real-world media coverage, even with only subtle differences in framing, can have a political impact on how the public understands immigration. While the majority of the scholarship has examined the US context or a comparative European context, we focus on the United Kingdom where immigration has been particularly politically contentious and extensively covered in the media during the last decade.

In this study, we are interested in the relationship between media frames and perceptions of immigration in Britain. We find support for the notion that even subtle coaxing can shift public conceptions of immigration, in this case toward more realistic understandings of the overall size and make-up of the immigrant population in Britain. Given their disproportionate coverage in the media, the public perceives immigrants are being predominantly asylum-seekers or illegal immigrants although they are only a small proportion of immigrants coming to or living in Britain. Media frames that are less frequent but already in circulation, particularly in the broadsheet press, seem able to reduce overestimation of immigration and shift the image of immigrants away from asylum seekers and "illegal" immigrants, negatively-viewed categories that are overrepresented in public perceptions. More widely used frames such as number frames and flooding metaphors do not appear to have an impact on perceptions, at least in the context of the survey experiment. Our conjecture is that these ways of thinking of immigrants and immigration are so prevalent already that they are already incorporated into baseline public perceptions and attitudes, and so a small bit of additional exposure had no detectable impact.

If we are correct, then the findings about the impact of alternative frames (or even common but contested frames, such as the Eastern Europe frame) may reveal something about the way that dominant media coverage helps to set this baseline for attitudes and perceptions. As noted above, it is extremely difficult to show the "impact" of common but diffuse background exposure to media messages. Given parallels between media coverage of immigration and the images of immigrants that are common among members of the British public (Allen and Blinder 2013), it is certainly plausible to imagine that repeated exposure to media coverage plays a role in creating these common images and shared understandings – and likewise in largely obscuring more positively-viewed migrants (the highly-skilled, international students) from view. If we cannot directly observe the impact of the media portrayals that already set the baseline for the public, then at least our experimental evidence on the impact of alternative or contested frames can show what might happen to public opinion with greater exposure to a wider set of messages about and portrayals of migrants. Note that the changes we observe did not depend on an explicit argument for immigration, nor on data attempting to debunk perceptions of the size of immigrant populations or the prevalence of "illegal" immigrants and asylum seekers. Rather, simple exposure to one sentence indicating the presence of highly-skilled migrants led to changes in how immigration overall in Britain is perceived. In other words, the impact of this treatment may provide a glimpse of how the media might affect attitudes and perceptions, given a shift in practices to emphasise words and themes that are currently present but much less prominent in news coverage than they are in the actual reality of migration in Britain.

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Appendix

A. Pseudo-article, Control Group Frame

On This Day In Britain: Saturday, December 31, 2011

100 years ago: The National Telephone Company and its 18,000 employees are set to pass into the control of the state-owned Post Office at midnight

50 years ago: A blizzard brings travel to a standstill at Waterloo Station in London, with several trains frozen up on the tracks leading to Clapham Junction.

10 years ago: New measures to close the gender pay gap were announced by the Trade and Industry Secretary which will allow women to be given new rights to find out if male colleagues with similar work experience are being paid more than them.

5 years ago: Britain made its last payment of about $83m (£45.5m) to the United States, discharging the last of its loans from World War II from its transatlantic ally.

1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010.

Numbers Frame:

1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010. Over half a million immigrants were admitted to the UK in 2010.

Flood Frame:

1 year ago: New data released from Office of National Statistics shows that the UK continued to experience a wave of migration. Over half a million immigrants flooded into the UK in 2010.

Illegal Frame:

1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010. Estimates also show that an additional 600,000 immigrants reside in Britain illegally.

Eastern European Frame:

1 year ago: New data released from Office of National Statistics shows the UK continued to be a destination for migrants in 2010. This has been driven by an increase in migrants from Eastern Europe.

High Skill Frame:

1 year ago: New data released from Office of National Statistics shows that high-skilled migrants made a net contribution to the UK economy in 2010.

	Control	Numbers	Flood	Illegal	E.Europe	Skilled	Total
gender							
male	147	156	164	160	167	150	944
female	158	158	155	161	180	165	977
age							
18-30	46	56	44	57	61	42	306
30-44	70	84	91	69	84	83	481
45-59	89	87	96	101	96	86	555
60-74	87	76	83	83	102	94	525
75 or more	13	11	5	11	4	10	54
education							
no degree	197	181	220	199	233	205	1235
university degree	100	128	87	113	108	104	640
unknown	8	5	12	9	6	6	46
household income							
less than 15,000	47	44	47	43	47	46	274
15,000-29,999	68	83	77	78	70	65	441
30,000-44,999	63	55	50	56	65	55	344
45,000-69,999	31	51	41	42	45	35	245
more than 70,000	21	20	14	21	20	23	119
unknown	75	61	90	81	100	91	498
region							
North East	19	16	12	15	18	12	92
North West	35	39	33	44	52	25	228
Yorkshire	22	19	20	19	28	37	145
East Midlands	27	26	26	21	19	26	145
West Midlands	15	26	23	36	25	27	152
East of England	40	30	32	39	30	29	200
London	29	39	36	28	41	39	212
South East	49	46	40	38	33	46	252
South West	29	25	42	39	40	36	211
Wales	15	14	20	17	26	6	98
Scotland	25	34	35	25	35	32	186

Note: unknown are either not asked, skipped, preferred not to say, or don't know responses