Anti-Immigrant Rhetoric and ICE Reporting Interest:

Evidence from a Large-Scale Study of Web Search Data

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Abstract

This paper studies whether media cues can motivate interest in reporting suspected unauthorized immigrants to Immigration and Customs Enforcement (ICE). Using Google Trends data, along with Bing search data and automated content analysis of cable news transcripts, we examine the role of post-2016 media coverage on searches for information about how to report immigrants to ICE, as well as searches about immigrants related to crime and welfare dependency. We find significant and persistent increases in news segments on crime by immigrants and their use of public services after Trump's inauguration, accompanied by a sharp increase in searches for how to report immigrants. We find a strong and consistent association between daily reporting searches and immigration and crime coverage, as well as with media fear cues about immigrants. Using timestamped searches during broadcasts of Trump's and Obama's speeches, we isolate the specific effect of anti-immigrant media coverage on searches for how to report immigrants to ICE. The findings indicate that media's choices regarding the coverage of immigrants can have a strong impact on the public's interest in behavior that directly harms immigrants.

In May of 2018, a grainy cell-phone video began making the rounds online, eventually gracing the front cover of the New York Daily News. In the video[1], a visibly angry man brandishes a cell phone and confronts a Spanish-speaking worker in a Midtown Manhattan restaurant with the words, "My guess is [your co-workers are] not documented, so my next call is to ICE to have each one of them kicked out of my country...I pay for their welfare, I pay for their ability to be here - the least they can do is speak English." In 2018, this was no idle threat - under the first year of the Trump administration, arrests of unauthorized immigrants without a criminal record more than tripled as compared to the previous year (Leonard 2018). Over the same time period, reports of employers threatening to call immigration authorities on workers more than quadrupled (Khouri 2018).

What motivates people's interest in reporting immigrants to Immigration and Customs Enforcement (ICE)? Is it driven by situational factors, such as encountering a suspected unauthorized immigrant, or do media narratives play a role in encouraging this behavior? Previous studies have found that anti-immigrant narratives can influence behavior, inducing information-seeking behavior about immigration (Gadarian and Albertson 2014), as well as interest in contacting elected officials with anti-immigrant messages (Brader, Valentino and Suhay 2008; Hainmueller, Hiscox and Margalit 2015). The framing of the immigration debate has serious policy implications, with more sympathetic portrayals reducing support for deportation (Haynes, Merolla and Ramakrishnan 2016; Merolla, Ramakrishnan and Haynes 2013; Knoll, Redlawsk and Sanborn 2011; Jones and Martin 2017). Anti-immigrant narratives also play a broader role in US politics, as narratives about immigrant crime and welfare use ("immigrant threat narrative") shape policy preferences about criminal justice and the welfare state (Abrajano and Hajnal 2017).

Reporting immigrants to ICE is a modern form of denunciation, a behavior which involves reporting alleged deviant behavior by others to the government. This behavior is largely studied in the historical and comparative contexts, such as Nazi Germany or the Soviet Union (Fitz-

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[1]The video can be accessed here: `https://thehill.com/homenews/news/388108-man-in-ny-restaurant-threatens-to-call-ice-on-people-speaking-spanish`

patrick and Gellately 1996; Joshi 2003; Fitzpatrick 1996), though some authors have noted the role of denunciation in US anti-terrorism policy (Bergemann 2019). In democratic societies, individuals who use denunciation are motivated by the desire to remove members of threatening out-groups within their community (Bergemann 2019). In the case of unauthorized immigration in the US, both ideology and inter-group conflict may play important roles in encouraging denunciation. Implicit anti-Latino attitudes increase political support for deportation (Pérez 2016), as does Republican party identification (Jones and Martin 2017). Still, the act of denunciation (reporting someone to ICE) itself is qualitatively distinct from merely holding anti-immigrant or pro-deportation attitudes. Many Americans who hold pro-deportation attitudes are not interested in reporting anyone to ICE, and the factors than encourage denunciation of unauthorized immigrants may be different from those that lead to pro-deportation attitudes. While we do not study reporting behaviors directly, we do study a vital step in the process: web searches for how to report.

Can anti-immigrant media narratives trigger interest in immigrant denunciation among American viewers? To address this question, we combine a novel dataset of Bing and Google searches for anti-immigrant queries, including a comprehensive set of queries about how to report immigrants to ICE, with automated text analysis of TV transcripts from CNN, MSNBC, and Fox News from 2014 to 2019. We are able to identify two key anti-immigrant topics within the transcripts; immigrants committing crimes, and immigrant usage of social benefits. We look at shifts in these topics over time, and leverage this temporal variation to measure the effects of the immigrant threat narrative on immigrant-reporting searches. We also examine the role of anger, fear, disgust, and sadness language cues in the transcripts in order to understand their effect on reporting interest. Finally, we use hourly time-stamped search data examine the effects of President Trump and Obama's speeches about immigration on reporting searches, to isolate the effect of anti-immigrant broadcasts themselves.

We find that after the 2016 election, news coverage of the immigrant threat narrative became

more prevalent, especially on Fox News. We identify a strong correlation between daily coverage of immigrant crime topics and immigrant-reporting searches. Fear cues in news transcripts had a significant and positive effect on immigrant-reporting searches, distinct from the effect of the immigrant threat narrative. We also find that all three categories of anti-immigrant searches we measure, including reporting searches, dramatically increased during the broadcasts of President Trump's speeches about immigration. We do not find similar effects for Obama's televised addresses. These findings suggest that in the wake of the 2016 election, anti-immigrant media coverage increased, which may have resulted in a significant uptick in interest in immigrant denunciation.

The rest of the article is organized as follows. The subsequent section describes the theoretical perspectives that motivate this study. The third section presents our hypotheses about conditions that prompt interest in reporting of immigrants. The fourth section discusses our data sources and delineates our analysis strategy. The fifth section demonstrates the rise of anti-immigrant rhetoric via television news coverage after the 2016 election. The sixth section documents the rise in anti-immigrant searches after the 2016 election and demonstrates the strong association between daily anti-immigrant searches and news segments about immigration. The seventh section uses hourly search data to isolate the effect of anti-immigrant media broadcasts specifically (Donald Trump's televised speeches) on anti-immigrant searches and compares these to effects from televised speeches by Barack Obama. The final section describes the implications of our findings.

Media Messages and Anti-Immigrant Beliefs and Behaviors: What We Know and Do Not Know

Scholars have identified several effects of the media on public opinion (Strömberg 2015). Media has a well-documented agenda setting impact on which political issues are seen as most impor-

tant by voters (Iyengar and Kinder 2010). However, mass media can play a role beyond that of agenda setting - activating public opinion. When a person's opinion on an issue is activated, their opinion about this issue is both "salient in the mind and impels [them] to political action" (Lee 2002). Through activating public opinion, mass media can compel the public to engage in a variety of behaviors that can influence the political process. These behaviors include expressive behaviors such as tweeting about an issue (King, Schneer and White 2017) or communicating with elected officials. Activated public opinion has played a key role in shaping the politics of race and ethnicity in the United States. Lee (2002) described the role of civil rights activists in activating Northern whites' public opinion, which he argues led to the passage of civil rights legislation in the 1960s.

Media coverage is also an extremely important propagator of presidential cues. Americans tend to follow cues from co-partisan political figures when forming their policy preferences (Lenz 2013; Achen and Bartels 2017; Layman and Carsey 2002; Levendusky 2009). While presidents communicate with their supporters through email and, more recently, social media, the press plays an important role in mediating these cues (Dalton, Beck and Huckfeldt 1998), amplifying some while diminishing others. This role is especially notable in the current scenario during the Trump administration, with media organizations vigorously debating their role in fact-checking inaccurate claims.[2] The debate over amplifying Trump's cues was notable in media discussions over whether to broadcast his 2019 Oval Office address on immigration live on the air.

Negative media portrayals of immigrants are common(Kim et al. 2011; Alamillo, Haynes and Madrid Jr 2019). Between 2000 and 2010, media regularly showed immigrant arrests and detentions, implying their criminality (Farris and Silber Mohamed 2018). Immigrants are disproportionately portrayed as male and Latino (Silber Mohamed and Farris 2019), invoking the "Latino threat" narrative, which emphasizes criminality and a lack of assimilation as common traits of immigrants from Latin America (Chavez 2013). Media coverage of immigration has

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[2]https://www.theguardian.com/media/2020/jan/06/media-leaders-agonize-amplifying-donald-trump-lies-2020-election

been shown to have significant impact on anti-immigrant sentiment (Benesch et al. 2019), as well as broader impacts on white Americans' support for more punitive criminal justice and welfare policies (Abrajano and Hajnal 2017).

Several studies have focused specifically on factors that influence attitudes toward deportation in the US. Pérez (2016) highlights the role of implicit anti-Latino attitudes in decisions about whether or not to deport a specific hypothetical immigrant. Haynes, Merolla and Ramakrishnan (2016) explores the role of various pro-and anti- deportation arguments, such as rule of law or cultural impact of immigration, in support for deportation. Several papers have looked at the use of specific labels such as "undocumented" or "illegal" (Merolla, Ramakrishnan and Haynes 2013; Knoll, Redlawsk and Sanborn 2011), and the role of campaign cues on immigration attitudes (Jones and Martin 2017).

A number of studies have focused on the effects of rhetoric and framing on anti-immigration behaviors and attitudes (Merolla, Ramakrishnan and Haynes 2013; Merolla et al. 2013; Haynes, Merolla and Ramakrishnan 2016; Valentino, Brader and Jardina 2013). Several conclusions have emerged from this literature. First, stimuli that engage anxiety are the most effective at mobilizing political participation and information seeking behavior around immigration (Brader, Valentino and Suhay 2008; Gadarian and Albertson 2014). Fear cues have been shown to stimulate information-seeking behaviors in a variety of contexts (Brader 2005, 2006) beyond immigration. Second, frames emphasizing cultural threats from immigration are more effective at generating opposition to immigration than frames emphasizing native-born citizens' economic interests (Hainmueller and Hopkins 2014; Haynes, Merolla and Ramakrishnan 2016; Brader, Valentino and Suhay 2008).

While this literature provides a rich background for understanding the relationship between xenophobic rhetoric, attitudes towards deportation, and anti-immigrant behaviors, there are several key areas that remain under-explored.

First, most studies that look at anti-immigrant behaviors look to policy-relevant behaviors,

such as contacting an elected representative (Brader, Valentino and Suhay 2008; Hainmueller, Hiscox and Margalit 2015; Merolla et al. 2013), agreeing to learn more about the issue (Brader, Valentino and Suhay 2008; Gadarian and Albertson 2014), or voting on naturalization applications (Hainmueller and Hangartner 2013). These are all behaviors that exist within the democratic process, in which citizens learn about issues, vote in elections, and attempt to influence their elected officials to support their preferred policies. However, not all media-influenced behaviors are so benign. Previous literature in the comparative context has found that media exposure can motivate violence against ethnic minorities, often by encouraging personal participation (Yanagizawa-Drott 2014; Müller and Schwarz 2019; Warren 2015). While violent behaviors exist on the extreme end of the spectrum, there is still a wide range of extra-democratic behaviors intended to harm immigrants, from expressing anti-immigrant comments to employment discrimination to denunciation of immigrants to ICE. Understanding the role of media messages in triggering these behaviors in individuals is crucial to understanding the full spectrum of responses to xenophobic rhetoric. If xenophobic rhetoric merely encourages people to participate in the political system and express anti-immigrant opinions to government officials, it is far less dangerous than if it encourages people to take actions directly harmful to immigrants.

Second, many immigration and media studies use similar methodological approaches, which have some weaknesses in the case of studying anti-immigrant behaviors. Many studies that focus on anti-immigrant attitudes and behaviors rely on surveys to measure their main dependent variable of interest. While surveys allow for experimentation and provide researchers with precise control over question wording, they can raise a variety of concerns, such as social desirability bias. While recent research has questioned the importance of social desirability in some domains (Blair, Coppock and Moor 2020), anti-immigrant behavior is a domain where it still retains significant power. Hainmueller and Hangartner (2013) found that Swiss citizens voting on immigration referenda tended to exhibit strong social desirability effects, as their votes were much more discriminatory on the basis of immigrants' ethnic origins than their responses to comparable pub-

lic opinion surveys[3]. Even studies that measure anti-immigrant behavior in the US context (such as contacting an elected official) do so embedded in an experimental environment, replicating these same social desirability effects.

While social desirability effects may limit the degree to which people are willing to engage in anti-immigrant behavior in a research setting, these environments might also generate the converse effect. Despite the prevalence of anti-immigrant rhetoric in popular media, only a small percentage of Americans choose to contact their elected representatives about immigration[4]. A laboratory setting where participants are offered this choice may overestimate the proportion of people who would behave in a similar way outside of an experiment. Similarly, a survey experiment where a participant is shown a prompt and asked whether or not they would be willing to deport the person described in the prompt is very different situation from the same participant choosing to report someone to ICE outside of an experimental context. In the first setting, the respondent is provided with the "deport" option by the experimenter, and knows that their choice will not have any consequences. The second setting requires the person organically search for how to report someone to ICE without prompting by an experimenter, with the knowledge that if they choose to report, their report may have very serious consequences. A stimulus that encourages a meaningful proportion of respondents to select a "deport" option in a lab may be insufficient to move the same respondents to take a step toward report someone to ICE. Americans get a specific dosage of anti-immigrant narratives through the media. Knowing whether or not these narratives are enough to generate interest in reporting immigrants to ICE outside of a research setting is key to understanding the affects of anti-immigrant rhetoric.

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[3]For a broader discussion of social desirability effects in the context of anti-immigrant attitudes, please see Hainmueller and Hopkins (2014)

[4]In general, even unusually engaged Americans are unlikely to contact their representatives on any issue. Even when prompted by an interest group, only 3.13% of respondents on that interest groups' mailing list chose to call their representative (Broockman and Ryan 2016).

Denunciation of Immigrants As Political Behavior

Why might people be interested in reporting a suspected unauthorized immigrant to ICE? While political scientists have studied denunciation in the context of counter-insurgency (Shaver, Shapiro et al. 2016; Wright et al. 2017) and whistleblowing (Ting 2008; Fiorin 2019), most studies on denunciation outside of these specific contexts come from the history literature. Using historical case studies, Bergemann (2019) provides a framework for considering the motives for denunciation in various contexts. While some regimes that encourage denunciation do so through coercion, both explicit (torture) and implicit (providing benefits for those who denounce others), many other regimes operate their denunciation systems on an entirely voluntary basis. Under such systems, denouncers are often protected by the veil of anonymity, and while false denunciations are not punished, denouncers gain no material rewards from the government by denouncing. The United States has had a number of recent programs encouraging denunciation, from the "If you see something, say something" anti-terrorism campaign to the Trump Administration's recent Victims of Immigrant Crime Engagement hotline.

The most common impetus in a democratic society is what is termed a "pro-social" denunciation (Bergemann 2019). Under a pro-social denunciation, the denouncer expects that the denounced person represents a genuine threat to society, and the removal of this denounced person will generate net good for many people. This is in contrast with other forms of denunciation, where the motive may be financial gain or retaliation against an enemy. One key motivation that holds true across multiple denunciation contexts, including pro-social denunciation, is the desire to remove the denounced person, in order to reap whatever gains were sought from the denunciation.

We argue that media plays a key role in sparking interest in denunciations of suspected unauthorized immigrants to ICE in three different ways. First, the media provides important cues about elected officials' political positions. When an elected official explicitly supports negative

sanctions against people engaged in undesirable behaviors, this can encourage would-be de-nouncers to report these behaviors. People are more likely to engage in political action when they believe that action will yield results - for example, turnout increases in close elections (Cancela and Geys 2016; Fraga and Hersh 2010). This leads us to our first hypothesis:

H1: People will have more interest in reporting immigrants when they believe the government supports deportation.

Donald Trump engaged in extreme anti-immigrant rhetoric during his campaign, with promises to create a deportation force specifically designed to removed unauthorized immigrants from the country. We expect that people who are interested in denouncing immigrants to ICE will be more likely to do so after Trump takes office, with searches for reporting immigrants increasing immediately after the inauguration. The increase in searches should remain significant even after accounting for time trends and amount of anti-immigrant media coverage. We also expect that when the Trump administration receives media coverage for anti-immigrant rhetoric or policies, we will see an uptick in reporting searches. However, we do <u>not</u> expect a discontinuity in reporting searches immediately after the 2016 election, nor do we expect that media coverage of Candidate Trump's anti-immigrant rhetoric to generate more reporting searches. Neither Candidate Trump nor President-elect Trump had the power to change immigration policy before his inauguration, so his anti-immigrant positions should not increase interest in reporting.

Second, we argue that due to the significant and consistent effect of negative out-group media coverage on negative attitudes toward out-group members (Das et al. 2009), mass media coverage is a key driver of pro-social denunciation interest. Unlike in other denunciation contexts, pro-social denouncers tend to focus on denouncing out-group members who they find threatening (Bergemann 2019). Our second hypothesis focuses on the role of cultural threat, specifically the immigrant threat narrative. Previous literature has shown that cultural threat poses a greater role in opposition to immigration than does economic competition (Hainmueller and Hopkins 2014). In the United States, the immigrant threat narrative focuses largely on concerns about immigrant

crime and utilization of government benefits. As such, media coverage that invokes this narrative is most likely to generate searches for reporting immigrants, even after controlling for the total amount of coverage about immigration.

H2: People will have more interest in reporting immigrants when exposed to rhetoric about immigrants committing crime and immigrant receipt of government benefits.

Our final hypothesis focuses on the role of fear cues on reporting searches. A number of studies focus on the role of emotion in triggering anti-immigrant responses. Anxiety about rising levels of immigration has been identified as a key emotion that triggers both information-seeking and politically participatory behaviors in the context of immigration (Brader, Valentino and Suhay 2008; Gadarian and Albertson 2014). While some studies find that emotion is the causal mechanism by which news coverage generates anti-immigrant behaviors, we choose to study the two hypotheses separately, in order to determine whether emotional cues alone can trigger interest in denunciation.

H3: People will have more interest in reporting immigrants when exposed to fear cues about immigrants.

These three hypotheses demonstrate how a number of different media cues can trigger interest in denunciation of immigrants to ICE. First, media can provide cues about the position of the current government on deportations, and thus the likelihood of removal of the threatening denounced person. Second, media can exacerbate out-group threat against immigrants through the invocation of the "immigrant threat narrative" and thus generate motivations for their removal. Finally, the media can elicit fear-based emotional cues, which have been shown to be effective in spurring anti-immigrant political participation.

	Table 1: Data Summary	
Dataset	**Measures**	**Availability**
Long Term Trends:		
Bing data	Daily Bing searches	03/16-08/19
Google Trends data	Daily Google searches	01/04-08/19
Media Effects:		
News transcript data[a]	News coverage	01/14-08/19
Hourly Bing search data	Effects of televised Trump speeches	01/18-08/19
Hourly Google Trends data	Effects of televised presidential speeches	01/15-08/19

[a]News transcript data was available for only 01/15 - 08/19 for MSNBC

Empirical Approach

This paper uses a wide variety of data sources to study the effects of media messaging on public interest in anti-immigrant denunciations. The main outcome variable of interest is web search behavior, measured by Bing and Google searches.[5] Within our web search data, we look at searches for reporting immigrants as our main variable of interest, with two secondary variables that measure search interest in immigrant crime and immigrant welfare use. Table 1 summarizes the data sources and their availability.

We use two approaches to measure the effect of media coverage on anti-immigrant searches. In the first approach, we look at daily Google and Bing searches for anti-immigrant keywords and compare the volume of these searches with the amount of media coverage of anti-immigrant topics. This approach tests whether there is an association between anti-immigrant media coverage and anti-immigrant search volume. Our second approach uses timestamped searches during Trump's and Obama's televised speeches to determine whether there was a spike in anti-immigrant web searches during a widely-watched anti-immigrant media broadcast.

[5]The use of Bing data was reviewed and cleared by the Microsoft IRB-594.

Why Reporting Searches Matter

Our measure for interest in reporting is web searches for queries such as "how to report an immigrant to ICE" and "report illegal immigrants anonymously". We describe our process for selecting these queries in detail in the next section. In this section, we outline three reasons why such queries are a useful measure of anti-immigrant attitudes and behaviors.

First, at least some searches for "how to report an immigrant" searches are likely to result in an actual denunciation. While web searches are a form of information seeking-behavior, not all information seeking behaviors are created equal. Prior studies of immigration that examine information-seeking behavior in the immigration context examines willingness to read a news article about immigration (Gadarian and Albertson 2014) or to sign up to receive more information about immigration from an outside group (Brader, Valentino and Suhay 2008). Searches for "how to report an immigrant", on the other hand, fall into a different category of information-seeking behavior, referred to in the marketing literature as the "conversion funnel". Jansen and Schuster (2011) finds that search engine users interested in purchasing a specific item, such as a computer, go through a variety of search terms that become increasingly more specific as they move through the funnel. A substantial fraction of searchers in each phase of the funnel move on to the next, with some ultimately choosing to purchase the product. Searches for "how to report an immigrant" are fairly late in the conversion funnel, as searches have identified a problem (in this case, immigrants), and are actively searching for a solution to the identified problem. Even if searchers do not ultimately report an immigrant to ICE immediately as a result of this search, they are now more familiar with the process and can report someone later or pass the information along to someone else who will make a report. Knowing how to report may also empower people to make threats to report suspected unauthorized immigrants to ICE, even if they do not follow through.

While the conversion funnel model was developed to describe online purchase behavior, web searches have been shown to be a clear predictor of offline behavior in a wide variety of contexts,

both political and non-political[6]. As such, when an event results in a clear spike in web searches for "how to report an immigrant to ICE", it is extremely likely to be followed by a spike in actual reports to ICE.

Second, even searches that do not result in a report to ICE still signal support for the deportation of unauthorized immigrants. Many of these searches, including 4 out of the top 10 most common queries, are explicitly interested in reporting immigrants to ICE "anonymously", suggesting that the searcher is concerned about suffering retaliation or reputational harm as a result of their report. This level of specificity in searches is unlikely to represent an idle curiosity about the workings of the US immigration system. We find that media events that result in spikes for reporting searches do not explicitly ask viewers to report anyone to ICE. Instead, searches for how to report immigrants are generated organically by the viewers themselves. This suggests that these viewers not only support deportations, but see them as a preferred policy solution and are interested in personally participating. This is a very meaningful set of attitudes, even if they do not translate directly into reporting behaviors.

Finally, the elicitation of extreme anti-immigrant attitudes and a willingness to personally participate in behaviors that harm immigrants can lead to other, non-reporting anti-immigrant behaviors. The same attitudes that lead to a desire to harm or remove immigrants via denunciation can manifest in other anti-immigrant behaviors, such as threats and discrimination. Even if people do not ultimately report anyone to ICE as a result of their search, the search itself is a strong indicator of their interest in engaging in anti-immigrant behaviors, up to and including violence. In addition to our searches measuring interest in reporting immigrants to ICE, we look at a secondary set of searches measuring interest in crimes committed by immigrants, as well immigrant welfare usage. While these searches themselves do not necessarily represent anti-immigrant attitudes, they do show an interest in and engagement with anti-immigrant narratives. We expect immigrant/crime and immigrant/welfare searches to be correlated with reporting searches, as we

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[6]For a brief literature review of search as a predictor of real-world behavior, please see appendix

Table 2: Top 10 Bing Searches For Each Immigration Topic

Report	Crime	Welfare
how to report illegal immigrants	Criminal Immigrants	do illegal immigrants get welfare
report illegal immigrants	fbi illegal immigration crime statistics	can illegal immigrants get welfare
how to report illegal immigrants anonymously	illegal immigrant crime statistics	illegal immigrants on welfare
how to report someone to immigration	illegal immigrants crime statistics	do illegal immigrants get benefits
how to report an illegal immigrant	illegal immigrant population statistics crime	cost of illegal immigration
report illegal immigrants anonymously	illegal alien crime	do illegals get government benefits
how to report immigration fraud anonymously	illegal alien crime report	how much does illegal immigrants cost america
ice report illegal immigrants anonymously	americans killed by illegal aliens	how much do illegal immigrants cost taxpayers
report immigration fraud	illegal immigrant crime	cost of illegal immigration 2018
How to Report Someone to Immigration	Illegal Aliens Kill A Woman In Washington, State	cost of illegal immigrants to taxpayers

Notes: The table represents the top 10 searches for each search category in the United States. The searches were overwhelmingly negative in tone towards immigrants and overwhelmingly focus on unauthorized immigrants.

predict that all three categories of search are influenced by the same set of anti-immigrant messages.

Measuring Real-Time Interest Through Search Data

To measure reporting interest, as well as search interest in immigrant crime and welfare usage, we turn to web search data. We broadly refer to this set of searches as "anti-immigrant searches" throughout the duration of the paper. Specifically, we look at Google and Bing for searches about immigration and crime, immigration and welfare, and information about reporting immigrants to ICE. These searches contain at least one immigration term and one keyword associated with the category of search (for example, "report"). For a detailed explanation of how search terms were selected, please see the appendix. Table 2 shows the top 10 Bing searches for each topic.

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To measure Google search volume, we used Google Trends data. A downside of this data, in contrast with the Bing data, is that it limits the number of terms that can be used and does not allow the manual removal of terms that, while matching the keywords, are not related to immigration. Despite these limitations, we find that the Google Trends results consistently replicate the Bing results.

We aggregate these searches using two different intervals of time - the hourly level, and the daily level. Hourly-level searches are used to measure the effects of presidential speeches on anti-immigrant searches, while daily level-searches are used to understand the broader relationship between anti-immigrant searches and media coverage.

Estimating News Content Using Structural Topic Models

To measure immigration news coverage over time, we rely on MSNBC, Fox News, and CNN transcripts from 2014 to 2019. Time-stamped transcripts were downloaded from the Internet Archive. While Fox and CNN transcripts were available for 2014-2019, MSNBC was available only for 2015-2019.

News transcripts are used as a proxy for media coverage of specific aspects of the immigration issue. When we see an increase in coverage of immigration and crime in the transcripts, this suggests that multiple print, online, and TV news outlets also increased their coverage of this issue. The results in this paper do not necessarily reflect TV alone, but news media coverage collectively, of which TV is by far the dominant mode of public consumption (Allen et al. 2020). Cable news in particular allows for analysis of a wide range of perspectives that shape the broader national news agenda.

To measure changes in media coverage of immigrant-related issues before and after the 2016 election, we use a structural topic model (Wang, Zhang and Zhai 2011) to estimate the prevalence of various immigrant-related topics in CNN, MSNBC, and Fox News transcripts.

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Structural topic models are a form of semi-automated text analysis that allow for the inclusion of document covariates when estimating topical prevalence or content (Roberts et al. 2014). Topic models assign each document a topic proportion for each topic, which means that a document can (and often does) belong to multiple topics (e.g., 0.1 topic A, 0.2 topic B, 0 topic C). The model generates a wide variety of topics relating to immigration[7]. In the appendix, Table A1 shows the full results of the topic model.

We focus on three topics from the model: Topic 1 and Topic 3, which are classified as crime topics, and Topic 13, which is classified as the welfare topic. Figure 1 shows the documents most representative of each topic, all of which clearly represent an anti-immigrant point of view. Furthermore, as further demonstrated in the results section, these topics are significantly more likely to be covered by Fox News than by MSNBC or CNN, further suggesting that these news segments depict immigrants in a negative light.

In order to measure emotion in news transcripts and presidential speeches, we use the sentimentr R package to measure the presence of 4 negative emotions -

Figure 1: Immigrant Crime and Welfare Topics

Crime (topic 1):

THE ILLEGAL IMMIGRANTS AND SEVEN-TIME FELON ACQUITTED IN THE SHOOTING DEATH OF KATE STEINLE IS SENTENCED TO TIME SERVED FOR A GUN CHARGE. FELONY POSSESSION WAS THE ONLY CONVICTION FOR JOSE ZARATE IN THE NOVEMBER TRIAL. THE JURY RULING STEINLE'S DEATH WAS AN ACCIDENT. JAMAL SHAW WHOSE 17-YEAR-OLD SON -- JAMIL SHAW WHOSE 17-YEAR-OLD SON KILLED BY ILLEGAL IMMIGRANT SAID THE

Crime (topic 3):

AN UNLICENSED ILLEGAL IMMIGRANT. >> THE BUS SLAMMING INTO A FIRE TRUCK AT THE SCENE OF AN EARLIER ACCIDENT IN BATON ROUGE. THE BUS DRIVER A 37-YEAR-OLD HONDURAN MAN CHARGED WITH NEGLECT HOMICIDE. >> ILLEGAL IMMIGRANTS HAVE A NEW

Welfare (topic 13):

IMMIGRANTS. AS A STUDENT MYSELF, SOMETIMES I WONDER IF I WOULD BE BETTER OFF RIPPING MY SOCIAL SECURITY CARD IN HALF SO I COULD RECEIVE THE BENEFITS. WHAT DID YOU NOTICE AT OREGON STATE YOU'RE REPORTING? >> SURE. I WAS A STUDENT AT OREGON STATE AND I PAID UPWARDS OF $30,000 IN TUITION TO ATTEND THERE AS AN OUT OF STATE STUDENT. AND OREGON AMONG 17 OTHER STATES, IS A TUITION EQUITY STATE. WHERE UNDOCUMENTED STUDENTS ARE ABLE TO PAY IN STATE TUITION. WHILE I, A U.S. CITIZENS WAS PAYING $30,000 TO ATTEND COLLEGE, I WITNESSED, YOU KNOW, ILLEGAL IMMIGRANTS ATTENDING

Notes: These documents have the highest association with Topics 1, 3, and 13.[a]

[a]These documents were selected using the FindThoughts() function of the stm package, which uses the posterior probability of a topic given a document to return the documents most representative of a topic. The pictured documents are the top documents returned for each topic.

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[7]For more information about how we identified immigration segments, as well as the details of the model, please see the methods appendix

anger, fear, disgust, and sadness[8] in each immigration

segment. Cable news often uses visual affective cues in

concert with emotional language, and language alone can prove a potent emotional cue even in

the absence of additional imagery (Lindquist 2017; Utych 2018). While this methodology is not

a perfect measure of the emotions induced by media coverage in viewers, it serves as a reason-

able heuristic of the emotional cues that were sent by the media coverage. In general, Fox News

tended to have more negative emotional cues around immigration than MSNBC or CNN, and

negative cues increased during and after the 2016 election[9].

Measuring Media Effects Using Presidential Speeches

To determine whether changes in anti-immigrant searches can be directly attributed to anti-immigrant

broadcasts, we look at hourly searches during presidential speeches. We compare searches during

a speech to searches at the same time exactly one week before and one week after the speech.

Searches tend to have significant day-of-week effects. Searches one week before or one week af-

ter a speech are a better control group than searches one day before or one day after, as people

search differently on weekdays than weekends.

Televised presidential addresses are an ideal test of the effects of anti-immigrant broadcasts

on anti-immigrant search behavior. Each address is a major media event with an audience of tens

of millions of Americans watching the speech live. Unlike nightly news broadcasts, there are

no competing political media broadcasts of similar magnitude during a presidential address, so

spikes in anti-immigrant search terms during this time can be attributed to the address. Finally,

political media events of the same magnitude as televised presidential addresses are rare, so com-

parisons to search patterns at the same time one week before or after the speech are unlikely to

be confounded by a different political media event. Using the hourly Google Trends data, which

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[8]Before running the package, we remove the terms "illegal immigr*", "illegals", "illegal alien*", and "immigr*", as the word "illegal" is associated with a specific emotional valence

[9]For more details, please see appendix

is available for the prior five years, we examine searches during Trump and Obama's State of the Union Addresses in 2015 - 2019, as well as Trump's 2019 Oval Office Address about immigration[10]. These speeches are all heavily televised events that draw tens of millions of viewers.

The comparison with Obama's speeches is useful because both presidents mentioned immigration in their SOTU speeches, but from very different perspectives. Trump's comments on immigration during his speeches were much more negative, and focused on immigrant criminality and welfare dependence. In contrast, Obama's mentions of immigrants tended to be positive. This allows us to verify that anti-immigrant search spikes can be attributed to *anti-immigrant* messages, rather than positive messages about immigrants.

It is important to note that none of the presidential speeches studied exhort Americans to report anyone to ICE. Furthermore, we find no evidence that media broadcasts about immigration explicitly direct people to denounce immigrants to ICE. If there is an effect of media broadcasts on interest in denunciation, it is not because viewers are following directions explicitly given by the media. Instead, they are responding to cues about immigrants and beliefs about their threat to the US.

Results: Anti-Immigrant Media Messages Became More Prevalent After 2016

After the 2016 presidential election, media coverage of immigration increased, and the content became more negative towards immigrants. Figure 2 plots the total daily duration of immigration news segments across three periods and three cable news channels. While there was little change in the daily duration of immigration coverage between the pre-campaign and campaign periods,

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[10]Google Trends data was pulled using the pytrends package for the GMT timezone, which we then converted to EST. Google accounts for 94% of mobile search market share in the US (as compared to only about 60% of desktop search market share), making it a better data source to measure direct responses to widely-watched media events

Figure 2: Immigration News Segments
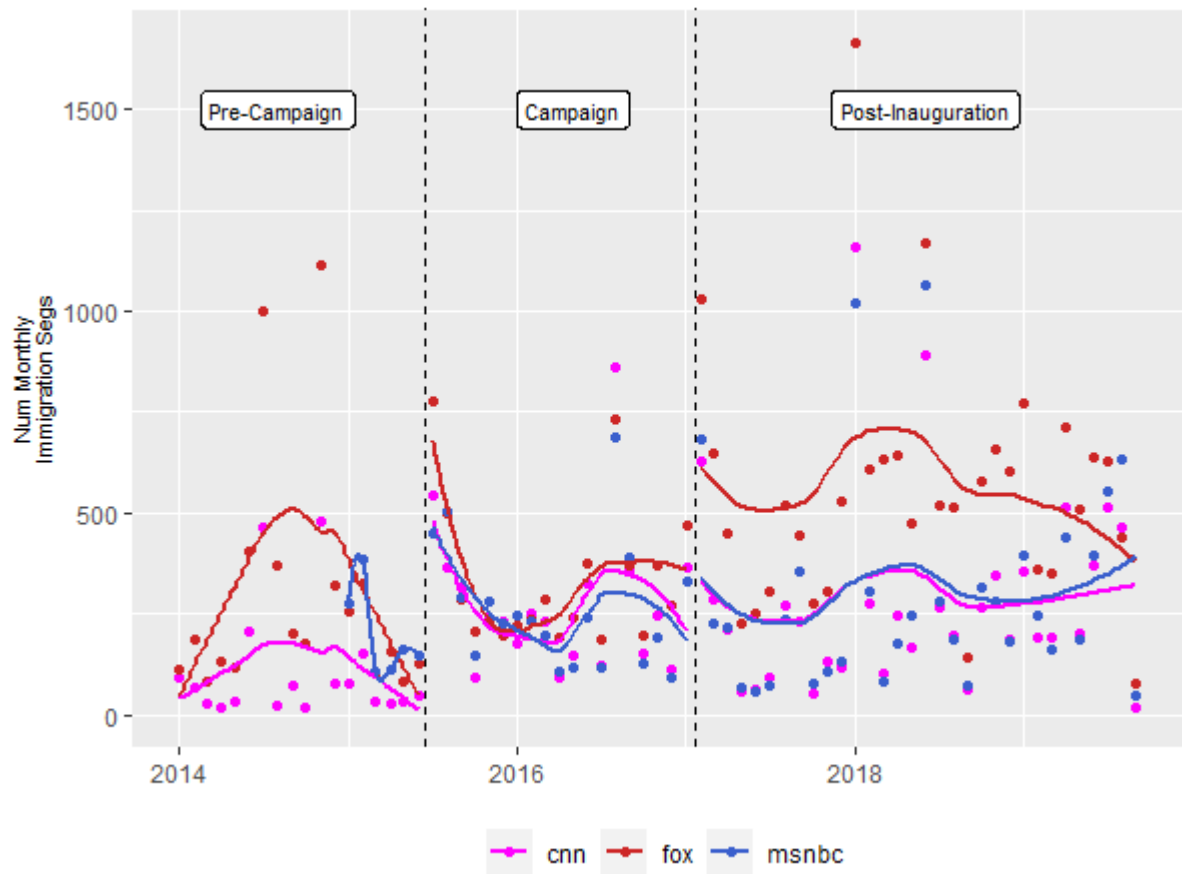
Notes: There was a small increase in the monthly number of immigration segments aired by CNN and MSNBC after Trump's inauguration while Fox News nearly doubled its' immigration coverage.

Figure 3: Immigration News Segments by Topic
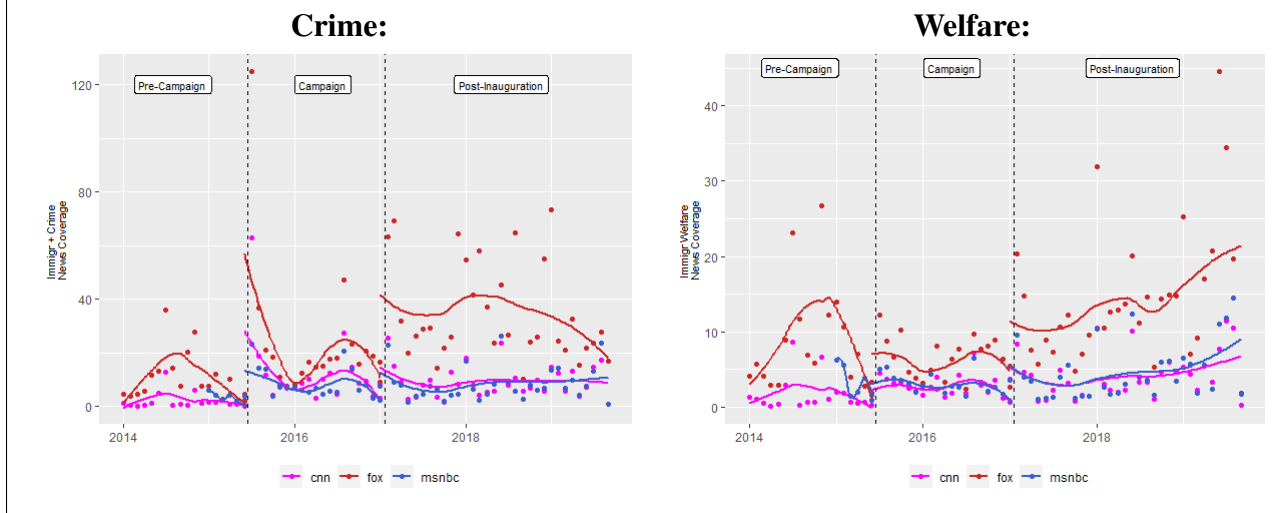
Notes: The overall amount of immigration crime and immigration welfare coverage increased substantially in the post-inauguration period, especially on Fox News. Coverage of a topic is defined as the sum of the crime/welfare topic proportion across all documents per month for that channel.

there was a significant increase after the inauguration, especially on Fox News. While there was a modest post-inauguration increase in immigration coverage on CNN and MSNBC, Fox News' average monthly number of immigration segments nearly doubled after the inauguration, from 303.5 to 545.2. This suggests that a substantial portion, if not all, of the news effects we measure can be attributed to stories originating from Fox and other forms of right-wing media, many of which are extremely anti-immigrant.

In addition to increases in the volume of coverage , the *content* of immigration news coverage also shifted.[11] Fox News, which had the highest proportion of immigrant crime coverage of the three channels in our dataset, both increased its volume of immigration coverage and devoted more of its immigration coverage to crime. Figure 3 presents the proportion of daily coverage devoted to immigration and crime, and immigration and welfare for each of the three channels.[12]

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[11]For results of the structural topic model, which shows changes in topic proportion over time, please see the appendix.

[12]Daily crime coverage calculated as $DailyCoverage_{jk} = \sum_i CrimeProportion_{ijk}$ over all news segments i on channel j on date k

In sum, cable news coverage became markedly more focused on immigrant crime and welfare during the 2016 campaign and especially after Trump's inauguration. Cable news coverage can be considered a proxy for media coverage more broadly, and the nature of this shift suggests that the public had much greater exposure to messages about immigrant crime and welfare dependency after the 2016 presidential campaign. In the next section, we examine web search patterns around immigration during the post-inauguration period and show their relationship to media coverage.

## Anti-Immigrant Searches Closely Track Media Coverage

Echoing the discontinuity in media coverage shown in figures 2 and 3, there was a clear discontinuity in anti-immigrant search rates after the 2017 inauguration of Donald Trump. Figure 4 plots the proportion of Bing and Google searches for the three sets of immigration terms during the Trump, Obama, and Bush administrations.[13] For each set of terms, there was a substantial increase in searches in the days after Trump's inauguration. Furthermore, in addition to the immediate post-inauguration spike in searches, the baseline level of anti-immigrant searches either remained constant or increased over the course of the Trump administration. This difference is especially pronounced for reporting searches, where a sharp discontinuity at the inauguration was followed by relatively little change. On the other hand, we see no discontinuity after the 2016 election in either the Bing or the Google reporting searches.

The increases in immigration searches after Trump's inauguration were non-trivial and highly consistent across both the Google and Bing data. Compared with the Obama administration, searches for immigrant crime, welfare, and reporting during the Trump administration increased by a factor of 1.36 to 2.45. For example, the Google Trends data show that searches for the immi-

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[13]Because Figures 2 and 3 show little change in media coverage of immigration during the campaign period relative to pre-campaign period and because we want to avoid the inclusion of a large number of periods in Figure 4, we let the campaign period be associated with the outgoing administration

Figure 4: Immigration Searches by Administration
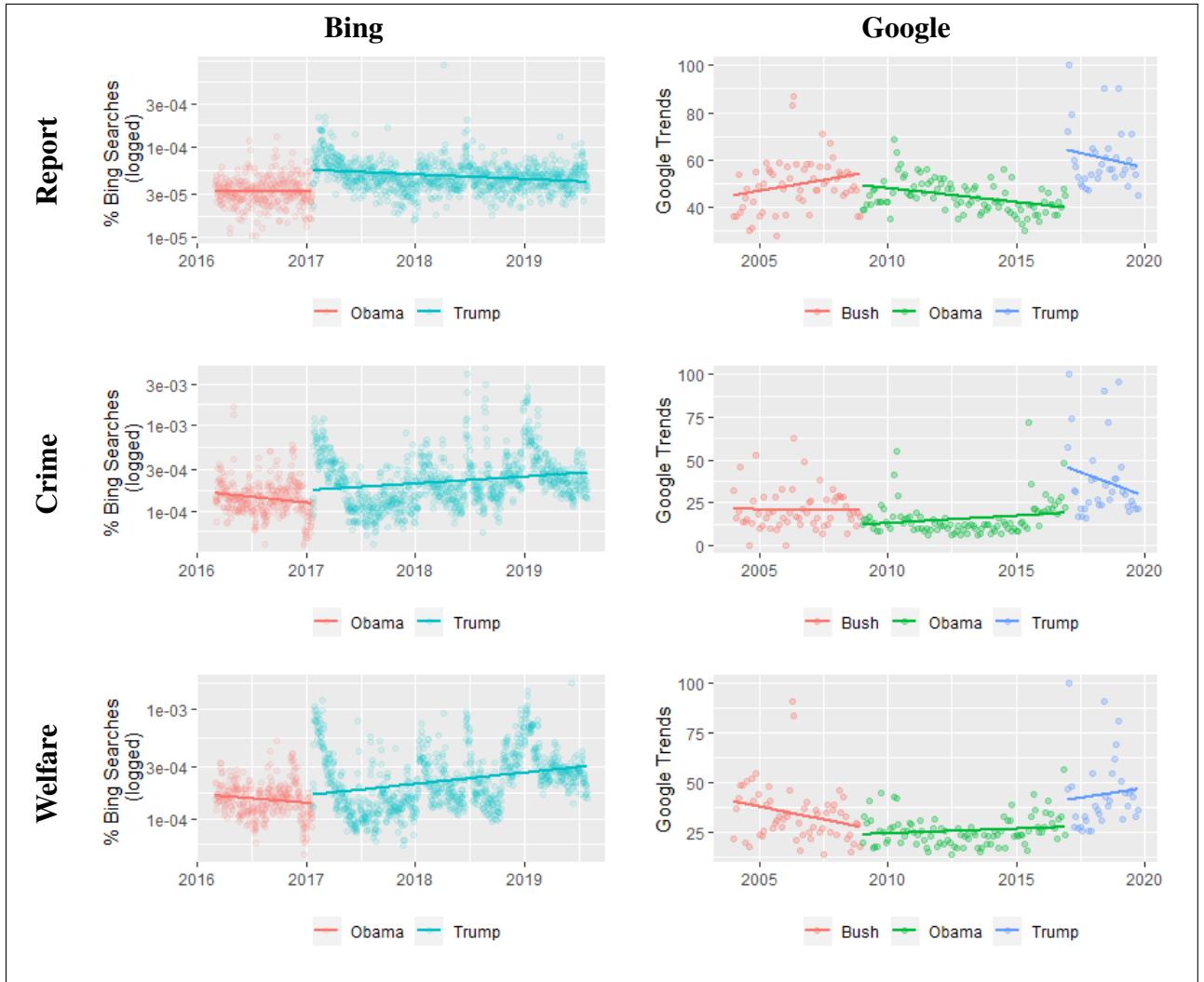
Notes: For all three sets of anti-immigrant terms, searches increased after Trump's inauguration on both Bing and Google. There was also a spike in all three sets of terms in the months immediately after the inauguration. For the Bing data, the Y-axis is daily searches for the immigration terms as a percentage of daily Bing searches on a log10 scale, and each data point represents one day. For the Google data, the Y-axis is Google Trends' "Interest over Time" measure, and each data point represents one month.

Table 3: Immigration Searches by Presidential Administration

	Dependent variable:			
	Crime		Welfare	
	Bing	Google	Bing	Google
Date	0.0004*** (0.0001)	0.001 (0.001)	0.0004*** (0.0001)	−0.0002 (0.001)
Bush Admin		8.280** (4.187)		7.819** (3.731)
Obama Admin	-	-	-	-
Trump Admin	0.304*** (0.087)	19.903*** (4.027)	0.265*** (0.082)	18.560*** (3.588)
Constant	−20.531*** (1.965)	−4.163 (23.241)	−20.281*** (1.855)	28.585 (20.710)

	Report	
	Bing	Google
Date	−0.0004*** (0.0001)	−0.002* (0.001)
Bush Admin		0.785 (2.899)
Obama Admin	-	-
Trump Admin	0.668*** (0.051)	19.716*** (2.788)
Constant	−7.649*** (1.016)	72.574*** (16.089)

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

Notes: After accounting for the linear time trend, there was still a clear increase in immigrant reporting searches after Trump's inauguration. Trump admin is a dummy variable that is 1 when Date> 2017-01-20, and 0 otherwise. Bing regression is binomial logit on number of searches, with each search for a reporting search coded as 1, and a search for a non-reporting search term coded as 0. Standard errors are clustered by date. Google regression is OLS on monthly search interest.

Table 4: Media Coverage and Reporting Searches

	Dependent variable:	
	Report	
	Bing	Google
Immigration Segs	0.002*** (0.0004)	0.055*** (0.019)
Immigr + Crime Coverage	0.019*** (0.007)	0.685** (0.279)
Immigr + Welfare Coverage	−0.007 (0.014)	1.416* (0.723)
Trump Admin	0.563*** (0.043)	18.051*** (1.883)
Date	−0.0004*** (0.00005)	−0.002 (0.002)
Day of Week FE	X	X
Month FE	X	X
Constant	−9.027*** (0.842)	73.911** (32.050)

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

Notes: The volume of immigrant crime coverage and overall immigrant-related coverage was positively associated with higher search rates for immigrant reporting in both Bing and Google Searches. The volume of immigrant welfare coverage is positively associated with immigrant reporting Google searches. Bing Regression is binomial logit with standard errors clustered by date. OLS yields substantively similar results (see appendix). Google Regression is OLS on daily Google data. For equivalent tables about immigrant/crime and immigrant/welfare searches, please see appendix.

grant and crime terms increased by a factor of 2.45 from the Obama administration to the Trump administration while Bing shows that it increased by a factor of 1.8. Table 3 presents regression estimates for the effects of the administration change on immigration searches for both Google Trends and Bing and confirms that the effects of the Trump administration remain significant even after introducing a linear time trend.

The results presented here establish the existence of a sizable and persistent increase after Trump's inauguration in searches for immigrants and crime, immigrants and welfare, and methods for reporting immigrants to ICE. This manifests as a discontinuity immediately after the inauguration on January 20, 2017. Further, these results are highly consistent across both the Google and Bing search data.

Both the amount and topic of anti-immigrant media coverage was found to be closely related to the level of immigrant reporting searches, as shown in Table 4. On days when there was

detailed media coverage of the immigration and crime topic, searches for reporting immigrants tended to be higher on both Bing and Google. Google searches were also positively correlated with media coverage of the immigration and welfare topic. Furthermore, these associations remained significant after controlling for the Trump administration, providing support for hypothesis 2, which states that media coverage reinforcing the immigrant threat narrative leads to more reporting searches. These findings suggest a genuine relationship between media coverage and anti-immigrant searches that is driven by specific events rather than by the overall higher level of coverage of immigrant-related topics during the Trump administration. It is also important to note that both the dummy variable for the Trump administration and the level of anti-immigrant media coverage have distinct and significant effects on reporting searches. Americans respond both to cues that the government supports deportations (hypothesis 1) as well as to anti-immigrant media coverage (hypothesis 2).

While there was a significant increase in negative coverage of immigrants after Trump's inauguration, the Trump administration also engaged in substantial anti-immigrant messaging and policy initiatives. Linking immigration to crime has been a major messaging strategy of the Trump administration to justify its restrictive immigration policies, and these results suggest that this message is effective at mobilizing interest in denunciation. This raises the issue of whether media coverage of the Trump administration's anti-immigrant messages sparked the increase in anti-immigrant searches.

To further test these hypotheses, we look at the number of mentions of the word "Trump" in daily immigration coverage. When the Trump campaign or Trump administration emits anti-immigrant cues, there is often significant media coverage of the event and thus an increase in immigration segments containing the word "Trump". If the relationship between immigration coverage and anti-immigrant web searches is the direct result of Trump's words or actions, searches should be related to the amount of immigration coverage containing the word "Trump" rather than overall immigration coverage or coverage of a specific immigration topic. To capture dif-

Table 5: Immigration Coverage, Administration Actions, and Reporting Searches

	Dependent variable:	
	Report	
	Bing	Google
Immigration Segs	−0.001 (0.001)	−0.058 (0.041)
Immigr + Trump Segs	0.001 (0.002)	0.094 (0.068)
Trump Admin	0.469*** (0.044)	15.500*** (2.002)
Trump Segs x Trump Admin	0.008*** (0.002)	0.300*** (0.071)
Immigr + Crime Coverage	0.023*** (0.007)	0.913*** (0.283)
Immigr + Welfare Coverage	−0.007 (0.013)	1.340* (0.729)
Date	−0.0003*** (0.00005)	−0.001 (0.002)
Day of Week FE	X	X
Month FE	X	X
Constant	−9.760*** (0.829)	65.889** (32.018)

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

Notes: Controlling for the amount of Trump-immigration coverage does not weaken the relationship between anti-immigrant coverage and anti-immigrant searches. The Trump News variable is not significant, indicating that during the campaign, Trump's statements on immigration had no relationship with anti-immigrant searches. The interaction between Trump News and Trump Admin, while significant, does not weaken the relationship between the crime/welfare news coverage and anti-immigrant searches. Bing regression is binomial logit with standard errors clustered by day, and Google regression is OLS.

ferences in cue-taking during the campaign versus the Trump administration, we also include an interaction between number of segments of immigration-Trump coverage and Trump administration variable. Recall, hypothesis 1 predicts that only cues emitted by *President* Trump, but not *Candidate* Trump, would increase reporting searches, as only President Trump can shape immigration policy and ensure that denunciations of immigrants to ICE will have the intended effect.

The results of these tests, shown in Table 5, demonstrate that while there was a relationship between Trump's messages and reporting searches, the effects of news coverage on immigration searches were not solely the result of Trump's cues on immigration. Even when the Trump Coverage variable and its interaction with the Trump administration is included in the regression, the strong relationship between immigrant searches and coverage of the immigrant+crime and immigrant+welfare topics does not decline in significance. This provides further support for hypothesis 2, as it shows that anti-immigrant messaging specifically had an effect on reporting searches, even when it was not accompanied by presidential rhetoric.

In the case of Trump's campaign cues, the regressions did not show a significant positive effect of Trump immigration coverage on anti-immigrant searches during the campaign. However, the cues about Trump's immigration policy as president did have a positive and significant effect on reporting searches. Both of these findings provide further support for hypothesis 1. Furthermore, these results confirm the distinct effects of pro-deportation government cues and immigrant threat cues on reporting interest.

Finally, we examine the role of negative emotional cues in reporting searches. Hypothesis 3 states that fear cues should have a positive relationship with reporting searches. Table 6 shows the result of regressing reporting searches onto anger, fear, sadness, and disgust cues. We find that across both Bing and Google searches, days with higher proportions of immigrant fear cues generated more immigrant reporting searches, providing support for hypothesis 3. However, both crime and welfare topics are correlated with certain emotional cues (most notably, immigrant crime coverage contains a great number of fear cues). Is it possible that the topic and emotional

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cue variables are measuring the same phenomenon? In order to test this possibility, we include the daily level of immigrant crime and immigrant welfare coverage in the last two columns of table 6. We find that both sets of cues continue to have a positive and significant relationship with reporting searches, suggesting that they are measuring separate phenomena. While immigration and crime coverage does have a large number of fear cues, it appears that the immigrant threat narrative itself has a distinct relationship with immigrant denunciation interest, beyond its' relationship with fear cues.

In summary, when comparing immigration coverage with immigration searches, after controlling for the presidential administration, on days with more news coverage of immigration, there were more anti-immigrant Bing and Google searches. Furthermore, the topic of the news coverage had a significant impact on reporting searches; on days with more immigrant crime coverage, there were more anti-immigrant searches. This relationship is not attributable to media coverage of Trump's anti-immigrant cues, although the Trump administration cues that it supported more punitive policies toward immigration also increased reporting searches. Immigrant fear cues also play a distinct role in encouraging reporting searches. These findings show a clear and consistent relationship between anti-immigrant media coverage and reporting interest. In the next section, we further isolate the effect of anti-immigrant broadcasts on reporting searches by looking at hourly searches during presidential speeches.

Table 6: Emotional Cues and Anti-Immigrant Searches

	Dependent variable:			
	Report		Report	
	Bing	Google	Bing	Google
Anger Cues	−0.012 (0.078)	0.997 (2.857)	−0.007 (0.070)	2.017 (3.384)
Fear Cues	0.185** (0.072)	6.200** (2.860)	0.127** (0.058)	7.105** (3.265)
Sadness Cues	−0.055 (0.076)	2.570 (3.123)	−0.172** (0.076)	−1.497 (3.658)
Disgust Cues	−0.013 (0.114)	−6.433* (3.741)	−0.050 (0.082)	−12.549*** (4.314)
Immigr + Crime Coverage			0.0001* (0.00004)	0.004** (0.001)
Immigr + Welfare Coverage			0.0004** (0.0002)	0.004* (0.002)
Immigration Segs	0.001 (0.001)	0.006 (0.033)	0.001* (0.001)	0.027 (0.041)
Trump Admin	0.552*** (0.043)	18.193*** (1.901)	0.540*** (0.042)	18.077*** (2.039)
Date	−0.0004*** (0.00005)	−0.002 (0.002)	−0.0005*** (0.0001)	−0.009*** (0.002)
Day of Week FE	X	X	X	X
Month FE	X	X	X	X
Constant	−8.753*** (0.804)	80.816** (31.827)	−7.580*** (0.826)	197.924*** (42.153)

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

Notes: Immigrant fear cues in news transcripts was positively associated with higher search rates for immigrant reporting in both Bing and Google Searches. The association remains significant even after controlling for immigrant crime and immigrant welfare topics. Bing Regression is binomial logit with standard errors clustered by date. OLS yields substantively similar results (see appendix). Google Regression is OLS on daily Google data. For equivalent tables about immigrant/crime and immigrant/welfare searches, please see appendix.

Anti-Immigrant Searches Increase During Broadcasts of Speeches by Trump

Our final set of analyses examines the direct effect of anti-immigrant media broadcasts on immigrant reporting searches. To test this, we look at televised speeches by both President Obama and President Trump. The speeches in our sample average 40.65 million viewers, and each contains multiple mentions of immigration. Given the anti-immigrant content of Trump's speeches, we expect to see a spike in anti-immigrant searches during Trump's speeches. We do not expect to see the same increases during Obama's speeches, as they do not contain anti-immigrant content. Furthermore, we also examine searches at the same time exactly one week before and one week after the speech, to ensure that any changes in searches during the presidential speeches are not the result of a time-of-day effect.

Our analyses reveal that the volume of anti-immigrant searches, including immigrant reporting searches, did spike during televised broadcasts of speeches by President Trump. Figure 5 shows hourly Google searches for reporting, crime, and welfare during Trump's 2017, 2018, and 2019 SOTUs and 2019 Oval Office address and compares them to Obama's 2015 and 2016 SOTUs. The plot also compares these searches with searches for the same terms one week before the speech and one week after the speech. During President Trump's speeches, there were clear spikes for reporting, crime, welfare but there were no corresponding spikes during President Obama's speeches.

Furthermore, there was no increase in searches at the same time of day exactly one week before and after the speech, which suggests that the increase in searches can be attributed to the speech itself rather than any time effects. The results shown in Table 7 confirm the statistical significance of these search spikes, as the interaction between speech date and speech hour is

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positive and significant only for Trump, but not for Obama[14]. This signifies the unusual spike in anti-immigrant searches during televised Trump speeches.

While all four of Trump's speeches prompted a spike in crime searches, and three resulted in a welfare spike, only the last two resulted in a spike in reporting searches (Table 8). What was different about these last two speeches? To answer this question, we examined the negative emotional cues (anger, disgust, fear, and sadness) present in speech sentences that mentioned immigration. Figure 6 shows that Trump's first two speeches showed little increase in negative emotional cues in paragraphs about immigration as compared to Obama's. However, his 2019 oval office address showed markedly different emotional valence, containing the most negative cues in immigration paragraphs of all of the speeches. This is especially notable given that it was also the shortest, running approximately 10 minutes, as compared to the rest of the speeches, which were hour-long State of the Union Addresses. Of all of the speeches, it also generated the largest spike in reporting searches[15]. Trump's 2019 speeches were in general more negative towards immigrants, with a greater focus on unauthorized immigrants.

In summary, there was a clear and sharp increase in anti-immigrant web searches during Trump's speeches but not during Obama's speeches. While all four of Trump's speeches generated web searches for the anti-immigrant topics he explicitly mentioned in the speech (crime and welfare), only the last two generated spikes in reporting searches. In the first two speeches, viewers were picking up on Trump's anti-immigrant cues and searching for them, but these messages did not translate into reporting interest. The last two speeches, however, were particularly negative towards immigrants, suggesting that the content of an anti-immigrant broadcast is critical in determining whether it will pique interest in reporting. The 2019 Oval Office address, which

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[14]The negative and significant coefficient on the un-interacted speech date term is the result of different scales across different dates in Google Trends. The regression is meant to detect whether the change in searches during the speech hour is unusual on the date of the speech, as compared to the same time during the week before and the week after

[15]On Google Trends, the week of Trump's 2019 Oval Office Address yields the largest number of "report immigrant" searches in 5 years. See `https://trends.google.com/trends/explore?date=2014-02-01%202019-02-01&geo=US&q=report%20immigrant`

Table 7: Google Immigration Searches During Presidential Speeches

	Dependent variable:			
	Crime		Welfare	
	Obama	Trump	Obama	Trump
Speech date	−2.920 (2.797)	−35.689*** (2.774)	−0.705 (3.449)	−0.992 (2.769)
Speech hour	2.148 (5.594)	8.439 (5.547)	11.068 (6.898)	6.106 (5.537)
Speech date x Speech hour	5.420 (9.689)	68.273*** (9.608)	−9.545 (11.948)	24.242** (9.591)
Constant	16.602*** (1.615)	43.811*** (1.601)	19.682*** (1.991)	37.477*** (1.598)
Observations	144	216	144	216

|	*Dependent variable:*			
	Report			
	Obama	Trump		
Speech Date	−1.875 (4.298)	−11.848*** (2.337)		
Speech Hour	1.920 (8.597)	−1.447 (4.674)		
Speech Date x Speech Hour	7.875 (14.890)	22.932*** (8.096)		
Constant	37.830*** (2.482)	59.197*** (1.349)		
Observations	144	216		

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

Notes: There was a significant spike in Google searches for immigrant crime, welfare, and reporting during Trump's speeches. Regression is OLS. The Speech Date variable is 1 if the search was performed on the date of the speech and 0 otherwise (i.e., performed exactly one week before or after the speech). The speech hour variable is 1 if the search was performed during the hours of 9 pm or 10pm EST (with the exception of the Oval Office speech, which is only 9pm EST).
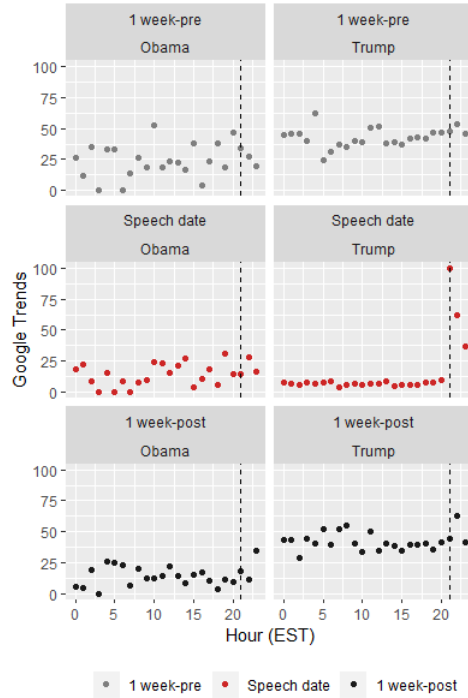
generated historic levels of reporting searches, also had the largest number of negative emotional cues towards immigrants, despite being only one-sixth the length of the other speeches.

Figure 5: Anti-immigrant Searches on Google During Presidential Speeches
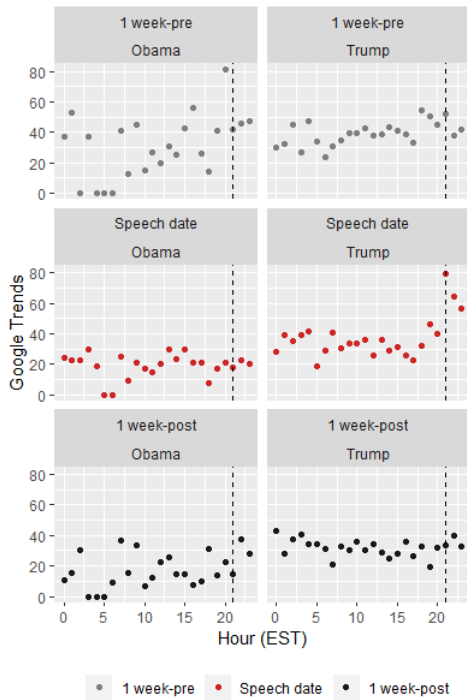
Report:
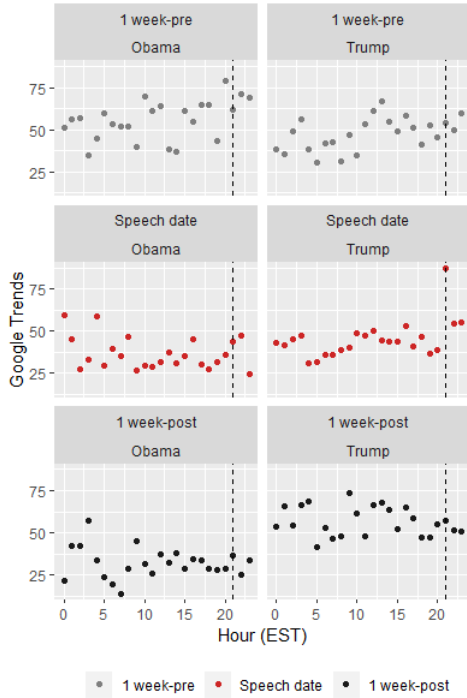
Crime:

Welfare:

Notes: There were clear spikes in anti-immigrant searches during Trump's televised addresses but no similar spikes during Obama's televised addresses. Each point represents Google Trends data for one hour. The dashed lines represent speech times.

The Y-axes of the plots are comparable within, but not between, days. A rating of 100 represents the hour with the most searches on that specific date but is not comparable with searches for other dates. For Bing results, please see appendix

Table 8: Speech Content and Search Types

| Speech	Viewers	# Immigr Mentions		Topic Mentions		Search Spike		
		Total [a]	Illegal	Immigr Crime	Immigr Welfare	Crime	Welfare	Report
Obama 2015 SOTU	32M	4	0	N	N			
Obama 2016 SOTU	31.3M	4	0	N	N[b]			
Trump 2017 SOTU	48M	10	2	Y	Y	X	X	
Trump 2018 SOTU	45.6M	11	1	Y	N[c]	X		
Trump 2019 Address	41M	9	7	Y	Y	X	X	X
Trump 2019 SOTU	46M	11	6	Y	Y	X	X	X

Notes: Variance in Trump's speech content corresponds with variance in search spikes. Search spikes correspond with the anti-immigrant content in the speech. X denotes a statistically significant search spike at p<0.05.

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[a]Number of mentions of "illegal immigr", "illegals, or "illegal alien" during the speech.

[b]Obama stated "Immigrants aren't the principal reason wages haven't gone up."

[c]Trump described a merit-based immigration program that would admit "people who are skilled, who want to work, who will contribute to our society" but stopped short of claiming that unauthorized immigrants are costly or a burden on public services, as he did in the 2017 SOTU, 2019 SOTU, and 2019 Oval Office Address.

Figure 6: Negative Emotional Cues in Immigration Paragraphs of Presidential Speeches
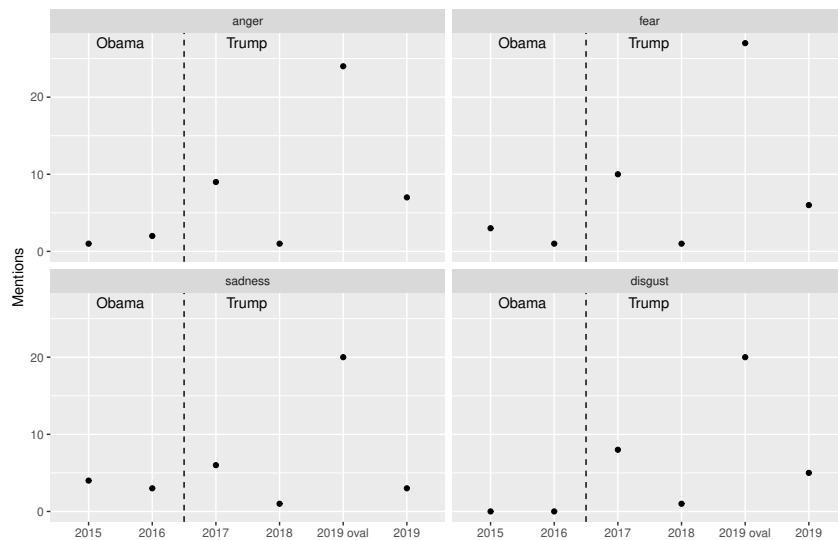
Notes: This plot shows the number of negative emotional words in presidential speech sentences containing the terms "immigr*","illegals", or "illegal alien". Trump's 2019 Oval Office Address showed the highest level of negative emotional cues in sentences containing the aforementioned terms.

Conclusion

Does anti-immigrant media coverage lead to interest in denunciation of immigrants to ICE? We find evidence that it does. We examine three distinct effects of media cues on immigrant reporting searches. First, we look at the role of cues suggesting government support for deportations. There is more interest in immigrant denunciation when people believe that reporting will lead to some action by the government. We find that reporting searches increase sharply after Trump takes office, and that media reporting on Trump immigration policies during the Trump administration (but not Trump campaign) is associated with more reporting searches.

Next, we look at messages within media coverage about immigrants themselves. We find that media cues supporting the immigrant threat narrative are associated with more reporting searches, as are media messages about immigration that include fear cues. Even though these two sets of cues are correlated, they have distinct effects on reporting searches.

Finally, we investigate the effect that widely-watched anti-immigrant media broadcasts have on hourly searches about immigration. We find that anti-immigrant searches spiked during Trump's televised addresses, but not during Obama's. Furthermore, we find that the content and emotional valence of the speech influences the type of search terms that spike - Trump speeches that talked about immigration and welfare generated immigration and welfare searches, while those that had negative emotional cues towards immigrants generated more immigrant reporting searches.

These findings have serious implications for media coverage of immigration. First, anti-immigrant media coverage, especially coverage of immigrants and crime, has the potential to cause tangible and serious negative impacts on immigrants' well-being. A media story that repeats inaccurate claims about immigrants and crime could pique interest in deportations, leading to threats, harassment, or arrests of people suspected to be unathorized immigrants. Immigrants have reported "living in fear"[16] under the Trump administration, and anti-immigrant news cover-

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[16]https://www.theguardian.com/us-news/2018/oct/18/immigration-ice-deportation-undocumented-trump

age may make these fears come to fruition.

The second implication concerns news coverage of Trump's speeches and other statements. While there was significant media debate over airing Trump's 2019 Oval Office Address live, networks ultimately chose to broadcast the address. After the broadcast, news outlets called the address a "dud"[17] and "bewildering"[18], concluding that, unless the address motivated Americans to call their congressmembers, "Trump's speech changed nothing".[19] Even if Trump's address did not have substantial political impacts or change the hearts and minds of the population at-large, it resulted in one of the largest-ever spikes in Google searches on reporting immigrants, suggesting that at least some reports to ICE of immigrants were made as a result of the speech. Airing anti-immigrant statements to a large audience may eventually lead to serious harms for immigrants.

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