

When I Was Growing Up: The Lasting Impact of Immigrant Presence on Native-Born American Attitudes towards Immigrants and Immigration

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Abstract

Scholarship, including seminal research on prejudice, identifies adolescence as a critical period for the development of attitudes. Yet most sociological research on prejudice, especially in the form of anti-immigrant sentiment, focuses on the relationship between contemporaneous social conditions and attitudes towards out-groups while neglecting the demographic context during one's impressionable years. Therefore, we design research to investigate the relationship among temporally distal and temporally proximal sub-national contexts and native-born attitudes towards immigration and immigrants. To do this, we merge geocoded data from the General Social Survey (1994–2016) with a unique US state-level dataset (1900–2015). Results from multilevel models reveal that immigrant presence during adolescence is a more consistent predictor of attitudes towards immigration and immigrants in adulthood. Thus, while the majority of sociological research on anti-immigrant sentiment asks *if* societal conditions matter, our results suggest that a more important question is *when* the context matters.

Introduction

The past is never dead. It's not even past.—William Faulkner (1951)

Call it sociological imagination or armchair psychology, but it is commonplace for people to explain their own views on society, politics, or the economy by referencing the conditions that existed when they were growing up. To be sure, individual accounts of personal beliefs often assign causal weight to adolescence, also known as the formative or impressionable years. People intuit that, even if their opinions have evolved over time, the past played a role in shaping what they have become. This includes prejudice, or negative attitudes about out-groups. Yet, despite the popularity of the notion that the

past and the present are connected, scholarship that examines the relationship between past contexts and current prejudice is relatively scarce.

Previous research on negative reactions to out-groups emphasizes the role of contextual factors (e.g. Blalock, 1967; Fosset and Kiecolt, 1989; Olzak, 1992; Quillian, 1995; McLaren, 2003; Wagner *et al.*, 2006; Bohman, 2011; Hangartner *et al.*, 2019). Both of the dominant accounts of prejudice, group threat theory (Blumer, 1958) from sociology and intergroup contact theory (Allport, [1954] 1979) from social psychology, share the expectation that the presence of an out-group is related to in-group attitudes towards that racial or ethnic group (Savelkoul *et al.*, 2011). The former

predicts that out-group size engenders prejudice via threat, while the latter posits that out-group size may induce positive intergroup contact and the reduction of out-group prejudice (Stein, Post, and Rinden, 2000). Previous research that examines the link between immigration and anti-immigrant sentiment suggests a tenuous relationship between the size of the out-group and prejudice among the in-group (for reviews, see Ceobanu and Escandell, 2010; Fussell, 2014; Pottie-Sherman and Wilkes, 2017; Kaufmann and Goodwin, 2018).

We offer one possible reason why the relationship between the presence of immigrants and native-born reactions to immigration remains contested. Hypotheses derived from intergroup contact theory and group threat theory are typically tested by regressing attitudes on objective levels of immigration that reflect the current demographic reality. Limiting an analysis to the relationship between contemporaneous social conditions and attitudes towards immigrants may be insufficient for two related reasons. First, many social and political attitudes are developed during adolescence and young adulthood (Mannheim [1928] 1952; Almond and Verba, 1963; Ryder, 1965), and, second, such attitudes are fairly resilient to change (Newcomb *et al.*, 1967; Alwin, Cohen and Newcomb, 1991; Alwin and Krosnick, 1991; Grasso *et al.*, 2019; Kiley and Vaisey, 2020).

The idea that social and political attitudes depend on contexts that are not only spatial but also temporal is not new. According to Mannheim ([1928] 1952), the formative years are paramount for attitudinal development: ‘Early impressions tend to coalesce into a *natural view* of the world. All later experiences then tend to receive their meaning from this original set... that even if the rest of one’s life consisted in one long process of negation and destruction of the natural world view acquired in youth, the determining influence of these early impressions would still be predominant’ (Mannheim [1928] 1952: p. 298). Put simply, the past casts a long shadow, exerting causal weight throughout the life course.

Seminal scholarship on prejudice also identifies adolescence as a critical period for the development of attitudes towards out-groups. Allport saw prejudice as a product of early socialization, where children learn attitudes from their parents and other adults. Yet, ‘[i]t is not until adolescence that the child is able to handle ethnic categories in a culturally approved way, and only then that his prejudices can be said to be fashioned in the adult form’ Allport, [1954] 1979: p. 312). Although, according to Allport, socializing agents like parents play a central role in this process, the significance of the

greater social context is also clear. ‘No child is born prejudiced. His prejudices are always acquired... Yet the context of his learning is always the social structure in which his personality develops’ (Allport, [1954] 1979: p. 324). Theories of modern or symbolic racism also emphasize the importance of the social context during adolescence. According to Kinder and Sears (1981: p. 416) attitudes towards out-groups are ‘more likely traceable to pre-adult socialization than to current racial threat.’

To explain prejudice, these accounts clearly emphasize contextual features that are both geographic and temporal, but only the first of these theoretical insights is consistently the focus of empirical research. Nevertheless, we argue that, to the extent that the demographic context matters, it should matter most *when* individuals develop their attitudes about race and ethnicity. *Thus, in this article, we test a central hypothesis that the presence of an out-group during adolescence has a lasting impact on attitudes towards that out-group in adulthood.*

Although prejudice may take many forms, we examine anti-immigrant sentiment. We aim to contribute to an empirical literature that is dominated by European studies. However, we rely on data from the United States in order to exploit both regional and temporal variation in immigration. US states differ not only in the relative size of the foreign-born population at any point in time but also in fluctuations in the size of the immigration population within states over time. The United States’s long history of immigration and its significant sub-national variation in immigrant presence ensures that individual-level factors like age do not covary with trends in immigration, as they tend to do in European countries (e.g. McLaren, Neundorff, and Paterson, 2020).

Our primary objective is to contribute to the sociological literature concerned with the relationship between the size of a minority group in a geographic unit and attitudes of the majority group (e.g. Quillian, 1995; Semyonov, Raijman, and Gorodzeisky, 2006). In the following sections, we first review scholarship on the contextual determinants of prejudice with a focus on attitudes towards immigration and immigrants. We then discuss scholarship on the formative years and political socialization. Combining insights from each literature, we develop three hypotheses about temporally distal and temporally proximal demographic contexts and attitudes towards immigrants and immigration. We describe our data and methods, which involve combining survey responses from the General Social Survey Cumulative File (1994–2016) with a unique state-level dataset (1900–2015). Results from multilevel models,

which provide support for the formative years approach, have implications for theory, as a significant relationship between attitudes and conditions that are temporally distant versus temporally proximate suggest different accounts of prejudice. We conclude with a discussion of the limitations of our study and directions for future research.

Contextual Theories of Prejudice

According to group threat theory and intergroup contact theory, context matters for attitudes. Both theories share the expectation that the presence of an out-group is related to in-group attitudes towards that group, and both theories, in their original formulation, are rather pessimistic about the relationship between out-group presence and prejudice. According to group threat theory (Blumer, 1958), the presence of an out-group leads to prejudice via threat. This theory understands prejudice as a response to a perceived threat from an out-group due to intergroup competition. Additionally, in-group members may view racial or ethnic diversity as a proxy for cultural diversity and see the presence of out-groups as a threat to a homogeneous national culture (McLaren, 2003). This theory predicts a strong relationship between the size of the immigrant population and prejudice (Blalock, 1967). According to Allport's ([1954] 1979) contact hypothesis, the presence of an out-group also has the potential to lead to prejudice. However, diversity creates opportunities for positive social interaction with out-group members thereby reducing prejudice (Allport, [1954] 1979; Pettigrew, 1998; Pettigrew and Tropp, 2006; Hewstone and Swart, 2011; Tropp *et al.*, 2018).

Although these theoretical propositions refer to groups in the abstract, group threat theory and intergroup contact theory were originally developed in order to explain race relations between the white majority and black minority in the United States. The studies that examined macro-level contexts and anti-black attitudes tended to focus only on the relationship between proximate conditions and prejudice (Pettigrew, 1957; Giles, 1977) with some scholars explicitly arguing that conditions in adulthood are central to racial attitudes (Bobo, 1988). There are notable exceptions, however. Hyman and Sheatsley (1964) analyzed the racial attitudes of Americans based on whether they currently lived in the North or South as well as whether they previously lived in the North or South. They found that southerners who had previously lived in the North were less prejudiced than southerners who had never lived in the north. Fosset and Kiecolt (1989) explicitly hypothesized that

residing in the US south *during adolescence* should matter for attitudes among white adults and found higher levels of prejudice among whites with 'southern origins'. Recently, Goldman and Hopkins (2020) show that white people who grew up in counties with a relatively large African-American population exhibited higher prejudice towards them later in life.

In recent decades, these theories have been used to explain other instances of racial and ethnic prejudice, especially anti-immigrant sentiment following Quillian's (1995) seminal study of European attitudes. Yet, within this mostly European literature, the innovation to include some macro-level variable operationalizing adolescent exposure to diversity has not become a consistent feature of subsequent empirical studies. To our knowledge, only two studies have directly modelled exposure to immigration during adolescence: Coenders *et al.* (2008) find that the average level of immigration to the Netherlands when the Dutch respondent was 16–20 years is positively related to support for ethnic discrimination later in adulthood; McLaren, Neundorff, and Paterson (2020) show that growing up during times of high immigration in the United Kingdom is associated with more positive attitudes towards immigrants in adulthood. Two other studies lend support for the idea that past conditions matter for contemporary attitudes: Coenders and Scheepers (2008) show that adults faced with high levels of unemployment during adolescence exhibit stronger resistance to the social integration of immigrants in Germany. Gorodzeisky and Semyonov (2018) find a positive effect of living in an 'old immigration country' rather than in a 'new immigration country' on anti-immigrant sentiment among Europeans. Nevertheless, these four studies use either country-level contextual data or a country-level typology based on histories of immigration, broadly defined. While certainly suggestive, further attention to sub-national variation in the geographic distribution of immigrants should enhance our ability to make claims about the effect of exposure to diversity early in life.

Insights from the Formative Years, Symbolic Racism, and Political Socialization Literatures

Scholarship on political socialization emphasizes the importance of context for the development of attitudes; however, this theoretical framework points to a context that is first and foremost temporal (Mannheim [1928] 1952). The notion that political orientations are formed during childhood and adolescence is central to this

literature, and scholars from this tradition attribute differences in values and attitudes across cohorts to pre-adult socialization and societal conditions present prior to adulthood. Early research in this area grew from the formative years approach, which understands social and political attitudes as a product of late adolescence or early adulthood that remain fairly stable over the life course (Alwin and Krosnick, 1991; Alwin, Cohen, and Newcomb, 1991). According to this account, to the extent that attitudes are subject to change, they are most likely to change during adolescence. After individuals age into adulthood, attitudes ‘crystallize’. This suggests that the conditions that exist during the impressionable years—not adulthood—are paramount for attitudes.

Seminal research in political socialization highlighted the importance of micro-level contexts (e.g. Almond and Verba, 1963; Hyman, 1959), but studies have since examined whether temporally distant macro-level contexts also have a lasting effect on adults’ attitudes. For example, studies show that growing up during administrations of presidents (Sears and Valentino, 1997) or prime ministers (Grasso *et al.*, 2019) shapes political attitudes that persist later in life. Empirical research on historical events, such as the Civil Rights era (Osborne, Sears, and Valentino, 2011), also suggests that events experienced during the formative years have not only a lasting effect but are also more strongly associated with attitudinal outcomes and voting behaviour than proximate conditions (Schuman and Corning, 2012). For instance, Campbell (2016) shows that economic hardship during adolescence has a lasting impact on attitudes about welfare policies in the United States. Moreover, Norris and Inglehart (2019) find that authoritarian values are more closely related to birth cohort than the contemporary economic context, arguing that formative experiences rather than current conditions play a larger role in shaping attitudes (see also Inglehart, 2008).

Reminiscent of Mannheim ([1928] 1952), Jennings (1996: 249) argues, ‘What each cohort brings into political maturity has a good deal of continuity and provides a certain degree of stability in terms of what that cohort is likely to draw on as it moves through the rest of the life cycle’. This framework for understanding the development of attitudes also informs some scholarship on prejudice. Theories of modern or symbolic racism (Kinder and Sears, 1981; Kinder and Sanders, 1996) view prejudice as primarily the result of socialization early in life. To explain prejudice, this account relies on social learning theory (Bandura, 1977), a theory that points to the influence of role models, such as parents, teachers, and peers, on children and adolescents’ attitudes and behaviours.

Empirical studies of adolescents confirm the importance of early socialization for the formation of attitudes towards out-groups, including immigrants. Research indicates that parents are an important socializing agent for racial attitudes (Aboud and Doyle, 1996) and anti-immigrant sentiment (Miklikowska, 2016). Studies also show that adolescents’ level of prejudice tends to be consistent with their peers (Paluck, 2011) and that levels of anti-immigrant sentiment among peers affects adolescents’ prejudice over time (Hjerm, Eger, and Danell, 2018; Mitchell, 2019b). School is also a socializing agent, as students’ exposure to critical thinking and multicultural education are associated with attitudes towards immigrants (Hjerm, Johansson-Sevä, and Werner 2018). Although theories and research leaning on the formative years approach highlight the importance of contextual factors for the development of immigration attitudes among adolescents, this research rarely extends into analyses of adults. A noteworthy exception comes from McLaren and Paterson (2020), who find that the prejudice-reducing effects of education and birth cohort on anti-immigrant sentiment are diminished if radical right electoral support was particularly high when European voters were in their twenties.

Towards a Combined Approach

Our approach synthesizes these pillars of literature. Each account reviewed here provide important theoretical insights, yet previous tests of these approaches reveal blind spots in the empirical literatures they inspire. Classic theories of prejudice highlight the role of macro-level contexts for prejudice; however, the vast majority of empirical research has focused on the relationship between contemporaneous contexts and prejudicial attitudes among adults. Meanwhile, empirical research on the formative years demonstrates that attitudes form and change primarily during adolescence but has largely left unexamined macro-level contexts. Finally, the political socialization literature connects the past to attitudes later in life but has not focused on prejudice.

In the research that follows, we aim to build on insights from each literature. Yet our primary goal is to contribute to the sociological literature inspired by group threat theory (e.g. Blumer, 1958) that analyzes the relationship between the size of a minority group and attitudes of the majority group (e.g. Blalock, 1967; Olzak, 1992; Quillian, 1995; Semyonov, Raijman, and Gorodzeisky, 2006; Pottie-Sherman and Wilkes, 2017). Our analysis is fundamentally sociological in its focus on societal conditions at the regional level (Schlueter and Wagner, 2008; Hjerm, 2009; Markaki and Longhi,

2013; Weber, 2015) but innovates in its incorporation of past conditions.

Our approach acknowledges that adolescents are influenced by the contexts in which they grow up (Kinder and Sears, 1981; Allport, [1954] 1979). Schools, parents, and peers contribute to the development of adolescents' attitude but these socializing agents do not exist in a vacuum. Indeed, they are embedded in and influenced by local contexts. Arguably, these contexts also influence adolescents' attitudes directly, and two recent longitudinal studies lend support to our claim: Weber (2019) and Mitchell (2019a) find a relationship between regional diversity within Germany and the development of immigration attitudes during adolescence.

Despite evidence that out-group size matters for in-group attitudes in small, medium, and large geographic units, there is no consensus regarding which geographic unit of analysis is meaningful, let alone paramount. Compared to country-level units, measuring the immigrant population at a sub-national-level may more accurately reflect actual exposure of natives to immigrants (Weber, 2015; Eger and Breznau, 2017). Research shows that country-level measures of immigration are poor indicators of individuals' perceptions of the size of the immigrant population (Herda, 2010) and may reflect media narratives rather than actual experiences (Weber, 2015: pp. 119–120). Yet, when analyzing the effect of out-group size in the smallest of geographic units, one risks issues of self-selection, as decisions to live in specific cities or neighbourhoods that are more or less homogeneous may partially reflect attitudes about out-groups (see research on tipping points [Grodzins, 1957; Schelling, 1978] and 'white flight' [e.g. Kruse, 2013]). Even within small heterogeneous units such as high schools, students are able to self-select into ethnically homogeneous friendship groups (Moody, 2001).

Our research relies on data from the 50 US states. This choice is partly pragmatic given data availability but has important benefits. First, by analyzing mid-range geographic units, such as states, we balance minimizing potential self-selection effects with maximizing potential exposure to/contact with immigrants. Second, US states are politically salient units and the smallest geographic entities that are consistent across our period of study. Third, states are theoretically relevant as they, among other things, create boards of education that produce policies and oversee curriculum for the school systems that lie within their borders. Moreover, students learn about their respective state histories and contemporary conditions in social studies courses, which include details about demography and diversity. Still, we acknowledge that states contain both heterogeneous and

homogeneous localities. To speak to this, in Supplementary Table A3, we present models where we take into consideration the size and type of community respondents lived in during adolescence as well as adulthood. However, it is likely that adolescents learn about these differences, which also contribute to the development of their worldview (Bigler and Liben, 2007).

Recent empirical research shows that the *direction* of the relationship between the size of an out-group and in-group attitudes varies depending on the size of the geographic unit (Dinesen and Sønderskov, 2015; Weber, 2015, 2019; Kaufmann and Goodwin, 2018). Following Weber (2015, 2019), we expect a *negative* relationship between the relative size of the foreign-born population in a US state and native-born prejudice. Weber (2015: p. 120) argues that the larger the share of the regional population that is foreign-born, the more likely natives have personal contact with immigrants and/or become habituated to or familiar with (Schneider, 2008: p. 55) their presence. This notion is consistent with evidence that more intergroup contact exists in regions with large immigrant populations within European countries, and that this contact is associated with lower levels of threat (Schlueter and Wagner, 2008: p. 167). Additionally, residential segregation within larger regions provides the possibility of avoiding any (perceived) negative consequences associated with immigration, such as crime or poverty (Weber, 2019: p. 242), thereby increasing the likelihood that reactions to immigrant presence at the state-level will be positive.

Hypotheses

With the general expectation that state-level diversity is associated with less prejudice, we posit three specific hypotheses about the role of temporally distal and proximal societal conditions on attitudes about immigrants and immigration. First, the classic approach to explaining anti-immigrant sentiment emphasizes the relationship between contemporaneous conditions and attitudes (e.g. Blalock, 1967; McLaren, 2003). If proximate conditions drive attitudes, the size of the immigrant out-group should be related to native-born attitudes.

H1: The *proportion* of immigrants at the state level is inversely related to native-born prejudice towards immigrants and opposition to immigration.

Considering many social and political attitudes are developed during adolescence and young adulthood (e.g. Mannheim [1928] 1952), the presence of

immigrants during the formative years should be related to attitudes in adulthood.

H2: The proportion of immigrants at the state level during adolescence is inversely related to native-born prejudice towards immigrants and opposition to immigration.

Based on research that shows that social and political attitudes developed during adolescence are fairly resilient to change (e.g. [Alwin and Krosnick, 1991](#)), we expect contexts that are temporally distant to have a lasting impact on attitudes towards immigration and immigrants in adulthood. Thus, temporally distant conditions, instead of current conditions, should be more strongly associated with adults' attitudes towards immigrants.

H3: Taking into account contemporary conditions, the proportion of immigrants at the state level during adolescence has a lasting impact on native-born attitudes towards immigration and immigrants.

Data and Methods

We design research to investigate *when* the demographic context, specifically presence of immigrants, matters for attitudes. We focus on the United States due to its long history of immigration, where levels have also fluctuated over time. For example, at the beginning of the 20th century, the proportion of the country born abroad was relatively high at 14%. By 1915, the share of foreign-born began decreasing, reaching a mere 5% in 1970 ([Gibson and Lennon, 1999](#)). Since then, the share has increased steadily, reaching 13.8% in 2017 ([Migration Policy Institute, 2018](#)). Importantly, the distribution of immigrants has long varied by US state ([Portes and Rumbaut, 2006](#)), a sub-national macro-level context that is politically and culturally meaningful ([Hero, 1998](#)) in regards to immigration ([Hero and Preuhs, 2007](#)) and anti-immigrant sentiment ([Middleton, 1976](#)).

We rely on the General Social Survey (GSS): a nationally representative, cross-sectional survey administered since 1972 and widely considered one of the best sources of attitudinal and sociological data in the United States. It is ideal for our purposes as questions about immigrants and immigration have been part of the GSS since the 1990s. We use 10 rounds administered between 1994 and 2016 ([Smith et al., 2017](#)) and restrict our sample to native-born Americans. Critical to our aim, the GSS also has restricted-use, geocoded variables.

We obtained two variables: the first variable indicates each respondent's state of residence in the survey year, and the second identifies the respondents' state of residence when 16 years old. Combining these GSS data with a unique state-level dataset (1900–2015) allows us to test hypotheses about the relationships among these American's attitudes about immigration/immigrants and contextual factors at two different time points.

Dependent Variables

We use two dependent variables, which have become standard in the literature on prejudice towards immigrants. The first, opposition to immigration, relies on a question that is first available in 1994 and repeated in nine other rounds: 1996, 2000, 2004, 2006, 2008, 2010, 2012, 2014, and 2016 ($N \approx 12,300$). This question (letin, letin1, letin1a) asks whether immigration to the United States should be increased or decreased. Responses are 1 'increased a lot', 2 'increased a little', 3 'remain the same as it is', 4 'reduced a little', and 5 'reduced a lot'. This variable is featured in [Hopkins \(2010\)](#).

Because the first refers to immigration levels, which change over time, it is also important to test our hypotheses with a second dependent variable that captures attitudes about immigrants in general. Three questions capture attitudes towards immigrants found in 1996, 2004, and 2014 ($N \approx 3050$). The first (immameco) asks the extent to which the respondent agrees or disagrees that 'immigrants are good for America's economy'. The second variable (immjobs) asks the extent to which the respondent agrees or disagrees that 'Immigrants take jobs away from people who were born in America'. The third (immcrime) asks the extent to which the respondent agrees or disagrees that 'Immigrants increase crime rates'. Responses for each are 1 'agree strongly', 2 'agree', 3 'neither agree nor disagree', 4 'disagree', and 5 'disagree strongly'. Similar statements about immigrants' perceived impact on crime and the economy appear in other indices of anti-immigrant sentiment ([Quillian, 1995](#); [Semyonov, Rajjman, and Gorodzeisky, 2006](#); [Hjerm, 2007](#); [Sides and Citrin, 2007](#); [Schneider, 2008](#); [Semyonov et al., 2008](#); [Schlueter and Davidov, 2013](#); [Weber, 2015](#)). The second and third questions are reverse coded so that high numbers denote more negative attitudes towards immigrants ($\alpha = 0.72$; Eigenvalue = 1.93). In each survey year, we use row means to combine these three variables into a measure of anti-immigrant sentiment.

[Figure 1](#) illustrates mean attitudes among native-born over time, demonstrating that Americans have

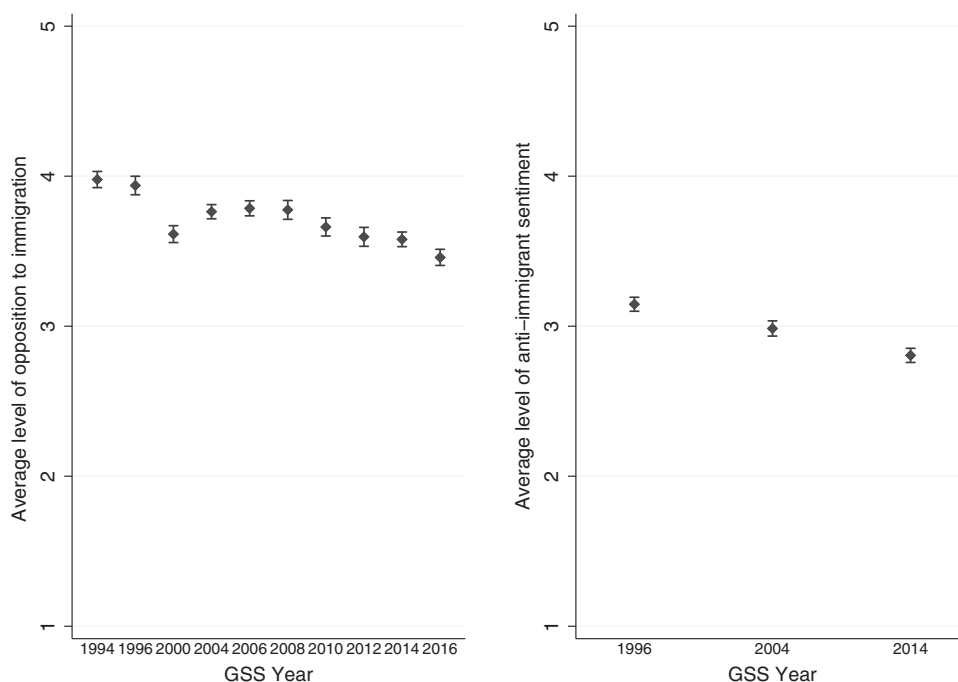


Figure 1. Native-born attitudes towards immigration and immigrants, 1994–2016

Sources: General Social Survey Cumulative Data File 1972–2016.

Notes: Means with 95% confidence intervals.

become more positive towards both immigration and immigrants. In 1994, native-born Americans, on average, wanted to see immigration reduced a little. By 2016, Americans articulated greater support for current levels of immigration. In 1996, attitudes towards immigrants were, on average, negative. By 2014, the mean reflects, on average, positive attitudes towards immigrants. In 1996, 2004, and 2014, these two dependent variables are correlated at 0.5.

Individual-Level Variables

As controls, we include a continuous measure of age and a categorical measure of sex. We recode information about race and ethnicity to distinguish between white and non-white respondents. We recode information about marital status to distinguish between those who have never married and who are married, divorced, separated, or widowed. Years of education and inflation-adjusted household income serve as theoretical controls as group threat theory predicts and empirical research shows that socioeconomic status is related to attitudes about immigrants (Coenders and Scheepers, 2003; Hainmueller and Hiscox, 2007)¹

We create two additional measures to control for other factors that may be relevant to this study. First, we generate a dummy variable based on whether the respondent lives in a different state in the survey year than where she lived when she was 16 years old (Wilson, 1986; Glaser and Gilens, 1997). Second, we generate a dummy variable based on age to capture whether the respondent was age 16 before or after 1965. In that year, the US Congress passed the Hart-Celler Act (also known as the Immigration and Nationality Act of 1965) which abolished immigration quotas enacted in 1922 to preserve the ethnic majority based on earlier immigration from Northern and Western European countries. After 1965, it was easier to emigrate from other parts of the world, especially Asia and Africa, changing the racial and ethnic make-up of the immigrant population. Still, previous research provides ample evidence that immigration was a source of conflict in the United States long before 1965 (e.g. Olzak, 1989, 1992). Indeed, nativity has long been a salient social group boundary, even when immigrants predominantly came from Europe. For instance, immigrants from countries like Poland and Italy were portrayed negatively in media and faced a great deal of discrimination.

State-Level Variables

Drawing on statistics from three US government sources, we created a state-level dataset covering the period between 1900 and 2015. To ensure comparability over time, we utilize the variable percent foreign-born—or the proportion of residents born abroad.² For the years between 1900 and 1990, we rely on a US Bureau of the Census report on the nativity of the US population based on decennial censuses (Gibson and Lennon, 1999). Data for 2000 and 2010 come from decennial censuses (U.S. Census Bureau, 2000, 2010) and data for 2015 come from the American Community Survey (U.S. Census Bureau, 2011–2015). Because intercensal estimates are not available until the 1970s, we average data from decennial censuses to create midpoints between decades, producing a state-level measure of the proportion of immigrants every five years between 1900 and 2015. Figure 2 shows non-linear trends in the percentages of state-level populations born abroad over time,

illustrating the sizeable variation in demographic make-up both over time and across states.

According to group threat theory, a poor economy intensifies competition between groups over scarce resources (Olzak, 1992), thereby increasing native resentment of immigrants (Semyonov, Raijman and Gorodzeisky, 2006; Coenders *et al.*, 2008; Hjerm, 2009). Therefore, to control for economic conditions in the survey year, we use state-level unemployment rates from the Local Area Unemployment Statistics program at the US Bureau of Labor Statistics (U.S. Bureau of Labor Statistics, 2018). Comparable data are unavailable for earlier years,³ so we must generate a different variable for years associated with respondents' adolescence. Based on the National Bureau of Economic Research's data on recessions, we calculate the months of national-level recession by year (Federal Reserve Bank of St Louis, 2018). For each year, we create a measure of months of recession in that year as well as

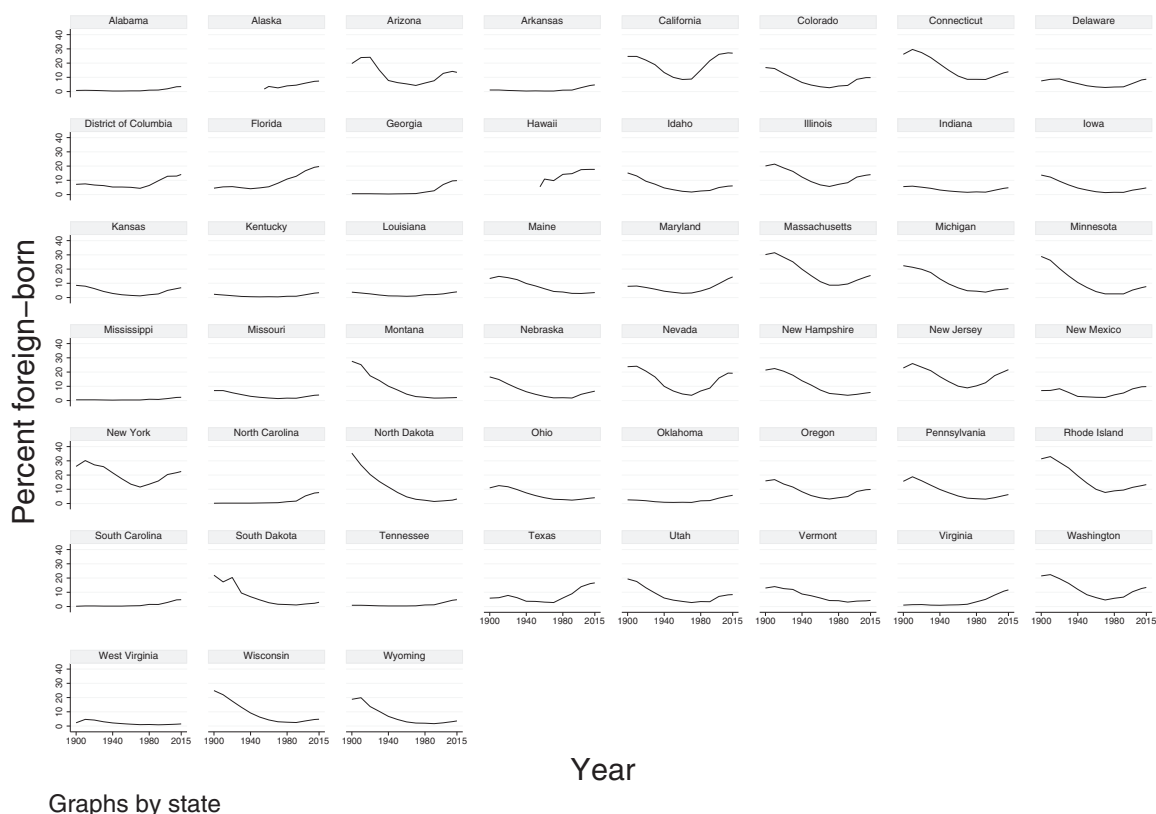


Figure 2. Relative size of the foreign-born population, 1900–2015

Source: United States Census Bureau, Decennial Censuses (1900–2010) and American Community Survey (2015).

the 3 years prior and 2 years after. We use this new measure, which covers up to a 6-year period depending on the year of birth of the respondent, to capture the total number of months of recession during respondents' adolescence (ages 13–18). As a robustness check, in Supplementary Table A2, we present additional analyses with country-level unemployment rates (U.S. Bureau of Labor Statistics, 2020) in the survey year and during adolescence. The correlation between rates of unemployment at the state and country levels is 0.82.

Combining Datasets

We merge data from the state-level dataset with the cumulative GSS file twice. First, we use two variables, 'survey year' and 'state of residence in survey year', to link state-level economic data from that specific year and state-level demographic data from closest previous year. For example, Ohio unemployment rates from 1996 and Ohio proportion foreign-born from 1995 are linked to a respondent living in Ohio when the GSS was administered in 1996. Second, using the respondent's age and survey year, we create a new variable identifying the year when they were 16. We then use two variables, 'year at age 16' and 'state of residence at age 16', to link state-level demographic data from the closest previous year. For example, percent foreign-born in Alabama in 1935 is linked to someone who, in 1938, was 16 years old and living in Alabama. As previously explained, months of national recession during adolescence are specific to the year when respondents were 16 and combines data from up to 6 years. So, if a respondent was 16 in 1930, she lived through 51 months of recession between the ages of 13 and 18.

Separating the Past from the Present

In this article, we distinguish theoretically between past and present conditions and their respective relationships to attitudes. In the past, similarly motivated scholars have relied on age, period, cohort (APC) models, and their contemporary variant, hierarchical age, period, cohort models (HAPC) (Yang and Land, 2006; Wilkes and Corigall-Brown, 2011; Gorodzeisky and Semyonov, 2018). While the efficacy of these models is intensely debated (e.g. Reither *et al.*, 2015; Bell and Jones, 2018), APC models are used to answer a different research question, specifically what amount of variation in cross-sectional time trends are attributable to differences among birth cohorts, ages, and survey years. HAPC models allow for analysis of cohort-level variables, but our main independent variable varies even among those born in the same decade depending on respondents' state

of residence during adolescence. Further, state of residence during adolescence is not the same as birth state, information not included the GSS.

Although disentangling APC effects cannot help us test hypotheses about immigration attitudes and the relative size of the state-level immigrant population at two different time points in a respondent's life, we still face a challenge similar as those who rely on HAPC models, namely potential multicollinearity, or the linear associations among two or more explanatory variables.⁴ Although multicollinearity would not bias the overall model, it can affect our ability to make claims about the explanatory power of either state-level demographic variable when both are included in a model. Additionally, we face a unique challenge: assessing the relative explanatory power of two variables that capture two different points in time but may refer to the same geography. To make analytical claims about the effect of the past on the present, we must statistically separate the two.

To address these challenges and ease interpretation of results, we orthogonalize our key state-level demographic variables. This transformation, which is native to Stata (command 'orthog'), relies on a modified Gram–Schmidt procedure (Golub and Van Loan, 2013). This process creates a new set of variables such that the 'effects' of the first variable have been removed from the second variable. Orthogonalization is based on the order of the variables, so the most important variable should be listed first (Golub and Van Loan, 2013). We list percent foreign-born in state of residence at age 16 first because we hypothesize this context has a lasting impact on attitudes in adulthood (H3) and we would like to remove its 'effect' from percent foreign-born in the state of residence in the survey year. Further, the temporal order of these variables would make it impossible to interpret results based on the reverse strategy (i.e. the removal of the effects of the future from the past). As a robustness check, we report models testing H3 with the original, non-orthogonalized versions of these contextual variables in Supplementary Table A1.

Table 1 includes descriptive information for all variables in the analyses.

Multilevel Models

To account for the nested structure of our dataset, we rely on multilevel mixed-effects linear regression models as individuals are nested in survey year and in state of residence. A three-level model takes into account the repeated observations of characteristics specific to each of the 395 state-years and 50 states and assigns a

Table 1. Descriptive statistics

	N	Mean	SD	Min	Max
Dependent variables					
Opposition to immigration	12,279	3.7	1.1	1	5
Anti-immigrant sentiment	3,042	3.0	0.8	1	5
Independent variables					
Survey year	12,279	12.6	7	0	22
Age (years)	12,279	46.8	17	18	89
Female	12,279	0.5	0.5	0	1
Non-white	12,279	0.2	0.4	0	1
Education (years)	12,279	13.7	2.7	0	20
Inflation-adjusted family income	12,279	49,033.9	41,363.6	363	178,712.5
Never married	12,279	0.3	0.4	0	1
Moved states since age 16	12,279	0.3	0.5	0	1
Age 16 prior to 1965	12,279	0.3	0.4	0	1
Foreign-born (%), state of residence	12,279	10.0	7.4	0.8	27.2
Foreign-born (orth), state of residence	12,279	0.3	1	−3.0	3.8
Unemployment (%), state of residence	12,279	5.9	1.8	2.3	12.6
Foreign-born (%), state at age 16	12,279	6.4	5.7	0.3	27.4
Foreign-born (orth), state at age 16	12,279	0.0	1	−1.1	3.5
Months of recession, ages 13–18	12,279	11.8	7.8	0	51

Sources: General Social Survey Cumulative Data File 1972–2016, United States Census Bureau, United States Bureau of Labor Statistics, and National Bureau of Economic Research.

random intercept for each state and state-year (Schmidt-Catran and Fairbrother, 2016). Although there is virtually no clustering based on state of residence at age 16, Supplementary Table A1 also reports similar results from cross-classified models.

Results

We begin with the classic approach to measuring the relationship between demographic context and attitudes towards immigrants. Table 2 reports results from multi-level models that test our first hypothesis that the percent of the state population that was born abroad is related to attitudes towards immigration and immigrants. Models 0 and 3 are the empty models for our two dependent variables. The variance components indicate that most of the variance exists at the individual-level (96% and 94%, respectively). Model 1 and model 4 include the percentage of the respondent's current state of residence that is foreign-born as well as all individual-level controls. In models 2 and 5, we also control for state-level unemployment rate in the survey year. Results indicate that percent foreign-born is negatively related to both opposition to immigration and anti-immigrant sentiment. This means that respondents in states where the share of immigrants is larger hold

more positive attitudes towards immigration and immigrants. This effect does not disappear when controlling for the unemployment rate, which is positively associated with opposition to immigration but not related to anti-immigrant sentiment. Also worth highlighting is the finding that opposition to immigration and anti-immigrant sentiment are both decreasing over time. Supplementary Figure A1 illustrates predicted values from models 2 and 5.

In Table 3, we report results from models consistent with the formative years approach and a test of hypothesis 2 that, at age 16, the share of the state population that was born abroad is related to attitudes towards immigration and immigrants. Results from model 6 reveal that respondents that lived in states with higher proportions of immigrants when they were growing up report significantly less opposition to immigration when surveyed. As model 9 shows, this temporally distant demographic context is also significantly, negatively related to anti-immigrant attitudes. The larger the share of immigrants in one's state at age 16, the more positive one is towards immigrants in adulthood. To test the robustness of this result, models 7 and 10 control for the economic conditions during adolescence. Similar to the effect of unemployment in Table 2, the number of months of recession during adolescence is positively

Table 2. Classic approach to modelling immigration attitudes

	Opposition to immigration			Anti-immigrant sentiment		
	(0)	(1)	(2)	(3)	(4)	(5)
Foreign-born (%), state of residence		−0.007* (0.003)	−0.008** (0.003)		−0.011** (0.003)	−0.012** (0.004)
Unemployment (%), state of residence			0.027*** (0.007)			0.009 (0.020)
Survey year		−0.013*** (0.002)	−0.015*** (0.002)		−0.012*** (0.002)	−0.012*** (0.002)
Age (years)		0.001* (0.001)	0.001* (0.001)		−0.002* (0.001)	−0.002* (0.001)
Female		0.028 (0.019)	0.027 (0.019)		0.003 (0.029)	0.003 (0.029)
Non-white		−0.207*** (0.025)	−0.208*** (0.025)		−0.027 (0.039)	−0.027 (0.039)
Education (years)		−0.062*** (0.004)	−0.062*** (0.004)		−0.080*** (0.006)	−0.080*** (0.006)
Inflation-adjusted family income		−0.000 (0.000)	−0.000 (0.000)		−0.000** (0.000)	−0.000** (0.000)
Never married		−0.201*** (0.025)	−0.202*** (0.025)		−0.040 (0.038)	−0.041 (0.038)
Constant	3.692*** (0.023)	4.791*** (0.066)	4.668*** (0.072)	2.975*** (0.030)	4.452*** (0.096)	4.410*** (0.134)
Variance components						
Individual	1.067 (0.014)	1.026 (0.013)	1.026 (0.013)	0.649 (0.017)	0.598 (0.015)	0.598 (0.015)
State-year	0.032 (0.005)	0.011 (0.003)	0.010 (0.003)	0.027 (0.010)	0.000 (0.000)	0.000 (0.000)
State	0.014 (0.005)	0.007 (0.003)	0.006 (0.003)	0.016 (0.009)	0.009 (0.004)	0.009 (0.004)
Log likelihood	−17,961.723	−17,653.43	−17,645.365	−3,708.663	−3,547.4774	−3,547.3737
N level 1 (individuals)	12,279	12,279	12,279	3,042	3,042	3,042
N level 2 (state-years)	395	395	395	117	117	117
N level 3 (states)	50	50	50	50	50	50

Sources: General Social Survey Cumulative Data File 1972–2016, United States Census Bureau, United States Bureau of Labor Statistics, National Bureau of Economic Research.

Standard errors in parentheses.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

associated with opposition to immigration, but not significantly related to anti-immigrant sentiment. These models also control for whether respondents are living in a different state than where they lived at age 16. Moving relates inversely to both dependent variables. Finally, since immigration to the United States between 1900 and 1965 were largely from European countries, in models 8 and 11, we test the effect of period-specific trends. The insignificant interaction terms indicate that the relationship between immigrant presence during the formative years and attitudes is consistent even across historically different immigration eras. Supplementary

Figure A1 illustrates predicted values from models 7 and 10.

Finally, turning to the combined approach, we pit the classic and formative years approaches against each other by including orthogonalized versions of our main independent variables in the models. With the models reported in Table 4, we test hypothesis 3—that the presence of immigrants in the formative years has a lasting impact on attitudes towards immigration and immigrants in adulthood. Models 12 and 14 demonstrate that only the proportion of the state population that is born abroad during adolescence correlates with our two

Table 3. Formative years approach to modelling immigration attitudes

	Opposition to immigration			Anti-immigrant sentiment		
	(6)	(7)	(8)	(9)	(10)	(11)
Foreign-born (%), state at age 16	−0.009*** (0.002)	−0.009*** (0.002)	−0.006* (0.002)	−0.013*** (0.003)	−0.013*** (0.003)	−0.010** (0.004)
Months of recession, ages 13–18		0.004** (0.001)	0.003** (0.001)		0.003 (0.002)	0.002 (0.002)
Survey year	−0.014*** (0.002)	−0.014*** (0.002)	−0.016*** (0.002)	−0.013*** (0.002)	−0.013*** (0.002)	−0.015*** (0.002)
Age (years)	0.001 (0.001)	0.001 (0.001)	0.004*** (0.001)	−0.002* (0.001)	−0.002* (0.001)	0.000 (0.002)
Female	0.028 (0.019)	0.026 (0.019)	0.027 (0.019)	0.002 (0.029)	0.003 (0.029)	0.002 (0.029)
Non-white	−0.212*** (0.025)	−0.213*** (0.025)	−0.217*** (0.025)	−0.034 (0.039)	−0.030 (0.038)	−0.036 (0.039)
Education (years)	−0.062*** (0.004)	−0.060*** (0.004)	−0.060*** (0.004)	−0.081*** (0.006)	−0.078*** (0.006)	−0.078*** (0.006)
Inflation-adjusted family income	−0.000 (0.000)	−0.000 (0.000)	−0.000 (0.000)	−0.000* (0.000)	−0.000* (0.000)	−0.000* (0.000)
Never married	−0.192*** (0.025)	−0.194*** (0.025)	−0.185*** (0.025)	−0.035 (0.038)	−0.043 (0.038)	−0.033 (0.038)
Moved states since age 16		−0.087*** (0.021)	−0.086*** (0.021)		−0.113*** (0.032)	−0.110*** (0.032)
Age 16 prior to 1965			−0.077* (0.039)			−0.055 (0.059)
Foreign-born 16 * age 16 prior to 1965			−0.006 (0.004)			−0.007 (0.006)
Constant	4.812*** (0.065)	4.761*** (0.066)	4.683*** (0.070)	4.483*** (0.096)	4.433*** (0.098)	4.357*** (0.105)
Variance components						
Individual	1.025 (0.013)	1.023 (0.013)	1.022 (0.013)	0.596 (0.015)	0.593 (0.015)	0.592 (0.015)
State-year	0.011 (0.003)	0.011 (0.003)	0.012 (0.003)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
State	0.006 (0.003)	0.006 (0.003)	0.006 (0.003)	0.009 (0.004)	0.009 (0.004)	0.010 (0.004)
Log likelihood	−17,646.367	−17,633.314	−17,627.197	−3,543.256	−3,535.9269	−3,533.9635
N level 1 (individuals)	12,279	12,279	12,229	3,042	3,042	3,042
N level 2 (state-years)	395	395	395	117	117	117
N level 3 (states)	50	50	50	50	50	50

Sources: General Social Survey Cumulative Data File 1972–2016, United States Census Bureau, and National Bureau of Economic Research.

Standard errors in parentheses.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

dependent variables. The size of the foreign-born population in the survey year has no effect. This relationship is robust to economic controls (models 13 and 15). Figure 3 illustrates predicted values with 95% confidence intervals from models 13 and 15. On average,

there is an 8% decrease in opposition to immigration and a 13% decrease in anti-immigrant sentiment between individuals living in states with the lowest and highest shares of immigrants at age 16. In summary, the significant effect of state of residence in survey year

Table 4. Combined approach to modelling immigration attitudes

	Opposition to immigration		Anti-immigrant sentiment	
	(12)	(13)	(14)	(15)
Foreign-born (orth), state at age 16	−0.059*** (0.013)	−0.062*** (0.013)	−0.085*** (0.019)	−0.085*** (0.019)
Foreign-born (orth), state of residence	−0.019 (0.017)	−0.025 (0.016)	−0.034 (0.022)	−0.037 (0.023)
Months of recession, ages 13–18		0.004** (0.001)		0.003 (0.002)
Unemployment (%), state of residence		0.027*** (0.007)		0.008 (0.020)
Survey year	−0.014*** (0.002)	−0.015*** (0.002)	−0.013*** (0.002)	−0.012*** (0.002)
Age (years)	0.001* (0.001)	0.001 (0.001)	−0.002 (0.001)	−0.002* (0.001)
Female	0.026 (0.019)	0.025 (0.019)	0.003 (0.029)	0.003 (0.029)
Non-white	−0.211*** (0.025)	−0.212*** (0.025)	−0.025 (0.039)	−0.026 (0.039)
Education (years)	−0.060*** (0.004)	−0.060*** (0.004)	−0.078*** (0.006)	−0.078*** (0.006)
Inflation-adjusted family income	−0.000 (0.000)	−0.000 (0.000)	−0.000** (0.000)	−0.000** (0.000)
Never married	−0.194*** (0.025)	−0.195*** (0.025)	−0.041 (0.038)	−0.042 (0.038)
Moved states since age 16	−0.088*** (0.021)	−0.086*** (0.021)	−0.112*** (0.032)	−0.113*** (0.032)
Constant	4.728*** (0.065)	4.562*** (0.073)	4.354*** (0.095)	4.291*** (0.140)
Variance components				
Individual	1.024 (0.013)	1.023 (0.013)	0.593 (0.015)	0.593 (0.015)
State-year	0.011 (0.003)	0.010 (0.003)	0.000 (0.000)	0.000 (0.000)
State	0.006 (0.003)	0.005 (0.003)	0.009 (0.004)	0.009 (0.004)
Log likelihood	−17,637.076	−17,624.619	−3,535.822	−3,534.638
N level 1 (individuals)	12,279	12,279	3,042	3,042
N level 2 (state-years)	395	395	117	117
N level 3 (states)	50	50	50	50

Sources: General Social Survey Cumulative Data File 1972–2016, United States Census Bureau, United States Bureau of Labor Statistics, and National Bureau of Economic Research.

Standard errors in parentheses.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

(Table 2) is due to the shared variance of the past and the present. Once we remove the past from the present, we see that it is earlier conditions that are related to current attitudes (Table 4). Taken together, our results provide supportive evidence for hypothesis 2 and 3 but not hypothesis 1.

Conclusion

With this research, we combine theoretical insights from literatures in sociology, psychology, and political science to advance a formative years approach to the study of prejudice in adulthood. With the general expectation that state-level diversity is associated with less prejudice,

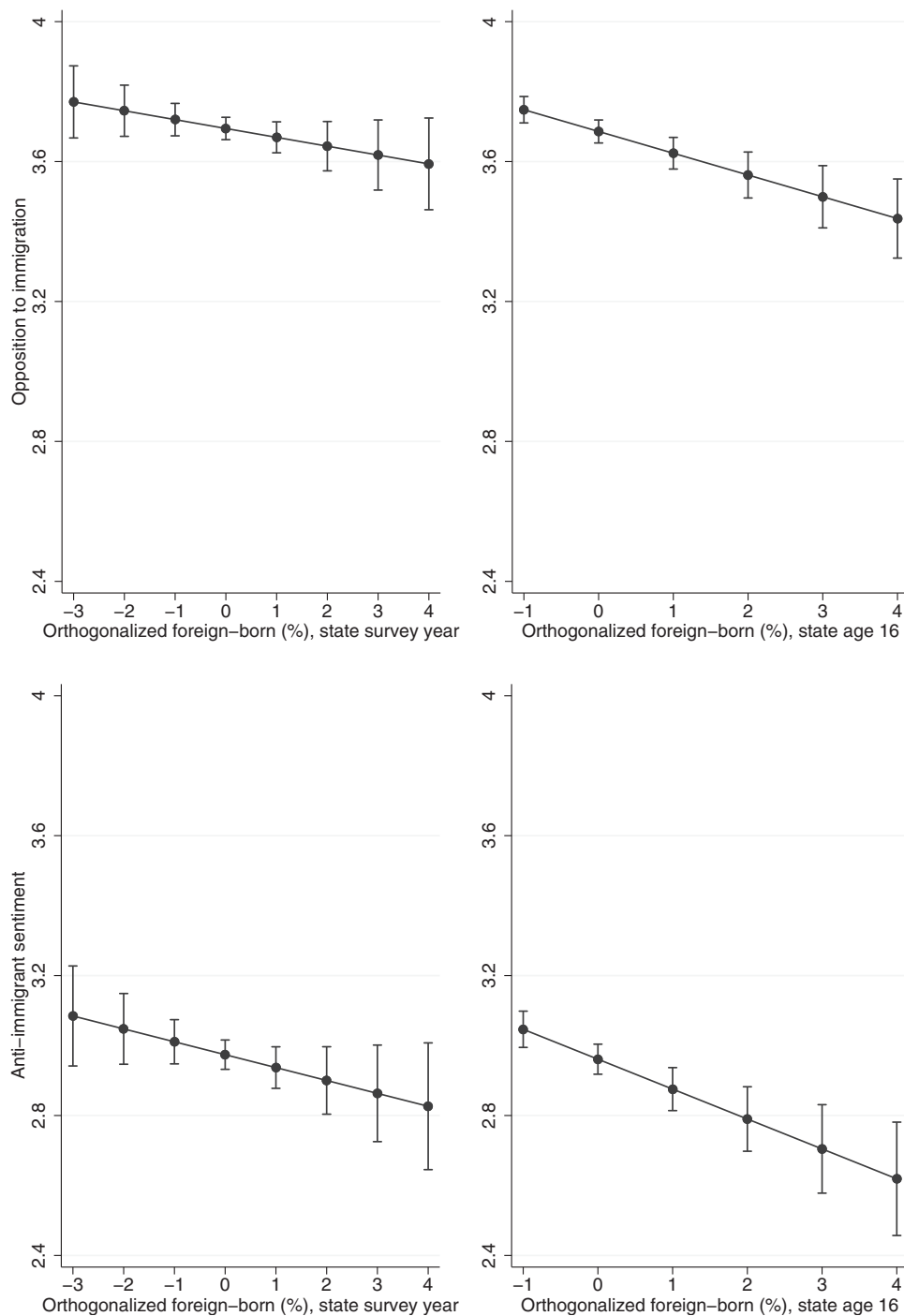


Figure 3. Predicted values, combined approach to modelling immigration attitudes.

Sources: General Social Survey Cumulative Data File 1972–2016, United States Census Bureau, United States Bureau of Labor Statistics, and National Bureau of Economic Research.

Notes: Model 13 (top) and model 15 (bottom) with 95% confidence intervals.

we tested three hypotheses about the role of temporally distal and proximal societal conditions on attitudes about immigrants and immigration. By linking historical census data to respondents based both on their state of residence at age 16 and state of residence in the survey year, we go beyond previous research that operationalized exposure to diversity using national averages, regional dummies, or other broad categorical variables. Our strategy provides empirical evidence that the presence of an out-group during adolescence is related to attitudes towards that out-group in adulthood. Further, our results show that when we consider conditions present during the formative years along with temporally proximate conditions, only immigrant presence during adolescence is significantly related to attitudes towards immigration and immigrants in adulthood. Thus, while the majority of sociological research on anti-immigrant sentiment asks *if* societal conditions contribute to antipathy towards foreign-born, our results suggest that a more important question is *when* the context matters for attitudes.

Although the aim of this research was not to adjudicate between group threat theory and intergroup contact theory, it is worth noting that our results provide no empirical support for the threat hypothesis, neither when past nor present conditions are assessed. Instead, our results are consistent with intergroup contact theory, which may be associated with our choice of geographic unit (Weber, 2019). According to this account, the presence of out-group members provides the possibility for positive contact, which may in turn generate greater knowledge about the out-group, reduce anxiety about intergroup contact, and increase empathy towards the out-group (Pettigrew and Tropp, 2008; Tropp *et al.*, 2018). While we do not know if individuals had any positive social interaction with immigrants in adolescence or adulthood, large immigrant out-groups at least make possible that scenario. Yet we do not claim that the direction of the relationship between diversity in adolescence and prejudice in adulthood will always be negative going forward. Theoretically, if circumstances change, the direction of effects may also change. Our contention is merely that the past will continue to cast a shadow on the future. What that shadow entails may vary over time and between different groups.

For that reason, we remain careful not to rule out the potential effects of group threat during the formative years. One previous study that explicitly modelled the relationship between exposure to immigration (albeit at the country-level) during adolescence and prejudice in adulthood found a positive association among Dutch respondents between 1979 and 2002 (Coenders *et al.*,

2008). As mentioned at the outset of this article, the empirical literature on the relationship between out-group size and prejudice has produced mixed findings (Fussell, 2014; Pottie-Sherman and Wilkes, 2017). While some of this may be due to the choice of geographic unit (Kaufmann and Goodwin 2018; Weber, 2019), researchers who have taken a more dynamic approach to testing the theory argue that it is recent changes in contextual conditions both in adulthood (Lancee and Pardos-Prado, 2013) and adolescence (Weber, 2019; Mitchell, 2019a) that trigger feelings of threat. Thus, it is possible that exposure to increases in immigration during adolescence initially generates an increase in prejudice, but that over time the effects of intergroup contact result in more positive attitudes. Our findings do not rule out this possibility.

This speaks to some limitations of our study. First, although we have made use of historical data to compare relationships between temporally distal and proximal contextual conditions and anti-immigrant attitudes, we do not have data that is longitudinal at the individual-level. This means we are unable to examine how changes in contextual conditions might result in changes in attitudes. Second, a lack of longitudinal data also means we do not know how frequently people moved between age 16 and the survey year, limiting our capacity to account for possible exposure to other demographic contexts. Nevertheless, we are only testing the hypothesis that contextual conditions in the formative years matter for attitudes—not the accumulation of life experiences.

Other limitations are related to things not examined here and constitute a roadmap for future research. First, we have only examined demographic contexts in relation to prejudice, while recent research reveals that other contexts, such as media environments, are also important. For example, a recent longitudinal study finds that, as the issue of immigration becomes more salient in the media, prejudice increases in Europe (Czymara and Dochow, 2018). Similarly, Hopkins' (2010) research on the impact of 11 September shows that a hostile political climate is associated with anti-immigrant sentiment. Future research should investigate whether the effect of the demographic context in the formative years is comparable to that of media or political environments during adolescence.

The current research lends credence to the conventional wisdom that the way things were, in the places where people grew up, play a role in their attitudes. This notion underlies seminal research on the development of values and attitudes (Mannheim [1928] 1952) as well as prejudice (Allport, 1954). While these early accounts emphasized both geographic and temporal contexts,

empirical analyses of anti-immigrant sentiment among adults have primarily focused on the former, ignoring that the past casts a long shadow into adulthood. Thus, this research also contributes to a long-standing theoretical question about prejudice over the life course. Bobo (1983: p. 1201) once wrote that ‘it might be argued that the ultimate source of whites’ political discontent with blacks is a core of antiblack feelings acquired during early childhood socialization’ but none had provided an empirical test of such a claim. In this article, we show that conditions that existed in adolescence are not only related to prejudice in adulthood but also a more consistent predictor of anti-immigrant sentiment among Americans than current demographic conditions.

The majority of sociological scholarship on anti-immigrant sentiment has focused on the effect of current conditions on adults’ attitudes, while neglecting the probability that individual attitudes also depend on the past. The theoretical and empirical privileging of temporally proximal conditions suggests an account of prejudice where the attitudes of not only adolescents *but also adults* are mutable and dependent on exposure to diversity and changes in the size of an out-group over time. While it is easier to imagine how increases in the size of an out-group could lead to prejudice via threat, it is more difficult to imagine scenarios where, *ceteris paribus*, decreases in the size of an out-group would result in more positive attitudes towards immigrants. Indeed, it is more likely that the conditions in adolescence, when attitudes are most susceptible to change, serve as an anchor, and that the ‘determining influence of these early impressions’ exert influence for years to come (Mannheim [1928] 1952: p. 298). Therefore, in instances where empirical evidence to substantiate theoretical claims linking contemporaneous contextual indicators to attitudes or value orientations is missing or mixed, we hope researchers may draw insights from the analyses and conclusions presented here.

Notes

- 1 Supplementary Table A2 includes a model that also controls for party affiliation.
- 2 Due to data limitations based on the changing categories of the US census, we cannot create longitudinal state-level measures of immigrant groups based on countries, regions of origin, or race/ethnicity.
- 3 The earliest year that some states reported unemployment figures is 1957. We contacted the US Bureau of Labor Statistics in 2018 about combining data from 1957 to 1975 with the BLS 1976–2016

time series. We were cautioned that due to major differences in methodologies earlier figures are not comparable with the either the BLS series or within states over time.

- 4 For our entire sample, the correlation between percent foreign-born in state of residence at age 16 and percent foreign-born in state of residence in survey year is 0.6. However, the strength of this correlation varies with age. For the youngest 18- or 19-year-old respondents, these variables are correlated at 0.9. For respondents in his or her 20s, 30s, 40s, or 50s, the correlations are 0.8, 0.7, 0.6, or 0.5 respectively. The correlation between these variables varies between 0.4 and 0.3 for the oldest respondents. In every age group, these correlations are stronger among respondents who live in the same state in the survey year and at age 16.

Supplementary Data

Supplementary data are available at *ESR* online.

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References

- Aboud, F. E. and Doyle, A.-B. (1996). Parental and peer influences on children’s racial attitudes. *International Journal of Intercultural Relations*, 20, 371–383.
- Allport, G. W. ([1954] 1979). *The Nature of Prejudice*. Reading, MA: Addison-Wesley.
- Almond, G. A. and Verba, S. (1963). *The Civic Culture*. Princeton: Princeton University Press.
- Alwin, D. F. and Krosnick, J. A. (1991). Aging, cohorts, and the stability of sociopolitical orientations over the life span. *American Journal of Sociology*, 97, 169–195.
- Alwin, D. F., Cohen, R. L. and Newcomb, T. M. (1991). *Political Attitudes over the Life Span: The Bennington Women after Fifty Years*. Madison, WI: University of Wisconsin Press.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84, 191.
- Bell, A., and Jones, K. (2018). The hierarchical age-period-cohort model: Why does it find the results that it finds?. *Quality and Quantity*, 52(2), 783–799.

- Bigler, R. S. and Liben, L. S. (2007). Developmental intergroup theory: explaining and reducing children's social stereotyping and prejudice. *Current Directions in Psychological Science*, 16, 162–166.
- Blalock, H. M. (1967). *Toward a Theory of Minority-Group Relations*. New York: Wiley.
- Blumer, H. (1958). Race prejudice as a sense of group position. *The Pacific Sociological Review*, 1, 3–7.
- Bobo, L. (1983). Whites' opposition to busing: symbolic racism or realistic group conflict? *Journal of Personality and Social Psychology*, 45, 1196–1210.
- Bobo, L. 1988. Group conflict, prejudice, and the paradox of contemporary racial attitudes. In Katz, P. A. and Taylor, D. A. (Eds.), *Eliminating Racism: Profiles in Controversy*, pp. 85–114. New York: Plenum.
- Bohman, A. (2011). Articulated antipathies: political influence on anti-immigrant attitudes. *International Journal of Comparative Sociology*, 52, 457–477.
- Campbell, C. (2016). The formative years, economic hardship, and beliefs about the government's role in lessening poverty. *Social Problems*, 63, 244–265.
- Ceobanu, A. M. and Escandell, X. (2010). Comparative analyses of public attitudes toward immigrants and immigration using multinational survey data: a review of theories and research. *Annual Review of Sociology*, 36, 309–328.
- Coenders, M. and Scheepers, P. (2003). The effect of education on nationalism and ethnic exclusionism: an international comparison. *Political Psychology*, 24, 313–343.
- Coenders, M. and Scheepers, P. (2008). Changes in resistance to the social integration of foreigners in Germany 1980–2000: individual and contextual determinants. *Journal of Ethnic and Migration Studies*, 34, 1–26.
- Coenders, M. et al. (2008). More than two decades of changing ethnic attitudes in the Netherlands. *Journal of Social Issues*, 64, 269–285.
- Czymara, C. S. and Dochow, S. (2018). Mass media and concerns about immigration in Germany in the 21st century: individual-level evidence over 15 years. *European Sociological Review*, 34, 381–401.
- Dinesen, P. T., and Sønderskov, K. M. (2015). Ethnic diversity and social trust: Evidence from the micro-context. *American Sociological Review*, 80(3), 550–573.
- Eger, M. A. and Breznau, N. (2017). Immigration and the welfare state: a cross-regional analysis of European welfare attitudes. *International Journal of Comparative Sociology*, 58, 440–463.
- Federal Reserve Bank of St. Louis. (2018). NBER based recession Indicators for the United States from the Period following the Peak through the Trough [USRECQ], retrieved from FRED, Federal Reserve Bank of St. Louis, available from <<https://fred.stlouisfed.org/series/USRECQ>> [retrieved 27 March 2018].
- Fosset, M. A. and Kiecolt, K. J., (1989). The relative size of minority populations and white racial attitudes. *Social Science Quarterly*, 70, 820–835.
- Fussell, E. (2014). Warmth of the welcome: attitudes toward immigrants and immigration policy in the United States. *Annual Review of Sociology*, 40, 479–498.
- Gibson, C. J. and Lennon, E. 1999. Table 13. Nativity of the population, for regions, divisions, and states: 1850 to 1990. Historical Census Statistics on the Foreign-Born Population of the United States: 1850–1990. Population Division Working Paper No. 29. Washington, DC: Population Division, U.S. Bureau of the Census. <<https://www.census.gov/library/working-papers/1999/demo/POP-twps0029.html>> [retrieved 22 August 2017].
- Giles, H. 1977. *Language, Ethnicity and Intergroup Relations*. London; New York: Academic Press.
- Glaser, J. M. and Gilens, M. (1997). Interregional migration and political resocialization: a study of racial attitudes under pressure. *The Public Opinion Quarterly*, 61, 72–86.
- Goldman, S. K. and Hopkins, D. J. (2020). Past place, present prejudice: the impact of adolescent racial context on white racial attitudes. *The Journal of Politics*, 82, 529–542.
- Golub, G. H. and Van Loan, C. F. 2013. *Matrix Computations*, 4th edn. Baltimore, MD: Johns Hopkins University Press.
- Gorodzeisky, A. and Semyonov, M. (2018). Competitive threat and temporal change in anti-immigrant sentiment: Insights from a hierarchical age-period-cohort model. *Social Science Research*, 73, 31–44.
- Grasso, M. T. et al. (2019). Thatcher's children, Blair's babies, political socialization and trickle-down value change: an age, period and cohort analysis. *British Journal of Political Science*, 49, 17–36.
- Grodzins, M. (1957). Metropolitan segregation. *Scientific American*, 197, 33–41.
- Hainmueller, J. and Hiscox, M. J. (2007). Educated preferences: explaining attitudes toward immigration in Europe. *International Organization*, 61, 399–442.
- Hangartner, D. et al. (2019). Does exposure to the refugee crisis make natives more hostile?. *American Political Science Review*, 113, 442–455.
- Herda, D. (2010). How many immigrants? Foreign-born population innumeracy in Europe. *Public Opinion Quarterly*, 74, 674–695.
- Hero, R. E. 1998. *Faces of Inequality: Social Diversity in American Politics*. New York: Oxford University Press.
- Hero, R. E. and Preuhs, R. R. (2007). Immigration and the evolving American welfare state: examining policies in the US states. *American Journal of Political Science*, 51, 498–517.
- Hewstone, M. and Swart, H. (2011). Fifty-odd years of inter-group contact: from hypothesis to integrated theory. *British Journal of Social Psychology*, 50, 374–386.
- Hjerm, M. (2007). Do numbers really count? Group threat theory revisited. *Journal of Ethnic and Migration Studies*, 33(8), 1253–1275.
- Hjerm, M. (2009). Anti-immigrant attitudes and cross-municipal variation in the proportion of immigrants. *Acta Sociologica*, 52, 47–62.
- Hjerm, M., Eger, M. A. and Danell, R. (2018). Peer attitudes and the development of prejudice in adolescence. *Socius: Sociological Research for a Dynamic World*, 4, 1–11.

- Hjerm, M., Johansson-Sevä, I. and Werner, L. (2018). How critical thinking, multicultural education and teacher qualification affect anti-immigrant attitudes. *International Studies in Sociology of Education*, 27, 42–59.
- Hyman, H. H. (1959). *Political socialization*. New York: Free Press.
- Hopkins, D. J. (2010). Politicized places: explaining where and when immigrants provoke local opposition. *American Political Science Review*, 104, 40–60.
- Hyman, H. H. and Sheatsley, P. B. (1964). Attitudes toward desegregation. *Scientific American*, 211, 16–23.
- Inglehart, R. F. (2008). West European politics changing values among western publics from 1970 to 2006 changing values among western publics from 1970 to 2006. *West European Politics*, 31, 1–2.
- Jennings, M. K. (1996). Political knowledge over time and across generations. *Public Opinion Quarterly*, 60, 228–252.
- Kaufmann, E. and Goodwin, M. J. (2018). The diversity wave: a meta-analysis of the native-born white response to ethnic diversity. *Social Science Research*, 76, 120–131.
- Kruse, K. M. 2013. *White Flight: Atlanta and the Making of Modern Conservatism*. Princeton, NJ: Princeton University Press.
- Kiley, K. and Vaisey, S. 2020. Measuring stability and change in personal culture using panel data. *American Sociological Review*, 85, 477–506.
- Kinder, D. R. and Sanders, L. M. 1996. *Divided by Color: Racial Politics and Democratic Ideals*. Chicago, IL: University of Chicago Press.
- Kinder, D. R. and Sears, D. O. (1981). Prejudice and politics: symbolic racism versus racial threats to the good life. *Journal of Personality and Social Psychology*, 40, 414.
- Lancee, B. and Pardos-Prado, S. (2013). Group conflict theory in a longitudinal perspective: analyzing the dynamic side of ethnic competition. *International Migration Review*, 47, 106–131.
- Mannheim, K. 1952. The problem of generations. In Kecskemeti, P. (Ed.), *Essays on the Sociology of Knowledge*. London: Routledge & Kegan Paul Ltd., pp. 276–322.
- Markaki, Y., and Longhi, S. (2013). What determines attitudes to immigration in European countries? An analysis at the regional level. *Migration Studies*, 1(3), 311–337.
- McLaren, L. M. (2003). Anti-immigrant prejudice in Europe: contact, threat perception, and preferences for the exclusion of migrants. *Social Forces*, 81, 909–936.
- McLaren, L. and Paterson, I. (2020). Generational change and attitudes to immigration. *Journal of Ethnic and Migration Studies*, 46, 665–682.
- McLaren, L., Neundorff, A. and Paterson, I. (2020). Diversity and perceptions of immigration: how the past influences the present. *Political Studies*. doi:10.1177/0032321720922774.
- Middleton, R. (1976). Regional differences in prejudice. *American Sociological Review*, 41, 94–117.
- Migration Policy Institute. (2018). U.S. immigrant population and share over time, 1850–present, available from: <https://www.migrationpolicy.org/programs/data-hub/charts/immigrant-population-over-time> [retrieved 22 May 2019].
- Miklikowska, M. (2016). Like parent, like child? Development of prejudice and tolerance towards immigrants. *British Journal of Psychology*, 107, 95–116.
- Mitchell, J. (2019a). Context and change: a longitudinal analysis of attitudes about immigrants in adolescence. *Socius: Sociological Research for a Dynamic World*, 5, 1–11.
- Mitchell, J. (2019b). Prejudice in the classroom: a longitudinal analysis of anti-immigrant attitudes. *Ethnic and Racial Studies*, 42, 1514–1533.
- Moody, J. (2001). Race, school integration, and friendship segregation in America. *American Journal of Sociology*, 107, 679–716.
- Newcomb, T. M., Koenig, K. E., Flacks, R., and Warwick, D. P. (1967). *Persistence and Change: Bennington College and Its Students after 25 Years*. New York: Wiley.
- Norris, P. and Inglehart, R. 2019. *Cultural Backlash: Trump, Brexit, and Authoritarian Populism*. Cambridge: Cambridge University Press.
- Olzak, S. (1989). Labor unrest, immigration, and ethnic conflict in urban America, 1880–1914. *American Journal of Sociology*, 94, 1303–1333.
- Olzak, S. (1992). *The Dynamics of Ethnic Competition and Conflict*. Stanford: Stanford University Press.
- Osborne, D., Sears, D. O. and Valentino, N. A. (2011). The end of the solidly democratic south: the impressionable-years hypothesis. *Political Psychology*, 32, 81–108.
- Paluck, E. L. (2011). Peer pressure against prejudice: a high school field experiment examining social network change. *Journal of Experimental Social Psychology*, 47, 350–358.
- Pettigrew, T. F. (1957). Demographic correlates of border-state desegregation. *American Sociological Review*, 22, 683–689.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65–85.
- Pettigrew, T. F. and Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751–783.
- Pettigrew, T. F., and Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38(6), 922–934.
- Portes, A. and Rumbaut, R. G. (2006). *Immigrant America: A Portrait*. Berkeley: University of California Press.
- Pottie-Sherman, Y. and Wilkes, R. (2017). Does size really matter? On the relationship between immigrant group size and anti-immigrant prejudice. *International Migration Review*, 51, 218–250.
- Quillian, L. (1995). Prejudice as a response to perceived group threat: population composition and anti-immigrant and racial prejudice in Europe. *American Sociological Review*, 60, 586–611.
- Reither, E. N., Land, K. C., Jeon, S. Y., Powers, D. A., Masters, R. K., Zheng, H., Hardy, M. A., Keyes, K. M., Fu, Q., Hanson, H. A., and Smith, K. R., Utz, R. L., Yang, Y. C. (2015). Clarifying hierarchical age-period-cohort models: A

- rejoinder to Bell and Jones. *Social Science and Medicine*, **145**, 125–128.
- Ryder, N. B. (1965). The cohort as a concept in the study of social change. *American Sociological Review*, **30**, 843.
- Savelkoul, M. *et al.* (2011). Anti-Muslim attitudes in the Netherlands: tests of contradictory hypotheses derived from ethnic competition theory and intergroup contact theory. *European Sociological Review*, **27**, 741–758.
- Schelling, T. (1978). *Micromotives and Macrobehavior*. New York: Norton.
- Schmidt-Catran, A. W. and Fairbrother, M. (2016). The random effects in multilevel models: getting them wrong and getting them right. *European Sociological Review*, **32**, 23–38.
- Schlueter, E. and Wagner, U. (2008). Regional differences matter: examining the dual influence of the regional size of the immigrant population on derogation of immigrants in Europe. *International Journal of Comparative Sociology*, **49**, 153–173.
- Schneider, S. L. (2008). Anti-immigrant attitudes in Europe: Outgroup size and perceived ethnic threat. *European Sociological Review*, **24**(1), 53–67.
- Schlueter, E., and Davidov, E. (2013). Contextual sources of perceived group threat: Negative immigration-related news reports, immigrant group size and their interaction, Spain 1996–2007. *European Sociological Review*, **29**(2), 179–191.
- Schuman, H. and Corning, A. (2012). Generational memory and the critical period: evidence for national and world events. *Public Opinion Quarterly*, **76**, 1–31.
- Sears, D. O. and Valentino, N. A. (1997). Politics matters: political events as catalysts for preadult socialization. *American Political Science Review*, **91**, 45–65.
- Semyonov, M., Raijman, R. and , Gorodzeisky, A. (2006). The rise of anti-foreigner sentiment in European societies, 1988–2000. *American Sociological Review*, **71**, 426–449.
- Semyonov, M., Raijman, R., and Gorodzeisky, A. (2008). Foreigners' impact on European societies: public views and perceptions in a cross-national comparative perspective. *International Journal of Comparative Sociology*, **49**(1), 5–29.
- Sides, J., and Citrin, J. (2007). European opinion about immigration: The role of identities, interests and information. *British Journal of Political Science*, **37**(3), 477–504.
- Stein, R. M., Post, S. S. and Rinden, A. L. (2000). Reconciling context and contact effects on racial attitudes. *Political Research Quarterly*, **53**, 285–303.
- Smith, T. W. *et al.* (2017). *General Social Surveys, 1972–2016, Release 3* [machine-readable data file]. Principal investigator, Tom W. Smith; co-principal investigators, Peter V. Marsden and Michael Hout, NORC (Eds.). Chicago, IL: NORC. 1 data file (62,466 logical records) and 1 codebook (3,689 pp) <https://study.sagepub.com/system/files/gss_codebook.pdf> [Retrieved 12 March 2018].
- Tropp, L. R. *et al.* (2018). How contact experiences shape welcoming: perspectives from U.S.-born and immigrant groups. *Social Psychology Quarterly*, **81**, 23–47.
- U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics Program. (2018). States and selected areas: employment status of the civilian noninstitutional population, 1976 to 2017 annual averages, available from: <<https://www.bls.gov/lau/rdsncp16.htm>> [retrieved 18 March 2018].
- U.S. Bureau of Labor Statistics. (2020). Unemployment rate [UNRATE]. Retrieved from FRED, Federal Reserve Bank of St. Louis, available from: <<https://fred.stlouisfed.org/series/UNRATE>> [retrieved 13 April 2020].
- U.S. Census Bureau. (2000). Decennial census, summary file 3 (SF 3), TM-P031. Percent of persons who are foreign born: 2000 Universe—Total population Dataset—Sample Data Unit—Percent <<https://www.census.gov>> [retrieved 24 January 2009].
- U.S. Census Bureau. (2010). Decennial census summary file 1 (SF 1), Table GCT0501. Percent of people who are foreign born: United States—States; and Puerto Rico Universe: Total population <<http://factfinder.census.gov>> [retrieved 22 August 2017].
- U.S. Census Bureau. (2011–2015). American community survey 5-year estimates, Table GCT0501—Percent of people who are foreign born—United States—States; and Puerto Rico Universe: Total population <<http://factfinder.census.gov>> [retrieved 22 August 2017].
- Wagner, U. *et al.* (2006). Prejudice and minority proportion: contact instead of threat effects. *Social Psychology Quarterly*, **69**, 380–390.
- Weber, H. (2015). National and regional proportion of immigrants and perceived threat of immigration: a three-level analysis in Western Europe. *International Journal of Comparative Sociology*, **56**, 116–140.
- Weber, H. (2019). Attitudes towards minorities in times of high immigration: a panel study among young adults in Germany. *European Sociological Review*, **35**, 239–257.
- Wilkes, R., and Corrigan-Brown, C. (2011). Explaining time trends in public opinion: Attitudes towards immigration and immigrants. *International Journal of Comparative Sociology*, **52**(1–2), 79–99.
- Wilson, T. C. (1986). Interregional migration and racial attitudes. *Social Forces*, **65**, 177–186.
- Yang, Y., and Land, K. C. (2006). A mixed models approach to the age-period-cohort analysis of repeated cross-section surveys, with an application to data on trends in verbal test scores. *Sociological Methodology*, **36**(1), 75–97.

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