# Support for Free Trade: Self-Interest, Sociotropic Politics, and Out-Group Anxiety

Edward D. Mansfield and Diana C. Mutz

**Abstract** Although it is widely acknowledged that an understanding of mass attitudes about trade is crucial to the political economy of foreign commerce, only a handful of studies have addressed this topic. These studies have focused largely on testing two models, both of which emphasize that trade preferences are shaped by how trade affects an individual's income. The factor endowments or Heckscher-Ohlin model posits that these preferences are affected primarily by a person's skills. The specific factors or Ricardo-Viner model posits that trade preferences depend on the industry in which a person works. We find little support for either of these models using two representative national surveys of Americans. The only potential exception involves the effects of education. Initial tests indicate that educational attainment and support for open trade are directly related, which is often interpreted as support for the Heckscher-Ohlin model. However, further analysis reveals that education's effects are less representative of skill than of individuals' anxieties about involvement with out-groups in their own country and beyond. Furthermore, we find strong evidence that trade attitudes are guided less by material self-interest than by perceptions of how the U.S. economy as a whole is affected by trade.

The politics of international trade has been a long-standing puzzle for social scientists. Among economists, there is widespread agreement that free trade is beneficial.[1] Open trade and cross-national market integration help to allocate factors of production efficiently and to promote the welfare of countries and the world as

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1. Alston, Kearl, and Vaughan 1992.

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a whole. Historically, however, open trade has been the exception rather than the rule.

Studies of the political economy of trade often attribute variations in trade preferences to the distributional implications of overseas commerce. Despite the economic benefits that a given country would accrue from open trade, some individuals suffer economic harm as a result. If these individuals form a politically potent constituency, they may be able to pressure policymakers to increase trade barriers even if doing so is economically counterproductive for the country as a whole. If, on the other hand, the individuals who derive welfare gains from trade are particularly influential, then an open trade regime is likely to take hold. Recent research indicates that, in democratic countries, constituency opinion on trade plays a central role in influencing the policy positions of public officials.[2]

There are two principle ways of assessing the distributional consequences of trade. First, the factor endowments approach emphasizes that, in a given country, trade benefits those individuals who own factors of production that are in abundant supply relative to the remainder of the world, and harms owners of factors that are in scarce supply. In countries such as the United States, which has a skilled labor force, free trade benefits highly skilled workers and harms less skilled workers. Second, the specific factors approach predicts that an individual's attitudes toward trade will reflect characteristics of the industry in which he or she works. People employed in industries that depend on overseas markets should be more supportive of open trade than people working in industries that face considerable competition from imports.

A small but growing number of studies have evaluated the strength of these explanations for trade policy preferences. We extend this body of research using two representative national surveys of Americans and more comprehensive measures of industries and occupations than previous studies had available to them. In addition, we link the study of trade preferences to the more extensive body of theory and empirical research on how self-interest enters into the formation of domestic economic policy preferences.

Substantial research in other economic policy domains has demonstrated that self-interest rarely shapes the formation of policy opinions because people have a difficult time understanding the connection between personal economic well-being and government policy. By mounting the most thorough individual-level examination to date of the effects of industry and skill on individual trade preferences, we seek to determine whether trade is, indeed, one of those rare exceptions in which personal experiences are successfully politicized. Alternatively, if attitudes about trade are formed in a manner similar to attitudes about domestic economic domains such as unemployment, then trade policy preferences will be based on how people believe a policy affects the country collectively rather than on narrowly defined self-interest. Importantly, the analysis of aggregate-level data—the

2. See Fordham and McKeown 2003; and Kono 2008.

approach used by most previous studies of trade preferences—cannot differentiate between these two possibilities. Thus, uniquely, this study simultaneously examines both how personal economic self-interest and perceptions of the collective national interest influence trade preferences.

Our findings indicate that accounting for perceptions of how the U.S. economy is affected by trade is important to modeling trade preferences. Consistent with previous research on the impact of self-interest on policy attitudes, our data show little support for either the factor endowments or the specific factors model. By contrast, perceptions of how trade affects the country as a whole—what are often referred to as "sociotropic" perceptions—play a substantial role in shaping attitudes about foreign commerce, a role that is largely independent of self-interest. Indeed, these perceptions are among the most important influences on opinions about trade.

Finally, we further improve our understanding of mass trade preferences by incorporating into our model indicators of domestic ethnocentrism and foreign policy attitudes. There is little support for free trade among people who believe the United States should take an isolationist stance on international affairs more generally or those who feel that members of other ethnic and racial groups are less praiseworthy than their own racial or ethnic group. Although such views have no direct bearing on the economic benefits of trade, they are far more predictive of trade preferences than indicators of economic self-interest.

Taken as a whole, the results of this article cast doubt on the ability of standard political economy models to explain trade preferences. Furthermore, the fact that sociotropic perceptions and out-group anxiety are such powerful predictors of these preferences indicates that research on trade policy would benefit by developing psychologically based models that address how individuals process information about the economy, and how they form attitudes about people and places beyond their borders.

## The Origins of Trade Preferences

Much of the existing research on trade preferences has been guided by two models. The factor endowments, or Heckscher-Ohlin, model assumes that all factors of production within a country are mobile across sectors, that markets are perfectly competitive, and that there are constant returns to scale in production. Based on these assumptions, Stolper and Samuelson showed that, in a given country, open trade benefits owners of factors of production that are abundant, relative to the remainder of the world, and harms owners of scarce factors.[3] Consequently, in the United States—a country endowed with an abundance of highly skilled and well-educated labor relative to the rest of the world—free trade benefits highly skilled workers

3. Stolper and Samuelson 1941.

and damages less-skilled individuals.[4] Open trade increases the demand for skilled workers, since the United States has a comparative advantage in the production of goods that use this input intensively. As the demand for such workers rises, so do their wages. Conversely, heightened trade decreases the demand for low-skilled labor in the United States and depresses its wage rate since goods produced using such labor intensively can be produced more efficiently abroad.[5] The factor endowments approach therefore predicts that highly skilled workers in the United States should be protrade, whereas other workers should hold more protectionist views.

Empirical studies of trade policy attitudes have generated a fair amount of support for this theory. In a set of cross-national analyses, O'Rourke and Sinnott and Mayda and Rodrik find that mass opinion about trade corresponds closely to predictions stemming from the factor endowments approach.[6] Scheve and Slaughter provide some additional support for this approach, based on an analysis of public attitudes in the United States; and Balistreri concludes that this model helps to explain Canadian attitudes toward the Canadian–U.S. Free Trade Agreement.[7] Nonetheless, a number of recent studies have raised questions about the fit between trade preferences and the factor endowments model.[8] A key assumption in the Heckscher-Ohlin model is that factors of production can move quickly and easily from one sector to another. In the long run, this assumption is not difficult to justify. In the short run, however, it can be difficult for people (not to mention other factors of production) to change the sector in which they are employed.[9]

The specific factors, or Ricardo-Viner, model is an alternative framework that assumes that, at least in the short run, certain factors of production cannot be shifted across sectors. If workers cannot easily move from one sector to another, then they will base their trade preferences on how changes in trade policy are expected to affect the industry in which they are currently employed. This model suggests that individuals who work in export-oriented sectors of the economy will support open trade because they personally benefit from it, while those in import-competing sectors will be more protectionist. Equally, an individual employed in a nontraded sector of the economy should be more protrade than someone employed in an industry that faces substantial competition from foreign imports.

Few studies have tried to evaluate whether trade preferences correspond to the specific factors model, primarily due to a lack of data on individuals' industry of

4. Leamer 1984.

5. The human capital model makes similar predictions about the attitudes of highly skilled workers in countries with a highly skilled labor force. In this model, however, the reason highly skilled workers should support open trade is that they can more easily shift occupations and industries, and thus adapt successfully to economic change. See Gabel 1998; Baker 2003 and 2005; Kaltenthaler, Gelleny, and Ceccoli 2004; and Kocher and Minushkin 2006.

6. See O'Rourke and Sinnott 2002; and Mayda and Rodrik 2005.

7. See Balistreri 1997; and Scheve and Slaughter 2001.

8. See Baker 2003; and Hainmueller and Hiscox 2006.

9. The model may still prove useful if citizens use a relatively long time frame to evaluate the impact of trade policies. On this point, see Mayda and Rodrik 2005.

employment in most extant surveys. Mayda and Rodrik try to infer respondents' industry from occupational data; but this is an imperfect solution, with many individuals assigned to multiple overlapping sectors because of inadequate information.[10] Nonetheless, Mayda and Rodrik find evidence that is broadly consistent with the specific factors model. In a similarly motivated analysis, Scheve and Slaughter compare the factor endowments and specific factors models, using educational attainment and the average yearly earnings for the respondent's occupation as indicators of skill, and the comparative advantage or disadvantage of the respondent's industry of employment as specific factors indicators.[11] Their study provides evidence for the factor endowments model, but none supportive of the specific factors model.

Notably, the underlying premise in both models described above is that attitudes toward trade are largely a function of who is personally helped or hurt by trade policies. As Mayda and Rodrik note, "to the extent that individuals are motivated by material self-interest, these models provide important hints about an individual's likely attitudes toward trade depending upon his/her factor type or sector of employment."[12] Unfortunately, the explanatory value of these models has been quite limited to date, and even simple demographics often explain more about trade preferences than variables linked to either model.

Beyond these two dominant theoretical frameworks, existing studies have also produced a set of empirical findings that remain in need of a theoretical framework. For example, Mayda and Rodrik find that social status, relative incomes, and values play a more important role than variables highlighted by either economic model.[13] Upper-class people are more likely to be protrade as are those with higher relative incomes. In addition, older people appear to be more protectionist than younger generations.

In the same vein, although educational attainment tends to be highly correlated with support for trade, the appropriate interpretation of this relationship remains unclear.[14] If education is simply serving as a proxy for skill level, then this relationship can be interpreted as support for the factor endowments model. This, in fact, is how these results are typically viewed.

But there are many other plausible explanations for why education might relate to trade preferences. Well-educated people are different from their less-educated counterparts in numerous ways, including levels of tolerance for out-groups (such as foreigners), risk preferences, levels of dogmatism, and preferences for immediate versus delayed gratification. To the extent that trade preferences are driven by

10. Ibid.
11. Scheve and Slaughter 2001.
12. Mayda and Rodrik 2005, 1394.
13. Mayda and Rodrik 2005.
14. For studies that have found such a correlation, see Bauer, Pool, and Dexter 1963, chap. 6; Scheve and Slaughter 2001; O'Rourke and Sinnott 2002; Kaltenthaler, Gelleny, and Ceccoli 2004; and Mayda and Rodrik 2005.

characteristics such as ethnocentricism, out-group hostility, or isolationist foreign policy tendencies, education's influence may have little to do with economic self-interest.

Hainmueller and Hiscox argue that education represents something other than skill level.[15] They find that the effect of education on trade preferences is much the same for Americans who are not currently employed as for those who are working. Equally, there is no distinguishable difference in the effects of education between working individuals and retirees, a subset of nonworking individuals who are unlikely to re-enter the labor force. In their view, the fact that education's impact is not contingent on whether an individual is receiving wages for using his or her skills casts doubt on the factor endowments model. Rather than serving as a proxy for skill, they argue that education represents the effects of exposure to economic ideas among the college-educated. Because mainstream economists generally favor open trade, college-educated individuals will have more exposure to arguments about the economic benefits of foreign commerce than those with less formal education.

This claim is consistent with Hainmueller and Hiscox's findings that college-educated individuals have especially protrade attitudes, but these individuals are distinctive from their less educated counterparts in many other ways as well. As Nie, Junn, and Stehlik-Barry point out, education is a powerful predictor of many civic virtues.[16] Unfortunately, it is poorly understood why education is linked to these outcomes. Empirical research suggests that education affects political preferences in at least two ways: (1) through occupational prominence and position in social networks, and (2) through cognitive proficiency and analytical ability.[17] If education serves as a proxy for skill level, then it falls into the first of these categories. Under these circumstances, education influences trade preferences because of where schooling locates people in socioeconomic strata. But since education also contributes to tolerance of different cultures and countries, as well as a belief on the part of Americans that the United States should be more actively engaged in foreign affairs, it remains to be seen if exposure to arguments about the virtues of international trade is driving Hainmueller and Hiscox's results.[18]

Furthermore, the expected trade attitudes of retirees are far from clear. That education's impact on such attitudes is indistinguishable between workers and retirees could reflect a tendency for trade preferences to persist over the course of a lifetime, rather than changing suddenly at retirement. Thus, based on this analysis alone, it is difficult to determine whether skill level influences the formation of trade preferences.

The common finding that women are more protectionist than men, even after controlling for educational differences, also has been attributed to a college edu-

15. Hainmueller and Hiscox 2006.
16. Nie, Junn, and Stehlik-Barry 1996.
17. Ibid.
18. See Bauer, Pool, and Dexter 1963, chap. 6; Erikson and Tedin 2005; and Fordham 2008.

cation, in this case to differences in the kinds of courses taken by men and women. Burgoon and Hiscox, for example, maintain that college-educated men are more likely than college-educated women to be exposed to mainstream economic arguments about the gains from trade. They argue that the gender gap in trade policy attitudes stems from the fact that protrade ideas reach more men than women through their college coursework.[19]

More generally, Burgoon and Hiscox and Hainmueller and Hiscox make the important point that the kind of information to which citizens are exposed is likely to play a crucial role in shaping trade preferences.[20] To extend their argument beyond the educational environment, it is easy to see how if a person is a union member, they will be exposed to a different kind of information about the impact of free trade policies than a nonunion worker. As new concerns about globalization arise, organizations regularly communicate with their members to encourage certain policy preferences and to inform them about how they think people will be affected by particular policies. Likewise, members of the retiree organization AARP may receive regular information about the perils of financial insecurity in today's global economy, thus cultivating the impression of risk and volatility that could drive perceptions of the need for protectionist policies. Particularly in the current highly specialized media environment, different people receive different information.[21]

Whether this information variability is an outgrowth of the college courses they took, of newsletters, or of the daily newspaper, it helps shape perceptions that may or may not have a basis in the individual's personal economic reality. We refer to this collection of models emphasizing information differences as a source of variance in trade preferences as information-based models.

Intuitively, information of the kind one might be exposed to in college or in a daily newspaper would seem to pale in comparison to the hard reality of economic risk faced by a worker in a given occupation or industry. Surely threats to one's livelihood would seem to be a more potent influence on policy preferences. Surprisingly, the literature on economic policy preferences suggests that self-interest is unlikely to play an influential role in shaping attitudes toward free trade.[22] A large body of research demonstrates that self-interest enters into the formation of policy opinions only under very special and rare circumstances.[23]

Because of the counterintuitive nature of this claim, social scientists have searched extensively for instances in which economic self-interest played a significant role in the formation of policy preferences, but with little success. Evidence suggests that the economic impact of policies on individual families has little, if any, influence on their policy preferences.[24] The lack of self-interested policy pref-

19. Burgoon and Hiscox 2004.
20. See Burgoon and Hiscox 2004; and Hainmueller and Hiscox 2006.
21. Prior 2007.
22. For a review of this literature, see Kiewiet 1983.
23. Sears and Funk 1990.
24. Ibid.

erences occurs not out of a mass tendency toward altruism, but rather because citizens have a difficult time linking their personal economic situations to public policies. Furthermore, this pattern is not restricted to the economic realm. The list of failed attempts to observe the influence of self-interest in the formation of policy preferences is by now quite lengthy.[25] Exceptions to this general rule have received a great deal of attention, if only because of their rarity.[26]

But this is not to say that economic conditions are unrelated to policy preferences. Instead, because people tend to formulate policy preferences on the basis of collective, national-level information (that is, perceptions of how a given policy has affected the nation as a whole), economic conditions can influence these preferences, but through a fundamentally different process than what has been suggested by theories emphasizing self-interest. Even something as personally jarring as losing a job has far less impact on political preferences than the perception that unemployment is worsening as a collective, national problem.[27] Thus, to the extent that trade preferences are similar to attitudes toward other aspects of economic policy, they will stem from people's perceptions of the collective impact that trade policy has on the nation. This pattern has been dubbed sociotropic influence because of the tendency it suggests for relying on collective-level information rather than personal experience.[28]

Sociotropic models are, at root, information-based explanations. They are rooted in people's perceptions (or misperceptions) derived from any number of sources of information, beyond personal life experience. Most interestingly, such perceptions are not mere generalizations from personal experience. The two kinds of information that have been found to influence national-level collective perceptions are: (1) local information, such as information about the local economy, and (2) mass media coverage of economic issues. Citizens tend to process personal-level experiences and concerns in a fashion that compartmentalizes them from the political world.[29] Collective-level information, on the other hand, is more easily linked to government policy. An unemployed person is unlikely to blame the government for his or her personal situation, but people who are aware of rising joblessness in their country or community are likely to hold the government accountable for this development, regardless of their employment status. In the case of trade preferences, if available information convinces a person that many in the United States are being adversely affected by free trade, even if he is not, it

25. For a full review, see ibid.

26. Green and Gerken, for example, found that smoking-related policy preferences were significantly influenced by whether a person was a smoker. The few exceptions are simple policies with straightforward effects on individuals, such as the effects of nonsmoking policies on smokers. As complex, difficult to understand agreements, trade policies would not naturally fall into this category of policies in which one would expect self-interest to affect political preferences. See Green and Gerken 1989.

27. See Sears and Funk 1990; and Mutz 1992.

28. Kinder and Kiewiet 1981.

29. See, for example, Brody and Sniderman 1977; and Mutz 1994.

will be the former, sociotropic perception that shapes his trade policy preferences rather than how trade has influenced his personal economic well-being.

To summarize, research on the role of economic well-being on political preferences would warn against the assumption of self-interest as the driving force behind attitudes toward trade. Studies of mass opinion have repeatedly shown that individuals rarely form political preferences on the basis of economic self-interest. Although early studies of U.S. voting behavior attributed the surge enjoyed by incumbent parties in good economic times, and the anti-incumbent preferences in bad economic times, to so-called "pocketbook" voting, once these studies moved beyond aggregates to the individual level of analysis, it became clear that self-interest was not the mechanism driving economic accountability. The people helped or hurt by the economy were not those rewarding and punishing accordingly; instead, accountability rested on citizens' perceptions of how the nation as a whole was faring—perceptions that might or might not be accurate.

In some ways, this account is quite consistent with the relatively poor performance of the leading political economy models in explaining individuals' trade policy attitudes. Effects have appeared weak to nonexistent in many studies or have been derived from measures such as education, the interpretation of which remains ambiguous. Moreover, because many studies have used aggregate-level measures of preferences and impact, and none have asked about sociotropic perceptions, previous research has not been able to distinguish these various sources of trade preferences.

In this study, we use individual-level data that include multiple measures of attitudes toward trade. To date, few analyses of trade preferences have utilized data gathered at the individual level.[30] In all but a handful of studies, trade attitudes have been inferred from aggregate vote results, patterns of campaign contributions, or the outcomes of the policy debates themselves. Importantly, aggregate-level data can produce evidence of self-interested attitudes toward trade policies that is impossible to distinguish from preferences formed on a sociotropic basis, that is, on the basis of how people think the collective as a whole is influenced.

In addition, previous individual-level studies have generally relied on single-item indicators. Individual questions tend to be unreliable and sensitive to question wording and to the framing of options, problems that are easily avoided if responses across a variety of measures produce a reliable index.[31] We also use these data to expand the potential ways in which self-interest might enter into these policy preferences, beyond skill levels and industry impact.

Interestingly, most research on this topic has not viewed trade as a political issue. Instead, the emphasis in explaining trade attitudes has been on how trade

30. These studies include Bauer, Pool, and Dexter 1963; Balistreri 1997; Scheve and Slaughter 2001; Baker 2003 and 2005; Burgoon and Hiscox 2004; Kaltenthaler, Gelleny, and Ceccoli 2004; Mayda and Rodrik 2005; Hays, Ehrlich, and Peinhardt 2005; Hainmueller and Hiscox 2006; Hiscox 2006; and Kocher and Minushkin 2006.

31. See Bauer, Pool, and Dexter 1963, 84–85; Worldviews 2002; and Hiscox 2006.

positively or negatively affects individuals economically. With these data, we examine not only the dominant political economy models, but also the sociotropic hypothesis, which is the preference formation model most widely documented in public opinion research on economic policy preferences. In so doing, we not only improve our overall understanding of the origins of attitudes toward trade, we also reveal the importance of the kind of political information that reaches citizens in explaining American preferences in this policy domain.

## Study Design

Using two representative national surveys, we attempt to move beyond ecological inferences and the limitations of previous individual-level surveys by asking working and temporarily unemployed Americans about their attitudes toward trade and related matters. One was a telephone survey conducted as part of the National Annenberg Election Study (NAES) during the summer of 2004.[32] The other was a survey conducted via Internet or Web TV by Knowledge Networks (KN) in summer 2007.

We focus on the attitudes of Americans for various reasons. First, the United States has been the dominant country in the global trading system for more than half a century. As a result, social scientists have expressed substantial interest in the factors driving U.S. trade policy. The attitudes of Americans toward trade are likely to influence outcomes in this policy arena.[33] Second, a number of key studies of trade attitudes center on the United States.[34] Focusing on the attitudes of Americans should enhance the comparability of our results to these previous analyses.

### *The Dependent Variables*

Two survey questions served to construct the dependent variables in the analyses based on the NAES survey:

1. *As you may know, international trade has increased substantially in recent years. This increase is due to the lowering of trade barriers between countries, that is, tariffs or taxes that make it more difficult or more expensive to buy and sell things across international borders. Do you think government should try to encourage international trade or to discourage international*

32. The conservative AAPOR Response Rate I calculation was 23 percent, which represents a minimum possible response rate.

33. Fordham and McKeown 2003.

34. See, for example, Bauer, Pool, and Dexter 1963; Scheve and Slaughter 2001; Burgoon and Hiscox 2004; and Hainmueller and Hiscox 2006, 474–81, 487–91.

*trade? Do you think the government should [encourage/discourage] this a lot or only a little?*

2. *I'm going to read you some actions the federal government in Washington can take on a variety of issues. For each one please tell me whether you favor or oppose the federal government doing it. . . . How about the federal government negotiating more free trade agreements like NAFTA? Do you favor or oppose the federal government doing this? Is that strongly [favor/oppose] or only somewhat [favor/oppose]?*

Each item was scored on a five-point scale, or a four-point scale in the KN survey.[35] The highest (lowest) score was assigned to respondents who believed that the government should encourage (discourage) international trade a lot and who strongly favored (opposed) the government negotiating free trade agreements, respectively.[36]

Our first dependent variable is the mean score for these two items. The second dependent variable is an ordered trichotomous measure that equals 1 if a respondent opposes free trade agreements and believes that international trade should be discouraged, and 3 if he or she favors free trade agreements and believes that international trade should be encouraged. All other respondents were scored as 2. This variable therefore groups individuals based on whether they have a consistent preference for open trade or protectionism, or whether their preferences are inconsistent.[37]

Five survey questions were used to generate the dependent variable for the analysis based on the KN survey. The first two questions were identical to those described earlier, but three additional items were asked as well:

3. *Do you believe that globalization, especially the increasing connections of our economy with others around the world, is good or bad for the United States?*
4. *Should foreign companies be encouraged or discouraged from investing in the United States, for example, by building their factories in this country?*
5. *Do you have a very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable opinion of the WTO, the World Trade Organization?*

Each of these items was scored on a four-point scale. The highest (lowest) score was assigned to respondents who believed that the government should strongly

35. These two items are especially useful because one segment of the literature on trade policy preferences focuses on free trade agreements and another segment addresses more general attitudes toward trade. On this first segment, see, for example, Balistreri 1997; and Baker 2003.

36. For the first item, individuals who expressed no opinion or refused to answer were assigned to a middle category; for the second item, such individuals were grouped with respondents who neither favored nor opposed free trade agreements.

37. Combining these two items has various advantages, chiefly that the dependent variable is a more reliable measure and less prone to problems associated with idiosyncratic wording or measurement error than if we analyzed each item separately. On this issue, see Baker 2003, 444, fn. 35.

encourage (discourage) international trade, who strongly favored (opposed) the government negotiating free trade agreements, who felt that globalization is very good (bad) for the United States, who strongly encouraged (discouraged) foreign investment in the United States, and who had a very favorable (unfavorable) opinion of the WTO. The mean of the responses to these five items is our third dependent variable.

Although these items clearly do not address exactly the same issues, it is noteworthy just how consistent people's preferences were across the questions. Experts on these issues might anticipate that people would have different attitudes on the North American Free Trade Agreement (NAFTA) than on free trade more generally, or toward direct foreign investment than toward the World Trade Organization (WTO). Nonetheless, responses to these five questions indicated a very high degree of internal consistency, with a Cronbach's alpha of greater than 0.80 and a Cramer's V that averages about 0.80 for pairs of the items. In short, people's attitudes are very consistent across these facets of international economic relations, so much so that it would be inaccurate to describe them as anything other than a single underlying protrade or antitrade preference.

### *The Independent Variables*

Our key independent variables fall into three broad categories: (1) indicators of the individual characteristics suggested by the factor endowments and specific factors models, (2) indicators of respondents' perceptions of how trade influences their family's financial conditions as well as the country as a whole, and (3) indicators tapping potential noneconomic influences on trade preferences, including nationalism, ethnocentrism, and attitudes toward intervention in the affairs of other countries.

To analyze self-interest within the first category of models, we include measures of a respondent's skill level and features of his or her industry of employment. Economic studies typically use the average annual wage for an individual's occupation and the extent of an individual's formal education to measure skill, a tack that has been followed in much of the research on trade attitudes.[38] In both surveys, we therefore asked individuals, "In your current (or most recent) job, what kind of work do you do?" Each respondent's occupation was then coded using the U.S. Department of Labor's Standard Occupational Classification (SOC) system. We used data compiled by the Department of Labor's Bureau of Labor Statistics to calculate AVERAGE ANNUAL WAGE in 2003 (for the 2004 survey) and in 2006 (for the 2007 survey) for each occupation in our sample.[39] We also asked

38. See Attewell 1990, 425; Spenner 1990, 407; Balistreri 1997; Scheve and Slaughter 2001; Hays, Ehrlich, and Peinhardt 2005; and Mayda and Rodrik 2005.

39. The data on occupation and wages are taken from U.S. Department of Labor 2008a and 2008b, respectively.

each respondent about his or her formal education and created three dummy variables based on this information. The first, SOME COLLEGE, indicates whether the person graduated from a technical school or a two-year college, or whether the respondent attended but did not graduate from a four-college. The second, COLLEGE GRADUATE, indicates whether he or she graduated from a four-year college; and the third, GRADUATE SCHOOL, indicates whether the person attended graduate school. The reference category is someone who did not receive any formal education beyond high school.

To test the specific factors model using the NAES survey, we asked open-ended questions of each respondent about the industry in which they work, as well as details about their occupations. Because the full range of occupations and industries cannot easily be coded in real time, respondents were probed at length for details. Based on audio recordings of their responses, they were later assigned to one of the U.S. Census Bureau's three-digit North American Industry Codes (NAIC).[40] In the KN survey, we presented respondents with a list of the three-digit NAIC categories and asked them to select the one that best described the industry in which they work or most recently worked. For each industry represented in our sample, $i$, we constructed one measure of export orientation and another measure of import competition. EXPORT ORIENTATION is defined as the natural logarithm of $(X_i/Y_i)$ and IMPORT COMPETITION is defined as the natural logarithm of $(M_i/Y_i)$, where $X_i$ is sector $i$'s total exports, $M_i$ is the volume of imports in sector $i$, and $Y_i$ is this sector's total output. These variables are derived using 2003 data for the NAES survey and 2006 data for the KN survey.[41] Various industries in our sample are nontradable and therefore do not export or import goods. Since the natural logarithm of zero is undefined, we arbitrarily add 0.01 to both $X_i$ and $M_i$. The specific factors model predicts that individuals employed in industries that export a substantial portion of output should support open trade, whereas those working in sectors that face extensive competition from imports should be especially hostile to overseas commerce.

To distinguish evidence of self-interested policy preferences from sociotropic ones, an item in both surveys asked how respondents thought the nation as a whole had been influenced by trade. Respondents answered using a five-point scale ranging from "helped a lot" (5) to "hurt a lot" (1).[42] A parallel item asked about the

40. For a list of the three-digit industry classifications, see U.S. Census Bureau 2008a. Note that our sample is representative of the distribution of workers across industries in the U.S. population as a whole. We compared the distribution of respondents across industries in our sample to the distribution in the U.S. population, using data provided by U.S. Census Bureau 2008b. For each industry, the percentage of respondents in our sample is much the same as the percentage of the U.S. workforce.

41. Data on exports and imports are taken from U.S. International Trade Commission 2008. We used version 2.7.4 of the data when analyzing the NAES survey and version 2.8.4 of the data when analyzing the KN survey. Data on output are taken from U.S. Department of Commerce 2008 (Bureau of Economic Analysis).

42. People who refused to answer this question or who said they did not know the answer were grouped together with people who answered that trade neither hurts nor helps the economy.

perceived effect of trade on the financial situation of the person's family. Although the latter variable might appear to be an indicator of subjectively assessed self-interest, it is included to take into account however much slippage may occur between actual self-interest and what people perceive to be in their economic interests. These perceptions are inevitably a function of personal experience, but they also reflect information that causes people to attribute a particular economic situation to international trade.

As shown in Figure 1, both surveys demonstrate a slight skew toward perceptions that trade has adversely affected the economy. The NAES survey produced a roughly uniform distribution across the five response categories from "helped a lot" to "hurt a lot," whereas the KN results are more bimodal, with most respondents feeling that trade has either helped or hurt the economy "a little."

Importantly, both distributions deviate starkly from the distribution on this same scale for the American public's perceived effects of trade on their family's financial well being. Based on both surveys, there is a striking tendency for respondents to claim that trade has not affected their family's financial situation. Indeed, "no effect" is the modal response when people are asked to assess trade's perceived effects on their personal economic situation, which is consistent with the fact that most Americans are employed in nontradable sectors of the economy.

In the KN survey, we also included three indexes designed to help clarify the role of education in shaping trade preferences. Toward this end, we added items addressing three well-studied orientations that are known to be a function of education and that also are potentially linked to attitudes toward foreign commerce. First, regardless of context, well-educated people tend to favor a more activist role for the United States in foreign policy matters. Such individuals, for example, hold more favorable views of the United Nations, are more willing to normalize relations with Cuba, are more likely to favor signing international treaties, and generally endorse a more active role for the United States in foreign affairs than less-educated individuals.[43] Thus, protrade preferences among the well-educated may be a function of the same underlying tendency to involve one's self in affairs beyond national borders. Second, the poorly educated tend to have a stronger sense of nationalism, which might also account for their hostility to open overseas commerce. Finally, ethnocentrism—that is, the tendency to think less of those who are racially or ethnically different from one's own group—is tied to education and may also promote antitrade preferences. To the extent that the observed effects of education stem from any of these factors, it puts a different cast on what drives attitudes toward trade.

Our first index, ISOLATIONISM, is comprised of five widely used items tapping the extent to which respondents believe the United States should adopt an isolationist or an activist stance on international affairs. Notably, these items do not address economic relations between countries so much as whether the United States should

43. See Bauer, Pool, and Dexter 1963, chap. 6; Erikson and Tedin 2005; and Fordham 2008.

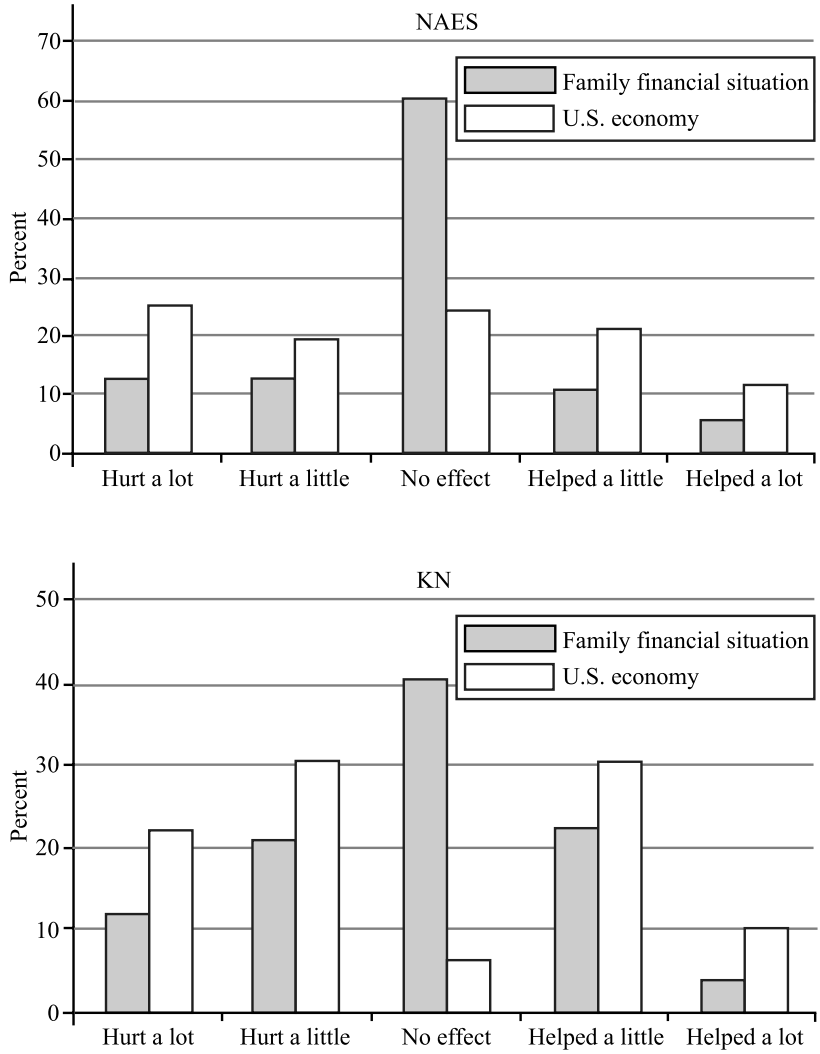


**FIGURE 1.** *The perceived impact of trade on respondents' families and on the U.S. economy*

intervene to prevent human rights abuses abroad, cooperate with foreign countries to solve global problems, and so forth.[44] The second index, NATIONALISM, draws

44. See Wittkopf and Maggiotto 1983, Maggiotto and Wittkopf 1981; and Herrmann, Tetlock, and Diascro 2001. These five items are as follows. "Please tell us whether you agree or disagree with each of the following statements: [RANDOMIZED ORDER] (1) The U.S. needs to play an active role in

on three previously used questions to assess whether respondents believe that the United States is culturally superior to other countries.[45] The third index, ETHNOCENTRISM, taps "prejudice, broadly conceived."[46] Ethnocentrism scales are designed to measure the "commonplace inclination to divide the world into in-groups and out-groups, the former characterized by virtuosity and talent, the latter by corruption and mediocrity."[47] By asking an individual about some positive and some negative human characteristics with reference to the in-group as well as what are out-groups for that given person, we obtain an indicator of the extent to which the person employs an in-group/out-group mode of thinking.[48] To construct these measures, we use the same racial and ethnic in-groups and out-groups as previous studies (blacks, whites, and Hispanics). Each of these three indexes was highly reliable, with Cronbach's alphas greater than 0.80. All were standardized, with a mean of zero, and coded such that larger positive (negative) values of these variables reflect views that are more (less) isolationist, nationalistic, and ethnocentric, respectively.

In addition, our models include measures of party identification (one variable indicating whether respondents describe themselves as a Democrat and another indicating whether they describe themselves as Republican, with the reference category being someone without a partisan affiliation), whether anyone in the home belonged to a union, whether the respondent was currently unemployed or laid off, age, gender (which equals 1 if the respondent is male and 0 if she is female), and family income.

In the following tests, we use ordinary least squares (OLS) to analyze our nine-point measure of trade policy preferences based on the NAES survey and our measure based on the KN survey, since both of them have a roughly normal distribution. To analyze the ordered trichotomous measure of the consistency of trade policy preferences across the two items, we use an ordered logit specification. All tests

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solving conflicts around the world; (2) The U.S. government should just try to take care of the well-being of Americans and not get involved with other nations; (3) It is essential for the United States to work with other nations to solve problems, such as overpopulation, hunger, and pollution; (4) It will be best for the future of the country if we stay out of world affairs; (5) The United States has the responsibility to play the role of 'world policeman,' that is, to fight violations of international law and aggression wherever they occur."

45. Rankin 2001. These three items are as follows. "To what extent do you agree or disagree with each of these statements? [RANDOMIZED ORDER]: (1) In the United States, our people are not perfect, but our culture is superior to others; (2) I would rather be a citizen of America than of any other country in the world; (3) The world would be a better place if people from other countries were more like Americans."

46. Levinson 1949, 19.

47. Kam and Kinder 2007, 321. All respondents are asked about their racial ethnic group as well as two out-groups. Ethnocentrism is the difference between the mean for positive-negative characteristics attributed to the in-group and the same characteristics attributed to the out-group. "Next are some questions about various groups in our society. Below are seven-point scales on which you can rate characteristics of people in different groups. Where would you rate physicians in general on this scale? Where would you rate [BLACKS/WHITES/HISPANIC-AMERICANS] in general on these scales?" The scales range from 1 to 7, anchored by Hard Working-Lazy, Efficient-Wasteful, and Trustworthy-Untrustworthy.

48. Levinson 1949.

of statistical significance are based on robust standard errors, which account for any heteroskedasticity in the data and which are clustered by the state in which the respondent resides.

## Results

Table 1 shows the results based on the NAES nine-point index of trade opinions, Table 2 reports the results based on the NAES trichotomous index, and Table 3 presents the results based on the mean of the five items on trade opinions from the KN survey. In each table, we start by estimating a model to test the factor endowments and specific factors hypotheses. This model includes occupational wages, education, the industry of employment's exposure to trade, and the control variables. Then we supplement this baseline model with additional variables to evaluate the impact of perceptions of trade's influence on the national economy and to assess the robustness of our results.

Our initial findings offer some apparent support for the factor endowments hypothesis. For each dependent variable, the coefficient estimates of SOME COLLEGE, COLLEGE GRADUATE, and GRADUATE SCHOOL are positive and jointly statistically significant. Furthermore, the results in each table indicate that respondents become increasingly supportive of open trade as they obtain more formal education. The estimated coefficient of SOME COLLEGE is always the smallest among these three variables and the coefficient estimate of GRADUATE SCHOOL is always the largest. Individuals who attended graduate school are much more supportive of open trade than both people with only a high school education and those with some college education. Each coefficient estimate of GRADUATE SCHOOL is statistically significant. Additional analyses of the incremental effect of each additional level of education furnish mixed results.[49] In the KN survey, each additional level of achievement—from high school to some college, and from some college to a four-year college degree—contributes to greater support for trade. Graduate school, on the other hand, does not contribute additional support beyond what one receives by virtue of having completed a four-year college degree. In the NAES study, by contrast, a graduate school education has a statistically significant impact on trade support beyond receiving a four-year degree, whereas prior levels of educational achievement (some college and a college degree) do not contribute significantly.

Whereas education exerts a strong influence on attitudes about trade, the effect of occupational wages is weak. The coefficient estimate of AVERAGE ANNUAL WAGE is positive, which is consistent with the factor endowments approach, but it is

49. The additional analyses to test the incremental effect of each level of educational achievement were conducted by coding education as a set of nested dummy variables. All people with graduate degrees were coded as also having four-year degrees and some college, all who had four-year degrees were coded as also having completed some college, and so forth.

**TABLE 1.** *The determinants of trade preferences, based on the NAES nine-point index*

| *Variables* | *Model 1* | *Model 2* | *Model 3* | *Model 4* | *Model 5* |
|---|---|---|---|---|---|
| SOME COLLEGE | 0.068 | −0.024 | −0.041 | −0.025 | −0.070 |
| | (0.089) | (0.082) | (0.074) | (0.082) | (0.070) |
| COLLEGE GRADUATE | 0.164 | 0.111 | 0.131+ | 0.110 | 0.060 |
| | (0.122) | (0.087) | (0.071) | (0.087) | (0.069) |
| GRADUATE SCHOOL | 0.377*** | 0.304** | 0.319*** | 0.305** | 0.248** |
| | (0.100) | (0.089) | (0.082) | (0.089) | (0.078) |
| AVERAGE ANNUAL WAGE | 0.000 | 0.000 | | 0.000 | |
| | (0.000) | (0.000) | | (0.000) | |
| EXPORT ORIENTATION | −0.174 | −0.033 | 0.089 | | 0.076 |
| | (0.170) | (0.133) | (0.114) | | (0.114) |
| IMPORT COMPETITION | 0.129 | 0.011 | −0.097 | | −0.090 |
| | (0.163) | (0.126) | (0.108) | | (0.109) |
| TARIFF RATE | | | | −0.025 | |
| | | | | (0.021) | |
| PERCEIVED EFFECT OF TRADE ON U.S. | | 0.361*** | 0.380*** | 0.363*** | 0.297*** |
| | | (0.024) | (0.020) | (0.024) | (0.020) |
| PERCEIVED EFFECT OF TRADE ON SELF | | | | | 0.247*** |
| | | | | | (0.033) |
| UNION MEMBERSHIP | −0.443*** | −0.331*** | −0.338*** | −0.331*** | −0.325*** |
| | (0.079) | (0.070) | (0.055) | (0.070) | (0.053) |
| UNEMPLOYED | −0.168 | 0.034 | 0.030 | 0.033 | 0.085 |
| | (0.186) | (0.183) | (0.174) | (0.183) | (0.158) |
| REPUBLICAN | 0.014 | −0.047 | −0.018 | −0.047 | −0.074 |
| | (0.065) | (0.069) | (0.068) | (0.068) | (0.066) |
| DEMOCRAT | −0.173+ | −0.082 | −0.078 | −0.080 | −0.090 |
| | (0.097) | (0.088) | (0.069) | (0.088) | (0.070) |
| MALE | 0.211* | 0.128 | 0.076 | 0.123 | 0.064 |
| | (0.101) | (0.084) | (0.068) | (0.083) | (0.066) |
| AGE | −0.003 | −0.002 | −0.002 | −0.002 | −0.003 |
| | (0.003) | (0.003) | (0.002) | (0.003) | (0.002) |
| INCOME | 0.017 | 0.000 | −0.014 | −0.000 | −0.014 |
| | (0.026) | (0.024) | (0.019) | (0.024) | (0.017) |
| *Constant* | 2.992*** | 2.201*** | 2.334*** | 2.184*** | 1.927*** |
| | (0.212) | (0.204) | (0.166) | (0.220) | (0.155) |
| *R-square* | 0.077 | 0.253 | 0.263 | 0.252 | 0.293 |
| *Adjusted R-square* | 0.062 | 0.240 | 0.254 | 0.240 | 0.284 |
| *N* | 851 | 851 | 1084 | 851 | 1084 |

*Notes:* Entries are ordinary least squares regression estimates with robust standard errors, clustered by the respondent's state of residence, in parentheses. Two-tailed tests of statistical significance are conducted for all coefficient estimates. Statistical significance is indicated as follows: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

small and far from statistically significant. Furthermore, the results offer no support for the specific factors hypothesis since neither EXPORT ORIENTATION nor IMPORT COMPETITION has a statistically significant impact on trade preferences.

There is little evidence that individuals form attitudes about trade based on how trade affects their income. But as shown in the second columns of Tables 1, 2, and 3, there is strong evidence that these attitudes are formed in response to perceptions of how trade affects the U.S. economy. Respondents who feel that trade benefits the economy as a whole are significantly more likely to favor open trade than

**TABLE 2.** *The determinants of trade preferences, based on the NAES trichotomous index*

| *Variables* | *Model 1* | *Model 2* | *Model 3* | *Model 4* | *Model 5* |
|---|---|---|---|---|---|
| SOME COLLEGE | 0.111 | −0.004 | −0.003 | −0.006 | −0.049 |
| | (0.154) | (0.163) | (0.152) | (0.163) | (0.150) |
| COLLEGE GRADUATE | 0.256 | 0.216 | 0.247 | 0.215 | 0.130 |
| | (0.220) | (0.179) | (0.151) | (0.180) | (0.151) |
| GRADUATE SCHOOL | 0.598** | 0.596** | 0.507** | 0.597** | 0.388* |
| | (0.187) | (0.190) | (0.166) | (0.191) | (0.163) |
| AVERAGE ANNUAL WAGE | 0.000 | 0.000 | | 0.000 | |
| | (0.000) | (0.000) | | (0.000) | |
| EXPORT ORIENTATION | −0.280 | −0.056 | 0.172 | | 0.156 |
| | (0.299) | (0.261) | (0.223) | | (0.234) |
| IMPORT COMPETITION | 0.209 | 0.020 | −0.181 | | −0.175 |
| | (0.282) | (0.244) | (0.209) | | (0.221) |
| TARIFF RATE | | | | −0.038 | |
| | | | | (0.044) | |
| PERCEIVED EFFECT OF TRADE ON U.S. | | 0.639*** | 0.669*** | 0.641*** | 0.536*** |
| | | (0.051) | (0.042) | (0.050) | (0.043) |
| PERCEIVED EFFECT OF TRADE ON SELF | | | | | 0.429*** |
| | | | | | (0.071) |
| UNION MEMBERSHIP | −0.626*** | −0.493*** | −0.487*** | −0.493*** | −0.474*** |
| | (0.120) | (0.132) | (0.098) | (0.132) | (0.097) |
| UNEMPLOYED | −0.287 | 0.020 | 0.040 | 0.018 | 0.132 |
| | (0.340) | (0.402) | (0.379) | (0.402) | (0.369) |
| REPUBLICAN | 0.036 | −0.086 | −0.047 | −0.086 | −0.141 |
| | (0.139) | (0.151) | (0.137) | (0.150) | (0.136) |
| DEMOCRAT | −0.276 | −0.159 | −0.192 | −0.155 | −0.219 |
| | (0.185) | (0.195) | (0.161) | (0.194) | (0.161) |
| MALE | 0.393* | 0.290+ | 0.185 | 0.280+ | 0.167 |
| | (0.164) | (0.154) | (0.135) | (0.155) | (0.136) |
| AGE | −0.004 | −0.002 | −0.005 | −0.002 | −0.006 |
| | (0.005) | (0.005) | (0.004) | (0.005) | (0.004) |
| INCOME | 0.024 | −0.009 | −0.031 | −0.010 | −0.030 |
| | (0.040) | (0.042) | (0.031) | (0.042) | (0.029) |
| *Cut_1* | −1.247*** | 0.003 | −0.348 | 0.020 | 0.353 |
| | (0.359) | (0.400) | (0.290) | (0.429) | (0.299) |
| *Cut_2* | 1.125** | 2.710*** | 2.362*** | 2.725*** | 3.124*** |
| | (0.378) | (0.409) | (0.295) | (0.439) | (0.313) |
| *Pseudo log likelihood* | −829.509 | −759.039 | −969.012 | −759.390 | −953.927 |
| *Pseudo R-square* | 0.030 | 0.113 | 0.114 | 0.112 | 0.128 |
| *N* | 851 | 851 | 1084 | 851 | 1084 |

*Notes:* Entries are ordered logit estimates with robust standard errors, clustered by the respondent's state of residence, in parentheses. Two-tailed tests of statistical significance are conducted for all coefficient estimates. Statistical significance is indicated as follows: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

those who believe that trade is economically harmful, providing considerable support for sociotropic arguments about overseas commerce. Including PERCEIVED EFFECT OF TRADE ON U.S. substantially strengthens the model's explanatory power, increasing the adjusted coefficient of variation ($R^2$) by about fourfold in Table 1 and by roughly sevenfold in Table 3. In addition, doing so weakens the effects of gender, partisanship, and age.

Our initial results—in the first column of Tables 1, 2, and 3—provide clear evidence of a gender gap, with women holding more protectionist attitudes than men.[50] There is also evidence of a partisan split, although the nature of this split differs across the two surveys. Based on the findings in Table 1, Democrats are more protectionist than either unaffiliated individuals or Republicans. Based on the findings in Table 3, there is no difference between the estimated coefficients of DEMOCRAT and REPUBLICAN, but Republicans are more protectionist than unaffiliated voters. Equally, the results in Table 3 indicate that people become more protectionist as they grow older. All of these relationships except the split between Republicans and unaffiliated voters in Table 3, however, become attenuated once we add the sociotropic variable to the model. Including this variable also reduces the magnitude of education's impact on preferences about overseas commerce, especially when analyzing the KN index.

Consistent with existing research, Tables 1 and 2 further indicate that union membership affects an individual's attitude toward trade.[51] Respondents who either were a union member or had a union member in their family were much less likely to be protrade than those without a union affiliation. However, income seems to have no bearing on trade preferences. In addition, what little evidence there is that unemployment influences these preferences (see the second and third columns of Table 3) becomes much weaker once we account for respondents' perceptions of how trade has influenced their family financial situation (see the fourth column of Table 3).

Taken together, our results indicate that perceptions of how trade affects the U.S. economy, union membership, and education strongly influence mass opinion about trade. To further analyze the impact of these factors, we estimate the effects of a change in each factor on the predicted probability that our trichotomous dependent variable equals 1 (consistent opposition to trade) and 3 (consistent support for trade), respectively. These predicted probabilities are generated using Stata's *prvalue* program, based on the model in the second column of Table 2, and setting the remaining continuous variables to their sample means and the remaining discrete variables to their modal categories.[52]

The results indicate that the perception of trade's effects on the U.S. economy has a sizable impact on trade preferences. A change from not being sure whether trade benefits the U.S. economy (a score of 3) to the view that trade has helped the economy "a little" (a score of 4) yields about a 50 percent increase in the probability that a respondent consistently supports free trade; a change to the belief that trade helps the economy "a lot" (a score of 5) yields roughly a 100 percent increase in this probability.

50. See O'Rourke and Sinnott 2002; Burgoon and Hiscox 2004; Baker 2005; Hays, Ehrlich, and Peinhardt 2005; and Mayda and Rodrik 2005.

51. See Balistreri 1997; and Mayda and Rodrik 2005.

52. On this program, see Long and Freese 2005. Note that these results are virtually identical if we rely on the estimates in the third or fourth columns of Table 2.

**TABLE 3.** *The determinants of trade preferences, based on the KN index*

| *Variables* | *Model 1* | *Model 2* | *Model 3* | *Model 4* | *Model 5* | *Model 6* |
|---|---|---|---|---|---|---|
| SOME COLLEGE | 0.146* | 0.072 | 0.073 | 0.069 | 0.050 | 0.027 |
| | (0.061) | (0.051) | (0.050) | (0.050) | (0.048) | (0.048) |
| COLLEGE GRADUATE | 0.284*** | 0.155*** | 0.158*** | 0.143** | 0.107* | 0.056 |
| | (0.061) | (0.044) | (0.043) | (0.043) | (0.043) | (0.043) |
| GRADUATE SCHOOL | 0.338*** | 0.177** | 0.181*** | 0.153** | 0.121* | 0.031 |
| | (0.063) | (0.051) | (0.051) | (0.054) | (0.057) | (0.050) |
| AVERAGE ANNUAL WAGE | 0.000 | −0.000 | −0.000 | −0.000 | −0.000 | −0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| EXPORT ORIENTATION | 0.030 | −0.017 | | −0.043 | −0.038 | −0.029 |
| | (0.051) | (0.026) | | (0.027) | (0.029) | (0.026) |
| IMPORT COMPETITION | −0.032 | 0.017 | | 0.040 | 0.035 | 0.030 |
| | (0.045) | (0.024) | | (0.025) | (0.027) | (0.025) |
| TARIFF RATE | | | 0.007 | | | |
| | | | (0.009) | | | |
| PERCEIVED EFFECT OF TRADE ON U.S. | | 0.300*** | 0.300*** | 0.257*** | 0.254*** | 0.249*** |
| | | (0.010) | (0.010) | (0.011) | (0.011) | (0.012) |
| PERCEIVED EFFECT OF TRADE ON SELF | | | | 0.101*** | 0.100*** | 0.075*** |
| | | | | (0.015) | (0.016) | (0.018) |
| UNION MEMBERSHIP | −0.001 | 0.045 | 0.046 | 0.052 | 0.054 | 0.066 |
| | (0.053) | (0.043) | (0.043) | (0.043) | (0.043) | (0.048) |
| UNEMPLOYED | −0.126 | −0.128* | −0.130* | −0.089 | −0.089 | −0.075 |
| | (0.090) | (0.062) | (0.063) | (0.063) | (0.063) | (0.070) |
| REPUBLICAN | −0.118* | −0.095* | −0.096* | −0.113** | −0.110* | −0.123* |
| | (0.052) | (0.041) | (0.041) | (0.042) | (0.042) | (0.047) |
| DEMOCRAT | −0.081 | −0.032 | −0.034 | −0.034 | −0.032 | −0.044 |
| | (0.061) | (0.039) | (0.039) | (0.038) | (0.039) | (0.048) |
| MALE | 0.100** | 0.035 | 0.033 | 0.034 | 0.024 | 0.009 |
| | (0.032) | (0.030) | (0.030) | (0.030) | (0.029) | (0.031) |
| AGE | −0.004* | −0.002 | −0.002 | −0.002 | −0.001 | −0.002 |
| | (0.002) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| INCOME | 0.010 | 0.010 | 0.010 | 0.006 | 0.003 | 0.005 |
| | (0.012) | (0.010) | (0.010) | (0.010) | (0.009) | (0.009) |
| ECONOMICS CLASS | | | | | 0.044 | 0.056+ |
| | | | | | (0.026) | (0.030) |
| ECONOMISTS' VIEW OF TRADE | | | | | 0.062* | 0.055+ |
| | | | | | (0.026) | (0.027) |
| ISOLATIONISM | | | | | | −0.099*** |
| | | | | | | (0.011) |
| ETHNOCENTRISM | | | | | | −0.029** |
| | | | | | | (0.010) |
| NATIONALISM | | | | | | −0.023 |
| | | | | | | (0.019) |
| *Constant* | 2.723*** | 1.902*** | 1.936*** | 1.754*** | 1.759*** | 1.886*** |
| | (0.087) | (0.084) | (0.090) | (0.076) | (0.077) | (0.087) |
| *R-square* | 0.070 | 0.446 | 0.446 | 0.463 | 0.466 | 0.480 |
| *Adjusted R-square* | 0.064 | 0.442 | 0.442 | 0.458 | 0.461 | 0.474 |
| *N* | 1995 | 1995 | 1995 | 1995 | 1992 | 1822 |

*Notes:* Entries are ordinary least squares regression estimates with robust standard errors, clustered by the respondent's state of residence, in parentheses. Two-tailed tests of statistical significance are conducted for all coefficient estimates. Statistical significance is indicated as follows: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Union membership also has a considerable influence on the probability of supporting trade. People with a union member in their household are about 35 percent more likely to oppose trade than other individuals. At first blush, it is tempting to interpret the effect of union membership as an indicator of self-interested preferences. This might be the case if union members work in industries that are adversely affected by trade or are relatively low-skilled workers. However, we have already accounted for the industry of employment and skill level, suggesting that union membership is not simply a feature of self-interest. Instead, unions probably influence attitudes on trade by disseminating information: most major unions oppose trade liberalization and free trade arrangements, and promote such views among their rank and file. Interestingly, most union members in our surveys work in nontradable sectors, such as primary, secondary, and higher education. There is no reason why trade would harm these individuals.

Education also has a marked effect on trade preferences. People with a graduate school education, for example, are about 65 percent more likely to consistently support trade than people with either a high school education or some college education but not a four-year degree. All of these effects are statistically significant.[53]

It is worth considering whether sociotropic perceptions of how trade affects the nation as a whole are potentially rationalized from pre-existing policy opinions. In other words, might people have a priori opinions on trade from some other influence and then rationalize from those issue preferences to an evaluation of how trade affects the nation's economy?

In using sociotropic perceptions of trade's impact as a predictor of trade preferences, we did not assume that such perceptions were completely exogenous. Indeed, previous work suggests that sociotropic perceptions of closely related issues such as unemployment and national economic decline are spawned by media coverage as well as by local economic conditions.[54] Moreover, there is some evidence to suggest that the same pattern of origins is true of trade perceptions.[55] Whereas media coverage may alter sociotropic perceptions, it generally has no direct effect on opinions, thus implying that the ordering we have suggested must be largely correct. Information sources alter collective-level perceptions, and these in turn alter policy preferences.[56]

Importantly, it is obvious from our results that inclusion of the sociotropic variable has no bearing on whether the variables representing self-interest demon-

53. Recall that, based on the results in Table 3, there is also evidence of a split between Republicans and unaffiliated individuals. However, the magnitude of this split is quite modest. A change in party affiliation from unaffiliated to Republican yields less than a 4 percent reduction in the predicted value of the KN index, holding constant the continuous variables in our model at their sample means and the remaining discrete variables at their modal categories.

54. See, for example, Erbring, Goldenberg, and Miller 1980; Conover, Feldman, and Knight 1986; and Mutz 1998.

55. See Busch and Reinhardt 2000; and Mansfield and Mutz 2006.

56. Mutz 1992.

strate influence. Regardless of ordering, we find little evidence that self-interest forms the basis of trade preferences. But if sociotropic perceptions were merely rationalizations of pre-existing issue attachments, one would expect panel data to show null effects from changing sociotropic perceptions over time. However, as in our results, panel analyses show that sociotropic perceptions have a strong and significant influence on political preferences.[57]

## The Robustness of the Results

Having generated some initial estimates of our models, we now assess the robustness of our results. First, in coding the data on occupation based on the NAES survey, it was not possible to assign every respondent an SOC code. Consequently, the size of our sample in Tables 1 and 2 is reduced when including AVERAGE ANNUAL WAGE in the model. Since this variable has little impact on trade preferences and to ensure that the effects of the remaining variables remain stable when we analyze the largest possible sample, we estimate the models using the NAES data after dropping AVERAGE ANNUAL WAGE. As shown in the third column of Tables 1 and 2, this change in the model's specification has no bearing on any variable except COLLEGE GRADUATE, which now has a marginally significant effect in Table 1, and MALE, which no longer has a statistically significant effect in Table 2.

Second, our initial findings do not support the specific factors hypothesis. One reason might be the measures we used to test this hypothesis. In addition to measuring the export orientation and import competition of a respondent's industry of employment, a few studies have analyzed whether the tariff rate of this industry affects his or her trade preferences.[58] Hence, we replace the variables tapping export orientation and import competition with a measure of his or her industry's 2003 (for the NAES survey) or 2006 (for the KN survey) tariff rate.[59] Like Scheve and Slaughter, we estimate the effective tariff rate by taking the natural logarithm of the ratio of customs revenue to total imports in each sector, using data compiled by the U.S. International Trade Commission.[60] Nontradable sectors are assigned a tariff rate of zero. Since the natural logarithm of zero is undefined, we arbitrarily add 0.01 to each (unlogged) tariff rate, thereby retaining all of our original observations.

57. See, for example, Kiewiet 1983.

58. See, for example, Scheve and Slaughter 2001.

59. We do not include export orientation, import competition, and the tariff rate in the same model because the first two variables are fairly highly correlated with the latter variable.

60. Scheve and Slaughter 2001. The data are available at U.S. International Trade Commission 2008. We used version 2.7.4 of the data when analyzing the NAES survey and version 2.8.4 of the data when analyzing the KN survey.

Scheve and Slaughter argue that industries marked by extensive protection are likely to be at a comparative disadvantage.[61] As such, the specific-factors model predicts individuals in such industries should be hostile to open trade and should press for protectionism. Our tests, however, continue to provide no support for this approach. As shown in the fourth columns of Tables 1 and 2 and the third column of Table 3, the coefficient estimate of TARIFF RATE is always small and far from statistically significant.

Third, to bolster assessment of self-interest beyond the factor endowments and specific factors measures, respondents in the NAES survey also were asked direct questions about the extent to which their place of work is involved in importing and exporting. They were asked whether their workplace: (1) exports products, (2) imports products, (3) supplies products or services to companies that import or export, or (4) outsources some of its work to other countries. None of these measures of how trade affects their place of employment had a significant bearing on trade preferences. Nor did including these variables have any impact on the remaining results.

To further address whether the effects of trade on an individual's personal life influences or his or her trade preferences, we included in the model respondents' perceptions of how they and their family had been influenced by open trade, as illustrated in Figure 1. Including this variable in our models of trade preferences is particularly important because we want to ensure that the observed effect of people's attitudes about how trade affects the nation is not simply an outgrowth of their attitudes about how trade has influenced them on a personal level. The results in the final column of Tables 1 and 2 and the fourth column of Table 3 show that people who feel that trade has helped them and their family support trade.[62] In all three tables, the coefficient estimate of PERCEIVED EFFECT OF TRADE ON SELF is positive and statistically significant. These estimates are also fairly large. For example, a change from not being sure whether trade benefits a respondent (a score of 3) to holding the opinion that trade helps him or her "a little" (a score of 4) yields about a 40 percent increase in the probability that a respondent consistently supports free trade; a change to the belief that trade helps the person "a lot" (a score of 5) yields roughly a 90 percent increase in this probability. Nonetheless, the effect of this variable is somewhat less than that of the sociotropic variable, whose coefficient is only marginally smaller than in our earlier analysis, and this difference is statistically significant based on the results in Table 3. Even after accounting for subjective perceptions of how trade affects a respondent, perceptions of how trade influences the nation have a strong and sizable impact on whether people support open trade.

Finally, a number of previous studies have included the effects of marital status, race, urban-rural residence, and religiosity in models of trade preferences. To

61. Scheve and Slaughter 2001.

62. We present the results without AVERAGE ANNUAL WAGE to maximize the sample size, but the results do not change when this variable is included.

assess the robustness of our results, we included these variables one at a time and in combination. There is no case in which any of these factors strongly influences trade preferences and including them had no bearing on the remaining results.

## Interpreting the Effects of Education

We have found that as Americans obtain more formal education, they become increasingly likely to prefer free trade. Most studies have viewed education as a proxy for skill and therefore interpret findings such as these as supportive of the factor endowments approach. As noted earlier, Hainmueller and Hiscox have challenged this interpretation, maintaining that a college education affects trade opinions, above and beyond increasing human capital and skill, by exposing people to theories about the benefits of trade.[63] This exposure, rather than the occupational skills acquired in the classroom, is why education is positively associated with preferences for open trade in the United States. To test their argument, Hainmueller and Hiscox compared the effects of education (especially a college education) on trade attitudes for people in the workforce and for retirees. If education is a proxy for skill, they reasoned, the factor endowments approach predicts that it should have a much greater influence on the trade policy attitudes of people in the workforce than on retirees. Their results provided no evidence of this sort; nor do ours.

First, we added retirees who were included in the NAES survey to our sample of respondents. We then added four variables to our model: (1) an indicator variable for whether the respondent was retired or in the workforce, and (2) the interaction between this variable and SOME COLLEGE, COLLEGE GRADUATE, and GRADUATE SCHOOL, respectively.[64] (We dropped AVERAGE ANNUAL WAGE, EXPORT ORIENTATION, IMPORT COMPETITION, and UNEMPLOYED since these do not apply to retirees.) Our results indicate that, for any given amount of formal education, the difference in the predicted value of each dependent variable between individuals in and out of the workforce is less than three percent. Clearly, the effects of education do not vary in any meaningful way between these sets of people.

Second, in order to directly test Hainmueller and Hiscox's argument, we included two items on the KN survey. The first asked whether respondents had taken an economics course. The second asked whether economists believe that free trade is good or bad for the economy. We included the latter item to determine whether an understanding of the basic principles of international economics affects trade attitudes, regardless of whether someone has taken an economics course. We then created two dummy variables. ECONOMICS CLASS equals 1 if a respondent has taken such a course, 0 otherwise. ECONOMISTS' VIEW OF TRADE equals 1 if a respondent

63. Hainmueller and Hiscox 2006.
64. Note that retirees make up about 19 percent of the sample in this analysis.

understands that economists believe that free trade is good for the economy, 0 otherwise. If Hainmueller and Hiscox are correct, then the estimated coefficients of these variables should be positive and statistically significant. The coefficients of SOME COLLEGE, COLLEGE GRADUATE, and GRADUATE EDUCATION, however, should not be significant.

The results shown in the fifth column of Table 3 provide some support for Hainmueller and Hiscox's thesis. The estimated coefficients of the two variables tapping exposure to ideas about the benefits of trade are both positive. ECONOMISTS' VIEW OF TRADE has a statistically significant effect, whereas the influence of ECONOMICS CLASS is marginally significant ($p = .105$). Nonetheless, economic knowledge has a small impact on trade attitudes: taking an economics class or understanding that economists argue that free trade is beneficial increases the predicted value of the KN dependent variable by only 2 to 3 percent, holding constant the remaining variables in the model. Equally, the estimated coefficients of SOME COLLEGE, COLLEGE GRADUATE, and GRADUATE SCHOOL, although somewhat smaller than before, remain jointly significant; and the coefficients of the latter two variables remain positive and statistically significant. The impact of education on trade attitudes stems from far more than a knowledge of basic economic principles.

What, then, underlies the influence of education? To gain a better understanding of this issue, we turn to an analysis of noneconomic influences, including ETHNOCENTRISM, NATIONALISM, and ISOLATIONISM, indexes drawn from the KN survey that we described earlier and that are likely to be closely tied to educational attainment. The effects of these variables are reported in the final column of Table 3. The coefficient estimates of all three variables are negative, indicating that there is little support for free trade among people who believe the United States is superior to other countries, hold isolationist views, and exhibit evidence of prejudice toward groups unlike themselves. The effects of isolationist attitudes and ethnocentrism are statistically significant. These effects are also relatively large. A change from the most globally interventionist attitudes registered by respondents to the most isolationist attitudes reduces the predicted value of our measure of trade attitudes by almost 20 percent. A shift from the least ethnocentric views to the most ethnocentric views reduces this predicted value by about 12 percent. Both of these changes are statistically significant.

Not only do ISOLATIONISM and ETHNOCENTRISM have a strong bearing on preferences about trade, they also account for the effects of education. After including ISOLATIONISM, ETHNOCENTRISM, and NATIONALISM in the model, the estimated coefficients of SOME COLLEGE, COLLEGE GRADUATE, and GRADUATE SCHOOL become substantially smaller. Moreover, none of these coefficients are even close to statistically significant and they are no longer jointly significant. The smaller and weaker effects of education stem from the impact of ISOLATIONISM and ETHNOCENTRISM, rather than NATIONALISM. If we exclude ISOLATIONISM and ETHNOCENTRISM but include NATIONALISM, the effects of education grow larger and stronger. In fact, the coefficients of the variables pertaining to education are almost identi-

cal to the corresponding coefficients in the fifth column of Table 3, a finding that accords with previous research on the relationship between nationalism and trade attitudes.[65] Consequently, the effects of education reflect differences in attitudes about the extent to which the United States should take an activist stance in international affairs and a general tendency to think less of out-groups relative to in-groups.

At one level, these results might seem curious. Why, for example, does a belief that the United States should play the role of "world policeman" in preventing human rights abuses in other countries have anything to do with trade preferences? Why should how blacks feel about whites and Hispanics (or vice-versa) have anything to do with trade liberalization? Activist foreign policy attitudes, a positive attitude toward out-groups, and a preference for open trade, however, all reflect a sense of cosmopolitanism and inclusion. Isolationism, a negative attitude toward out-groups, and antipathy toward open trade all reflect a sense of insularity and separatism. In short, trade preferences are driven less by economic considerations and more by an individual's psychological worldview.

## Conclusion

It is widely acknowledged that any complete model of the political economy of trade must account for the preferences of the mass public.[66] These preferences influence trade policy because government officials need to attend to constituent interests to retain office.[67] Despite the obvious importance of understanding the factors that influence attitudes about trade, however, there have been only a handful of studies on this topic.

Much of the research to date emphasizes that trade preferences are shaped by how overseas commerce affects an individual's income. The factor endowments or Heckscher-Ohlin framework posits that these preferences are affected primarily by a person's skills. In a country such as the United States, highly skilled individuals will benefit economically from open trade and therefore should prefer the expansion of foreign commerce, while less skilled individuals should oppose it. The specific factors or Ricardo-Viner framework posits that people who work in import-competing industries should oppose open trade because foreign competition is likely to degrade their income and threaten their jobs, whereas those who are employed in export-oriented industries should support it.

As with most existing studies of attitudes toward trade, we find limited support for either approach. Occupational wages, a widely used measure of skill, have no

65. See O'Rourke and Sinnott 2002; and Mayda and Rodrik 2005. Note that our measure of nationalism is virtually identical to the measures used in these earlier studies.

66. See Rodrik 1995; Scheve and Slaughter 2001; and O'Rourke and Sinnott 2002.

67. Fordham and McKeown 2003.

effect on attitudes about trade. On the other hand, highly educated Americans are much more likely to support open trade than are less-educated individuals. Some previous studies have interpreted this result as support for the factor endowments approach. However, we have found that that there is reason to be wary of this interpretation. In this study, we conducted the first systematic analysis of the influence of isolationism and ethnocentrism on trade attitudes. Our findings reveal that the observed effects of education reflect negative attitudes toward out-groups, as well as views about whether U.S. foreign policy should be isolationist or interventionist. Isolationism and domestic ethnocentrism are strongly linked to hostility toward free trade. People who have less formal education also hold more negative attitudes toward those different from themselves. Although there are several theories as to how and why education increases tolerance and promotes more cosmopolitan worldviews, there is little doubt that these factors are closely linked. After accounting for the effects of isolationism and ethnocentrism, we find that education has no direct effect on trade attitudes, thus suggesting that its effects represent out-group anxiety rather than economic self-interest.

In addition, we find no support for the specific factors approach. The revealed comparative (dis)advantage of the industry in which an individual is employed does not influence his or her opinions in the way that this approach predicts. Nor does the tariff level of the industry in which he or she works. In short, despite our efforts to gather detailed information on industry of employment and on individual skill levels, the self-interest hypothesis has little explanatory power when it comes to understanding attitudes toward trade.

Besides out-group anxiety, we find that opinions on trade are driven by perceptions of trade's impact on the nation as a whole. While at one level this finding may seem obvious, because existing studies have emphasized that trade preferences are shaped by self-interest, they have largely ignored the influence of the information that drives perceptions of trade's collective-level impact on the nation. We argue that this oversight is a significant shortcoming. Americans' attitudes about trade are guided in powerful ways by whether they believe that trade harms or benefits the national economy, and this perception is not a mere extension of their personal self-interest. If sociotropic perceptions were merely personal interests projected onto the country at large, then we would not expect the impact of perceptions to be consistently strong and influential in shaping trade attitudes in models that simultaneously demonstrate little, if any, impact from indicators of objective self-interest.

The fact that sociotropic perceptions powerfully shape trade attitudes begs the question of where these perceptions originate. Although a thorough analysis of this question is beyond the scope of this study, scholars studying the origins of sociotropic perceptions in other economic policy arenas have identified three likely sources. First, many have found that mass media coverage of the economy plays an important role in forming these perceptions. To the extent that negative economic indicators and downturns are stressed in press coverage, perceptions of the economy also tend to become more negative, regardless of whether people are

personally experiencing these downturns.[68] Likewise, when unemployment is emphasized in local and national media, individuals' perceptions of the state of unemployment also become more negative.[69] Any tendency for the press to place greater emphasis on the harmful impact of trade and less emphasis on the beneficial impact might help to account for the negatively skewed sociotropic perceptions shown in Figure 1.

In addition to mass media, local economic conditions that individuals learn about through interpersonal contact and casual conversations also influence their perceptions of the direction of national economic change. Although evidence is less extensive on this point, even those individuals who are not personally affected by trade policies can form impressions of its impact based on acquaintances who have been personally influenced.[70] In the case of trade, formal coursework in economics and related disciplines may also shape perceptions of whether trade is good or bad for the U.S. economy. Finally, perceptions of national-level conditions could be affected by personal experience, although most available evidence suggests that this relationship is fairly weak since people tend to compartmentalize personal-level and collective-level information.[71] Overall, our findings suggest that a better understanding of trade preferences among the mass public requires that we account for the broader information environment in which policy attitudes are formed, as well as the psychological predispositions of individuals.

The strong implication of our study is that standard political economy models are limited in what they can explain about trade preferences. Self-interest accounts for at best only a small portion of the variance in attitudes about trade. Incorporating the effects of sociotropic perceptions, isolationism, and out-group anxiety substantially increases the explanatory power of models of such attitudes. These results conform to what public opinion research has shown about how people form economic policy preferences more generally. Moreover, they point to the need for studies of trade policy to focus more attention on the development of psychologically informed models addressing how people process economic information, and whether political leaders are accurately held accountable for the effects of trade policies.

In one sense our findings were foreshadowed by research almost half a century ago, although this approach did not become dominant in explaining trade preferences. As early as 1963, Bauer, Pool, and Dexter noted that education's importance in shaping attitudes toward foreign trade in the United States exceeded even that of the economic characteristics of a respondent.[72] Unfortunately, they lacked the kind of specific information we have accumulated on individual skill levels

68. See, for example, Adoni and Cohen 1978; Erbring, Goldenberg, and Miller 1980; MacKuen and Coombs 1981; and Behr and Iyengar 1985.
69. Mutz 1992.
70. Conover, Feldman, and Knight 1986.
71. See Tyler 1980 and 1984; and Tyler and Cook 1984.
72. Bauer, Pool, and Dexter 1963.

and industries, and thus they could not differentiate between various explanations as to why education was so influential. These same scholars were also prescient in recognizing the role of communications in shaping perceptions of trade's impact, noting that press coverage in the 1950s was probably what changed public perceptions of whether trade was beneficial for the country. Finally, Bauer, Pool, and Dexter argued, as we have, that attitudes toward trade were driven in part by more general attitudes toward isolationism and internationalism.[73]

The implications of out-group anxiety for trade policy are particularly worrisome because anxiety toward out-groups is such a widespread reaction to what is unfamiliar. Although our findings are limited to a sample of Americans, we suspect that they generalize to other nations as well, precisely because fear of outsiders is so commonplace. Although the structure of economies differs greatly from country to country, human psychology tends to cross national borders easily. The origins of ethnocentric worldviews have been extensively studied, thus enabling some understanding of its origins.

Moreover, our findings may help to explain why previous studies have found that education is positively associated with support for trade liberalization, even in countries in which skilled labor is a scarce factor.[74] To the extent that education promotes cosmopolitanism and reduces out-group anxiety, its effects should be in the same direction in a wide variety of countries. Future approaches to explaining trade preferences will inevitably need to integrate the impact of information about how trade is perceived to affect the economy as well as the symbolic, psychological threat posed by U.S. involvement in foreign markets.

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73. Ibid., 96–99.

74. See Beaulieu, Benarroch, and Gaisford 2004; and Beaulieu, Yatawara, and Wang 2005.

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