Why Don't Trade Preferences Reflect Economic Self-Interest?

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Abstract: Recent research finds that voters do not have economically self-interested preferences about trade policy. This article investigates one potential explanation for this puzzling finding: economic ignorance. We show that most voters do not understand the economic consequences of protectionism. We then use experiments to study how voters would respond if they had more information about how trade barriers affect the distribution of income and the economy as a whole. We find that distributional cues generate two opposing effects: they make people more likely to express self-serving policy preferences, but they also make people more sensitive to the interests of others. In our study both reactions were evident, but selfish responses outweighed altruistic ones. Thus, if people knew more about the distributional effects of trade, the correlation between personal interests and policy preferences would tighten. Citizens in our experiments also responded strongly to information about efficiency. When we presented the classical case for free trade, support for protectionism fell sharply, the correlation between personal interests and policy preferences weakened, and the gender gap in protectionism disappeared. These findings provide a foundation for more realistic, behaviorally informed theories of public opinion and international trade.

1. Introduction

A large academic literature examines why some people support free trade whereas others oppose it. Some authors attribute the trade policy preferences of individuals to economic self-interest.[1] Either by themselves or with cues from political parties and interest groups, it is argued, people form opinions that reflect how trade would affect their material well-being. More recently, though, researchers have questioned the connection between material self-interest and attitudes toward trade.[2] They argue that opinions about trade depend primarily on symbolic and social considerations, rather than material self-interest.

This new wave of research not only contradicts prior work about international trade, but also challenges foundational assumptions in the field of international political economy. When economists and political scientists build models about economic policy, they typically start with the assumption that relevant actors—voters, interest groups, and politicians—seek to maximize their material interests. Moreover, interests are treated as highly predictable, and derived from each individual's position within the domestic or the global economy. Given knowledge about a person's assets and sector of employment, for example, one can predict how trade would affect that person economically, and therefore infer whether the individual should favor or oppose free trade. In standard models of international political economy, policy emerges from the interaction of these materially motivated actors.

The recent wave of research about individual attitudes toward trade threatens the rationalist foundation on which modern IPE has been built. If the preferences of individuals are

[1] O'Rourke and Sinnott 2001; Scheve and Slaughter 2001b; Beaulieu 2002; Mayda and Rodrik 2005.

[2] Hainmueller and Hiscox 2006; Mansfield and Mutz 2009; Sabet 2014; Authors 2015.

not driven primarily by economic self-interest, we may need to rebuild our models from the ground up. In this article, we begin the process by investigating *why* self-interest has relatively little explanatory power. Our paper focuses on economic ignorance as one potential explanation for the puzzling disconnection between material interests and trade policy preferences

We show that most voters do not understand the economic consequences of protectionism. We then use experiments to study how voters would respond if they had more information about the winners and losers from trade policy. We find that distributional cues generate two opposing effects: they make people more likely to express self-interested policy preferences, but they also make people more sensitive to the interests of others. Put another way, information about winners and losers facilitates both egoism and altruism. In our study both types of reactions were evident, but selfish responses outweighted altruistic ones. Thus, if people knew more about the distributional effects of trade, the correlation between personal interests and policy preferences would tighten.

We also studied knowledge about the classical case for free trade. Nearly all economists agree that free trade increases aggregate welfare, and is therefore superior to limiting imports. When we exposed Americans to this idea, several effects emerged: overall support for protectionism fell sharply, the correlation between personal interests and policy preferences weakened, and the gender gap in protectionism—widely regarded as one of the most puzzling patterns in research about public attitudes toward trade—disappeared.

Our findings have both theoretical and practical implications. At a theoretical level, future models of political economy need more appropriate assumptions about what citizens do—and don't—know about complex issues such as trade. At a practical level, our studies suggest that economic education could substantially change public attitudes. On the one hand, making

citizens more aware about the identities of winners and losers could polarize public opinion, by sharpening the association between material interests and policy preferences. On the other hand, teaching people about the aggregate benefits of trade could make trade less divisive and convert a fairly protectionist electorate into one that supports free trade.

In the remainder of this article, we briefly review existing evidence for and against the self-interest hypothesis. We then explain how economic ignorance could undermine the connection between self-interest and policy preferences, and we develop predictions about how citizens would respond to economic information. After documenting that Americans citizens know little about the effects of protectionism, we present a series of experiments that isolate the effects of information on public opinion. Our experiments show how opinion would change if citizens were more knowledgeable about the impact of trade on the distribution of income and the economy as a whole.

2. Existing evidence for and against the self-interest hypothesis

Studies that emphasize the role of economic self-interest have relied on two major economic theories about the effects of trade liberalization. The Stolper-Samuelson theorem hypothesizes that, in each country, free trade helps owners of the relatively abundant factor of production while hurting owners of the relatively scarce factor. Scholars have used this theorem to generate predictions about the policy preferences of ordinary citizens. In advanced economies (where educated labor is relatively abundant), it is argued, highly educated workers should favor free trade, whereas less educated workers should oppose it. Developing countries (which have an abundance of unskilled labor) should exhibit the opposite pattern: highly educated workers should oppose free trade, but less educated workers should favor it.

In the early 2000s scholars used public opinion polls to test these predictions.[3] They found a strong positive correlation between education and support for free trade in advanced countries, and a somewhat weaker correlation in developing countries. Based on this research, Anna Mayda and Dani Rodrik concluded that "pro-trade preferences are significantly and robustly correlated with an individual's level of human capital, in a manner predicted by the factor endowments model" proposed by Stolper and Samuelson.[4]

A second economic theory, the Ricardo-Viner or specific factors model, generates a different set of predictions. Ricardo-Viner posits that free trade benefits both capitalists and workers in comparative-advantage industries, by enabling them to tap new markets and raise their real income. At the same time, free trade hurts members of comparative-disadvantage industries by subjecting them to foreign competition. Consistent with these predictions, scholars found that people in comparative-disadvantage industries were somewhat more protectionist than people in comparative-advantage industries.[5]

In summary, several studies from the early 2000s concluded that public attitudes toward international trade were consistent with material self-interest, as predicted by Stolper-Samuelson and/or Ricardo-Viner. These studies provided empirical microfoundations for theories in which trade policies emerged from aggregating the preferences of economically selfish actors.[6]

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[3] Three seminal studies were O'Rourke and Sinnott 2001; Scheve and Slaughter 2001b; and Mayda and Rodrik 2005.

[4] Mayda and Rodrik 2005, 1393.

[5] Beaulieu 2002; Hays, Ehrlich, and Peinhardt 2005; Mayda and Rodrik 2005.

[6] Mayer 1984; Grossman and Helpman 1994; Hiscox 2002; Milner and Kubota 2005.

These findings, once regarded as conventional wisdom, have recently come under fire. A growing body of research now argues that the connection between material self-interest and trade policy preferences is far weaker than previously thought. Some authors find that material self-interest has little explanatory power after controlling for other predictors of public opinion.[7] Others acknowledge that variables like education are robustly correlated with attitudes toward trade, but maintain that the correlations do not reflect material self-interest. Jens Hainmueller and Michael Hiscox, for example, show that the effect of education on trade attitudes is just as strong among people outside the labor force, as among people in the labor force. They conclude that "the effects of education on individual trade preferences are not primarily a product of distributional concerns linked to job skills."[8]

[The authors of this article] advance the debate by analyzing public attitudes toward protectionism for specific industries, instead of looking at sentiment toward free trade in general.[9] They find surprisingly little evidence that the preferences of citizens fit the predictions of standard economic models, including not only Stolper-Samuelson and Ricardo-Viner, but also "new-new" models of trade with heterogeneous firms.[10]

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[7] Wolfe and Mendelsohn 2005; Mansfield and Mutz 2009. For an excellent review of these and other studies, see Kuo and Naoi 2015.

[8] Hainmueller and Hiscox 2006, 469.

[9] Authors 2015.

[10] Melitz 2003.

3. Economic Ignorance as a Potential Explanation

These studies, if correct, raise an important a puzzle: *why* does material self-interest have so little predictive power? One possibility is that individual preferences are determined by non-material considerations. Shahrzad Sabet, for example, finds that attitudes toward foreign cultures trump economic self-interest as predictors of attitudes toward international trade.[11] Other studies concur that cultural and ideological predispositions such as nationalism, ethnocentrism, racism, ideology, and social trust play important roles in shaping opinions about trade.[12]

A second possibility is that people weigh material considerations but focus on society as a whole, without putting undue weight on their own individual circumstances. Edward Mansfield and Diana Mutz argue, for example, 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."[13] Xiaobo Lü, Kenneth Scheve and Matthew Slaughter add that people exhibit "inequity aversion," and therefore prefer trade policies that minimize inequality or combat poverty.[14]

In this article we pursue a third, complementary explanation for the weak correlation between self-interest and trade opinion. Perhaps ordinary citizens do not understand how trade

[11] Sabet 2014.

[12] Herrmann, Tetlock, and Diascro 2001; O'Rourke and Sinnott 2001; Rankin 2001; Kaltenthaler, Gelleny, and Ceccoli 2004; Mayda and Rodrik 2005; Edwards 2006; Mansfield and Mutz 2009; Kaltenthaler and Miller 2013; Guisinger 2014; Lindsey and Lake 2014; Rathbun forthcoming.

[13] Mansfield and Mutz 2009, 425. But see Fordham and Kleinberg 2012, who argue that group-based social interests are difficult to distinguish from individual economic self-interest.

[14] Lü, Scheve and Slaughter 2012.

affects their material welfare, and therefore find it hard to choose the policy that would maximize their economic interests. In an early discussion of this theme, David Rankin asserted that ordinary citizens do not pay close attention to trade policies and lack the knowledge to weigh the personal costs and benefits of trade. They rely instead on information shortcuts, including symbolic predispositions such as national identity. Rankin did not measure public understanding about the consequences of international trade, however, nor did he test whether attitudes would change if citizens were more thoroughly informed.[15]

More recently, scholars have studied how citizens respond to arguments for and against free trade.[16] These researchers have exposed citizens to various pro and con arguments and estimated how the arguments moved public opinion. Researchers have also used visual stimuli that encourage people to identify with either producer or consumer interests.[17] Although innovative, these experiments do not explicitly identify winners and losers. As a consequence, the studies do not reveal how citizens would respond to information about the effects of trade on specific groups, or how they would react if distributional information were combined with classical arguments about efficiency.

To our knowledge, only one previous study experimentally manipulated the identity of domestic winners and losers from trade. The study, by Richard Herrmann, Philip Tetlock, and Matthew Diascro, described a trading relationship with a foreign country. Some respondents were told that, in the United States, "the benefits from this trade go largely to the wealthy." Others learned that "the benefits from this trade help the poor at least as much as the wealthy."

[15] Rankin 2001

[16] Hiscox 2006; Ardanaz, Murillo and Pinto 2013.

[17] Naoi and Kume 2011; Naoi and Kume forthcoming.

After supplying additional details, the investigators asked whether the United States should restrict trade with the country. The authors found that support for the trading relationship was substantially higher when some benefits accrued to the poor in the United States.[18]

Building on this work, we hypothesize that economic knowledge has a profound effect on whether citizens express self-serving preferences. As a baseline, consider how public opinion might look if citizens lacked information about the distribution and efficiency. In that case, we would expect a fairly low correlation between material interests and trade policy preferences. Citizens simply would not know enough to judge which policies are best for themselves. Moreover, if citizens did not know that free trade increases aggregate welfare, public support for free trade could be quite low. As we show later in the paper, many if not most Americans fit this description: ignorant about both distribution and efficiency, they express policy preferences that do not fit standard political economy models.

How would public opinion change if citizens learned about the distributional consequences of trade? We hypothesize that exposure to this type of information could generate two opposing effects. On the one hand, such information could increase the correlation between a person's material interests and policy preferences. Prior research has argued that policy preferences are most likely to reflect economic self-interest when the costs and benefits to individuals are clear and certain.[19] Armed with clear cues about how trade would affect them personally, citizens could more accurately identify and advocate policies that serve themselves.

[18] Herrmann, Tetlock, and Diascro 2001.

[19] Citrin and Green 1990; Sears and Funk 1991, 59; Chong, Citrin, and Conley 2001.

On the other hand, teaching people about winners and losers could facilitate altruism—the tendency that "one's utility increases with well-being of others."[20] A growing body of research has documented altruistic tendencies in human behavior, including political behavior.[21] On the topic of trade policy, Lü, Scheve and Slaughter identified altruism as a potential reason why low-skilled sectors typically receive more protection than high-skilled ones.[22] Displaying altruism on the topic of trade requires understanding how trade affects the welfare of others. Given that most citizens have only limited understanding of the distributional effects of trade, raising awareness could help people act on their altruistic tendencies.

The net effect of these two changes—one selfish, the other altruistic—is ambiguous. If people use their knowledge primarily for selfish purposes, distributional cues will cause citizens to sort into pro-trade and anti-trade camps that reflect material self-interest. If, on the other hand, people use information primarily to serve others, distributional cues will weaken the correlation between self-interest and policy preferences. Instead of advocating policies that help themselves, people will increasingly choose policies that help (or avoid hurting) others. In the empirical section of this article, we test for both selfish and altruistic responses to information, and we assess whether distributional information makes public opinion more self-serving, on average.

We also expect that people will respond strongly to information about efficiency. Non-experimental studies have shown that protectionism is more prevalent among people who do not understand the principle of comparative advantage.[23] Scholars have also suggested that higher

[20] Fehr and Schmidt 2003, 219.

[21] Fehr and Fischbacher 2003; Fehr and Schmidt 2006; Fowler and Kam 2007.

[22] Lü, Scheve and Slaughter 2012.

[23] Baron and Kemp 2004.

education—especially college—contributes to free trade by exposing citizens to the economic idea that free trade increases consumer welfare.[24] By providing the same kind of information in an experiment, our cues about efficiency should make free trade more popular.

Information about efficiency should also weaken the connection between personal interests and policy preferences. Knowing the classical case for free trade should make policy preferences less selfish, we suggest, by exposing a potential tension between the citizen's own interests and national welfare.[25]

Finally, efficiency cues could reduce the gender gap in public opinion about trade. Previous studies have consistently found that men support free trade at higher rate than women.[26] As one potential explanation for this puzzling gap, scholars have noted that men know more about economics in general and trade in particular. Indeed, tests of economic knowledge show that men can more accurately identify their country's trading partners,[27] and are more likely to know that economists regard free trade as good for the economy.[28] If the gender gap stems from

[24] Hainmuller and Hiscox 2006.

[25] Along these lines, Chong, Citrin, and Conley (2001) show that when people are primed about sociotropic concerns, they become less willing to choose policy preferences based on their self-interests.

[26] See, e.g., O'Rourke and Sinnott 2001; Baker 2005; Hays, Ehrlich, and Peinhardt 2005; Burgoon and Hiscox 2008; Mansfield and Mutz 2009; Blonigen 2011; Mansfield, Mutz and Silver 2014.

[27] Burgoon and Hiscox 2008; Guisinger forthcoming.

[28] Mansfield, Mutz, and Silver 2014.

differences in knowledge, then educating women about the classical case for free trade should level the playing field, causing the gender gap to shrink or disappear altogether.

Although these predictions seem plausible, they may not hold. There are at least two reasons why economic cues might not trigger the patterns we described. On the one hand, economically ignorant citizens do not necessarily need information to behave rationally. They can exhibit self-serving or other-regarding policy preferences by following the advice of more knowledgeable actors. Recommendations from trusted political parties, interest groups, the media, colleagues, and friends could allow "badly informed voters to emulate the behavior of relatively well informed voters."[29]

On the other hand, even economically informed citizens may not form policy preferences based on the material consequences for themselves, other groups, or society as a whole. Nonmaterial concerns including nationalism, ethnocentrism, racism, and ideology, could overshadow if not override economic costs and benefits.[30] In short, our predictions could fail either because citizens do not need economic information or because they tend not to use it. In the remainder of this article we investigate how much citizens actually know about trade, and how they would respond if they were better informed.

4. Knowledge about the Effects of Trade Policy

How much do voters know about the economic effects of trade policy? As a first step toward answering this question, we analyzed a 2004 Pew Research Center survey that measured

[29] Lupia 1994; 63; Popkin 1994; Scheve and Slaughter 2001a, 43; Fordham and Kleinberg 2012, 321-22.

[30] Guisinger 2014; Sabet 2014; Rathbun forthcoming.

reactions to arguments for and against free trade. Interviewers asked whether respondents had heard each argument and, if so, whether they agreed, disagreed, or had not thought much about it. Table 1 summarizes the percentage of people who offered each answer.

TABLE 1. *Knowledge about the consequences of free trade*

	Never heard	Heard but not thought	Heard and disagree	Heard and agree	Don't know or refused
Free trade results in better products and better prices for American consumers.	26 %	14 %	20 %	37 %	3 %
Free trade creates demand for U.S. products abroad, which stimulates economic growth and creates jobs here at home.	28	15	23	30	4
Free trade creates a strong global economy, which benefits everyone.	25	15	21	35	4
Because of free trade, corporations have laid off American workers and sent their jobs overseas.	9	8	17	63	3
Free trade widens the gap between rich and poor in the United States and in the world as a whole.	41	9	17	30	4

Note: Authors' calculations from the Pew Research Center, Pew Internet & American Life Survey, June 14–July 3, 2004. Sample size was 512.

The table shows that large swaths of the American public have not thought carefully about trade. Consider the first row, which summarizes the classical economic case for free trade. Around 26% of respondents had never heard the claim that "free trade results in better products and better prices for American consumers." An additional 14% had heard the argument but not

thought much about it, and another 20% knew the argument but disagreed. Overall, only 37% of respondents were familiar with and sympathetic to the classical case for free trade.

Americans were equally unsure about the effects of trade on economic growth. As the second and third rows of the table show, more than 40% had not heard or not considered whether trade stimulates the economy, and an additional 20% knew the claim but rejected it. In total, only one-third knew and agreed with the assertion that trade stimulates growth.

Americans have thought more extensively about the connection between trade and jobs. The vast majority recognized the assertion that trade had caused corporations to lay off American workers, and 63% agreed with it. Nonetheless, Americans remained unclear about the effect of trade on economic inequality. Fully 50% had not heard or thought about whether "free trade widens the gap between the rich and poor." In summary, the Pew data suggest that average Americans know little about the consequences of trade.

Such high levels of economic ignorance are not unique to the United States. Public understanding about trade is low in Spain, as well. Juan Díez Medrano and Michael Braun asked Spanish citizens, "would you say that you know a lot, some, little, or nothing about the consequences of raising or lifting barriers to the import of foreign products?" Approximately 34% confessed that they knew nothing about the issue, and an additional 48% said they had little knowledge about it. Moreover, more than 60% had never heard family, friends, or coworkers comment about foreign imports. Finally, when asked to mention up to three consequences of lifting restrictions on imports, 27% failed to name any.[31] Clearly, then, knowledge about international trade is low not only in the United States, but also in other countries.

[31] Medrano and Braun 2011.

To deepen the analysis, we conducted an original survey that measured whether Americans anticipated the predictions of Stolper-Samuelson. The Stolper-Samuelson theorem posits that an increase in the relative price of a product will increase the real returns to the factor used most intensively to make that product, while decreasing the real earnings of other factors of production. Suppose, for example, that the U.S. government limited imports of low-education products (items made with unskilled labor), such as clothing or fruits and vegetables. The domestic price of those products would rise, helping low-educated Americans at the expense of highly educated ones. Limiting imports from educated foreign workers would have the opposite effect: helping Americans with college degrees while hurting Americans without college degrees.

Our survey tested whether ordinary Americans anticipated these economic effects. We noted, "Some people think the U.S. government should limit imports from foreign businesses that employ a low percentage of workers with college degrees," and then asked how such a policy would affect Americans with and without college degrees. In a similar way, we asked what would happen if the U.S. government limited imports from foreign businesses that employed a high percentage of workers with college degrees.

We administered the questionnaire to a sample of 1,495 U.S. adults: 500 in December 2013, and an additional 995 in April 2015. The two waves yielded very similar responses, so we pooled them to increase the precision of our estimates. All participants were recruited via Amazon Mechanical Turk, an online recruitment service that is widely used for academic research. Validation studies show that, for many topics, surveys fielded through MTurk yield approximately the same findings as surveys on nationally representative samples.[32] Of special

[32] Buhrmester, Kwang, and Gosling 2011; Berinsky, Huber, and Lenz 2012; authors 2015.

relevance for research about trade, Huff and Tingley found that "the percentage of MTurk respondents employed in specific industries is strikingly similar" to data from the Cooperative Congressional Election Study, a nationally representative survey supported by the National Science Foundation.[33] MTurk subscribers do differ from the national population on some dimensions, including gender, race, education, age, and political party identification. As a robustness check, we weighted the data to match population benchmarks on those variables, but our conclusions did not change (see the online appendix).

The beliefs of ordinary Americans did not fit the Stolper-Samuelson model. Table 2a summarizes expectations about limiting low-education imports, i.e., products from foreign businesses that employ a low percentage of workers with college degrees. Only 28% of respondents thought, per Stolper-Samuelson, that such a policy would help Americans without college degrees, and only 16% predicted that the policy would hurt Americans with college degrees. The remaining respondents did not know, said the policy would have no effect, or predicted the opposite of Stolper-Samuelson. Most tellingly, only 4% anticipated that limits on low-education imports would help less educated Americans *and* hurt highly educated Americans.

Table 2b shows the perceived effects of limiting high-education imports, those made by foreign businesses that employ a high percentage of workers with college degrees. Here, too, the beliefs of ordinary Americans diverged sharply from Stolper-Samuelson. Only 28% said that such a protectionist policy would help Americans with college degrees; only 20% thought it would hurt Americans without college degrees; and less than 6% anticipated both effects.

[33] Huff and Tingley 2014.

TABLE 2. *Perceptions about the effects of limiting two types of imports*

(a) Perceived effects of limiting low-education imports

	Effect on Americans *without* college degrees	Effect on Americans *with* college degrees?
Would help	28 %	17 %
Would hurt	23	16
No effect	34	51
Don't know	15	16

(b) Perceived effects of limiting high-education imports

	Effect on Americans *without* college degrees	Effect on Americans *with* college degrees?
Would help	16 %	28 %
Would hurt	20	24
No effect	46	34
Don't know	18	15

Note: Percentage of respondents, out of 1,495 in total, who made each prediction.

When we combined data from both halves of Table 2, the discrepancy between theory and expectations became even more striking. Barely 1% of respondents believed that Americans without college degrees would gain if the government limited low-education imports but suffer if the government limited high-education imports, while also believing that Americans with college degrees would experience the opposite fate. In summary, our data revealed an enormous gap between the beliefs of ordinary Americans and the predictions of Stolper-Samuelson.

Tables 1 and 2 characterized the beliefs of all respondents. To deepen the analysis, we investigated whether highly educated respondents had a better understanding of trade, perhaps because of greater exposure to economic ideas.[34]

[34] Hainmueller and Hiscox 2006.

We found mixed evidence for this proposition. On the one hand, Americans with college degrees were more aware of the classical idea that free trade increases efficiency by reducing prices and increasing the diversity and quality of goods. This was clearly evident in the aforementioned Pew Survey, which measured knowledge of the claim that "free trade results in better products and better prices for American consumers." As Table 3 shows, only 29% of respondents with college degrees had never heard the argument or considered it enough to form an opinion, versus 50% among less educated respondents. The table further shows that 48% of people with college degrees knew and agreed with the claim, versus only 32% among people without college degrees. Both differences were not only substantively large but also statistically significant at $p < .001$.

TABLE 3. *Beliefs about the classical case for free trade, by education*

	Does respondent have a college degree?		Difference	
	Yes	No	Estimate	C.I.
Never heard or thought	29.1 %	49.8 %	-20.7 %	(-30 to -12)
Heard and agree	48.3	31.8	16.5	(7 to 26)
Heard and disagree	22.6	18.5	4.1	(-3 to 12)

Note: Responses to the idea that "free trade results in better products and better prices for American consumers." Based on data from Pew Research Center, Pew Internet & American Life Survey, June 14–July 3, 2004. Sample size was 510.

We found similar patterns with regard to other claims about aggregate effects of trade. For instance, only 38% of college graduates had not heard or formed an opinion about the claim that "Free trade creates demand for U.S. products abroad, which stimulates economic growth and creates jobs here and at home." An additional 39% knew and agreed with the claim, and the remaining 24% disagreed with it. The analogous figures for people without college degrees were 52%, 26%, and 22%. Thus, as in Table 3, college graduates showed higher awareness of, and a stronger tendency to agree with, the claim that trade increases the size of the pie.

Although educated Americans were more familiar with and sympathetic to classical arguments about free trade, they did not display systematically different beliefs about the identity of winners and losers. Table 4 shows the percentage of respondents, by educational category, who agreed that limiting low-education imports would help Americans without college degrees but hurt Americans with college degrees, whereas restrictions on high-education imports would generate the opposite effects. Although college graduates were slightly more likely to agree with each of the predictions, the differences were substantively small—on the order of 2 or 3 percentage points—and could have arisen by chance alone. Moreover, the percentage of respondents who concurred with Stolper-Samuelson on all four items was only 1%, regardless of whether the respondent had a college degree.

TABLE 4. *Beliefs about the distributional effects of protection, by education*

	Does respondent have a college degree?		Difference	
	Yes	No	Estimate	C.I.
Limiting low-education imports would:				
Help Americans without college degrees	29 %	26 %	3 %	(-2 to 7)
Hurt Americans with college degrees	17	14	3	(-1 to 7)
Agree with both statements	4	4	0	(-2 to 2)
Limiting high-education imports would:				
Help Americans with college degrees	30	26	4	(-1 to 8)
Hurt Americans without college degrees	22	19	3	(-1 to 7)
Agree with both statements	7	5	2	(0 to 4)
Agree with all four statemetns	1	1	0	(-1 to 1)

Note: Percentage of respondents who made each prediction. The sample contained 748 people with college degrees and 747 people without college degrees.

We have documented that ordinary Americans know little about the economic consequences of trade. Most are not familiar with classical arguments about the effects of trade on consumer welfare and economic growth, and even fewer anticipate the kinds of distributional arguments (such as Stolper-Samuelson) that have animated the academic literature about individual attitudes toward trade.

Our research also provides an important qualification to previous claims about the relationship between education and economic knowledge. We found that citizens with college degrees were more knowledgeable about the overall benefits of trade. This fact could explain the positive correlation between education and free trade that others have observed in the literature.[35]

[35] See also Hainmueller and Hiscox 2006.

Nevertheless, in our data, educational attainment was not associated with more accurate perceptions about the distributional effects of trade, at least as predicted by Stolper-Samuelson. Regardless of their level of education, respondents generally did not anticipate that protectionism would create winners and losers as a function of factor endowments.

Our findings could help explain the puzzling mismatch between the material interests of citizens and their trade policy preferences. Without a solid understanding of the distributional effects of trade, citizens may not be in a position to choose policies that advance their own pocketbook. At the same time, our findings suggest the potential efficacy of economic cues. Given low levels of knowledge in society as a whole, opinions could shift significantly if we informed citizens about the winners and losers from trade.

5. Experimental Design

How might citizens respond if they were more knowledgeable about trade? To find out, we designed a survey experiment in which some participants received cues about the distributional consequences of protectionism, whereas other participants did not. All participants read an introductory script: "U.S. businesses and consumers buy many products that are made in foreign countries. The products from foreign countries are called imports. There is much debate about whether the U.S. government should use laws to limit imports by U.S. businesses and consumers." Each respondent was then assigned to one of four groups.

The first group received cues about *both winners and losers*. Our cues taught respondents about Stolper-Samuelson, which seemed appropriate given the theorem's centrality in the existing literature. Technically, the theorem posits that an increase in the relative price of a product (caused by protectionism or some other policy) will increase the returns to the factor that

is most intensively used to make that product, while decreasing the real earnings of other factors of production. Educated labor is widely viewed as an important factor of production. Thus, workers without much formal education would gain if policies increased the price of items that were made with unskilled labor, but lose if policies raised the price of education-intensive products. Highly educated workers would experience the opposite: they would win if policies raised the price of high-education products but lose if policies made low-education products more expensive.

We presented information about winners and losers in simplified form. Respondents were told, "Some people think the U.S. government should limit imports from foreign businesses that employ a low percentage of workers with college degrees. This policy would help Americans without college degrees by protecting their jobs from foreign competition and increasing the income they earn from their jobs. This policy would hurt Americans with college degrees by raising the prices they would have to pay for products, without protecting their jobs or increasing their income." After presenting the information, we asked whether the government should limit imports from foreign businesses that employ a low percentage of workers with college degrees.

The first group also learned who would win and lose if the government restricted imports with high educational content. "Some people think the U.S. government should limit imports from foreign businesses that employ a high percentage of workers with college degrees," we noted. "This policy would help Americans with college degrees, by protecting their jobs from foreign competition and increasing the income they earn from their jobs. This policy would hurt Americans without college degrees by raising the prices they would have to pay for products, without protecting their jobs or increasing their income." After supplying these cues, we asked

whether the government should limit imports from foreign businesses that employ a high percentage of workers with college degrees.

The second group received cues about *winners only*. We explained, for example, that limits on low-education imports would help Americans without college degrees by protecting their jobs and raising their income, but did not mention that the same policy would hurt Americans with college degrees by raising the prices they would have to pay for products. Similarly, we noted that limits on high-education imports would help Americans with college degrees by safeguarding their jobs and increasing their wages, but did not say that the policy would hurt Americans without college degrees by making products more expensive. After presenting these partial cues, we asked whether the government should limit each type of imports.

The third group received cues about *losers only*. We mentioned that restrictions on low-education imports would hurt Americans with college degrees, without mentioning how the same policy might benefit Americans without college degrees. Likewise, we said that restrictions on high-education imports would hurt Americans without college credentials, without adding that the same restrictions would help Americans who had graduated college.

The fourth group did not receive any cues about winners and losers. We simply asked whether the government should limit imports from foreign businesses that employ a low percentage of workers with college degrees, and whether the government should limit imports from foreign businesses that employ a high percentage of workers with college degrees. This *no cues* group provided an important baseline by revealing how citizens would respond given their preexisting knowledge.

We recruited a sample of 5,027 U.S. adults via Amazon Mechanical Turk. As noted earlier, numerous studies have validated MTurk for research on a wide range of topics, including public opinion about trade. Nevertheless, we confirmed that our central conclusions held even after reweighting the MTurk sample to approximate the demographic profile of the national population.[36] The interviews were spread over a four-year period from August 2011 to April 2015.[37]

6. Effects of Distributional Cues on People with College Degrees

We begin by examining the responses of college graduates, who comprised 48% of the sample. The top half of Figure 1 shows, by experimental condition, the percentage of college graduates who thought the U.S. government should limit imports from foreign companies that employ a high proportion of workers with college degrees. The bottom portion of Figure 1 summarizes how the same people felt about limiting imports from companies with low proportions of college-educated workers. The dots in Figure 1 are point estimates, and the vertical bars are 95% confidence intervals.

[36] For analyses using weighted data, see the online appendix.

[37] The *winners and losers* condition was administered in December 2013 (N=973); the *winners only* condition was fielded in December 2013 (N=961) and April 2015 (N=991); the *losers only* condition was run in April 2015 (N=957); and the *no cues* condition was presented in August 2011 (N=496) and November 2012 (N=659). We did not find significant time trends over the period covered by these studies.

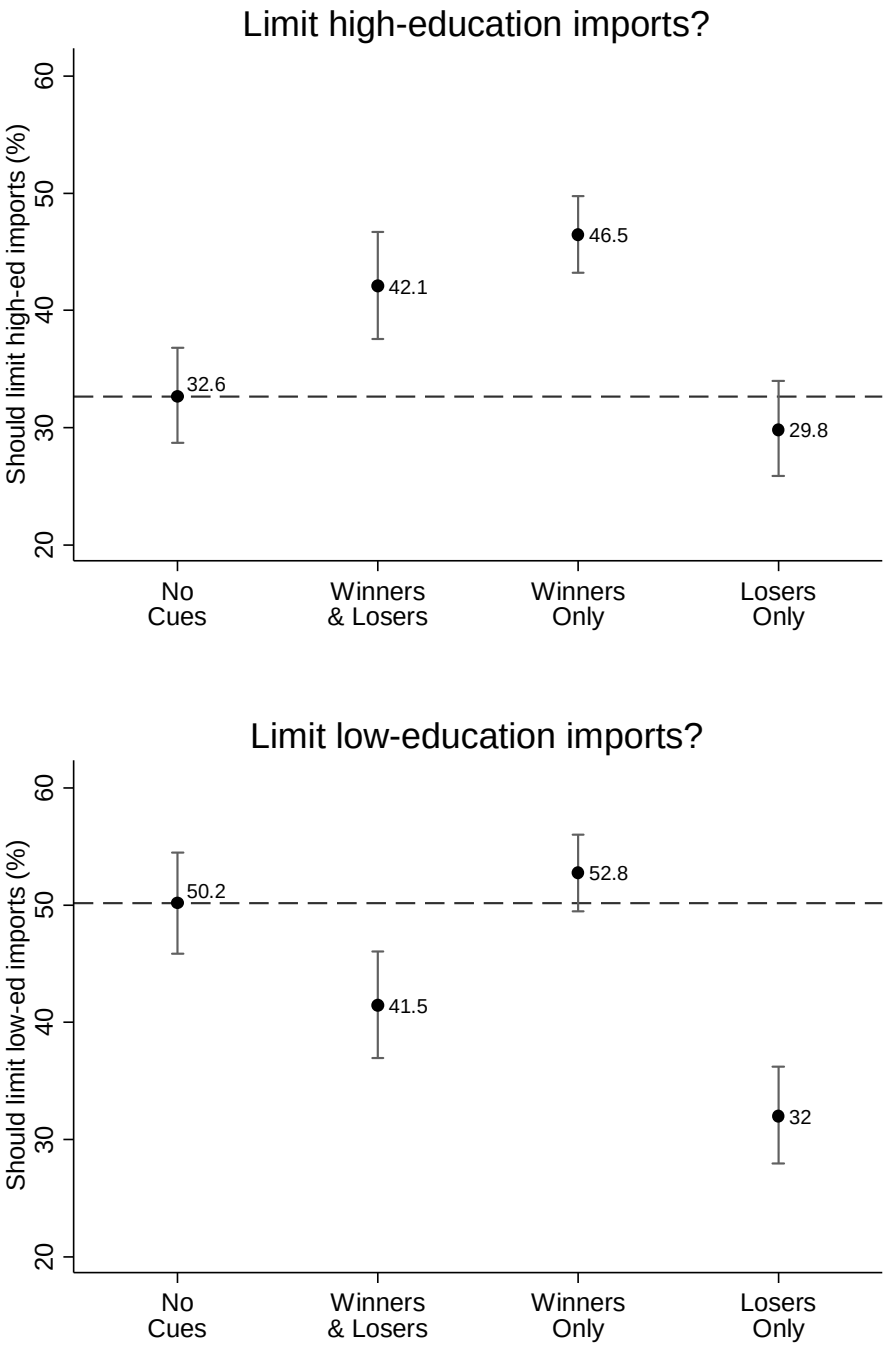

FIGURE 1. *Preferences of Respondents with College Degrees*

If college graduates were following their own economic interests as defined by Stolper-Samuelson, they would block high-education imports while allowing low-education imports to enter freely. In the absence of cues, this prediction clearly failed. Only one-third (32.6%) wanted to limit high-education imports, whereas half (50.2%) preferred to limit low-education imports. This pattern is the reverse of what one would expect if respondents were maximizing their pocketbook per Stolper-Samuelson.

When we informed respondents about both winners and losers, the policy preferences of college-educated respondents became markedly more self-serving. Their desire to block high-education imports rose by 9.5 percentage points, from 32.6% to 42.1%, and their willingness to inhibit low-education imports fell by 8.7 percentage points, from 50.2% to 41.5%. Both effects were not only substantively large but also statistically significant. This pattern suggests that economic ignorance explains part of the disconnection between economic interests and policy preferences. After receiving information about the distributional consequences of trade, college graduates became much more likely to advocate self-serving policies.

This pattern was not preordained. As emphasized earlier in this article, cues about *winners and losers* could have produced two distinct reactions. On the one hand, the cues could have made policy preferences more self-serving, by helping citizens understand how trade policies would help or hurt *themselve*s. On the other hand, informing people about winners and losers could have facilitated altruism, by helping people see more clearly how the policies would affect others. In our experiment the egoistic effect dominated the altruistic one.

For additional insight we investigated how college graduates responded to *winners only* and *losers only* cues. These one-sided treatments helped us isolate and compare the magnitudes of egoistic versus altruistic reactions.

Consider the top half of Figure 1. Without cues, only 32.6% of college graduates wanted to limit high-education imports. When we explained that restrictions would serve their own interests without mentioning the harm to others (the winners- only condition), support climbed to 46.5%, representing a 13.9 percentage point swing in opinion. When, on the other hand, we explained that restrictions would hurt less-educated Americans without mentioning the potential benefits for the respondents themselves (the losers-only condition), support fell by only 2.8 percentage points, from 32.6% to 29.8%. This difference was substantively small and could have arisen by chance alone.

The bottom half of Figure 1 shows a similar pattern. Sans cues, 50.2% of college graduates indicated that the U.S. government should limit imports made by unskilled foreign workers. When we noted that the policy would hurt college-educated respondents by increasing prices, without mentioning the salutary impact on other Americans (the losers-only condition), support fell by more than 18 percentage points. In contrast, the desire for trade barriers rose by only 2.6 percentage points when we explained how the policy help less-educated Americans, without adding that respondents themselves would suffer.

Thus, in both halves of Figure 1, the reaction to distributional cues was highly asymmetric. People with college degrees responded strongly to news about how policies would affect themselves, but barely budged after being told how policies would affect others. In both halves of the figure, the egoistic response far outstripped the altruistic one. This helps explain why the dual-cue condition, which included information about both winners and losers, made preferences much more self-serving, on balance.

In contrast, we found no evidence that people reacted asymmetrically to cues about gains versus losses. Explaining how respondents could gain economically from protectionism (the

winners-only condition in the top half of Figure 1) caused preferences to shift by 13.9 percentage points, a 13.9/32.6 = 43% increase relative to the control condition. Telling those same people how they would lose economically from protectionism (the losers-only condition in the bottom half of Figure 1) triggered a similarly large reaction: preferences moved by 18.2 percentage points, a 36% decline relative to control levels.

People in our experiment also responded symmetrically to news about gains and losses for members of other groups: the losers-only cue in the top half of the figure moved preferences by about as much as the winners-only cue in the bottom half of the figure. These findings seem at odds with prospect theory, which predicts that individuals should react more strongly to losses than to equivalent gains.[38] Our experiment was not a perfect test of prospect theory, though, because gains and losses were expressed in different metrics (jobs versus prices), and might have been perceived has having different magnitudes.

In summary, our analysis of college graduates suggests that the mismatch between material interests and policy preferences is partly due to economic ignorance. When we explained the distributional effects of trade, policy preferences moved in a self-serving direction. Importantly, the effect of information was highly asymmetric: college graduates reacted to cues about themselves, but not to cues about the welfare of others. Our experiments suggest that, if college graduates were better informed about the distributional effects of trade, the correlation between their economic interests and their attitudes toward protectionism would tighten.

Giving cues about winners and losers would not drive all college graduates to egoistic extremes, however. Even after learning about winners and losers, only 42.1% of the BA-holders in our experiment endorsed policies that would serve their own interests by protecting their jobs

[38] Kahneman and Tversky 1979.

and increasing their wages. Moreover, 41.5% remained willing to limit low-education imports, even though such policies would hurt them personally by making products more expensive. On balance, providing information about *winners and losers* would increase the correlation between self-interest and policy preferences, but many college graduates would still fail to choose policies that would maximize their material welfare.

7. Effects of Distributional Cues on People without College Degrees

How did people without college degrees (53% of the sample) react to distributional cues? If these less-educated Americans were maximizing their economic returns as predicted by Stolper-Samuelson, they would limit the inflow of items made by unskilled foreign labor, while allowing the fruits of educated foreign labor to enter the domestic market freely. Figure 2 provides some support for this prediction. Unaided by cues, 60.4% wanted limits on low-education imports, whereas only 38.9% wanted limits on high-education imports. Thus, even in the absence of cues, people without college degrees promoted their own interests by disproportionately blocking imports from foreign firms that used their own factor of production.

In this context, providing cues about low-education imports triggered an altruistic reaction. When we informed participants about winners and losers, support for limiting low-education imports *fell* by 6.9 points, from 60.4% to 53.5% (top half of Figure 2). Why? The partial cues Figure 2 provides some insight. Respondents did not become more protectionist after learning how trade barriers would advance their own interests (the winners-only condition), but they did become significantly less protectionist after hearing how trade barriers would hurt educated Americans.

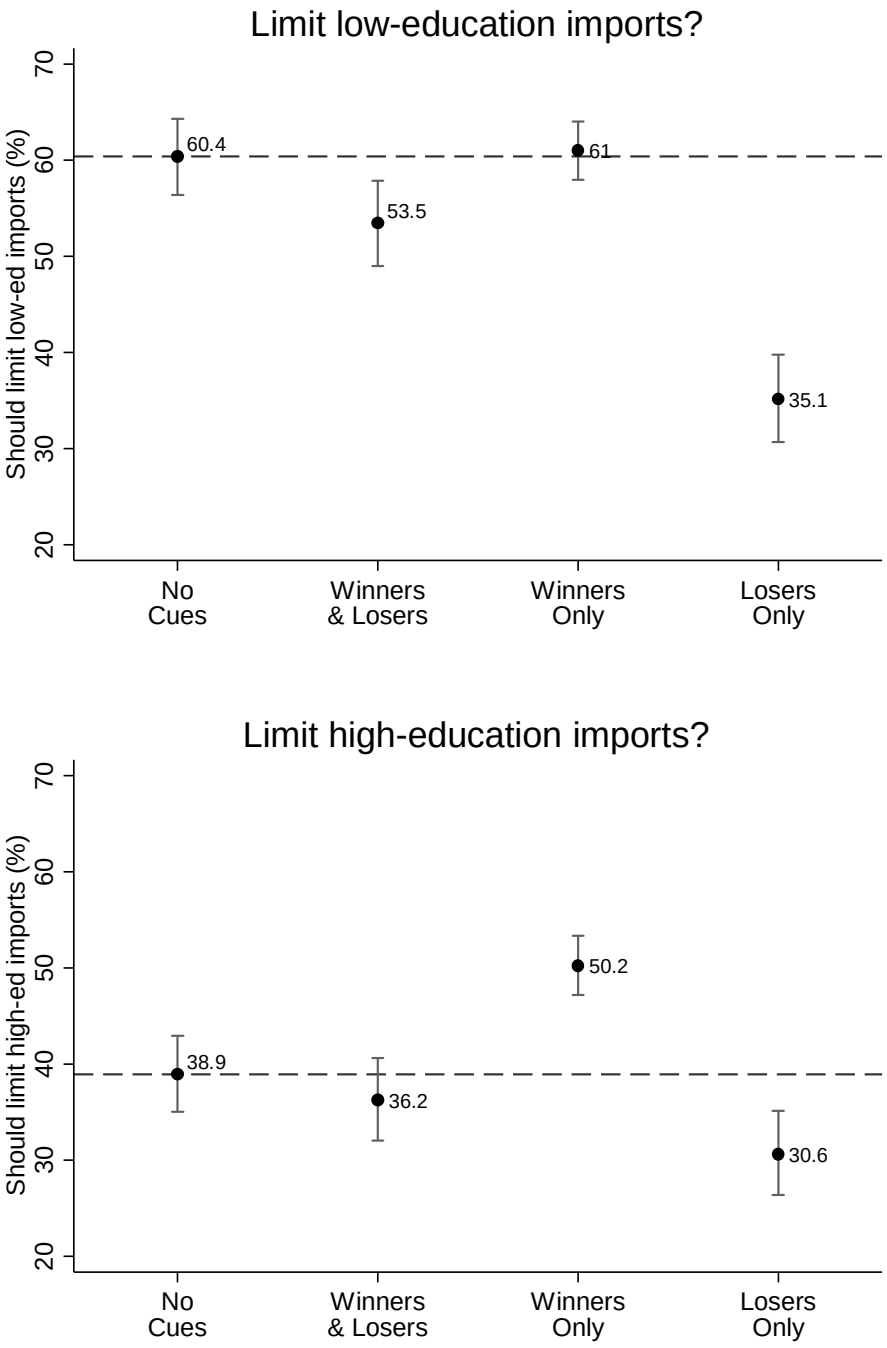

FIGURE 2. *Preferences of Respondents without College Degrees*

The bottom half of Figure 2 shows how people without college degrees responded to cues about high-education imports. Our winners-and-losers intervention moved opinion by only 2.7 percentage points, a small change that could have occurred by chance alone. Interestingly, the effect was nil because the winners-and-losers treatment pulled people in both altruistic and egoistic directions, to roughly equal degrees. When we disclosed how limits on high-education imports would help Americans with college degrees, without stating that that same policy would penalize more educated respondents (the winners-only cue), support rose from 38.9% to 50.2%, representing an altruistic shift of around 11 percentage points. When, on the other hand, we said the barriers would hurt citizens without college degrees, without alluding to benefits for more educated citizens (the losers-only cue), support fell from 38.9% to 30.6%, an 8.3 point shift in the egoistic direction. Presenting both cues caused these opposing effects to cancel out.

Unlike their high-education counterparts, participants without college degrees not only reacted altruistically to cues, but they also proved more sensitive to losses than to gains. Attitudes shifted by 8.3 points upon learning that a policy would hurt them personally (losers only in bottom panel of Figure 2), versus only 0.6 points after reading that a policy would help them personally (winners only in top panel of Figure 2). Likewise, the desire for protectionism changed by 25.3 points when the policy was said to hurt others (losers only in the top panel of Figure 2), compared with 11.3 points when the policy was tagged as helping others (winners only in bottom panel of Figure 2). These findings are more consistent with prospect theory.

In summary, our experiment confirmed that information facilitated both egoism and altruism, but the overall effect varied with the audience. People with college degrees used our cues to more accurately select policies that served their own economic interests. People without college degrees, on the other hand, used the information for altruistic purposes. Among this less

educated group, our cues sometimes sparked altruism without egoism; in other cases, the cues triggered both altruism and egoism, with one force offsetting the other. Respondents also differed in their approaches to gains versus losses. People without college degrees proved especially sensitive to losses, not only for themselves but also for others, whereas people with college degrees viewed gains and losses equally. We return to this issue in the conclusion.

8. Do Distributional Cues Make Preferences Consistent with Stolper-Samuelson?

Our cues elicited both self-serving and altruistic responses. On net, did the policy preferences of ordinary citizens become more consistent with Stolper-Samuelson? Under Stolper-Samuelson, there should be a *negative* relationship between a person's education and their desire to limit low-education imports (products made by foreign businesses that employ a low percentage of workers with college degrees). At the same time, there should be a *positive* relationship between a person's education and their desire to limit high-education imports (products made by foreign businesses that employ a high percentage of workers with college degrees).

When we did not provide cues about winners and losers, the first prediction held but the second one did not. As the top panel of Table 5 shows, people with college degrees were less protectionist across the board, regardless of whether the imports came from companies that employed low or high proportions of workers with college degrees.

Our cues caused policy preferences to align more closely with the predictions of Stolper-Samuelson. When we identified winners and losers, we continued to observe a negative relationship between education and willingness to block low-education imports. At the same time, we found a *positive* relationship between education and the desire to circumscribe high-

education imports. These results suggest that, if citizens were better informed about the distributional consequences of trade, their policy preferences would better approximate the assumptions in standard political economy models of trade.

TABLE 5. *Effect of distributional cues on the relationship between education and policy preferences*

(a) No cues

	Respondent has college degree?		
	Yes	No	Difference
Should limit low-ed imports	50.2 %	60.4 %	-10.2 (-16.0 to -4.5)
Should limit high-ed imports	32.6	38.9	-6.3 (-11.8 to -0.1)

(b) Cues about winners and losers

	Respondent has college degree?		
	Yes	No	Difference
Should limit low-ed imports	41.5 %	53.5 %	-12.0 (-18.3 to -6.8)
Should limit high-ed imports	42.1	36.2	5.9 (-12.0 to 0.0)

Note: Calculated from Figures 1 and 2; 95% confidence intervals in parentheses.

To check the robustness of these conclusions, we ran a series of logistic regressions in which the dependent variable was 1 if the respondent wanted to limit imports from the specified type of business and 0 otherwise. The main explanatory variable was college education, coded 1 if the respondent had completed a B.A. and coded 0 otherwise. Our regression also included control variables that might be correlated with education. We controlled for gender (female or

not), age, household income, union membership, unemployment, party identification (ranging from 0 for strong Democrats to 1 for strong Republicans), isolationism, and nationalism.[39]

Table 6 presents logistic regressions for the control condition in which we gave no cues, and for the treatment condition in which we informed people about winners as well as losers. The key explanatory variable, college, appears in bold. When respondents received no cues, Stolper-Samuelson received only partial support. People with college degrees were less willing to limit low-education imports, but they were also less willing to limit high-education imports. In other words, educated Americans preferred free entry for all types of products, contrary to Stolper-Samuelson.

When we offered cues about winners and losers, responses became more consistent with material self-interest. Cues strengthened the negative correlation between education and limits on low-education imports. At the same time, cues *reversed* the observed correlation between education and limits high-educated imports. When participants received cues about winners and losers, the coefficient on college in the last column of Table 6 became positive and significant.

[39] Our measures of isolationism and nationalism were based on Mansfield and Mutz 2009. We also included ethnocentrism in some models, but this variable was observed only for white, black, and Hispanic respondents. Including ethnocentrism reduced the sample size without increasing our explanatory power or altering the other key estimates, so we omitted ethnocentrism from Table 6.

TABLE 6. *Multivariate analysis of support for trade barriers, with and without distributional cues*

Characteristics of U.S. respondents	No cues provided		Cues about winners & losers	
	Limit low-ed imports?	Limit high-ed imports?	Limit low-ed imports?	Limit high-ed imports?
College	**-0.38**	**-0.27**	**-0.50**	**0.34**
	(0.13)	**(0.13)**	**(0.14)**	**(0.14)**
Female	0.31	0.39	0.45	0.50
	(0.12)	(0.13)	(0.14)	(0.14)
Age	0.02	0.14	0.16	-0.03
	(0.05)	(0.06)	(0.06)	(0.06)
Income	-0.23	-0.11	-0.25	-0.32
	(0.16)	(0.17)	(0.20)	(0.20)
Union member	0.49	0.35	0.39	0.55
	(0.26)	(0.25)	(0.28)	(0.29)
Unemployed	-0.12	-0.06	0.30	-0.22
	(0.15)	(0.16)	(0.22)	(0.23)
Party ID	-0.38	0.17	-0.80	-0.35
	(0.20)	(0.21)	(0.24)	(0.25)
Isolationism	0.14	0.27	0.30	0.39
	(0.08)	(0.09)	(0.09)	(0.10)
Nationalism	0.06	0.06	0.09	0.25
	(0.08)	(0.08)	(0.08)	(0.09)
Constant	0.42	-1.17	-0.26	-0.48
	(0.22)	(0.23)	(0.25)	(0.26)

Note: The table presents parameter estimates and standard errors from logistic regressions. The sample sizes were 1145 when no cues were provided and 970 when cues were provided about both winners and losers.

To quantify the importance of this reversal, we computed the average effect of a college degree on the probability that the respondent wanted to limit high-education imports, holding all other variables at their observed values. This was equivalent to estimating the following

counterfactual: how much more (or less) protectionist would members of our sample have been if all members had graduated from college, than if none had graduated from college. Without cues, the effect of college on the desire to limt high-education imports was -.06; with cues, the effect switched signs and became .08. Thus, cues increased the estimated effect of a college degree by 14 percentage points.

9. The Effects of Cues about Efficiency

The previous experiment showed how preferences would change if citizens were more knowledgeable about the distributional consequences of trade. What if citizens knew about efficiency, as well? To find out, we conducted a survey that not only identified the winners and losers from protectionism, but also said that trade barriers would decrease aggregate welfare. The survey was administered to a sample of 997 U.S. adults, who were recruited via Amazon Mechanical Turk in May 2014.

This survey employed the same script as our other experiments but included an additional economic cue. After explaining that limits on low-education imports would help Americans with college degrees while hurting Americans without college degrees, we concluded that the limits would be economically inefficient. "Overall," we explained, "this policy would hurt the U.S. economy and reduce the national standard of living. Although trade barriers would help some Americans, they would hurt other Americans even more." We provided similar cues about the aggregate effects of limiting high-education imports, explaining that such policies would generate winners and losers but ultimately hamper the U.S. economy and lower the national standard of living.

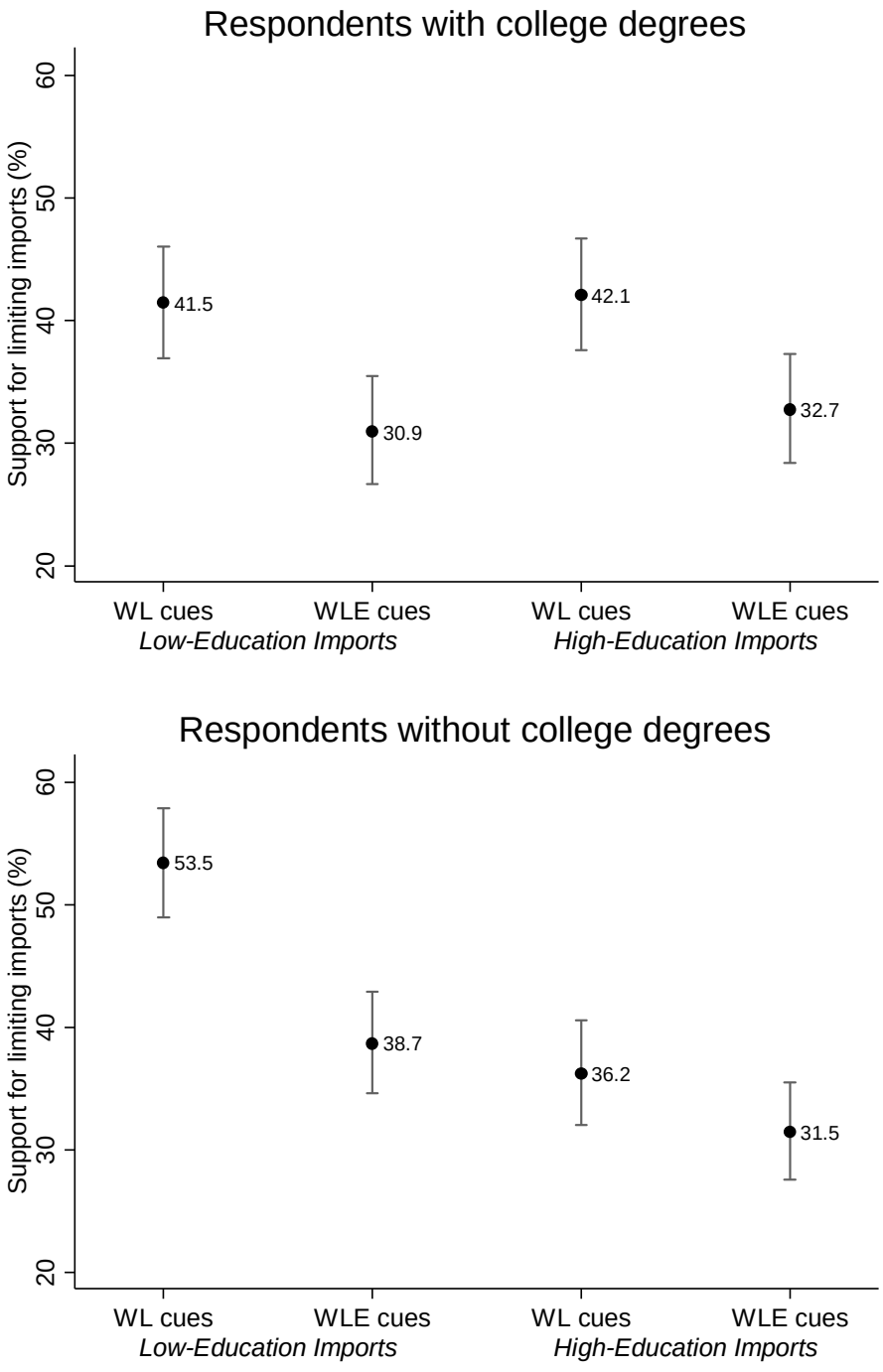

FIGURE 3. *Support for trade barriers, by WL and WLE cues*

Note: WL = winners and losers. WLE = winners, losers, and efficiency.

Efficiency cues substantially decreased public support for protectionism. The top half of Figure 3 summarizes the preferences of people with college degrees. When we about limiting low-education imports, only 30.9% said yes after receiving cues about winners, losers, and efficiency (WLE), whereas 41.5% agreed after hearing only about winners and losers (WL). Efficiency cues also changed attitudes toward high-education imports. Only 32.7% of college graduates were prepared to block those imports in the WLE condition, compared with 42.1% in the WL condition. On average, efficiency cues dampened protectionist sentiment by around 10 percentage points, a 24% decline relative to the WL baseline.

The bottom half of Figure 3 presents analogous estimates for respondents without college degrees. Their desire to block low-education imports fell by 14.8 percentage points, from 53.5% to 38.7%, when we appended information about efficiency to the cues about winners and losers. The impact on high-education imports was smaller, but nonetheless noteworthy: protectionist sentiment fell from 36.2% in the WL condition to 31.5% in the WLE condition, for a total change of 4.7 percentage points. Averaging across both types of imports, the mean treatment effect was 9.75 percentage points, effectively the same as the mean effect among college graduates. Thus, efficiency cues were equally potent for both groups of respondents.

Efficiency cues not only generated enthusiasm for free trade but also weakened the association between self-interest and policy preferences. Table 7 shows the change. When respondents received cues about winners and losers only, the association between education and limits on low-education imports was negative, while the association between education and limits on high-education imports was positive. When we added cues about efficiency, the correlation between education and limits on low-education imports remained negative but

weakened, and the association between education and limits on high-education imports became statistically indistinguishable from zero.

TABLE 7. *Effect of distributional and efficiency cues on the relationship between education and policy preferences*

(a) Cues about winners and losers only

	Respondent has college degree?		
	Yes	No	Difference
Should limit low-ed imports	41.5 %	53.5 %	-12.0 (-18.3 to -6.8)
Should limit high-ed imports	42.1	36.2	5.9 (-12.0 to 0.0)

(b) Cues about winners, losers, and efficiency

	Respondent has college degree?		
	Yes	No	Difference
Should limit low-ed imports	30.9 %	38.7 %	-7.8 (-13.7 to -1.8)
Should limit high-ed imports	32.7	31.5	1.3 (-4.6 to 7.1)

Note: Calculated from Figures 1, 2, and 3; 95% confidence intervals in parentheses.

Multivariate analyses confirmed these conclusions. Using logistic regression, we estimated the relationship between education and protectionism among people who received cues about both distribution and efficiency. The first regression in Table 8 modeled the desire to limit low-education imports. The estimated coefficient on college was –0.33, noticeably weaker than the –0.50 we observed when respondents were cued about winners and losers only (see Table 6). The second regression in Table 8 modeled the desire to limit high-education imports. Although

the coefficient on college was positive, as expected under Stolper-Samuelson, it was smaller than in Table 6 and is no longer statistically significant.

TABLE 8. *Multivariate analysis of support for trade barriers when respondents received cues about both distribution and efficiency*

Characteristics of U.S. respondents	Limit low-ed imports?	Limit high-ed imports?
College	**-0.33**	**0.20**
	(0.14)	**(0.15)**
Female	0.22	0.01
	(0.14)	(0.14)
Age	0.13	0.00
	(0.07)	(0.07)
Income	-0.31	-0.55
	(0.20)	(0.21)
Union member	0.72	0.08
	(0.28)	(0.30)
Unemployed	-0.45	-0.18
	(0.23)	(0.23)
Party ID	-0.31	-0.39
	(0.24)	(0.25)
Isolationism	0.19	0.22
	(0.09)	(0.09)
Nationalism	0.09	0.30
	(0.08)	(0.09)
Constant	-0.72	-0.45
	(0.26)	(0.26)

Note: Parameter estimates and standard errors from two logistic regressions, each with a sample size of 997.

To interpret the parameters in Table 8, we computed the average effect of a college degree on the probability of supporting protectionism, holding other explanatory variables at their observed values. The effects, expressed as percentage points, were –7.3 for low-education imports and 4.2 for high-education imports. In comparison, the effects given cues about winners and losers only (based on the estimates in Table 6) were –11.9 and 7.7. Thus, efficiency cues attenuated the relationship between education and support for protectionism.[40]

We also investigated whether the efficiency cues were more consequential for women than for men. Our analysis was inspired by a large literature that consistently finds women to be more protectionist than men. Some authors have conjectured that the gap could be due to differences in knowledge about the benefits of trade. If this hypothesis is correct, two patterns should emerge. First, efficiency cues should have a larger effect on women than on men. Second, to the extent that the gender gap in protectionism reflects disparities in knowledge, efficiency cues should level the playing field, reducing if not eliminating any systematic differences in between men and women.

We checked these predictions by comparing how men and women responded to the WLE condition, which contained efficiency cues, versus the WL condition, which was identical in all respects except for information about efficiency. Table 9 displays the parameter estimates from four logistic regressions. In each regression, "efficiency cue" was 1 if the respondent received

[40] The differences in effects were substantively large, but they were not statistically significant at the .05 level. The estimates, with 95% confidence intervals in parentheses, were –7.3 (–13.3 to –1.1) versus –11.9 (–18.3 to –5.4) for low-education imports, and 4.2 (–1.9 to 10.3) versus 7.7 (1.3 to 14.0) for high-education imports.

the WLE treatment or 0 if they received the WL treatment, and "efficiency × female" was 1 if the respondent received WLE and was female.

TABLE 9. *Multivariate analysis of the interaction between efficiency cues and gender*

	With college degrees		Without college degrees	
Characteristics of U.S. respondents	Limit low-ed imports?	Limit high-ed imports?	Limit low-ed imports?	Limit high-ed imports?
Efficiency cue	-0.22	-0.16	-0.55	-0.04
	(0.20)	(0.20)	(0.18)	(0.19)
Female	0.54	0.53	0.40	0.46
	(0.19)	(0.20)	(0.18)	(0.19)
Efficiency × female	-0.45	-0.60	-0.14	-0.38
	(0.28)	(0.28)	(0.26)	(0.27)
Age	0.14	-0.11	0.14	0.07
	(0.07)	(0.07)	(0.06)	(0.06)
Income	-0.23	-0.70	-0.35	-0.11
	(0.20)	(0.21)	(0.21)	(0.21)
Union member	0.56	0.59	0.56	-0.10
	(0.27)	(0.27)	(0.31)	(0.34)
Unemployed	-0.09	-0.01	-0.07	-0.33
	(0.26)	(0.27)	(0.19)	(0.21)
Party ID	-0.64	-0.63	-0.46	-0.16
	(0.26)	(0.26)	(0.23)	(0.24)
Isolationism	0.26	0.44	0.22	0.21
	(0.10)	(0.10)	(0.09)	(0.09)
Nationalism	0.05	0.24	0.12	0.30
	(0.09)	(0.09)	(0.08)	(0.08)
Constant	-0.78	0.45	-0.21	-0.89
	(0.30)	(0.31)	(0.26)	(0.27)

Note: Parameter estimates and standard errors from two logistic regressions, based on 912 respondents with college degrees and 1,055 respondents without college degrees.

In all four models, the interaction between efficiency and female was negative, implying that efficiency cues had stronger effects on women than on men. The differences were not

always statistically significant at conventional levels, but the point estimates were consistently large and in the expected direction. Moreover, the coefficients on the interaction term were powerful enough to offset the main effect of gender. In the first model in Table 9, for example, the estimated coefficient on female was 0.54 in the absence of efficiency cues, versus only 0.54 – 0.45 = 0.09 when efficiency cues were given. Efficiency cues attenuated or completely erased the gender gap in the other columns, as well.

Using the estimates from Table 9, we computed the marginal effect of gender on support for protectionism, with and without efficiency cues, while holding other variables at their observed values. The top half of Figure 4 shows our estimates for respondents with college degrees. *Ceteris paribis*, women who received the WL treatment were 12.6 points more willing than men to restrict low-education imports. When we introduced efficiency cues, the difference shrunk to only 1.8 points, a substantively and statistically insignificant gap. Likewise, women in the WL condition were 12.3 points more enthusiastic about restricting high-education imports. With efficiency cues, the gap switched signs but was essentially indistinguishable from zero.

The bottom half of Figure 4 displays analogous estimates for respondents without college degrees. Here, too, teaching respondents about efficiency effectively eraased the gender gap in protectionism. Sans efficiency cues, women were 9.6 points more likely than men to endorse restrictions on low-education imports, and 10.3 points more likely than men to support limits on high-education imports. When we offered efficiency cues, the differences shrunk to 5.9 and 1.8, respectively, and became statistically insignificant.

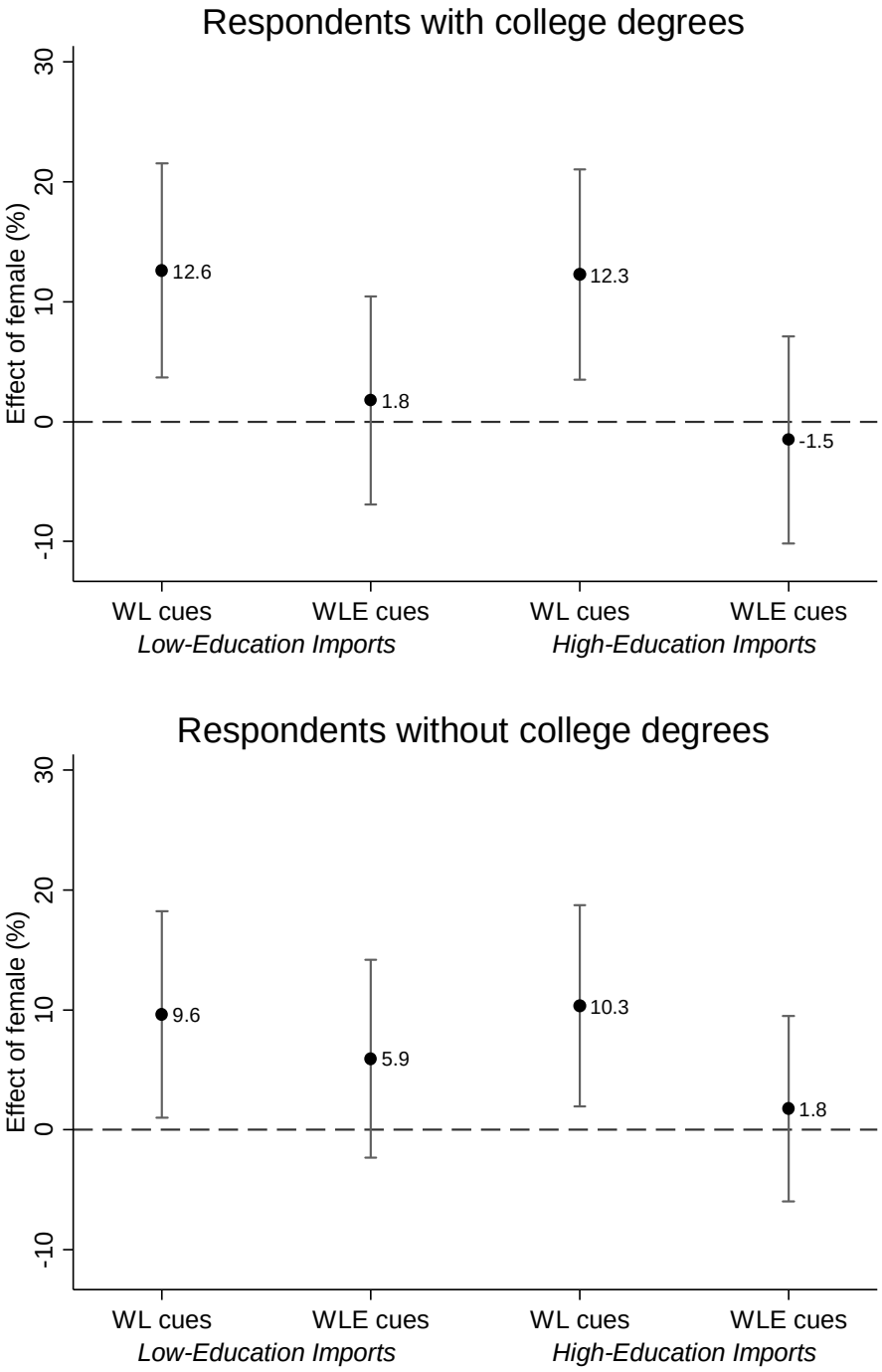

FIGURE 4. *Effect of gender on support for trade barriers, by WL and WLE cues*

For more than a decade, scholars have puzzled over why women appear to be more protectionist than men. Our experiment suggests a potential answer: women exhibit higher levels of protectionism, on average, either because they are less aware of how protectionism would affect the economy as a whole, or because efficiency concerns are less salient to them when thinking about trade policy. When we supplied information not only about winners and losers, but also about efficiency, the females in our experiment responded much like men. Our findings bring the field much closer to solving the "mysterious case of female protection."[41]

Our experiments also suggest how aggregate opinion might shift if the citizens were more fully informed about trade. Without supplementary information, most participants in our study thought the government should limit low-education imports, and more than one-third felt the government should limit high-education imports, as well. When we supplied information about both distribution and efficiency, protectionist sentiment subsided greatly. Armed with both types of information, less than 40% of respondents wanted to limit low-education imports, and even fewer wanted to limit high-education imports (Figure 3). These findings imply that some of the protectionist streak in American public opinion is a product of by economic ignorance. If Americans knew more about trade, the greatest consequence might not be making preferences more self-serving, but instead converting a nation of protectionists into a nation of free-traders.

10. Conclusion

In this article we investigated why the trade preferences of ordinary citizens do not reflect their material self-interests. Our study focused on one potential explanation: economic ignorance. We first documented that Americans have only a dim understanding of how trade

[41] Burgoon and Hiscox 2004.

affects economic outcomes. We then conducted experiments to investigate whether people would make more self-serving choices if they were better informed about the winners and losers from trade protection.

In our experiments, distributional information prompted two types of reactions. On the one hand, the information made people more likely to express self-interested policy preferences. After learning how trade policies would affect themselves, people became more likely to advocate policies that would advance their material interests. On the other hand, distributional information made people more sensitive to the interests of society. People became more likely to support policies that would help others, and less likely to support policies that would hurt them. On balance, selfish responses outweighed the altruistic ones. We conclude that if people knew more about the distributional effects of trade, the correlation between personal interests and policy preferences would tighten.

We also studied how people respond to information about efficiency. Economists generally agree that protectionism decreases aggregate welfares. Transmitting this knowledge to respondents weakened the connection between material self-interest and trade preferences. Our treatment also eliminated the gender gap that has puzzled scholars of protectionism for more than a decade. Finally, our efficiency cues substantially raised support for free trade. In fact, our experiments showed that if the public were fully informed—knowing not only about distribution but also about efficiency—a majority of Americans would endorse free trade instead of supporting protection for low-skilled and/or high-skilled workers.

As the introduction to this volume makes clear, identifying heterogeneity across individuals and groups is central to the behavioral revolution in international relations. Our experiments showed that cues had different effects on different groups. On average, Americans

with college degrees used cues to advance their own ends. When we identified the winners and losers from protection, college graduates became less willing to block imports from foreign firms that rely on unskilled workers, and more willing to block imports from foreign firms with highly educated workers.

People without college degrees responded more altruistically to cues. After learning the identities of winners and losers, they expressed less support for limiting low-skill imports, and they did not become more willing to let high-skill products enter freely. We unpacked this pattern by analyzing the consequences of half-cues, in which citizens learned how a policy would affect themselves (with no mention of its effect on others), or learned how a policy would affect others (with no mention of the personal implications). People without college degrees always responded altruistically to news about how a policy would affect others, but they did not respond with consistent egoism after learning how a policy would affect themselves. Future research should examine why some groups are more sensitive to economic information than others, and why information provokes primarily selfish responses among some people while triggering altruistic reactions among others.

Scholars could also investigate how economic knowledge varies across countries and over time. We showed that Americans know fairly little about the effects of trade policy, and we cited similar evidence of economic ignorance in Spain. Knowledge may be higher in other countries, particularly in places where trade has a bigger effect on the national economy or is a major topic of political debate. Costa Rica, for example, held a national referendum on the Central America Free Trade Agreement (CAFTA) in 2007. In the run-up to the referendum, political parties informed citizens about the distributional consequences of the agreement.[42]

[42] Hicks, Milner, and Tingley 2014.

Future research should also examine the two-way relationship between public and elite opinion. On the one hand, scholars know that public opinion constrains what leaders can do, not only in trade but also in other areas of domestic and foreign policy. On the other hand, politicians and the media can shape public opinion through the use of rhetoric. Indeed, our experiments suggest that elites could move public opinion by clarifying the distributional and aggregate effects of trade policy. Studying how elites not only follow but also lead public opinion, and how public preferences get aggregated into government policy, are important frontiers for future research.[43]

Finally, the methods in this article could be used to study other theories and policies. One could, for example, measure knowledge about how protection affects specific industries, and study how industry-specific cues affect the explanatory power of Ricardo-Viner theory. Scholars could also study the effect of economic knowledge on other issues, such as immigration, where research has found surprisingly little connection between economic interests and policy preferences.[44] Finally, to learn more about social preferences, one could experimentally manipulate beliefs about the effect of trade and immigration on culture. Over time, this research agenda should produce a more realistic, behaviorally informed foundation for theories of international relations.

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[43] Researchers could also extend our analysis to the elite level, by studying what elites know about trade policy and how they would respond to economic cues. The main obstacle to this kind of research is the difficulty of recruiting elite respondents. Scholars have shown that elite-level surveys are possible, however, and can yield fundamental insights about political behavior. See Herrmann, Tetlock, and Diascro 2001; Hafner-Burton, LeVeck, and Victor 2014.

[44] Hainmueller and Hopkins 2014.

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