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Support for trade restrictions, attitudes, and understanding of comparative advantage [☆]

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Abstract

We asked respondents about their attitudes toward restriction of imports, their understanding of the principle of comparative advantage and their attitudes toward globalization and business. Respondents who favored import restrictions scored lower on the test of understanding of comparative advantage, and they had less favorable attitudes toward globalization and toward business. Import restrictions were also more likely to be favored if the other country did not trade freely, if the goods were already made in one's own country, and if imports were currently restricted. The results were generally consistent for respondents who completed the questionnaire on the World Wide Web (mostly from the USA) and those who completed it on paper (all in New Zealand).

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1. Introduction

Economists since the time of Adam Smith have usually been convinced that free trade between peoples, regions, and countries benefits those taking part. In contrast, organized protests against free trade – such as those that occurred in Seattle in December 1999 – are commonplace in many countries and indicate at the least that many non-economists are far from convinced of the benefits of unrestricted free trade (Bazerman, Baron, & Shonk, 2001). This paper seeks to discern some of the factors that influence attitudes to trade amongst lay-people.

Opposition to free trade can arise for many reasons, including: concerns about loss of power to implement national policies to protect the environment or the rights of workers; opposition to particular agreements because of the belief that better agreements are achievable; concerns that the losers may suffer more than economic analyses would indicate; and self-interest of those who would be hurt by competition from foreign goods.

Other sources of opposition may be rooted in psychological factors. One such factor is a combination of the status-quo effect and omission bias (Baron, 1996; Baron & Jurney, 1993). People are more concerned about harms that result from action than harms that result from omission, especially when both harms are seen as changes from the status-quo. Trade liberalization inevitably produces losers as well as winners. Even when, in some objective utilitarian sense, the gains vastly outweigh the losses, people see the losses as more salient.

Another source of opposition concerns fairness and perceived justice, which have been the subject of considerable psychological research in recent times (e.g., Mellers & Baron, 1993; Singer, 1999; Zajac, 1995). In the present context an obvious issue is the effect on workers who may lose their livelihood in a particular industry because of their inability to compete with cheap imports. It is often thought to breach principles of fairness if some group is made demonstrably worse off, for example by losing their employment, by an introduced change to the status-quo (e.g., Zajac, 1995).

People's perceptions of fairness are tied in with the notion of reciprocity, and there is now considerable research that shows that people will reject outcomes that benefit them if they feel that another party will derive a greater, "unfair" benefit. One such line of research has investigated ultimatum bargaining. In ultimatum bargaining games, two players are offered a resource provided they can agree on its division. Player A has the choice of how the resource will be divided; player B can then only either accept or reject the suggested division. If B accepts, the resource is divided according to A's suggestion; if B declines, neither player receives anything. While the game theoretic solution indicates that B should accept anything and that A should offer as little as possible, in practice B players frequently reject small offers and A players frequently offer B players half (e.g., Güth, Schmittberger, & Schwartz, 1982; Güth & Tietz, 1990; Suleiman, 1996). The relevance of this research to trade is that it leads us to expect that people may oppose the free importation of goods from a country which does not offer one's own country the opportunity to export its produce, even if one's own consumers benefit from the imports.

The extent to which other countries import from one's own country, whether similar goods are made in one's own country, and what the status-quo is regarding their importation are thus all potentially important factors that we might expect to influence people's attitudes to importing, and the study we report attempted to investigate their effects. In psychological jargon, such factors might be termed stimulus factors since they are properties of the (trade) environment rather than the individual. However, it is also possible, and indeed likely, that people's preferences regarding trade are affected by factors relating to their individual attitudes and beliefs.

One such individual difference factor that might produce opposition to free trade is parochialism (Baron, 2001; Schwartz-Shea & Simmons, 1990, 1991). People may think that, when a nation opens borders to goods, it benefits the nations that make those goods. If people care only about their own nation, they will see this as no benefit. Indeed, if people think of their own nation as competing with other nations, they will see it as a loss. Hence we attempted to investigate the extent to which people think nationally rather than globally, and how their attitudes to globalization related to their trade preferences. It is also likely that people differ in their attitudes to the corporations which are sometimes thought to be the main beneficiaries of free trade. Thus, the study also used a measure of attitudes to business which could be correlated with trade preferences.

Another possible source of opposition to free trade is failure to understand the arguments for it. The general enthusiasm of economists for free trade is partly based on Ricardo's Theory of Comparative Advantage, and the point of the theory is the demonstration that even countries or regions which are not the most efficient producers of a commodity can still participate in and benefit from the trade process. Ricardo's original example (Ricardo, 1817/1971, Chapter 7) posits an economy of two countries, England and Portugal, producing two commodities, cloth and wine. England can produce cloth using 100 units of labour and wine using 120 units of labour; Portugal produces cloth with 90 units of labour and wine with 80 units of labor. Clearly, Portugal has an absolute advantage in producing both commodities. Nevertheless, as Ricardo shows, the production (and hence consumption) of both commodities is increased if Portugal specializes in wine production and England in cloth.

Ricardo's theory is not obvious – Adam Smith, for example, does not appear to discuss the principle of comparative advantage (e.g., Ellsworth & Leith, 1984, pp. 47–48). Hence, it would be understandable if its implications were not clear to all lay-people, and it is possible that anti-trade attitudes might result from failure to comprehend it. It is difficult to comprehend because it requires consideration of two ratios. It says, in essence, that everyone is better off if everyone does what they are relatively most efficient at doing. "Relatively" takes into account both their own level of efficiency at other things and the levels of efficiency achieved by others. This principle potentially involves two sorts of comparisons. In a simple case one country (or branch of a firm) might be better at producing one thing, the other country another, and it is relatively straightforward to see that production is maximised by specialization. In the more complex case, as in Ricardo's example, one country is better at producing both things but the relative advantage is greater for one of them. In our study we presented respondents with scenarios featuring both the simple and the complex case.

We developed a questionnaire to assess attitudes toward trade restriction in different circumstances. The questionnaire also included a test of understanding of the principle of comparative advantage, and two attitude scales, which derived from previous scales, concerning attitudes toward business and attitudes toward globalization. We gave the questionnaire to two groups of respondents: one group completed it on the World Wide Web; the other, on paper. Although the latter group was all from New Zealand and the former mostly from the United States of America, comparison of the results from the two groups can give a reasonable indication of how easily they can be generalized.

2. Method

2.1. Respondents

One hundred and thirteen respondents completed the questionnaire on the World Wide Web, for \$3. Their ages ranged from 16 to 74, with a median of 37, 68% were female, and 74% were from the USA (the remainder from Canada [19%], Australia [2%], India [2%], China, Singapore, Croatia, and Japan [1% each]). They discovered the questionnaire through a variety of links from sites listing questionnaires. Other studies done with the same population, in which more demographic information was collected, suggest that the median income and education level is very close to that of the US as a whole (although the US is, itself, highly unrepresentative of the world as a whole). Many respondents had done previous studies at this site (<http://www.psych.upenn.edu/~baron/qs.html>). They had to provide their name, email address, mail address, and (if in the US) their Social Security Number, in a registration form, in order to be paid. (Thus, submission of multiple responses would require having two identities with two checking accounts. We also checked for identical response patterns.) When submitting a response, the email address was used as an identifier, and this identifier was then stripped from the data before any analysis was conducted (and the respondents are told this); hence there is no incentive to answer dishonestly. Discussion of the general method is found in Birnbaum (2000).

A “paper” sample of 95 respondents completed questionnaires that were printed on paper. All respondents were recruited in New Zealand, by asking 11 paid interviewers to administrate the questionnaires to people of their acquaintance. No interviewer recruited more than 10 respondents, and the interviewers were required to obtain a range of ages and to approximately balance gender. They were also told that the people they recruited should be living in New Zealand and that no more than two of each interviewer’s sample could currently be students. The final sample was 54% female. Ages ranged from 18 to 88 (median 31.5), and 17% were students.

2.2. Trade restriction

The questionnaire had three parts, and the respondents were told about each part on an introductory page. The first two parts were entirely designed for this study.

The first part measured attitudes toward trade. Specifically, respondents answered questions about whether imports to “your country” should be restricted under various conditions, and whether such imports are beneficial to your country and to the exporting country. These questions were systematically varied along three dimensions, each with two possibilities. The questions were made up of three statements (with alternative insertions in square brackets):

- Goods of this type are made in your country, so if people buy the foreign goods a firm in your country will lose business [not made in your country].
- The foreign firm is based in a country that does not allow imports [imports freely] from your country.
- At present imports into your country of this kind of good are freely allowed [not allowed at all].

Respondents were asked: “How do you feel about restricting the import of these goods?” and were required to respond on a nine-point scale with the labels:

1. Such imports should be allowed freely.
5. Restrictions should block half of the goods from entering.
9. Such imports should not be allowed at all.

Two additional items asked: “Do such imports benefit the people of your country on the whole?” and “Do such imports benefit the people of the other country on the whole?”. These were responded to on a scale: 1 = “certainly not”, 2 = “probably not”, 3 = “not sure”, 4 = “probably yes” and 5 = “certainly yes”.

In sum, the trade questions faced respondents with different sets of conditions and asked them about their support for import restrictions and about benefit for their own country and the other country. The order of conditions was fixed (so as to reduce the across-respondent variance that might result from order differences): made in country, non-reciprocal (other does not allow), now allowed; not made in country, non-reciprocal, now allowed; the next two reciprocal; the next four repeating the first four with the status-quo that the goods are not allowed. (Earlier, unpublished, studies we conducted with the order of conditions randomized produced the same patterns of results reported below.)

2.3. *Comparative advantage*

The test for comparative advantage contained eight items. Half were about motorbikes, half about computers. Each question asked about the allocation of production of two components to two units that differed in efficiency of producing the two components. Within each type, half were within-nation, half between nations. And half were “hard” and half were “easy”. The hard items were characterized by one producer being less efficient at both components, so the allocation between them had to be based on relative efficiency. Respondents were asked both how they would allocate the work and what would be most efficient.

Here are the basic items, with the questions shown only after the first:

Two branches of a firm, both within one country, make parts for a motorbike. Branch A can make engines at a cost of \$100 each and frames at a cost of \$80 each. Branch B can make engines at a cost of \$80 [for easy, \$180 for hard] each and frames at a cost of \$100 each. A third branch puts the engines and frames together. Each branch has a limited number of skilled workers and no possibility of recruiting more. Nor can the workers be moved between the branches. The motorbikes sell well.

At present, A and B make equal number of motorbikes, and each branch makes an equal number of frames and engines.

Think about how you would allocate work to get the most production.

How would you allocate the production of frames [engines, etc.]?

The choices consisted of five buttons or points labeled: All to [first unit]; Most to [first unit] and the rest to [second unit]; Equal to both; Most to [second unit] and the rest to [first unit]; All to [second unit]. The same questions were then asked for the second component (engines in this example).

The other three scenarios began as follows (and were otherwise parallel to the first):

There are two countries P and Q that are close together. Both make motorbikes. P can make engines at a cost of \$100 each and frames at a cost of \$80 each. Q can make engines at a cost of \$80 [for easy, \$180 for hard] each and frames at a cost of \$100 each.

Two branches of a firm, both within one country, make parts for a computer. Branch A can make processors (including disk drives, etc., everything inside the case) at a cost of \$500 each and peripherals (monitor, keyboard, and mouse) at a cost of \$400 each. Branch B can make processors at a cost of \$400 [for easy, \$900 for hard] each and peripherals at a cost of \$500 each. A third branch puts the processors and peripherals together.

There are two countries P and Q that are close together. Both make computers. ...[as in the last case].

The order was fixed: hard, within country, motorbikes; easy, within, motorbikes; hard, two countries, motorbikes; easy, . . .; then the same four for computers.

These items were scored so that allocation of “all” to the producer with the greatest comparative advantage received 1 point, “most” received half a point, equal allocation received 0 points, allocation of “most” to the other producer lost half a point, and allocation of “all” to the other producer lost a point. The maximum total score was 8, and equal allocation yielded a score of 0.

2.4. Attitudes and background

The third part contained attitude questions. The first and third groups concerned Pro-Business attitudes. Some were taken from the capitalist values scale (McCloskey

& Zaller, 1984). The middle group measured attitudes toward globalization (vs. nationalism) and was taken from the patriotism–nationalism questionnaire (Kossterman & Feshbach, 1989). The items are in Appendix A.

The questionnaire concluded with a number of questions about the respondents’ backgrounds. They were asked whether they were familiar with the principle of comparative advantage, and whether they had studied economics at secondary school or in later education and how much of it they recalled. They were also asked for the level of education they had attained, their age, gender and whether they were currently a student.

3. Results

3.1. Trade preferences and the perception of benefits

Fig. 1 shows the mean preferences for restriction of trade in a good (a variable we call Restrict) as a function of whether the good is or not made in one’s own country, whether the country from which it might be imported is prepared to reciprocate trade or restricts imports from one’s own country, and whether the importation of the good is currently allowed or prohibited. Analysis of variance on the whole sample confirmed that the main effect of each of these factors was highly significant (all

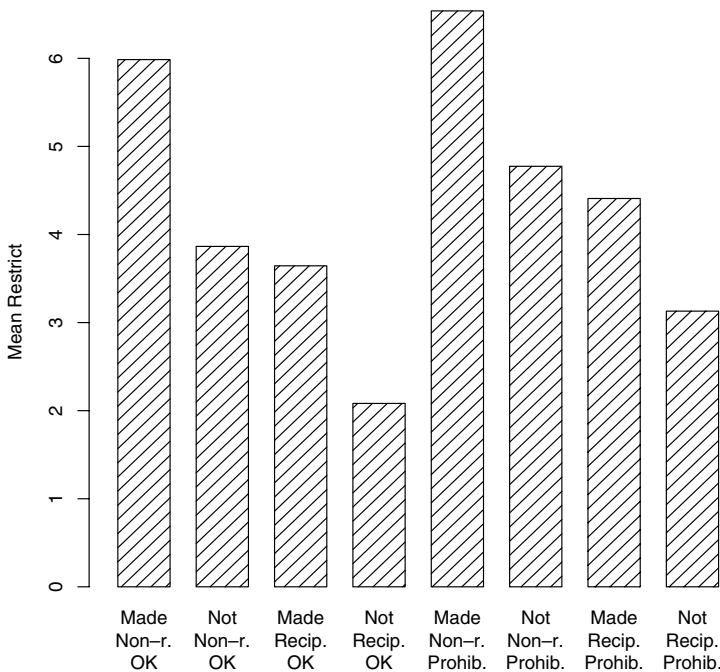


Fig. 1. Willingness to restrict trade (Restrict) for each question.

$p < 0.0001$): Made in one's own country, $F_{1,206} = 68.5$; Reciprocation, $F_{1,206} = 317.4$; Current practice, $F_{1,206} = 195.1$. There were statistically significant interactions of Made in one's own country and Reciprocation ($F_{1,206} = 8.7$, $p = 0.0036$) and Made in one's own country and Current practice ($F_{1,206} = 5.8$, $p = 0.0173$) but inspection of Fig. 1 indicates that these interactions were most likely the result of scale compression at one end or the other.

A measure of the relative importance of the three factors is given by the mean differences between factor levels. If the other country reciprocated trade this reduced the average preference for import restriction from an average rating of 5.3 to an average of 3.3 (mean difference 2.0). If the goods are not currently made in one's own country, the average restriction preference is reduced from 5.1 to 3.5 (mean difference 1.6), and if current practice is not to restrict imports the average restriction preference is reduced from 4.7 to 3.9 (mean difference 0.8).

There was no overall preference difference between the two samples ($F_{1,206} = 1.0$, n.s.). More importantly, the main effects of the three factors were statistically significant for each sample and the order of the mean differences between factor levels remained the same when each sample was analyzed separately. Thus, the key results (e.g., that reciprocation by the other country was the most important of the three influencing variables) were replicated across the samples.

When the ratings of benefit to one's own country were analyzed, importation when goods were not made in the country was rated significantly more beneficial (mean 3.6) than when they were made in the country (mean 2.8; $F_{1,207} = 128.3$, $p = 0.0000$). Importation was significantly ($F_{1,207} = 115.9$, $p = 0.0000$) more beneficial when the other country reciprocated (mean 3.5) than when it did not (2.9) and also more beneficial when current practice was to allow importation (mean 3.4) than when it prohibited the imports (mean 3.1) ($F_{1,206} = 38.7$, $p = 0.0000$).

Importation was rated significantly more beneficial to the *other* country when the goods are not made in one's own country (4.0) rather than being made there (3.9, $F_{1,206} = 32.5$, $p = 0.0000$), when the other country reciprocated (4.04) than when it did not (3.95; $F_{1,206} = 5.01$, $p = 0.0263$), and when current practice was to import (mean rating 4.2) than when it was not (mean rating 3.8, $F_{1,206} = 51.9$, $p = 0.0000$).

Taken over both samples, the mean preference for trade restriction (Restrict) averaged over the eight conditions was significantly correlated ($r = -0.65$, $p = 0.0000$) with similarly averaged ratings of benefit to one's own country from the imports and with ratings of benefit to the other country ($r = -0.18$, $p = 0.0108$). The two benefit ratings were also significantly correlated ($r = 0.30$, $p = 0.0000$). Similar patterns of correlation were obtained when the two samples were analyzed separately. Ratings of benefit of the imports to one's own country (mean 3.2) were significantly lower than ratings of the benefit of the imports to the exporting country (mean 4.0; $t_{207} = 14.2$, $p = 0.0000$). Again, this result was obtained from both samples when they were separately analyzed.

The questions varied as they did in order to discourage respondents from giving the same extreme answer to all questions. It is, however, apparent from Fig. 1 and from the analyses we just summarized, that all three sources of variation affected the responses: whether the good was made in the country or not, whether the other

Table 1
Means of main measures for each group

	Web	Paper	Range of scores	Possible range
Restrict	4.39	4.22	1–8.5	1–9
Comp-Ad	2.09	3.68	–1–8.0	–8–8
Pro-Business	–0.02	–0.20	–1.2–1.1	
Pro-Global	–0.42	–0.23	–1.8–1.2	
Heard of C-A	1.76	1.52	1–4	1–4
Econ-School	2.09	1.67	1–3	1–4
Econ-Univ	1.80	1.40	1–4	1–4
Education	3.30	3.83	1–5	1–5
Student (yes)	0.15	0.17	0–1	0–1
Gender (male)	0.32	0.46	0–1	0–1
Age	37.8	36.5	16–68	

country reciprocated free entry or not, and the status-quo, i.e., whether it was “OK” or prohibited to import the good freely now.

To relate preferences for import restriction with the measures of individual differences described below, we created the variable Restrict by simply averaging the preferences for import restriction under the eight manipulated conditions. A Cronbach α of 0.81 was obtained for this measure.

3.2. Individual differences in main measures

Table 1 shows the means for each measure for the two respondent groups, and the observed and possible ranges.

The main analysis involved correlations among summary measures consisting of the mean response on each scale made by each respondent. The scales were Restrict, the questions about whether trade should be restricted; Comp-Ad, the score on the questions concerned with understanding comparative advantage; Pro-Business, the sum of the attitude questions concerning business attitudes, with signs so that Pro-Business is positive; and Pro-Global, with signs so that Pro-Globalization (or anti-nationalist) attitudes are positive.

3.2.1. Comparative advantage scale

Fig. 2 gives the mean Comp-Ad scores by question and group (re-scaled so that the maximum is 8). It is apparent (and highly significant) that the hard questions had lower scores than the easy questions, with the exception of the last four questions in the Paper group. It is possible that this group took advantage of the opportunity to learn as the task went on.

We found no significant difference ($t_{205} = 0.47$, n.s.) in Comp-Ad score between those who claimed to have never heard of the principle of comparative advantage and those who had. There was a significant correlation ($r = 0.27$, $p = 0.0001$) of the score with the respondent's general education level, but analyses of variance showed no significant effect on the score of having studied economics at school or

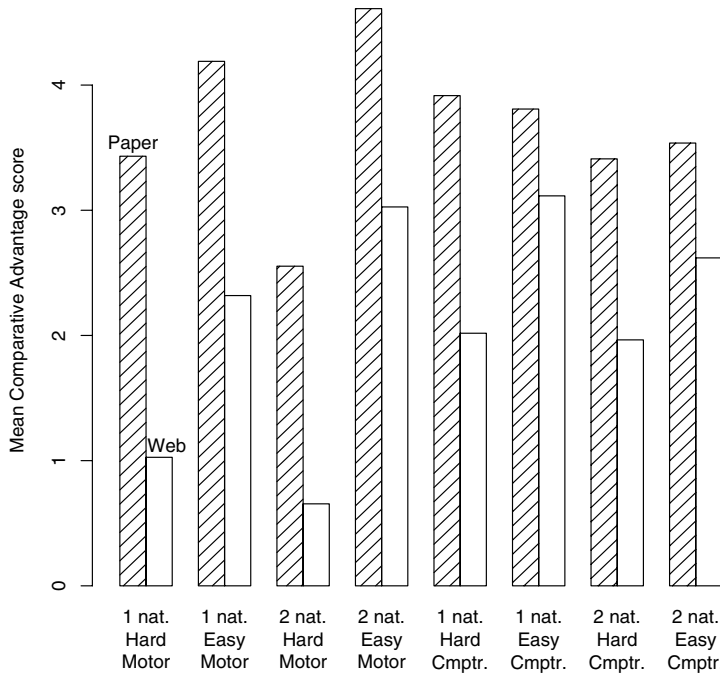


Fig. 2. Comparative advantage score (Comp-Ad) by question and group.

university. Curiously, the paper sample had higher Comp-Ad scores (mean 3.68, out of a maximum of 8) than the web sample (mean 2.09; $t_{206} = 4.56, p = 0.0000$).

3.2.2. Attitude scales

Prior to the main correlational analysis, the data for all 27 attitude items were recoded so that on a priori evidence they should be positive for the appropriate Pro-Business or Pro-international scale. Those items that were answered on a scale from 1 to 5 were thus recoded on scale from -2 to +2 (with some being reverse scored) and those (Pro-Business) items that were answered on a two-point scale were coded as -1 or +1. Note that for both types of scale item, the zero is now a neutral point, and overall scale scores of 0 thus reflect neutrality. Principal components factor analysis was then carried out on all 27 items and the whole sample. A scree test suggested a two-factor solution with eigenvalues of 5.0 and 3.0. After varimax rotation, these factors were identified as a Pro-Business scale and a Pro-Global scale. For all the items, the factor loadings were positive and the item loaded more heavily on the scale hypothesized (see Section 2). The standard deviations for the two types of item in the Pro-Business scale were similar, despite the different scales used (either -2 to +2 or -1 to +1). Hence, the Pro-Business scale was simply created by adding up the 15 items (after coding as described) shown in Groups 1 and 3 above, and the Pro-Global scale was the sum of the 12 items assembled in Group 2. Cronbach α s for the two scales were, respectively, 0.79 and 0.76.

Table 2
Correlations of main measures, for whole sample and each group

	Restrict	Comp-Ad	Pro-Business	Pro-Global
<i>Combined sample</i>				
Restrict	1.00	−0.28	−0.18	−0.28
Comp-Ad	−0.28	1.00	0.04	0.05
Pro-Business	−0.18	0.04	1.00	−0.29
Pro-Global	−0.28	0.05	−0.29	1.00
<i>Web sample</i>				
Restrict	1.00	−0.31	−0.01	−0.30
Comp-Ad	−0.31	1.00	0.06	0.04
Pro-Business	−0.01	0.06	1.00	−0.33
Pro-Global	−0.30	0.04	−0.33	1.00
<i>Paper sample</i>				
Restrict	1.00	−0.25	−0.38	−0.25
Comp-Ad	−0.25	1.00	0.14	−0.06
Pro-Business	−0.38	0.14	1.00	−0.20
Pro-Global	−0.25	−0.06	−0.20	1.00

The web sample was slightly more Pro-Business (mean -0.2) than the paper sample (mean -3.0 ; $t_{206} = 2.93$, $p = 0.0038$). On the other hand the web sample was slightly less Pro-Globalization (mean -5.0) than the paper sample (-2.7 , $t_{206} = 2.44$, $p = 0.0159$).

3.2.3. Correlations among the measures

Table 2 shows the correlations.

The main result is that Restrict correlated negatively with Comp-Ad. That is, respondents with better understanding of comparative advantage were more opposed to trade restrictions. This result was significant for the whole sample ($p = 0.0000$), the web sample ($p = 0.0008$) and the paper sample ($p = 0.0154$).¹ Fig. 3 shows the mean scores according to the Comp-Ad mean score (rounded to the nearest even number, maximum score 8). The diameter of each circle is proportional to the number of respondents represented.

Restrict also correlated negatively with Pro-Business and Pro-Global ($p = 0.0086$ and 0.0000 for the whole sample, respectively).² The effect of Comp-Ad on Restrict remained highly significant ($p = 0.0000$) when Pro-Business and Pro-Global were included in a regression. This is not surprising, given that the correlations of Pro-Business and Pro-Global with Comp-Ad were non-significant.³

¹ Post-hoc examination of prediction of Restrict from demographic variables as well as Comp-Ad showed that Comp-Ad showed no significant main effects, but “significant” (not corrected for being post-hoc) interactions were found between Comp-Ad and gender ($p = 0.02$, with a smaller effect for females, but the effect was still significant for each sex separately) and between Comp-Ad and web (vs. paper; $p = 0.04$, with a larger effect in web respondents).

² These effect showed no interactions with any demographic measures, including web vs. paper.

³ The negative correlation between Pro-Business and Pro-Global was, however, significant ($p = 0.0000$).

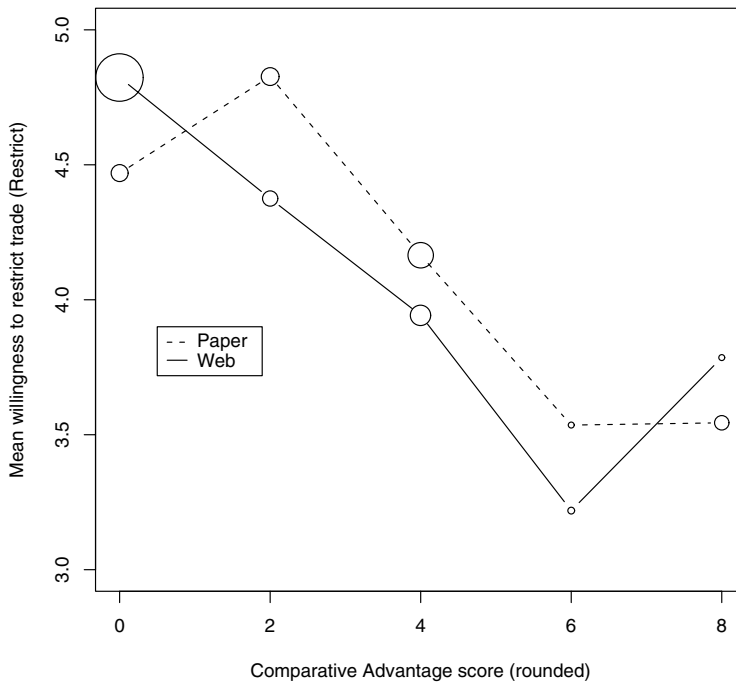


Fig. 3. Willingness to restrict trade (Restrict) as a function of Comp-Ad score, by group.

The mean responses to questions about benefit for one's own country (You-Benefit) and the other country (Other-Benefit) both correlated with Restrict across respondents ($r = 0.65$ and 0.18 , $p = 0.0000$ and 0.0108 , respectively, for the whole sample). In a regression of Restrict on You-Benefit and Other-Benefit, only the former was significant. When Comp-Ad was added, You-Benefit remained significant, and Comp-Ad was significant too. Thus, the effect of Comp-Ad on perceived benefits does not fully mediate its effect on Restrict.

4. Discussion

The two samples we used were found to differ on a number of measures. The web sample was slightly more Pro-Business but less Pro-Globalization. The paper sample had slightly higher education levels and scored somewhat better on our test of comparative advantage. It is unclear whether these differences reflect differences in the way the questionnaires were presented and responded to or differences in the sample themselves. Nor are these differences of much theoretical consequence. Our main reason for using two samples was to see if the relationships between people's trade preferences and the trade environment and individual difference variables would replicate across the samples. In fact this was true for all of the relationships we investigated. Moreover, not only the existence of these relationships but also their relative strengths replicated well across the samples.

People's preferences as to whether imports from a particular country were clearly influenced by whether the goods are already made in one's own country, by whether the other country imports from one's own, and by the status-quo regarding importing. Of these three factors, the most important seems to be the policy taken by the other country. These results are consistent with the idea that respondents make judgements about importation that are influenced not only by the direct utility that they and their country might receive from the imported goods, but also by the considerations of fairness outlined in the introduction.

Another and more subtle point emerges from these data. By and large the focus of economic theory is on the benefits derived from the consumption of goods. However, some features of our results indicate that judgements regarding importation are heavily influenced by factors relating to the production of goods, such as the employment that arises from production. The finding that the preference for restriction is stronger when the goods are already made in one's own country is consistent with this conclusion, as is the suggestion that free trade should be reciprocal. Finally, the finding that respondents believe that the exporting country benefits more from one's importing than one's own country is hard to explain in any other way. These results recall Lane's (1991) argument that many of the benefits from living in a modern market economy comes from its effects on the means of production rather than from the greater opportunities for consumption.

People's preferences regarding imports are related to individual difference factors as well as to features of the trade environment. Our results showed that for two rather different samples the desire to restrict imports was correlated with a more negative attitude towards corporations and a tendency to be nationalistic rather than international in outlook. We also found an indication that some at least of the opposition to free trade may be related to difficulties in understanding Ricardo's Principle of Comparative Advantage.

Understanding of the principle of comparative advantage is analogous to other principles that require comparing ratios. Perhaps a close example is the "mythical fixed pie" assumption in negotiation (Bazerman, Moore, & Gillespie, 1999). People fail to reach integrative (Pareto-optimal) outcomes in negotiations because they miss trade-offs in which each party can give up something that is relatively less important (compared to other things, for that party) in return for something that is relatively more important. The idea of comparative advantage itself could be seen as an example of an integrative outcome, if we think of two parties negotiating about what each one will produce. Although Bazerman and others attribute negotiation failure to a mistaken assumption, it is possible that failure of understanding is involved here too, as suggested by Evans (2001). It seems likely to us that efforts to teach these principles, perhaps as early as high school, could lead to increased understanding of arguments that all citizens should understand, regardless of which side of the trade debate they are on (see Larrick, Morgan, & Nisbett, 1990, for some evidence that similar principles can be taught fairly easily). However, one should note here that our results suggest that the present teaching of economics, whether at high school or at the tertiary level, does not appear to produce marked differences in people's understanding of the principle of comparative advantage.

Although our research demonstrates that opposition to free trade is associated with failure to understand the principle of comparative advantage, it does not, of course, demonstrate that such opposition is invariably the consequence of narrow-mindedness or deficiencies of understanding. It is worth bearing in mind that protests against free trade are also based on other, quite rational considerations, for example the concern that negative externalities, such as damage to the environment, may not be properly taken into account in free trade agreements.

Appendix A. Attitude items

Group 1 (Pro-Business). All questions were answered on a five-point scale: 1. Always incorrect, 2. Usually incorrect, 3. Equally correct and incorrect, 4. Usually correct, 5. Always correct.

The interests of multinational corporations are opposed to the interests of the people in the countries where these corporations do business.

Corporations' interests are opposed to those of democratically elected governments.

Corporations improve people's quality of life.

Corporations are unfair to workers.

Corporations deceive consumers in order to make a profit.

Corporations harm the environment.

A robust free-market economic is necessary for improving environmental quality.

A robust free-market economic is necessary for improving the lives of workers.

Citizens should support policies that increase the available range of reasonably priced products rather than policies that reduce unemployment.

Group 2 (Pro-Globalization). The same response scale was used as for Group 1.

I prefer to give to charities that operate within my own country.

Citizens should support policies that benefit the world, regardless of the effects of these policies on the citizens' nation.

National governments should put the interests of their own citizens before the interests of outsiders.

National governments should put the interests of the world as a whole ahead of their own national interests.

Nations should use force against other nations when national interest requires it.

Nations should not use force against other nations.

We should teach our children to uphold the welfare of all people everywhere even though it may be against the best interests of our own country.

Children should be educated to be international minded – to support an movement which contributes to the welfare of the world as a whole, regardless of special national interests.

National governments ought to be abolished and replaced by one central world government.

I prefer to buy a usable product that is made in my own country even if it is not quite so good as a similarly priced product made elsewhere (1 = always incorrect, 5 = always correct).

We should immediately take steps toward establishing a world government (1 = always incorrect, 5 = always correct).

My nation should not give up its military power to a strong world government.

Group 3 (Pro-Business). Respondents were asked to indicate “the option that comes closest to what you think”.

When it comes to making decisions in industry:

1. Workers should have more to say than they do now.
2. The important decisions should be left to management.

Workers and management:

3. Have conflicting interests and are natural enemies.
4. Share the same interests in the long run.

Trade unions:

5. Have too much power.
6. Need the power they have to protect the interests of working people.

The use of strikes to improve wages and working conditions:

7. Is almost never justified.

8. Is often necessary.

When businesses are allowed to make as much money as they can:

9. Everyone profits in the long run.
10. Workers and the poor are bound to get less.

Government regulation of business:

11. Usually does more harm than good.
12. Is necessary to keep industry from becoming too powerful.

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