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On the opposition to market institutions on moral grounds

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From a liberal viewpoint, voluntary trade appears to be something that should meet universal approval. If no one is obliged to trade, establishing a market institution could only make all better off. Nonetheless, specific market institutions meet substantial skepticism and criticism. This paper extends the extant literature by surveying the moral opposition towards trade in multiple dimensions and linking this to policy support measures. We provide survey results on moral opposition to trade in organs, sex services, surrogate mothers, trade in carbon permits, goods produced in poor countries, and food from countries where people suffer from hunger. These cover the potential reasons for opposing trade institutions: moral concerns, paternalism regarding risk-taking, and distributional concerns. Beyond this, we measure support for policies on unemployment benefits, risk prevention, equality goals within society, and redistribution. The survey of Amazon Mechanical Turk workers from the U.S. reveals significant moral opposition to trade in diverse dimensions. About a third of the participants strongly oppose trade in body items, sex services, and food imports from countries where a large proportion of the population suffers from hunger and malnutrition. Fewer participants strongly oppose trading CO_2 permits, importing from developing countries, or allowing surrogate mothership. Besides other correlates (e.g., gender, education, being conservative), individuals' attitudes towards imposing risks on others are identified as an important correlate of the opposition to trade for all the contexts of trade: those who are averse to exposing others to risk for their own advantage are more likely to oppose trading institutions. This measure of social preferences also relates to support for policies on risk prevention, equality goals within society, and redistribution. We discuss potential mechanisms behind this explanatory power of the newly identified measure.

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Introduction

At first glance, voluntary trade appears to be something that should meet universal approval. If no one is obliged to trade, establishing a market institution could only make all better off. Such a liberal view on people being free to pursue their idea of a good life without interference from society has motivated ideas of globalization and the implementation of market-based policy instruments, such as emission permit trading as an environmental policy.

Nonetheless, specific market institutions meet substantial skepticism and criticism. One important reason is *repugnancy* (e.g., McGraw and Tetlock 2005; Roth 2007; Bénabou and Tirole 2011; Roth and Wang 2020), defined as "aversion towards other individuals engage in it, even if the parties directly involved benefit from the trade" (Elias et al. 2017). Trading certain goods may violate traditional values or religious and moral norms, giving reasons for not trading them.[1] Examples may be trade in kidneys, jury duties, and school admissions. Yet, other reasons can relate to markets being perceived as *crowding out existing prosocial motiv*ation (e.g., Falk and Szech 2013; Bruni and Sugden 2013; Storr and Choi 2019; Ziegler et al. 2024; Bartling et al. 2021), or the *distribution of gains from trade being perceived as unfair* (e.g., Sandel, 2012, 2013; Helpman et al. 2017, Konow and Schwettmann 2016). Satz (2010) is also concerned about the consequences of trade, but in a broader sense - both *distributional and relational*. She identifies vulnerability, weak agency, extremely harmful outcomes for individuals, and extremely harmful outcomes for society as important parameters that may make markets "noxious". Another potential reason behind opposition could be related to *paternalism*, i.e., to limit the choices of others (e.g., Perri 2000; Parker 2004; Thaler and Sunstein 2003; Ambuehl et al. 2021) or to limit one's own future choices to prevent excessive risk-taking of one's future self.

Our paper extends the extant literature by surveying the moral opposition towards trade in multiple dimensions and linking this to policy support measures. To do this, we survey attitudes related to opposing trade in organs, sex services, using surrogate mothers, trade in carbon permits, goods produced in poor countries, and food from countries where people suffer from hunger. We included these different contexts as they, to a different extent, cover the above reasons for opposing trade institutions. In combination with moral concerns, the first three may be expected to link more to paternalism regarding risk-taking (vulnerability, weak agency, harms to individuals), and the latter two may also relate to distributional concerns. Surrogacy, organs, sex work, and pollution are examples discussed within the framework of Satz (2010). In her terms, carbon trade may harm society if such markets produce externalities themselves (e.g., by crowding our prosocial motivation).

Our exploration of the socio-demographic correlates of individual opposition to allowing trade in markets on a range of goods and services, is particularly relevant in the current socio-political climate. Beyond this, we measure support for policies on unemployment benefits, risk prevention, equality goals within society, and redistribution, providing insights that are crucial for policy-making and public discourse. Our study is guided by the idea that the individual's moral opposition to trade may correlate with concerns about other dimensions of moral relevance. We focus on the willingness to impose risks on others. Related to this is Hansson (2003) who discusses and develops ethical criteria under which someone is allowed to expose others to risk. Gardoni and Murphy (2014) further specify the source of risk, which causes the risk that some other person perhaps involuntarily has to bear, as a central moral element of risk exposure. Corresponding to this discussion, we develop a survey question to capture an individual's attitudes towards imposing risks on others for one's own advantage.

Our survey of Amazon Mechanical Turk workers from the U.S. reveals significant moral opposition to trade in diverse dimensions. Notably, 33% of the participants strongly oppose trade in body items, such as organs, sex services, and food imports from countries where a large proportion of the population suffers from hunger and malnutrition. On the other hand, fewer participants strongly oppose trading CO_2 permits, importing from developing countries, or allowing surrogate mothership.

Besides other correlates (e.g., gender, education, being conservative), we identify that the individuals' attitudes towards imposing risks on others correlate with the opposition to trade for all the morally loaded contexts of trade: those who are averse to exposing others to risk for their own advantage are more likely to oppose trading institutions. Importantly, this measure of social preferences is also related to support for policies on risk prevention, equality goals within society, and redistribution. Finally, we discuss the potential mechanisms behind this explanatory power of the newly identified measure.

The paper is structured as follows: "Survey and methods" discusses the survey design. We report the results in "Results" before the final section concludes.

Survey and methods

We surveyed participants concerning risk preferences, moral opposition towards different types of trade, and attitudes towards specific policies, described in Tables 1 and 2 below, as well as demographic background characteristics such as age, gender, state of residence, highest completed education, and political orientation.[2] The specific survey questions are reported in Appendix A.

To measure moral opposition towards trade, we selected diverse examples of goods and services where moral concerns can be an issue. These goods and services cover different reasons for opposing market institutions (e.g., risk-taking, distributional, and relational concerns) such that we expect some variation in the degree of moral acceptance. We measured attitudes towards trade along seven different dimensions or fields: Human body parts, sexual services, food produced in countries where a large proportion of the population suffers from hunger and malnutrition, emission permits for countries, emission permits for firms, goods produced in countries by people with very low income, and surrogate mothers, see Table 1 (field = body, sex, hunger, cntrCO2, firmCO2, poor, surrogate). We use the answers to define the variables *opp_field* (1 = trade in this good/service is morally acceptable, …, 5 = morally unacceptable).[3] We also define seven binary variables to measure strong opposition to trade for each type of goods or service: *oppose_field*=1 if *opp_field*=5 and 0 otherwise).

In addition, we surveyed respondents about their support for different policies, see Table 2. We used validated question formulations from the World Value Survey (Haerpfer et al. 2022) or the questions related to attitudes toward policies. The answer categories ranged from 1 to 5, where 1 corresponds to "I disagree completely" and 5 corresponds to "I agree completely". We use the answers to define a policy-support variable *pol_field*.

We use additional survey responses to create several explanatory variables. Importantly, we use answers to "I am generally a person who is fully prepared to take risks" (1 = "I agree completely", … 5 = "I disagree completely") as a measure of risk preferences. This measure corresponds to the validated measure by Dohmen et al. (2011) and is used to define the variable *RiskAverseMe*. We additionally use a survey measure based on attitudes towards the statement, "I am generally a person who is

Table 1 Survey questions and variable definitions regarding moral opposition towards trade.

Question: To what degree do you think it is morally acceptable or unacceptable to trade these goods/services for money?	Ordinal variables Coded 1 to 5: 1 morally acceptable, ..., 5 morally unacceptable	Binary variables Coded 0 or 1: 1 if morally unacceptable (i.e. if ordinal variable = 5)
Human body parts (kidneys, etc.)	*opp_body*	*oppose_body*
Sexual services	*opp_sex*	oppose_sex
Food from countries where a large proportion of the population suffers from hunger and malnutrition	*opp_hunger*	*oppose_hunger*
Emission permissions for countries (for instance CO_2-permits)	*opp_cntrCO2*	*oppose_cntrCO2*
Emission permissions for firms (for instance CO_2-permits)	*opp_firmCO2*	*oppose_firmCO2*
Goods produced in poor countries by people with very low income	*opp_poor*	*oppose_poor*
To use surrogate mothers (a woman who becomes pregnant for the purpose of carrying the fetus to term for another person) to have children	*opp_surrogate*	*oppose_surrogate*

Table 2 Survey questions regarding attitudes towards different policies.

Question: For each of the areas below, to what degree do you agree with the statements?	Ordinal variables Coded 1 to 5: 1 disagree completely, ..., 5 agree completely
The state should make people's incomes equal	*pol_equality*
Governments should tax the rich and subsidize the poor	*pol_redistribute*
People should receive state aid for unemployment	*pol_unempl*
The state should restrict the choices that people have in order to prevent them from taking extreme risks	*pol_ riskprevent*

willing to impose risks on others for my own benefit" (1 = "I agree completely", … 5 = "I disagree completely"). We interpret this as a measure of social preferences when one's own benefits trade-off with others' exposure to risk (see Brock et al. 2013). The measure is used to define the variable *RiskOnOthers*.

We further use explanatory variables such as *female*, university education (*eduni*), economics training (*econ*) (all binary dummy variables) as well as *age*. Additionally, we measure political orientation with the question, "In political matters, people often talk about "liberal" or "conservative". How would you place your views on this scale, generally speaking?", where the answer categories were a scale from 1 (liberal) to 10 (conservative). We use these answers to derive a variable *conservative*.

Including socio-demographic characteristics is standard in most surveys but is particularly relevant in this study. Previous studies show that several socio-demographic characteristics such as age (McNair et al. 2019; Krettenauer et al. 2016), gender (Jaffee and Hyde 2000; Rosen et al. 2016), and socioeconomic status (Elbæk et al. 2023), are important for morality and attitudes. Income and education are important elements of socioeconomic status and are proxied by the level of education (e.g., Vo et al. 2023). Our survey included only the educational level as a proxy for socioeconomic status.

Implementation of the survey. The experiment was designed in the SoSci Survey (https://www.soscisurvey.de/) and conducted on Amazon Mechanical Turk (MTurk) in December 2020. There were 902 participants, but 48 were dropped from our sample because they did not complete the survey. Thus, there are 854 participants in our analysis sample. We limited the experiment to MTurk workers from the U.S.

As the survey was embedded in an experimental study, the payments did not depend on the survey answers reported in this paper but were driven by the experimental part (see Hauge et al. 2024). On average, participants received 7.45 USD, including a participation fee.

Table 3 Summary statistics of socio-demographic variables.

VARIABLES	mean (sd)
RiskAverseMe	2.92 (1.14)
RiskOnOthers	3.51 (1.27)
conservative	5.67 (2.92)
Age (mean)	40.04 (11.74)
female (share)	0.45 (0.50)
eduni (share)	0.65 (0.48)
econ (share)	0.52 (0.50)

Table 3 reports the summary statistics of the main explanatory variables. Among participants, 45% are female, 65% have some university degree, and 52% have received some economics training. The average age is 40 years. The table also shows the mean of risk attitudes variables used as explanatory variables in our analysis.

Results

Opposition to trade for moral reasons. We present the summary statistics of the variables measuring the opposition to trade and the policy support in Table 4. The left column shows the ordinal variables (scale 1 through 5), and the right column the binary variables (0 or 1) for the strongest opposition to trade in the respective dimension. For CO_2, there is no difference in opposition towards the trade of carbon emissions between firms or countries. Because of this, we concentrate on the firm trade of CO_2 in our later investigations (referred to as CO_2).

Figure 1 illustrates the opposition to trade across diverse fields. The left figure reports the average opposition (left column in Table 4). In contrast the right figures correspond to the fraction of individuals

who strongly oppose trade in the respective field (the right column in Table 4).

As seen in Fig. 1, the opposition varies significantly across fields. Table 5 reports the statistical significance of the pairwise comparisons for the ordinal variable and Table 6 for the binary variable. For example, 33% of participants strongly oppose trade with body items (average opposition 3.41), 25% oppose trade with sexual services (average opposition 3.10), and 23% oppose trading with countries with prevalent malnutrition problems (average opposition 3.24). On the other hand, allowing for surrogates (6%, average 2.23), trade with poor countries (9%, average 2.65), or carbon emissions (15%, average 3.06) is less of a moral concern. While the difference between the strong opposition to sex trade and countries with malnutrition problems (hunger) is not significant, all other differences are significant (see Table 6). The results are largely robust when using the ordinal variable (except comparing opposition to trade in the field of sex to hunger and CO2, see Table 5).

Figure 2 reports the distribution of the average opposition to trade at the individual level (mean of *opp_field* across all fields) as well as the distribution of several fields in which an individual strongly opposes trade (0 – strong opposition in no field, … 6 – strongly opposing trade in all six fields).

Table 4 Summary statistics of opposition to trade and policy support in the respective fields.

Original ordinal variables		Binary coded variables	
VARIABLES	**mean (sd)**	**VARIABLES**	**mean (sd)**
opp_body	3.40 (1.40)	*oppose_body*	0.33 (0.47)
opp_sex	3.09 (1.42)	*oppose_hunger*	0.24 (0.43)
opp_hunger	3.26 (1.32)	oppose_sex	0.25 (0.44)
opp_firmCO2	3.06 (1.22)	*oppose_firmCO2*	0.15 (0.36)
opp_cntrCO2	3.05 (1.20)	*oppose_cntrCO2*	0.15 (0.35)
opp_poor	2.65 (1.19)	*oppose_poor*	0.09 (0.28)
opp_surrogate	2.22 (1.13)	*oppose_surrogate*	0.05 (0.23)
pol_unemploy	3.88 (1.06)		
pol_equality	2.84 (1.38)		
pol_redistribute	3.55 (1.24)		
pol_riskprevent	2.58 (1.26)		

The left column reports mean (sd) of the ordinal variables (1,...5), the second column reports mean (sd) of the binary variables measuring strongest opposition against trade in the respective fields.

We observe in the right panel of Fig. 2 that 53% of participants deem trade in at least one field context as morally unacceptable, 21% view trade in exactly one field as unacceptable, and only 1% of individuals strongly oppose trade in all fields. The opposition in all dimensions is pairwise highly significantly correlated ($p < 0.002$) at the individual level. The correlation coefficients are reported in Table B.1 (ordinal variable) and B.2 (binary variables) in Appendix B.

We formulate the following result by summarizing this initial look at the data.

Result 1: *Opposition to trade in the different fields is not universal but context specific. However, opposing trade in the diverse contexts strongly correlates at the individual level.*

Correlates for the opposition to trade. In the next step, we investigate which individual characteristics correlate with the decision to oppose trade in the respective dimensions.

Table 5 Pairwise comparison of ordinal opposition variable opp_field.

	Body	**sex**	**hunger**	**CO2**	**poor**
sex	$<^{***}$				
hunger	$<^{**}$	$>^{*}$			
CO2	$<^{***}$	$<$	$<^{***}$		
poor	$<^{***}$	$<^{***}$	$<^{***}$	$<^{***}$	
surrogate	$<^{***}$	$<^{***}$	$<^{***}$	$<^{***}$	$<^{***}$

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.
Comparison based on Wilcoxon-signed rank test, "<" refers to row field being smaller than column field.

Table 6 Pairwise comparison of binary opposition variable oppose_field.

	body	**sex**	**hunger**	**CO2**	**poor**
sex	$<^{***}$				
hunger	$<^{***}$	$<$			
CO2	$<^{***}$	$<^{***}$	$<^{***}$		
poor	$<^{***}$	$<^{***}$	$<^{***}$	$<^{***}$	
surrogate	$<^{***}$	$<^{***}$	$<^{***}$	$<^{***}$	$<^{**}$

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.
Comparison based on Wilcoxon-signed rank test, " <" refers to row field being smaller than column field.

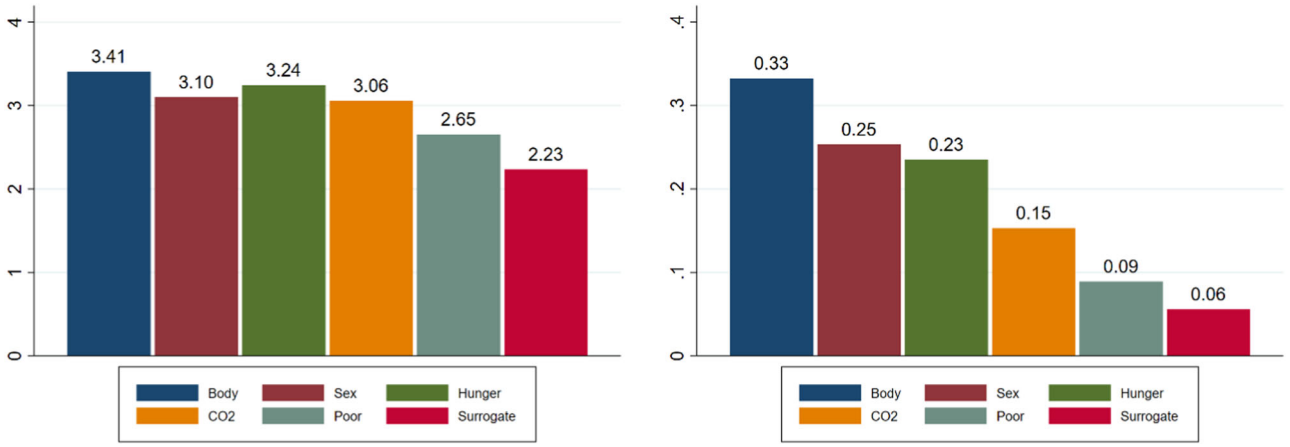

Fig. 1 Share of participants opposing trade in diverse fields. The left panel reports averages from the ordinal variable, the right panel is based on the binary variable.

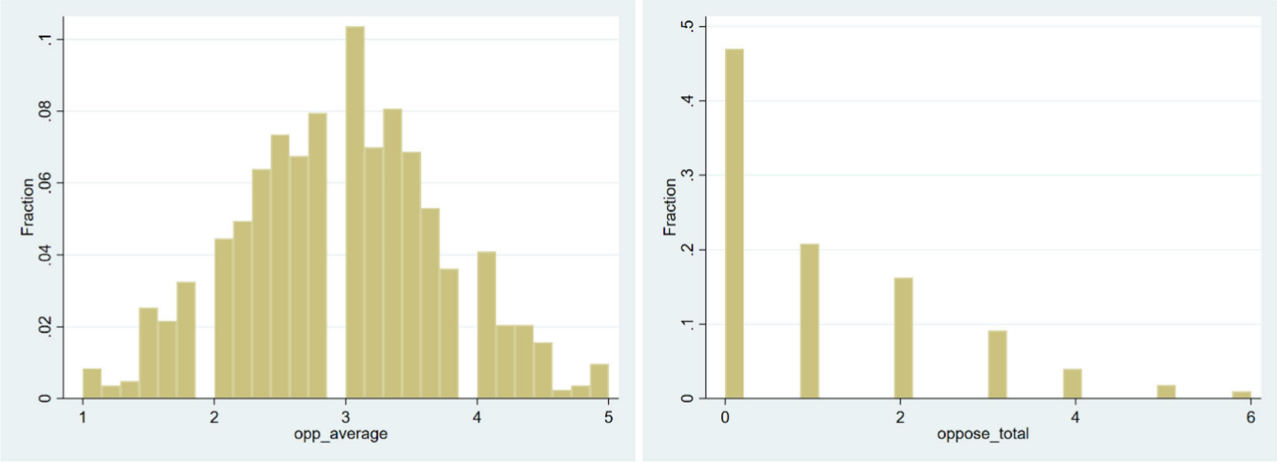

Fig. 2 Distribution of the aggregated opposition to trade. The left panel reports the average level of opposition in the six field (derived from opp_field), the right panel reports the number of fields in which an individual opposes trade, derived from adding the binary variables across the six fields (oppose_field).

Table 7 Opposition to trade across the respective dimensions (ordinal opp_field variable).

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	**opp body**	**opp sex**	**opp hunger**	**opp CO2**	**opp poor**	**opp surrogate**
RiskAverseMe	0.04 (1.02)	0.02 (0.36)	0.04 (1.05)	0.02 (0.58)	0.10** (2.45)	0.10** (2.51)
RiskOnOthers	0.43*** (10.52)	0.31*** (6.83)	0.37*** (9.44)	0.23*** (6.00)	0.12*** (3.22)	−0.04 (−1.01)
age	0.00 (0.25)	0.00 (0.05)	−0.00 (−0.19)	0.00 (0.28)	−0.00 (−1.13)	−0.00 (−0.19)
female	−0.12 (−1.42)	0.34*** (3.54)	0.06 (0.70)	0.04 (0.53)	0.11 (1.29)	0.03 (0.36)
uni	−0.19** (−2.05)	−0.09 (−0.93)	−0.19** (−2.16)	−0.15* (−1.80)	−0.09 (−1.00)	0.03 (0.40)
econ	−0.21** (−2.24)	−0.05 (−0.52)	−0.02 (−0.27)	−0.14 (−1.64)	−0.04 (−0.41)	0.19** (2.24)
conservative	−0.05*** (−3.57)	0.06*** (3.42)	−0.07*** (−4.53)	−0.07*** (−4.73)	−0.06*** (−3.95)	0.02 (1.35)
Constant	2.33*** (10.07)	1.56*** (6.06)	2.35*** (10.56)	2.70*** (12.57)	2.45*** (11.19)	1.86*** (8.68)
Observations	838	834	840	838	835	839
R-squared	0.25	0.11	0.22	0.14	0.09	0.02

OLS.
t-statistics in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 8 Opposition to trade across the respective dimensions (binary oppose_field variable).

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	**oppose body**	**oppose sex**	**oppose hunger**	**oppose CO_2**	**oppose poor**	**oppose surrogate**
RiskAverseMe	−0.01 (−0.71)	−0.01 (−0.43)	−0.01 (−0.40)	−0.00 (−0.01)	0.01 (1.06)	0.00 (0.60)
RiskOnOthers	0.12*** (8.31)	0.09*** (6.22)	0.11*** (8.28)	0.05*** (4.70)	0.04*** (4.05)	0.01* (1.74)
age	0.00* (1.67)	0.00 (1.16)	−0.00 (−0.58)	0.00 (0.79)	0.00 (0.31)	0.00 (0.31)
female	0.02 (0.68)	0.11*** (3.64)	0.03 (1.03)	−0.03 (−1.03)	0.03* (1.75)	0.01 (0.76)
uni	−0.08** (−2.52)	−0.03 (−0.85)	−0.05 (−1.53)	−0.02 (−0.60)	−0.02 (−0.71)	−0.01 (−0.49)
econ	−0.06* (−1.74)	−0.04 (−1.24)	−0.00 (−0.04)	−0.08*** (−2.89)	−0.03 (−1.57)	0.00 (0.17)
conservative	−0.01* (−1.84)	0.01*** (2.76)	−0.01** (−2.35)	−0.01*** (−2.70)	−0.00 (−1.09)	0.00 (0.30)
Constant	−0.02 (−0.21)	−0.19** (−2.35)	−0.02 (−0.25)	0.06 (0.88)	−0.05 (−0.96)	−0.02 (−0.47)
Observations	838	834	840	838	835	839
R-squared	0.16	0.10	0.14	0.09	0.07	0.01

OLS.
t-statistics in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

The main regressions consider the individual's opposition to trade in the respective field, $y_{i,field}$, controlling for socio-demographic characteristics, z_i, including the variables measuring risk aversion:

$$y_{i,field} = \beta z_i + \alpha + \varepsilon_i$$

Table 7 reports the results from a series of ordinary linear probability models (OLS) that separately consider the opposition to trade in the respective fields (based on ordinal variables). Next, Table 8 gives the results from the corresponding regressions based on the binary variables measuring strong opposition to trade.[4]

The regression results show substantial explanatory power of aversion to imposing risks on others for opposing trade across all trade contexts except the surrogate field. The latter, however, received almost no opposition at all, such that the power is low. Across all other dimensions, aversion towards imposing risks on others correlates positively with the opposition to allowing trade. Having a university degree or studying economics goes together with lower opposition to trading institutions. Perhaps not surprisingly, females are significantly more opposed to the sex trade than males. Individuals who identify themselves as conservative also feature a higher opposition to the sex trade but are less opposed to trade in all other dimensions.

However, we note that the regressions are subject to multicollinearity problems. While leaving the estimate unbiased, *RiskAverseMe* and *RiskOnOthers* depend on the sociodemographic characteristics in the respective regressions. as seen in Table 9. Given the important correlation between *RiskOnOthers* and the opposition to trade, it is thus instructive to better understand the drivers of the aversion towards imposing risks on others. Table 9 reveals that the aversion to exposing oneself or others to risks (as measured in our survey questions) is positively related to higher age and being female. In contrast, it is negatively related to training in economics and being conservative.

Summarizing these findings, we formulate the following result.

Result 2: *Opposition to trade in the different fields correlates strongly with an aversion to exposing others to risk for one's own advantage. Females and conservatives are more likely to oppose trade in sex services, while conservatives are less opposed to trade in all other dimensions.*

The strong effect of aversion to imposing risks on others onto the opposition to trade is further illustrated in Fig. 3, by displaying the mean opposition in the different fields separated by aversion towards imposing risks on others being at or above vs. below the median (*RiskOnOthers* ≥ 4 vs. < 4).

Policy preferences and behavioral attitudes. The previous sections identified substantial moral opposition to trading in various fields. Interestingly, the aversion to imposing risks on others was highly correlated with this opposition to trade in diverse fields. We now discuss whether this behavioral measure also captures policy preferences to understand the underlying mechanisms better.

Overall, a clear ranking exists for the average support for the diverse policies as reported in Table 4: unemployment policies receive the largest support (3.88), followed by redistribution (3.55), the support for equality as a policy goal (2.84), and risk prevention (2.58), see Table 4. The mutual differences are highly significant (< 0.001, based on Wilcoxon signed rank tests).

Table 10 reports the results from OLS, showing how support for these policies correlates with the main explanatory variables used before. We observe that *RiskOnOthers* significantly correlates with the support of the diverse policies: those who are more willing to impose risks on others for their own advantage are less in favor of policies targeted towards redistribution or equality. The same direction applies to policies for risk prevention. In contrast, *RiskOnOthers* does not correlate with the support of unemployment benefits.

These signs of support for policy measures may be surprising. For example, subjects hesitant to impose risks on others for their own advantage are less likely to support policies restricting people from taking risks. However, there is a crucial difference as *RiskOnOthers* captures hesitating to impose risks on others for their own advantage. In contrast, the policy would interfere with others' actions, i.e., prevent others from imposing the risk onto themselves. Similarly, *RiskOnOthers* has no explanatory power for supporting unemployment benefits, even though denying this would expose others (and oneself) to downside risks when losing their jobs.

We formulate the following result.

Result 3: *Individual aversion to exposing risks on others is an important correlate of policy support. More risk aversion correlates negatively with support for redistribution, equality goals and direct risk prevention policies.*

Table 9 Socio-economic drivers of RiskAverseMe and RiskOnOthers.

VARIABLES	(1) RiskAverseMe	(2) RiskOnOthers
age	0.01*** (4.08)	0.03*** (8.26)
female	0.37*** (4.98)	0.27*** (3.37)
uni	−0.28*** (−3.57)	−0.33*** (−3.87)
econ	−0.49*** (−6.32)	−0.45*** (−5.45)
conservative	−0.05*** (−3.56)	−0.10*** (−7.36)
Constant	2.94*** (18.77)	3.29*** (19.66)
Observations	840	840
R-squared	0.15	0.22

t-statistics in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.
OLS.

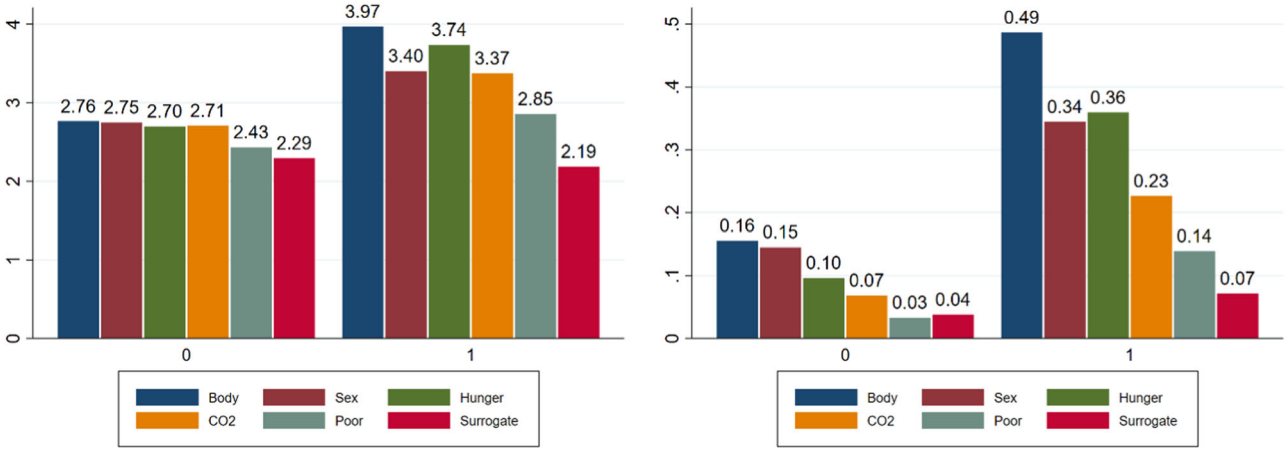

Fig. 3 Opposition to trade by RiskOnOthers above or below median. The left panel reports averages from the ordinal variable, the right panel is based on the binary variable for strong opposition to trade.

Table 10 Determinants of policy support.

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
	policy equality	policy unemployment	policy redistribute	policy risk prevent
RiskAverseMe	0.04 (0.85)	−0.00 (−0.02)	0.03 (0.73)	0.02 (0.44)
RiskOnOthers	−0.33*** (−7.79)	0.04 (1.13)	−0.11*** (−2.93)	−0.40*** (−10.57)
age	−0.01 (−1.52)	0.01* (1.75)	−0.01 (−1.57)	0.00 (0.15)
female	0.39*** (4.26)	0.04 (0.50)	0.12 (1.53)	0.20** (2.47)
uni	−0.03 (−0.26)	0.02 (0.31)	0.05 (0.55)	0.22*** (2.62)
econ	0.40*** (4.18)	0.10 (1.35)	0.16* (1.80)	0.33*** (3.86)
conservative	−0.10*** (−6.40)	−0.13*** (−10.02)	−0.17*** (−11.62)	−0.00 (−0.26)
Constant	4.37*** (17.97)	4.17*** (21.94)	4.88*** (22.40)	3.51*** (16.46)
Observations	839	840	839	840
R-squared	0.15	0.13	0.15	0.22

OLS.
t-statistics in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Conclusions

This paper considered opposing trade institutions. A substantial share of participants strongly oppose trade across several domains, most prominently opposing trade in body parts (i.e., organs), sex services, and food imports from countries with prevalent malnutrition problems. While this opposition reflects moral concerns, the opposition towards trade correlates with the individuals' attitudes toward imposing risks on others. Those unwilling to expose others to risks are more likely to oppose trading institutions. We interpret this as morality partly motivated by concerns that others may be induced to make risky choices once trade is allowed. Our study thus lends evidence that moral concerns towards trade correlate with individual attitudes in another dimension of moral relevance; the morality of exposing others to risks (e.g., Gardoni and Murphy, 2014; Hansson, 2003). We show that our newly established measure of aversion to exposing others to risk for one's own advantage also relates to support of policies targeted towards redistribution, equality and risk prevention.

Our study is a first step toward understanding the moral opposition to trade across diverse domains. Further survey experiments may reveal additional insights into causal determinants of such opposition, for example by exogenously changing the information on specific impacts of such trading opportunities.

Data availability

The datasets generated and analyzed during the current study are available under: Hauge, Karen Evelyn; Kverndokk, Snorre; Lange, Andreas, 2024, "Replication for "On the opposition to market institutions on moral grounds", https://doi.org/10.7910/DVN/I5N0DR, Harvard Dataverse, V1.

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Notes

1 Some of the repugnant goods are called taboo goods (Fiske and Tetlock 1997) where a taboo is defined as a particularly powerful kind of normative prohibition. Taboos are meant to protect individuals and societies "from behavior defined or perceived to be dangerous" (Tannenwald 1999), and breaking a taboo usually results in social sanctions or repercussions.

2 The survey was embedded in a larger study that included experimental investigations. Part A elicited experimental measures of risk attitudes, and Part B involved experimental variations on (information about) benefits from trade institutions in an abstract experimental setting. Part C contained the survey that we report in this paper. The experiment results are reported in Hauge et al. (2024). While also addressing reasons for opposing trade, it deals with rather abstract and monetarily incentivized situations and does not consider different dimensions of trade as we do in this paper. The experiment shows distributional concerns as a reason for opposing trade institutions. In contrast, risk preferences or paternalistic motives are less important in the abstract and monetarily incentivized setting. Information about background conditions (and thus about the individual benefits from trade relative to the benefits to others) matters for the opposition to trade institutions: the support for the trade institution is larger under a veil of ignorance.

3 The original question was coded 1 = unacceptable to 5 = acceptable. We recoded these survey answers so that larger numbers reflect greater opposition to trade.

4 The results are robust to using probit models. We opt for the linear probability model as it allows an easier interpretation of the coefficients.

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Author contributions

The authors contributed equally to this work.

Competing interests

The authors declare no competing interests.

Ethical approval

In Norway research ethics is regulated through the law of research ethics, which requires that medical and health research on humans have an ethical preapproval, while research within social sciences and humanities does not require such ethical preapprovals (see https://www.forskningsetikk.no/en/guidelines/social-sciences-and-humanities/guidelines-for-research-ethics-in-the-social-sciences-and-the-humanities/). As the current study is not medical or health research on humans, it was thus not required to have an ethical preapproval of the study. Instead, researchers and research institutions are responsible for compliance with ethical norms and guidelines, and the institutions are required to ensure that researchers follow these norms and guidelines but decide themselves how this requirement should be fulfilled. The data collected in this project were considered as "anonymous in the hands of researchers" since we have no possibility to link the code to individuals. Thus, these data were not categorized as "personal data" as defined in article 4 of GDPR.

Informed consent

Participants were recruited through MTurk. They were informed that the survey collected data for research purposes, what the survey was about, and what they could earn from participating. Participants were asked to click a link if they wanted to participate.

Additional information

Supplementary information The online version contains supplementary material available at https://doi.org/10.1057/s41599-024-03714-x.

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