The Impact of Trust on Large-scale Collective Action

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The ability to engage in collective action has forged the history of humankind, yet it cannot be taken for granted, because if everyone else cooperates, it gives each individual reason to freeride on other people's accomplishments. Solving major challenges such as antibiotic resistance and climate change will require a tremendous degree of collective action. In this paper, we discuss the importance of, and the relationship be-tween trust and collective action, either on a voluntary basis or through political intervention. By analysing survey data, we find a positive relationship between generalised trust and voluntary collective action, while this kind of trust is either negatively related, or not related at all, to people's acceptability of political steering. We also find a positive relationship between political-institutional trust and acceptability of such steering.

Introduction

Many of the major challenges that the world is currently facing can be defined as collective action problems (Ostrom, 2010), or cooperation problems. Examples include the climate change problem, over-fishing and pollution of oceans and seas and the growing problem of antibiotic resistance. A collective action problem is usually defined as a situation where the total benefit to a group of people is maximized when all members of the group cooperate, while each individual in the group derives the greatest personal benefit by not cooperating or contributing to the collective bene-fit, regardless of whether other group members cooperate or not (Dawes, 1980). Thus, each individual who understands the nature of this problem must make concessions, i.e. must choose to behave in a way that will not yield the greatest possible personal benefit, in order to solve the dilemma at hand. Moreover, the dilemma implies an obvious risk of being taken advantage of by other group members, i.e. a risk of some individuals choosing to make personal sacrifices for the common good while most others choose not to. In effect, the good cooperators risk getting caught in a so-called social trap (Rothstein, 2005). This refers to a situation where an actor chooses to cooperate and give up their immediate self-interest, while other actors continue to act according to their self-interest, thus leading to the resource or good in question continues to deteriorate (Kollock, 1998). Therefore, with the risk of ending up in a social trap, an interesting question in this context is whether – and if so under what conditions – individuals may be willing to cooperate by not acting based on self-interest in order to avoid collective losses.

When it comes to small-scale dilemmas, such as local fishing in a small lake, research has shown that certain factors can increase the likelihood of persistent collective action occurring among group members. Such factors include small group size, a low level of anonymity, transparency, good opportunities for communication, recurring interaction among the actors involved, delimitation of the resource, opportunities to punish non-compliance, and trust (Dietz, Dolšak, Ostrom, & Stern, 2002).

In contrast, however, the challenges we focus on in the present article are far more large scale in terms of both the size of the problems and the number of actors involved. It is unfortunate that a comparatively small volume of research has been conducted on ways to avoid large-scale collective action problems and in particular the role of trust in this context (cf. Nannestad, 2008; Uslaner, 2000). It seems reasonable to assume that the more large-scale a collective problem is, the more difficult it is to establish the level of collective action necessary to eliminate it. At the same time, however, we know from history, and in fact from simply looking at our own neighbourhoods and local communities, that such cooperation has always occurred and continues to take place. For

example, most people in Sweden choose to pay their taxes, despite many opportunities to cheat (Hammar, Jagers, & Nordblom, 2009). Also, many people choose to vote, even though the impact of each individual vote is negligible (Dawes, 1980).

Thus, the purpose of the present article is to explore *the relationship between individual's level of trust and their willingness to cooperate around large-scale challenges*.

In the next section, we first theorize the relationship between trust and people's inclination to cooperate and then present two hypotheses. Following this, we describe our empirical operations and present our results. The subsequent section provides a brief discussion, and the article concludes with some suggestions for future research.

The relationship between trust and cooperation

In order to fully understand the impact of trust on large-scale cooperation, it is of central importance to distinguish between voluntary cooperation and what we call created, or regulated, cooperation. *Voluntary cooperation* here refers to collective action where individual actors are free to choose whether to cooperate or not, for example by spontaneously buying environmentally friendly products, biking instead of driving or participating in demonstrations. *Regulated cooperation* instead refers to cooperation resulting from active intervention by an external actor (agent) such as an NGO or a trade organization, although the national government is typically mentioned as the number one example of an external actor able to incentivize people to cooperate. This far-reaching ability of the national government can be attributed to its access to a plethora of potential tools ranging from guidelines and information campaigns to economic and legal policy instruments that may be of either coercive or merely nudging nature. This distinction is important since we, theoretically, have reason to assume that the effect of trust varies depending on the type of cooperation one has in mind.

In the next section, we provide a rationale for the assumption that successful voluntary cooperation hinges in particular on a certain type of trust called generalised trust, whereas in the case of regulated cooperation, additional types of trust are relevant.

The role of trust in voluntary cooperation

The reason trust has been identified as a driver of cooperation, to deal with both small- and large-scale collective action problems (Nannestad, 2008), is that if an actor cannot trust that others will act for the collective good, and instead suspect that they will try to maximize their personal benefit, the actor herself has few reasons to always do what is best for the group or the community, since doing so implies a risk to fall in the social trap (Rothstein, 2005). Small-scale environments, such as in a housing cooperative or among the anglers at the small lake, typically involve very few actors who are well aware of each other's behaviour, and thus, such trust develops easily – of course given that the actors have a history of acting for the collective good, i.e. pro-socially. Consequently, this type of trust in the other, well-known members of a relatively small group, called *particularised trust*, goes a long way in enticing someone to cooperate in a local context.

In contrast, the situation is entirely different in more large-scale contexts, i.e. when it comes to individuals making personal sacrifices to help combat climate change or maintain the healing powers of antibiotics. In these cases, particularised trust does not have the same function as in the local context. One reason for this lack of function is that the large-scale situation makes it impossible for an individual actor to assess and monitor the behaviour of everybody else involved (sometimes all people in the whole world). Another type of trust, namely *generalised trust*, becomes more relevant in this type of situation. Generalised trust refers to trust in fellow human beings in general and is often operationalised by means of the question 'In your opinion, to what extent can people be trusted in general?' (Nannestad, 2008). Previous research shows that, on average, people with higher levels of generalised trust express a greater willingness to engage in cooperation even if they are unable to monitor other people's behaviour and ensure that they, too, act pro-socially (Fischbacher, Gächter, & Fehr, 2001; Gächter & Herrmann, 2009; Robertson, Jagers, & Rönnerstrand, 2018; Rönnerstrand & Andersson Sundell, 2015).

A few caveats can be noted, however. First of all, for people to voluntarily cooperate in regard to a widely spread problem, perhaps even reaching other parts of the world, it can be assumed that a reasonably high level of generalised trust is needed. Second, research shows that the level of generalised trust varies greatly internationally (Fairbrother, 2016). When it comes to large-scale dilemmas such as antibiotic resistance and climate change, this means that it does not really matter that for example people in Sweden have a high average level of generalised trust since this pattern is not present in most other parts of the world. As a result, neither people outside nor inside Sweden

are willing to voluntarily change their behaviour since doing so would imply a significant risk of falling in a social trap.

At the same time, it should be noted that some people's willingness to avoid unnecessary use of antibiotics and reduce their carbon footprint can be unrelated to their levels of generalised trust and expectations regarding other people's inclination to engage in collective action. Instead, their pro-social behaviour can be driven by for example personal values, norms and moral beliefs (Uslaner, 2000, 2002).

Does this mean that large-scale cooperation problems cannot be avoided without first broadly establishing the 'correct' norms and moral beliefs in society? No, not necessarily. All it means is that no simple solutions are available if large-scale social traps are to be avoided without coercion. Instead, people often need support in the process, and this support is what we in this article refer to as *regulated cooperation*.

The role of trust for regulated cooperation

Thus, in cases characterized by an obvious social trap, which – again – are common in the context of large-scale dilemmas, people are less likely to cooperate. This makes it extra important that individuals receive support in this regard – by means of various regulations, usually introduced by the national government to steer the population towards increased rates of cooperation and collective action (Olson, 1965). However, despite the presence of external regulation, trust is still crucial for collective action.

The reason for this is that when a third party starts to regulate people's behaviour, a new situation arises where the individual actor is expected to comply with the implemented policy measure. In a way, this gives rise to a new type of collective action problem: If everybody else acts in line with the regulation, an individual actor has everything to gain from not complying: That is, the collective benefit (for example a stable climate) will still be achieved and the individual will be able to maintain the same life-style as in the past. The opposite is true as well: If few others comply with the regulation, the individual will have nothing to gain from complying.

Generalised trust probably plays an important role also in this new situation. We can argue this point in at least two ways. First, if an actor trusts that others will comply with the regulation, the actor will be likely to do so, too, and will develop a more positive attitude to the regulation. Second, however, it is also possible that actors with high levels of trust in other people instead will deem the regulation unnecessary, leading them to develop negative attitudes to policy measures aimed to promote cooperation (Harring & Jagers, 2013). In order for a person to accept or comply with regulations, an additional dimension besides generalised trust is of critical importance: faith in the political system and the executive institutions therein. That is, the person must trust that the institutions that have established and implemented the regulations have done so in a fair and effective manner and also be assured that the institutions assigned the job of ensuring compliance with the regulations perform this task well so that the regulations have the intended effects (Lubell & Scholz, 2001).

Hypotheses:

Based on the hitherto discussion, we can expect the following outcomes of an empirical investigation:

H1. Generalised trust is (a) positively related to individuals' willingness to engage in voluntary cooperation, but (b) negatively related to individuals' acceptability of and compliance with policy measures intended to promote cooperation.

H2. Political-institutional trust is (a) unrelated to individuals' willingness to engage in voluntary cooperation, but (b) positively related to individuals' acceptability of and compliance with policy measures intended to promote cooperation.

Data and method

To test our hypotheses, we chose two cases of large-scale cooperation challenges: (1) overuse of antibiotics, which is leading to antibiotic resistance, and (2) environmental problems that can be characterized as collective action problems. We use two survey studies carried out by the SOM Institute at the University of Gothenburg in 2011 and 2016, respectively, and one survey that the Laboratory of Opinion Research (LORE), also at the University of Gothenburg, used in 2017 for the so-called Citizen Panel, which, when used in combination, cover all aspects of interest to us. These surveys of individuals in Sweden used relatively representative samples of the Swedish population, although men and people with post-secondary education are a bit overrepresented. The number of respondents included in the analyses were 1 506 for SOM 2016, 1 398 for SOM 2011 and 838 for the Citizen Panel.

To measure people's willingness to cooperate voluntarily to reduce the use of antibiotics, the following question was used: '*The more people use antibiotics, the more resistant bacteria get to them. Would you be willing to avoid using antibiotics when possible, even if you may need a few more days to get well as a result?*' The four response alternatives were: '*No, definitely not*', '*No, probably not*', '*Yes, probably'* and '*Yes, definitely*'. This variable was dichotomized into '*Yes, definitely*' and '*Other*', as it was not normally distributed. In this sample, a large majority of the respondents answered yes, probably or yes, definitely. To measure people's voluntary environmental contributions, the following question was used: '*How often do you buy eco-labelled products for environmental reasons*?'. The respondents could respond: '*Never*', '*Sometimes*', '*Fairly often*', '*Very often*' and '*Always*'. To measure people's attitudes to regulated use of antibiotics, we used the question '*What is your opinion about raising the price of antibiotics in order to reduce the use of it?*' (from '1=*Very bad*' to '7=*Very good*'), and to measure people's attitudes to regulated environmental behaviour, we used the question '*What is your opinion about the suggestion to increase the CO2 tax on petrol?*' ('*Very bad suggestion*', '*Bad suggestion*', '*The suggestion is neither good nor bad*', '*Good suggestion*' and '*Very good suggestion*'. To measure people's degree of generalised trust, we used the following question: '*To what extent can other people be trusted in general?*'. This question was measured using a 11-point scale ranging from 0 = '*People cannot generally be trusted*' to 10 = '*People can generally be trusted*'. All of the datasets used did not contain measures of both political and institutional trust, and thus, comparisons between the institutional and political trust measures were made with care. To capture political-institutional trust, the following questions were used: '*Trust in the government*'(political trust) in analyses of attitudes to green behaviour and regulation of CO2 emissions and '*Trust in the healthcare system*' (institutional trust) in analyses of attitudes to antibiotics use and regulation to increase the price of antibiotics. To measure trust in the healthcare system, the following question was used in SOM 2016: '*To what degree do you trust that the actors in the healthcare system are doing a good job?*' The response options were '*To a very high degree*', '*To a fairly high degree*', '*To a fairly low degree*' and '*To a very low degree*'. It was re-coded in the opposite direction. In LORE's Citizen Panel 27 2017, trust in the healthcare system was measured using the same question as in SOM 2016 but the response options were slightly different: '*To what degree do you trust that the actors in the healthcare system are doing a good job?*' The response options were 1 = '*To a very high degree*', 2 = '*To a fairly high degree*', 3 = '*To a neither high nor low degree*', 4 = '*To a fairly low degree*' and 5 = '*To a very low degree'*, and these, too, were re-coded in the opposite direction. The correlation between generalised trust and trust in the healthcare system was low in both SOM 2016 (0.27, p=0.00) and SOM 2011 (0.28, p=0.00).

Trust in the government was assessed using the following question: '*Please describe your trust in your following institutions/organisations: the government*'. The respondents could answer '*Very high trust*', '*Fairly high trust*', '*Neither high nor low trust', 'Fairly low trust*' or '*Very low trust*'. This question was re-coded in the opposite direction. There is a relatively low correlation between generalised trust and trust in the government (0.30, p=0.01).

In SOM 2016, level of education was coded as follows: '*Not completed compulsory (lower secondary) school*' and '*Compulsory school*' = low, '*Studies at upper secondary level, independent adult education college (folkhögskola)*' and '*Graduated from upper secondary school, independent adult education college*' = medium-low, '*Post-secondary education, not university level*' and '*Studies at university level*' = medium-high and finally '*Degree from university (or equivalent)*' and '*Studies/degree at doctoral level*' = high.

In the 2017 Citizen Panel, level of education was coded as follows: '*Not completed compulsory (lower secondary) school*' and '*Compulsory school*' = Low, '*Upper secondary school or equivalent, less than 3 years*' and '*Upper secondary school or equivalent, 3 years or more*' = Medium-low, '*Post-secondary education, not university level, less than 3 years*', '*Post-secondary education, not university level, 3 years or more*' and '*University level, less than 3 years*' = Medium-high, and '*University level, 3 years or more*' and '*Degree, doctoral/licentiate level*' = High.

Gender was coded as follows: 1 = '*Woman*', 2 = '*Man*' and 3 = '*Other*'. The third category was eliminated from further analysis as only 25 individuals gave this response. In all datasets, age was coded as follows: 1 = 16–29 years, 2 = 30–49 years, 3 = 50–64 years and 4 = 65–85 years.

In most cases we performed stepwise OLS regression analyses to test our hypotheses. In one of the analyses however, we applied binary logistic regression as the dependent variable was not normally distributed. In all analyses, only trust measures were included in the first step. In the next step, we added a number of socio-economic variables as controls (age, gender and level of education). In the results section below, we present our findings only for the complete models, except in the cases where a significant change in the stepwise analyses was identified.

Results

In the first analysis, we test the relationship between generalised trust, political-institutional trust and voluntary cooperation, and the respondents' estimated willingness to abstain from using antibiotics in Table 1. We do this by means of logistic regression, which shows a positive relationship between generalised trust and willingness to abstain from using antibiotics when political-institutional trust, gender, age and level of education are included in the model. No relationship is found between political-institutional trust, now measured as trust in the healthcare system, and willingness to abstain from using antibiotics. However, education helps to explain why some people want to abstain from using antibiotics. Regarding age, a significant relationship is only found for the youngest age group. More precisely, the respondents in this age group are less willing to abstain from using antibiotics. The model is improved when the control variables are included (increased good-ness of fit [-2LL], increased pseudo R2 and a significant chi2 for the model), and thus, Model 1 explains some of the variation in why some respondents are willing to abstain from using antibiotics while others are not.

We also test the relationship between generalised trust, political-institutional trust and voluntary cooperation by analysing respondents' environmental behaviour based on their habit (or lack there-of) of buying eco-labelled products. In Table 2, Model 2, generalised trust is positively related to how often people buy eco-labelled products for environmental reasons when trust in the government, gender, age and level of education are included in the model. There is no relationship between political-institutional trust, measured as trust in the government, and how often people buy eco-labelled products. Education, gender and age also help to explain how often people buy green products. The model explains some of the variation in environmental behaviour, but it should be noted that Model 2 has a low coefficient of determination.

In the next part of the analysis, we assess whether, and if so how, generalised trust and political-institutional trust are related to attitudes to regulation of cooperation problems (Table 2, Model 3). There is a significant positive relationship between generalised trust and willingness to raise the petrol tax (b= 0.04, std. err. = 0.02, p=0.01) when only generalised trust and political-institutional trust are included in the model. This correlation disappears when control variables are introduced, and then the relationship between generalised trust and willingness to raise the petrol tax is positive and not significant at a p-level of 0.05. There is a positive relationship between political-institutional trust and attitude to a petrol price increase even when generalised trust gender, age and level of education are included in the model. Gender and education also seem to influence the acceptability of a higher petrol tax. More specifically, a higher level of education increases the acceptability and women are more positive than men to a tax increase. Although a great deal of unexplained variation remains, Model 3 helps to further explain respondents' attitudes to an increased petrol price.

In the final model (Table 2, Model 4), we analyse whether generalised trust and political-institutional trust are related to attitudes to raising the price of antibiotics in order to reduce the overuse. There is a significant negative relationship between generalised trust and said attitude when political-institutional trust, gender, age and level of education are included in the model. There is a significant positive relationship between political-institutional trust, here measured as trust in the healthcare system, and attitude to increasing the price of antibiotics, when generalised trust, gender, age and level of education are included in the model. In this model, level of education is positively related to acceptability of a price increase. In other words, people with a higher level of education tend to be more accepting of such policy instruments. Model 4 does not explain much of the variation either, but at least its contribution to determine individuals' attitudes to an increase in the price of antibiotics is significant.

Discussion

Figure 1 provides a summary of our results. As can be seen, generalised trust is positively related to voluntary cooperation. This finding supports our first hypothesis (H1a). The pattern looks different when it comes to regulated cooperation. In the case of acceptability of an increase in the price of antibiotics, there is a negative relationship, in line with the hypothesis (H1b). That is, people with lower levels of this type of trust tend to be more positive to such regulation. However, we do not find a significant relationship in the case of acceptability of an increased CO2 tax. The reason for this may be that the word *tax* triggers certain values and attitudes that in many cases tend to influence a person's attitude to such a policy measure more strongly than generalised trust does.

As for political-institutional trust, we found that this type of trust is not significantly related to

voluntary cooperation, which is in line with our second hypothesis (H2a). However, we found significant positive relationships between political-institutional trust and support for regulation of both antibiotics use and CO2 emissions, which is also in line with the second hypothesis (H2b).

Conclusions

In this article, we have explored the impact of trust on people's inclination to engage in large-scale collective action. We know that individuals with higher levels of trust are more likely to engage in cooperation with other people to deal with both voluntary and created collective action problems – something our analyses, too, seem to confirm, although it should be pointed out that we have not measured actual behaviour but rather what people *say* they do or would do in various situations. However, as many of the current large-scale problems in the world reach far beyond national boundaries, we need knowledge about what the relationship between trust and cooperation looks like in many different countries. Unfortunately, most previous studies on the role of trust in the areas of health and the environment have been carried out in countries where people generally have relatively high levels of trust. Similarly, this article has focused on the case of Sweden, a country whose inhabitants are known to display among the highest levels of trust in the world. Needless to say, this is problematic. Nevertheless, however, a link between trust and cooperation is found in the studied context, too, although the correlations are relatively week. It is reasonable to assume that trust is more strongly connected with cooperation in countries characterized by lower levels of trust. In addition, there are probably differences between high and low trusting individuals if other people within the country is high or low trusting. For example, it would be interesting to compare attitudes and willingness to cooperate among low and high trusting individuals in both low and high trusting contexts.

Another aspect that should be given further attention is whether the role of trust for cooperation in collective action problems varies for other types of collective problems than those studied here. It may be the case that the delimitation of the resource, the structure of the collective action problem, how often someone uses the resource and who is involved in the utilization of the resource, differ as regards how trust affects the willingness to act collectively. Finally, a frequently discussed issue is whether trust changes over time and in turn how this affect people's willingness to cooperate in the long term. Based on our reasoning in this article, a drop in the level of generalised trust implies that the need for third-party solutions to solve collective action problems goes up. In addition, if the level of political-institutional trust decreases, it will also affect individuals' willingness to comply with regulations, which in turn reduces the power of such policy instruments. However, if the levels of generalised trust grow stronger, so does the probability of solving collective action problems on a voluntary basis.

References

Dawes, R. M. (1980). Social dilemmas. Annual Review of Psychology, 31(1), 169-193.

Dietz, T., Dolšak, N., Ostrom, E., & Stern, P. C. (2002). The Drama of the Commons. In E. Ostrom, T. Dietz, N. Dolšak, P. C. Stern, S. Stonich, & E. U. Weber (Eds.), The drama of the commons. Washington DC: National Academy Press.

Fairbrother, M. (2016). Trust and public support for environmental protection in diverse national contexts. Sociological Science, 3, 359-382.

Fischbacher, U., Gächter, S., & Fehr, E. (2001). Are people conditionally cooperative? Evidence from a public goods experiment. Economics Letters, 71(3), 397-404.doi:http://dx.doi.org/10.1016/S0165-1765(01)00394-9

Gächter, S., & Herrmann, B. (2009). Reciprocity, culture and human cooperation: previous in- sights and a new cross-cultural experiment. Philosophical Transactions of the Royal Society B: Biological Sciences, 364(1518), 791-806.

Hammar, H., Jagers, S. C., & Nordblom, K. (2009). Perceived tax evasion and the importance of trust. The Journal of Socio-Economics, 38(2), 238-245.

Harring, N., & Jagers, S. C. (2013). Should we trust in values? Explaining public support for pro- environmental taxes. Sustainability, 5(1), 210-227.

Kollock, P. (1998). Social dilemmas: The anatomy of cooperation. Annual Review of Sociology, 24(1), 183-214.

Lubell, M., & Scholz, J. T. (2001). Cooperation, Reciprocity, and the Collective-Action Heuristic. American Journal of Political Science, 45(1), 160-178. doi:10.2307/2669365

Nannestad, P. (2008). What Have We Learned About Generalized Trust, If Anything? Annual Review of Political Science, 11(1), 413-436. doi:10.1146/anurev.polisci.11.060606.135412

Olson, M. (1965). The logic of collective action: Public goods and the theory of groups. Cambridge: Harvard University Press.

Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. Global Environmental Change, 20(4), 550-557. doi:http://dx.doi.org/10.1016/j.gloevcha.2010.07.004

Robertson, F., Jagers, S. C., & Rönnerstrand, B. (2018). Managing Sustainable Use of Antibiotics–The Role of Trust. Sustainability, 10(1), 143.

Rothstein, B. (2005). Social Traps and the Problem of Trust. Cambridge: Cambridge University Press.

Rönnerstrand, B., & Andersson Sundell, K. (2015). Trust, reciprocity and collective action to fight antibiotic resistance. An experimental approach. Social science & medicine, 142, 249-255. doi:http://dx.doi.org/10.1016/j.socscimed.2015.08.032

Uslaner, E. M. (2000). Producing and Consuming Trust. Political Science Quarterly, 115(4), 569-590. doi:-10.2307/2657610

Uslaner, E. M. (2002). The moral foundations of trust: Cambridge University Press.

Table 1 Logistic regression of generalised trust and political-institutional trust for willingness to abstain from using antibiotics

	Model 1 *Willingness to abstain from using antibiotics*
Generalised trust	0.07 (0.03)**
Trust in the healthcare system (low)	
Trust in the healthcare system (medium-low)	-0.23(0.30)
Trust in the healthcare system (medium-high)	-0.11(0.29)
Trust in the healthcare system (high)	-0.11(0.32)
Level of education (low)	
Level of education (medium-low)	0.62(0.20)***
Level of education (medium-high)	0.95(0.21)***
Level of education (high)	1.10(0.20)***
Gender (woman)	
Gender (man)	0.01(0.11)
Age 16–29	
Age 30–49	0.24(0.18)
Age 50–64	0.20(0.18)
Age 65–85	-0.13(.18)
Intercept	-1.49(0.37)***
N	1506
Model chi^2	77.62***
Pseudo R^2	0.04

Note: p<0.01=***, p<0.05=**, p<0.1=*. B-values for the coefficient, standard errors in parentheses. Dependent variable: '*The more people use antibiotics; the more resistant bacteria get to them. Would you be willing to avoid using antibiotics when possible, even if you may need a few more days to get well as a result?*" '*Yes, definitely*', '*Yes, probably*', '*No, probably not*' and '*No, definitely not*' were dichotomized into 1= '*Yes, definitely*' and 0= '*Others"*. Source: The National SOM Survey 2016.

[1] We also performed an ordinal logit and a linear probability model and obtained comparable results.

Table 2: Regression analysis of generalised trust and political-institutional trust for various social traps.

	Model 2 *How often eco labelled*	**Model 3** *Acceptability increased petrol tax*	**Model 4** *Acceptability price increase antibiotics*
Generalised trust	0.03**(0.01)	0.02(0.02)	-0.10***(0.04)
Trust in the healthcare system	-	-	.18***(0.06)
Trust in the government (low)	0.04(0.03)	0.11***(0.04)	-
Level of education (low)			
Level of education (medium-low)	0.08(0.08)	0.17(0.09)	-0.31(0.43)
Level of education (medium-high)	0.22***(0.08)	0.33(0.10)	-0.11(0.42)
Level of education (high)	0.37***(0.08)	0.57(0.10)	0.36(0.41)
Gender (woman)			
Gender (man)	-0.18***(0.05)	-0.33***(0.06)	0.15(0.12)
Age (16–29)			
Age (30–49)	0.17**(0.08)	0.18*(0.10)	0.33(0.26)
Age (50–64)	0.28***(0.08)	-0,08(0.10)	0.23(0.26)
Age (65–85)	0.36***(0.09)	-0,04(0.10)	0.38(0.26)
Intercept	2.15***(0.14)	2.04***(0.17)	2.58***(0.55)
N	1398	1398	837
R^2	0.05	0.07	0.04
F	8.34***	11.98***	4.25**

Note: p<0.01=***, p<0.05=**, p<0.1=*. Standard errors in parentheses. Dependent variable Model 2: How often do you buy eco-labelled products? 'Always', 'Usually', 'Sometimes' or 'Never'. Dependent variable Model 3: '*What is your opinion about the suggestion to increase the CO2 tax on petrol?*' ('*Very bad suggestion'*, *'Bad suggestion', 'The suggestion is neither good nor bad*', '*Good suggestion*' and '*Very good suggestion*'. Dependent variable Model 4: '*What is your opinion about raising the price of antibiotics in order to reduce the use of it?*' (from '*1=Very bad*' to '*7=Very good*'). Trust in the healthcare system was only analysed in Model 4. Trust in the government was only analysed in Models 2 and 3. Source for Models 2 and 3: The National SOM Survey 2011. Source for Model 4: Citizen Panel 23 2017

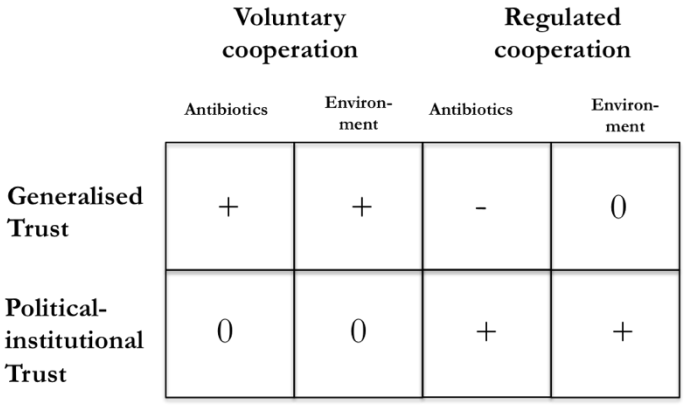

Figure 1 Relationships between generalised trust and political-institutional trust and individuals' claimed willingness to accept/engage in voluntary and regulated cooperation