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Preferences for Redistribution in the US, Italy, Norway: An Experimental Study

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Abstract

We examine experimentally individual preferences for redistributions in the US, Italy, and Norway. Twenty-one subjects were assigned initial earnings from a discrete uniform distribution. The source of earnings was manipulated and depended either on luck or on individual relative performance in some tasks. All subjects chose a redistribution rate to be applied to group members' earnings. One choice was then randomly selected to determine final earnings. Four different experimental decisions altered whether subjects' choice applied only to others, thus making self-interest irrelevant (impartial decision), and the degree of information over one's earnings. Norwegian subjects demanded significantly higher levels of redistribution both in the impartial decision and when self-interest offered the most clear-cut prescription, as uncertainty over one's earnings was removed. The demands for redistributions by US and Italian participants were instead similar. Conversely, country differences disappeared in decisions where earnings were uncertain. Contrary to widely held views, no evidence was found that US subjects were more "meritocratic" than others. Italian subjects reacted the most to the source of inequality, decreasing demand for redistribution in Performance treatments compared to Luck treatments. While behaviour of subjects whose earnings were above the median level (the "rich") did not differ significantly across countries, large differences emerged for people below the median level (the "poor") in the fourth decision. Italian "poor" were agreeable to let the "rich" receive a large share of their earnings, particularly so in Performance treatments. Conversely, Norwegians "poor" demanded full earnings equalisation. The behaviour of US subjects fell between these two extremes. This evidence shows the existence of relevant cross-country difference in demand for redistribution and opens new perspectives on what may be considered "fair" or "unfair" inequality in Western countries.

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1 Introduction

Developed countries differ vastly in the amount of taxation, social spending, and redistribution operated by their governments (Alesina and Glaeser, 2004). The US – and more generally Anglo-Saxon countries –rely on markets as allocative mechanisms considerably more than continental European countries, which on the contrary attribute a larger role to the state. These macroeconomic differences are mirrored by the dissimilar patterns of attitudes towards social mobility and opportunities that people hold (Alesina and Glaeser, 2004; Corneo and Gruner, 2002). Most US citizens believe that an individual's success in their career is the result of hard work, whereas most Europeans hold the view that success is the result of circumstances beyond one's control, such as family connections and affluence. Many accounts have been advanced to make sense of the different redistribution levels across countries (see Alesina and Glaeser, 2004, for a review). Such accounts emphasise differences in basic preferences or attitudes towards inequality or risk aversion; cultural differences about the deservedness of individual merit; ideology-driven beliefs over the deservedness of both the poor and the rich; historical and geographical factors. We review some of such factors in section 2. Thus far there is no consensus over which factor is dominant.

The goal of this paper is to examine some of the underlying psychological and cultural reasons of these differences through a comparative experimental study. Research on these topics has thus far drawn on large-scale attitudinal surveys – such as the General Social Survey (see e.g. Alesina and La Ferrara, 2005). However, some of the questions used in comparative studies seem to introduce elements of confound and cannot prove causality. For this reason we turn to an experimental methodology. With experiments the researcher can control the determinants of earnings inequality, thus telling apart the underlying components of preferences for redistribution.

To appreciate cross-country institutional differences we run experiments in three countries that, according to the influential work by Esping-Andersen (1990), can be deemed to represent three different systems of welfare state, i.e. the liberal, the corporatist- statist, and the social democratic[1]. These are the US, Italy, and Norway.

Table 1 documents differences in redistributive institutions and public opinion in these countries. Italy and the US have pre-tax levels of market income inequality – as measured by the Gini coefficient - that are similar, but inequality drops by 18.8% in Italy but only by 11.4% in the US after tax and transfer. Norway's pre-tax Gini coefficient is about 10 points lower than the other two countries, but taxation and

[1] The liberal model of welfare state makes welfare protection and insurance conditional to individual responsibility, according to the Beveridgian model of Welfare State (Esping-Andersen, 1990). The main objective is to construct a universal *safety net* through a flat income tax. Such a tax system is characterized by t a relatively low rate (ideally, a flat rate), providing the poor with a tax allowance. Tax revenues finance monetary transfers and in-kind services designed to reduce poverty and prevent social exclusion. In order to limit moral hazard there is extensive use of means-tested conditionality of welfare benefits. Health care is only partially provided by public institutions and "quasi-markets" complement the functioning of national health systems. Young workers are invited to self-insure by buying shares of private pension funds. Even if recent reforms caused the corporatist-statist model to converge in some aspects to the liberal model, this second model maintains most of its Bismarckian roots. In particular, the employed labour force is central in the system, as the financial coverage of welfare institutions is provided by workers' and firms' social contributions, and access to benefits depends on the position occupied in the labour market. Mutual risk insurance is provided to workers through employers' sub-contracts with insurance companies. Hence, protection and welfare transfers typically differ according to employment categories or sectors (for instance, protection may be different between civil servants, self-employed and industry employees), thus rendering redistribution negligible between sectors and maintaining social stratification. A centralised system of wage bargaining favours wage compression and contains market income inequality. The social-democratic model is characterised both by the prevalence of the citizens' financing of the Welfare State through general taxation, and by the universal provision of social protection benefits to all citizens, with a higher share of services with respect to the previous models. Labour market institutions are characterised by relatively low regulation and active labour policies and are oriented to maintain a high employment rate. Hence, both insurance and redistributive institutions are designed to reduce incomes dispersion. Centralized bargaining and wage compression are also prevalent in this system. After the publication of Esping-Andersen's (1990) book, the additional category of the "Mediterranean" model of welfare was introduced within the statist-corporatist model (Ferrera, 1996). This was done to emphasize the role of the family as a redistributive agent along with the state. Italy would belong to this latter group.

transfer further reduce it by 15.9%. The US stand out as having substantially lower levels for tax wedge on high incomes, general tax revenues and public social spending than the European countries, with Italy having higher public intervention than Norway. Finally, more than a quarter of US respondents to the World Value Survey completely agree with the statement that *"Hard work brings success"* and more than a third believe that *"People living in need is due to laziness or lack of willpower"*. In Norway, these percentages drop, respectively, to around 7% and 11%, while Italy is located in between the other two countries.

All in all, these three countries seem to vary both in terms of redistributive institutions and cultural attitudes of their citizens. Nevertheless, populous countries such as Italy and the US are likely to be characterised by conspicuous within-country differences at the cultural and institutional level, which may impinge upon preferences and attitudes towards redistribution. Arguably, this is less the case for Norway because of its smaller population. For this reason we run our research in two locations within Italy and the US. Such locations were selected with the goal of ensuring substantial cultural variability in the participant pool within-country. In this way we are able to contrast between-country variations with within-country variations across our subject pools. We run our research with University students both because of logistics reasons and to keep the socio-economic characteristic of the country samples roughly comparable. This obviously prevents us from achieving any purpose of country representativeness, but this strategy is widely deemed as acceptable in experimental comparative research (see e.g. Herrman *et al.*, 2008). Subjects' socio-economic background was also measured in the post-experiment questionnaire in order to have the possibility of studying its effect on experimental behaviour.

Our experiment was adapted from the framework developed by Durante, Putterman and van der Weele (2014) (DPW henceforth). Groups of 21 university students were assigned initial earnings from a discrete uniform distribution. We used the same distribution, adjusted for Purchasing Power Parity across locations, in every session. Subjects were asked to state how much redistribution they wanted within their group. One of such proposals was randomly selected and applied to the whole group. This determined everyone's final earnings. The methods to assign initial earnings were experimentally manipulated. In the four different treatments of our design, earnings

were determined according to: (A) an unbiased random procedure, (B) a biased random procedure that allowed participants coming from more affluent areas to have better chances to be assigned higher earnings than others; (C) a test of ability in abstract reasoning; (D) an effort-based task. Hence, luck was the main determinant of initial earnings in (A) and (B), whereas individual relative performance was the main determinant of initial earnings in (C) and (D). Such a difference in the source of earnings enables us to measure how demand for redistribution depends on individual merit and on real-life inequality.

Table 1: Country differences in income inequality, taxation, social spending and people's attitudes towards causes of success in life

	US	**Italy**	**Norway**
Gini coefficient before tax and transfer	50.8%	51.2%	41.6%
Gini coefficient after tax and transfer	39.4%	32.6%	25.7%
Total tax wedge on high incomes	43.6%	63.2%	53%
Total Tax Revenues (ratio of GDP)	26%	42.9%	38%
Public social spending (ratio of GDP)	19.3%	28.9%	25.1%
Percentage of respondents who completely agree with statement "*Hard work brings success.*"	26.4%	14.6%	6.8%
Percentage of respondents agreeing with statement "*People living in need is due to laziness or lack of willpower.*"	39.8%	26.3%	11.25

Source: World Value Survey for opinions on causes of success or living in need (last two items). OECD statistics (accessed online) for all other items.

Notes: Data for the Gini coefficient refer to 2014. Total tax wedge is computed as the combined central and sub-central government income tax plus employee and employer social security contribution taxes, as a percentage of labour costs defined as gross wage earnings plus employer social security contributions. The tax wedge includes cash transfers. High income is defined as income 66% higher than average income, where average income is the average annual gross wage earnings of adult, full-time manual and non-manual workers in the industry (ISIC C to K). Tax revenues and public social spending refer to 2016. Public social spending covers all financial flows from public bodies for social purposes, but excludes taxes breaks as well as private spending for social purposes. The questions on whether "hard work brings success" and on why "people live in need" have been asked in the sixth wave (2010-2014) and in the third wave (1995-1999) respectively, of the World Value Survey.

Participants made four choices that differed according to the level of information over their relative position in the earnings scale. The first decision was made from a condition of *impartiality*. The individual's choice only affected others' earnings rather than her own. This choice enables us to estimate an individual's "sense of justice" when self-interest motivations play no part in the decision. The second and third decisions were made behind a "Veil of Ignorance" (VoI), as individuals did not know their future position in the earnings scale. In this case, subjects' decision affected others' as well as their own final earnings. Therefore, self-interest was relevant, along with risk aversion and social insurance. The third decision differed from the second as subjects were communicated their previous initial earnings. This made it possible that individuals involved in performance-based tasks formed more precise beliefs over their relative ability. Only in the last decision did participants know in advance their exact ranking in the initial earning scale. Self-interest here entails straightforward prescriptions: an individual above (below) the median level should demand zero (100%) redistribution. We are thus able to ascertain the extent to which other-regarding motivations induce individuals to depart from self-interest. After these four experimental decisions, we run two additional tasks measuring risk and ambiguity aversion. Finally, participants completed a questionnaire enquiring into the participants' cultural traits, moral values, views over society, and demographic characteristics.

Overall, our study permits the examination of the relationship between individual propensities to redistribute income and various attitudinal, sociological, and cultural characteristics. Other studies conducted cross-national experimental investigations on redistributive preferences (Almås et al., 2016; Rey-Biel et al., 2016). Our study is complementary to theirs in examining various possible motivations underlying preferences for redistribution. In particular, Almås *et al* (2016) only collect choices under impartiality for nationally representative samples in Norway and the US, while subjects' self-interest is relevant in some of the decisions in our experiment. Rey-Biel *et al.* (2016) mainly focus on the impact of beliefs over deservingness over preferences for redistribution in Spain and the US, while we are mainly interested in disentangling the effect of self-interest and social preferences.

The paper is structured as follows. Section2 illustrates the theoretical background. Section 3 explains the experimental design and the hypotheses to be tested. Section 4 reports the main results. Section 5 concludes.

2 Self-interest and sense of justice in preferences for redistribution

2.1 Self-interest and risk aversion

Considerations of self-interest, fairness, and justice, may all contribute to the determination of someone's demand for redistribution. Our theoretical framework builds on previous studies such as Alesina and Giuliano (2010) and DPW. We posit that preferences for redistribution are represented by the following utility function:

$$U_i = \delta_i \; f_i^{h_i \sigma_i}\left(\tilde{y}_i;(x_i,L)\right) + \left\{\left[G - \left(G_i^{*}\left(IA(\tilde{y}_i);BOD_i;(x_i,L)\right)\right)\right]^2\right\} \qquad \textbf{(1)}$$

The first term includes primarily motivations pertaining to self-interest, whereas the second term captures other-regarding motivations. f_i is the function representing self-interest motivations, whose main argument is expected individual earnings $\tilde{y}_i$. As illustrated in section 3, in our experiments the key decision variable is the amount of redistribution to be implemented in one's group. The redistributive scheme is a linear income tax followed by lump sum transfers of equal size to each individual. In this context, as originally suggested by Romer (1975) and Meltzer and Richard (1981), people below (above) the median position in the earnings scale should demand full (no) redistribution to maximise their post-tax earnings[2]. Other factors can nevertheless modify the straightforward prescription of these models. When future income is uncertain, rational self-interested individuals should take into account both their current position in the earnings scale and the future position they expect to occupy. The so-called 'Prospect of Upward Mobility' (POUM) hypothesis (Benabou and Ok, 2001) stresses that people currently below the median line who expect to be above the median in the future may demand less than full redistribution to maximise their future post-tax earnings. A complementary hypothesis is that people *above* the median may demand a

[2] In the model by Meltzer and Richard (1981), the presence of efficiency losses in the redistribution scheme prevents below-median income earners to demand full equalization of post-tax incomes.

positive level of redistribution to protect themselves against the risk of a fall in their income.

f_i also depends on some parameters expressing an individual's degree of risk aversion. Redistribution, insofar as it guarantees a minimum income to every citizen, can be seen as an insurance scheme whereby people insure against the event of earning a low income. In other words, taxation may be seen as the premium to be paid to insure against the event of earning a low income (Varian, 1980). Therefore, the more risk-averse an individual, the higher, *ceteris paribus*, one's demand for redistribution. The parameter σ_i captures one's degree of *individual* risk aversion. It may be thought of as representing the curvature of the utility function in classical expected utility models (e.g. the parameter identifying a Constant Absolute Risk Aversion utility function), or the parameter identifying the specific probability weighting function in non-expected utility models (e.g. the weighting function parameter of a Quiggin function) (see Quiggin, 1982; Schmeidler, 1989; Conte *et al.*, 2011 for an econometric exercise to discriminate among the two models).

However, public redistribution differs from a private insurance scheme. First, a public redistribution scheme is by its very nature coercive. Every citizen is forced to pay the amount of taxation established by the majority. Conversely, in private insurance schemes, individuals may be free to enter the scheme or not, and may choose the amount of insurance they desire. Second, other-regarding individuals may modify their demand for redistribution taking into account the externalities their choice will bring about to other individuals. As observed by Thurow (1971), income inequality is, intrinsically, a public good, in that every citizen is forced to accept the level of inequality that becomes established in the society. Consequently, when an individual is asked to propose a redistribution rate to be applied to a group of people, as is the case in our experiment, she may modify her choice considering the externalities induced in others by imposing her own choice. For instance, a risk-loving individual may be aware of the presence of risk-averse individuals in her group, and thus temper her demand for low redistribution.

In fact, experimental evidence does show that individual risky choices differ significantly when they only affect the individual in comparison to when they also affect others (Linde and Sonneman, 2009; Bolton and Ockenfels, 2006; Krawczyk and

Le Lec, 2010). In sum, demand for redistribution due to risk aversion may be significantly different when it is realized through a public coercive scheme rather than a private scheme. We call the former an individual's demand for *social* insurance to remark this fact, and we introduce a parameter $h_i > 0$ in (1) that multiplies the risk aversion parameter σ_i. h_i represents the extent to which individuals modify their demand for redistribution due to risk-aversion when taking into account the social nature of the insurance scheme. $h_i > 1$ ($0 < h_i < 1$) represent individuals increasing (decreasing) their risk aversion parameter as a result of the externalities brought about on others. $h_i = 1$ represents the case of individuals not changing their individual degree of risk aversion in a social context. In the rest of the paper we shall refer to σ_i as *individual* risk aversion, and to the composite term $h_i\sigma_i$ as *social* risk insurance.

We also assume that f_i may be affected by a set of demographic characteristics, such as gender, age, social background. These components are captured by the vector x_i. Moreover, the way individuals handle risk may also be influenced by locality-specific cultural traits or social norms, whose influence is captured by L. For instance, some localities may be characterised by an attitude of fatalism with respect to future events, and do little to insure themselves against the risk of bad outcomes in the future. Glazer and Moynihan (1975) maintain this may be particularly the case for Southern Italians. More generally, the parameter L captures the influence of all meso-level of macro-level characteristics on the individual level. In particular, should within-country differences be absent whilst between-country differences are sizable, L should be interpreted as country-level cultural characteristics.

In real life one's self-interested demand for redistribution may also depend on a variety of other channels, such as the deterring effect of taxation over work effort, the efficiency losses due to redistribution, and even the negative impact of income inequality on social capital (see Alesina and Giuliano, 2010 for a review of such factors). Our experiments do not focus on these aspects so these will be expunged from the analysis (see DPW and Almås *et al*, 2016, for an analysis of the effects of efficiency losses on demand for redistribution).

2.2 Sense of justice

The parameter $\delta_i$measures the relative importance of self-interest motivations vis-à-vis other-regarding motivations. The key argument of the second term of the utility function is G_i^*. In Alesina and Giuliano's (2010) words, G_i^* reflects an individual's views about "social justice", and determines their desired level of inequality.

In our specification, we view G_i^*as being determined by two components. The first component is an individual's degree of inequality aversion (IA) with respect to the end-state income redistribution. This can be put down to a "pure" distaste for inequality by an individual. As mentioned above, such distaste can be treated as a preference over the environment in which an individual lives in very much the same way as a preference over a public good (Thurow, 1971). IA may be instrumental to reaching more cohesiveness and less deprivation within local communities (Pauly, 1973). Obviously, such social preferences may be the result of social norms, cultural characteristics, institutional settings, or ideological creeds, specific to different countries or different regions within the same country. Individuals brought up within a culture or a political system valuing egalitarianism may come to have a stronger IA than others (Esping-Andersen, 1990; Dallinger, 2010).

In Thurow's model an individual's actual position in the earnings scale has no bearing on her IA preferences. This entails that the argument of an individual's utility is the overall measure of inequality in the society – say, the Gini index. Such preferences can thus be deemed as impersonal. The most recent theoretical formalisations of IA assume instead that IA is *self-centred* (Fehr and Schmidt, 1999 - FS henceforth; Bolton and Ockenfels, 2000 - BO henceforth). In the FS model, individuals dislike income disparities defined *from their own income level*, and, drawing on the evidence provided by Loewenstein *et al.* (1989), they model larger utility losses in relation to *disadvantageous* inequality than *advantageous* inequality. The BO model assumes that an individual dislikes receiving earnings different from the group average income – what they call the *social reference point*-, but they are indifferent to how income is distributed among others.

The second component of an individual sense of justice is procedural fairness (Karni and Safra, 2002; Bolton et al., 2005; Karmi et al., 2008; Grimalda et al., 2016).

A growing body of literature has attached increased importance to this component along with consequentialist motivations. Roughly speaking, an individual can be said to be concerned with fairness when she is not indifferent to the *procedure* that has brought about a certain allocation X.

A wealth of experimental evidence has been gathered in support of the relevance of fairness concerns for individuals (see e.g. Hoffman *et al.*, 1994; Konow, 2000; Krawczyk, 2010; Cappelen *et al.*, 2010; 2013). Fairness considerations also appear to be key in accounting for the different attitudes towards redistribution that people manifest in surveys. As already mentioned in the introduction, believing that the functioning of the market is fair, that everyone has a fair share of opportunity to get ahead in life, and that the playing field is level, acts as a factor strongly *reducing* demand for redistribution (Fong, 2001; Corneo and Gruner, 2002; Alesina and La Ferrara, 2005). Instead, if individuals believe that success in life is determined by causes beyond their control – such as luck, family wealth, social connections, *etc.*, survey respondents declare to be more in favour of redistribution.

We model such considerations by introducing a second argument in the determinants of G_i^*. Since ultimately what seems to matter for individuals is their perception that people have *deserved* their current income, we introduce the term Beliefs over Deservedness (BOD) to represent their concern with procedural fairness in the society where they live[3]. In societies where earnings are perceived to be determined by factors beyond individual control, most likely people will hold the belief that people have not deserved their earnings, and G_i^* will be lower than in societies where incomes are perceived as being determined by individual merit. More generally, we expect that the higher BOD, the lower G_i^*.

[3] The relationship between beliefs and preferences is complex. The classic Humean approach posits that beliefs are independent from preferences. However, the thesis that preferences and beliefs are correlated has received growing support. In the experimental literature, the idea of a "consensus effect" between beliefs and preferences has been advanced. According to this view, people form beliefs that are coherent with their own preferences. For instance, in the two-stage game Prisoner's Dilemma, there is a positive relationship between the cooperation rate by a person when acting as a first mover and when acting as a second mover. This would not be possible without the existence of some correlation between beliefs over others' level of cooperation and one's own propensity to cooperate (Blanco *et al.*, 2014). On the other hand, that beliefs affect individuals' actions has been shown by Costa-Gomes *et al.* (2014) in a context where beliefs have been instrumented and so are not endogenous to preferences. In order not to introduce additional complexity, we nonetheless abstract away from the possible inter-dependence between preferences and beliefs in (1).

Theoretical models of institutional differences in redistribution call on ideological and cultural differences to explain differences in BOD across countries, and show that multiple equilibria obtain as a result. In the models by Alesina and Angeletos (2005), and Alesina *et al.* (2009), the divide between the American and the European BOD brings about two self-sustaining equilibria, where a low (high) tax rate stimulates high (low) effort, to the effect that high (low) investment and growth validate the creed that income inequality is fair (unfair). Consequently, the majority votes for low (high) redistribution. Similarly, the model by Benabou and Tirole (2006) generates an "American" equilibrium, where a majority of citizens believes that a laissez-faire regime promotes a "just-world", and a "European" equilibrium, where a majority of citizens believes that effort have a minor role vis-à-vis luck in determining earnings.

Finally, we posit that, similarly to the self-interest component, an individual's sense of justice may be influenced by demographic characteristics and cultural traits, or values, as well as location-specific characteristics. These are captured by the vectors *(x; L)*. [4]

3 Experiment design and testable hypotheses

3.1 The Redistribution Decision

We modify the framework proposed by DPW to standardise cross-country comparisons and to extend the range of motivations underlying preferences for redistribution. The essential elements of our experimental decisions are the following:

1. The *Initial earnings.* Each experimental session involved 21 University students. Initial earnings were assigned to each subject from a discrete uniform distribution

[4] Another explanation that has received widespread attention calls into question a second order of ideological causes, that is, the aversion to ethnic and racial heterogeneity. It has been shown that racial/ethnic heterogeneity is negatively correlated with individual propensities to redistribute and public goods provision, both across countries (Alesina and Glaser, 2004) and across different administrative areas within the same country (Alesina et al., 1999; Luttmer, 2001). The main claim is that in areas with high heterogeneity people from the richest ethnic/racial groups are not willing to benefit recipients belonging to other groups (Gilens, 1999). This hypothesis finds a theoretical rationale in what has been defined individual's "ethnic psychology" (Richerson et al., 2003). Although empirical support for this hypothesis has been found (Fershtman and Gneezy, 2001; Bernhard et al., 2006), its actual incidence on institutional settings – especially in a cross-country perspective – still appears deserving extensive empirical analysis. Although we do control for a subject's ethnic group, our design is not specifically designed to address this issue.

ranging from the minimum of 1 token up to the maximum of 21 tokens. Every one of the 21 earning levels from 1 to 21 was assigned to a different participant. The monetary value of each token was adjusted in each location to equalize Purchasing Power Parity. For instance, it was 1.30$ in Washington State, so that initial earnings may have ranged from $1.30 up to $27.30. We opted for a uniform earnings distribution to make the initial earnings distribution exactly the same across countries[5]. The four treatments of our design used four different methods to assign initial earnings (see section 3.2). We call initial earnings y_{it}^{I} where *i* denotes the individual, *t* the round of the decision, and *I* denotes initial earnings.

2. A *tax rate* (τ henceforth). Every student was asked to propose a tax rate, which would have brought about a certain amount of redistribution of initial earnings among the group of 21 participants. Tax rates could vary from the two extremes of 0% (no redistribution) to 100% (full redistribution). Any integer number from 0 to 100 was a feasible choice. We call $S = \{0, 1, \dots, 100\}$ the strategy space of individual decisions.

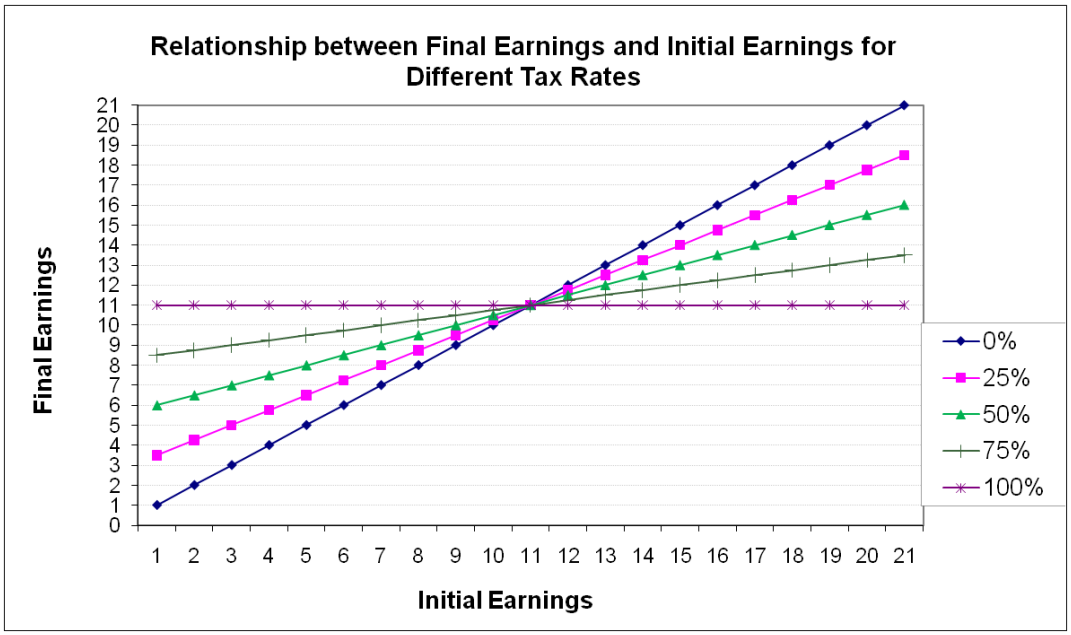
3. The *final earnings*. One tax rate among those proposed by participants was randomly selected and applied to everyone's initial earnings. This determined everyone's final earnings. The person whose tax rate was randomly drawn was called the "decisive individual", as in DPW. Every participant had the same probability of being selected as the decisive individual.

Figure 1 portrays the impact of various tax rates on the relationship between initial and final earnings. A similar chart was showed to participants. It was pointed out that a 0% tax rate would leave final earnings equal to initial earnings, whilst a 100% tax rate would have all participants earning the same final amount (11 tokens). It was also explained that as the tax rate increased, the difference between the highest earning and the lowest earning levels would be reduced. Note that given that median and mean income coincide in a symmetric distribution, the individual with initial earnings of 11

[5] In DPW 21 students were assigned 21 earning levels that reproduced the real income distribution in the US. Given the differences in income inequality in our three countries, this approach would have prevented us from comparing preferences for redistribution in different countries. For this reason, we opted to keep the distribution of initial earnings constant in every country.

tokens would always receive the same final earnings whatever the tax rate that is selected.

Figure 1



The formula linking initial and final earnings for each subject is thus:

$$y_{it} = y_{it}^{I}\left(1-\tau^{*}\right)+\tau^{*}\sum_{j=1}^{21} y_{jt}^{I} \qquad (2)$$

Where τ^{*} is the randomly selected tax rate. The sum of initial earnings was kept constant, as we did not vary the costs of redistribution, as done instead in DPW.

3.2 The four determinants of initial earnings

Similarly to DPW, we used four different methods to assign initial earnings. Unlike DPW, we followed a between-subject approach with respect to earnings determination. That is, participants only faced one method to determine their earnings, rather than four. The baseline case is what we call the 'RANDOM' treatment. Initial earnings were here assigned randomly, through computer-run unbiased lottery. Each individual had equal probability to be assigned an integer from 1 to 21, which corresponded to a specific level of initial earnings. All integers from 1 to 21 were assigned, so each position in the earnings scale was occupied by one individual.

In the 'ORIGIN' condition, the assignment of initial earnings was still random, but the lottery was *not* unbiased, as it favoured the ten subjects whose families resided in areas with a higher per capita income than the remaining 11 subjects. When signing up to the session subjects were requested to indicate the ZIP-code of the area where their family lived. We used that information to assign subjects to groups that were referred to as 'group A' and 'group B' in the course of the experiment. Group A comprised subjects coming from the ten wealthiest areas among those where session participants' families lived, Group B by the remaining 11 subjects. We used estimates of average income per capita per ZIP-code areas, or analogous estimates, to rank ZIP-code areas. The assignment to either group A or group B was not revealed to subjects. Subjects were informed that Group A participants had twice as high a probability as Group B participants to be assigned initial earnings above-median level in the earnings scale.

The ORIGIN treatment was designed to measure how much real-life inequality affected preferences for redistribution in addition to pure randomness. We conjectured that τ should have been higher in the ORIGIN treatment than in the RANDOM treatment because of the arbitrary advantage that some people enjoy over others in ORIGIN compared to RANDOM. In the course of the following analysis, we will merge observations coming from RANDOM and ORIGIN treatments into what we call the LUCK treatments: LUCK = {RANDOM; ORIGIN}.

In the other two treatments, initial earnings did not depend on the outcome of a lottery, but rather by individual relative performance in two types of tasks. In the ABILITY treatment, the task was modelled on Raven's IQ test. The task was presented as requiring "ability in abstract reasoning". In the EFFORT treatment, the task was tedious and required close-to-minimal skills or untrained abilities. The task was drawn from Azar (2009) and consisted in identifying one letter lying at a certain line and column within a jumbled script running over several pages (see Appendix). The EFFORT treatment task was presented to subjects as "extremely simple and not requiring specific skills or ability", but rather "concentration and some effort". The ABILITY and EFFORT treatments enable us to compare whether demand for redistribution is sensitive to different determinants of one's talents. The Raven tests that were used in the ABILITY treatment tap into so-called fluid intelligence. That is the

ability to reason, solve novel problems, and to see patterns or relations among items (Diamond, 2013). A long tradition in cognitive psychology has seen fluid intelligence as an innate trait that underscores an individual's inherent capacity to reason and solve abstract problems. Only recently has evidence been produced showing that fluid intelligence may be trained (Jaeggi et al., 2008) and is the result of environmental factors (Nisbett et al., 2012). The EFFORT treatment attributes central importance to hard work and effort, thus tapping into a different set of attributes of individual capacities.

For both tasks, the better an individual's relative performance in executing the tasks, the higher her initial earnings. Three different sets of ten tasks were administered in the three parts of the session. In the course of the analysis, we will merge the ABILITY and EFFORT treatments into what we call 'PERFORMANCE' treatments: PERFORMANCE = {EFFORT, ABILITY}.

According to Roemer (2009) and Dworkin (2002), demand for redistribution should be lower when the individual's responsibility over the earnings received is higher. On the basis of the literature on procedural fairness, we can also assume that more biased procedures will trigger higher demand for redistribution. These hypotheses entail that demand for redistribution should be higher in the two PERFORMANCE treatments than in the two LUCK treatments. This is the case because individuals have no responsibility over the random lotteries determining earnings in the LUCK treatments, whereas their ranking in the PERFORMANCE treatments depend on their actions. Given the condition of students of our subjects, it is also difficult to attribute responsibility to the assignment into the more affluent or less affluent group in the ORIGIN treatment. We keep DPW's approach of considering the ORIGIN treatment as capturing the effect of inherited wealth differences on preferences for redistribution.

On the basis of these hypotheses we also posited that redistribution would have been lower in the EFFORT treatment than in the ABILITY treatment. Even if fluid intelligence – required in the ABILITY treatment - can to some extent be trained, as argued above, we conjectured that the type of skills required by our ABILITY treatment would have been perceived as being less directly under individual control than those required by the EFFORT treatment. For this reason we conjectured that individual

responsibility over initial earnings would have been perceived to be higher in the EFFORT treatment than in the ABILITY treatment. Hence we expected higher redistribution levels in the ABILITY than in the EFFORT treatment. An alternative hypothesis can nonetheless be put forward. Empirical evidence and theoretical analysis posit that individuals tend to feel entitled to all the rewards stemming from their abilities and choices, regardless of whether these are under their control or not. According to so-called 'Meritocracy theory', for instance, a highly talented sport star, who acquired his or her talent without much individual effort or training, would be entitled to reap the rewards stemming from his or her natural talent. According to Meritocracy theory, therefore, redistribution in ABILITY and EFFORT should remain unchanged. Finally, on the basis of the second of the above hypothesis we also conjectured that redistribution in ORIGIN should be higher than in RANDOM, because the random procedures offered an arbitrary advantage to a group of people in the former but not in the latter treatment.

We therefore expect the following relationship between average level of τ, $\bar{\tau}$, across the four treatments:

$$\bar{\tau}^{EFFORT} \leq \bar{\tau}^{ABILITY} < \bar{\tau}^{RANDOM} < \bar{\tau}^{ORIGIN} \qquad (3)$$

Although we expect each country to satisfy (3), we also expect countries to do so to different degrees. In particular, a popular view in political science (Lipset, 1997) argues that meritocratic values are more widespread in the US compared to other countries. This distinctive cultural trait may be a legacy of the diffusion of a strong work ethic since the beginning of the migration from Europe, which is even nowadays embedded in the so-called "American dream" ethos – i.e. the idea that thanks to individual effort a child can achieve better economic outcomes than his or her parents. Likewise, according to the well-known Weberian argument, (Weber, 1904), a protestant ethic, diffused both in Norway and the US, may be more conducive to reward individual merit than a Catholic one, widespread in Italy. We therefore posit:

$$\bar{\tau}_{US}^{LUCK} - \bar{\tau}_{US}^{PERFORMANCE} > \bar{\tau}_{NOR}^{LUCK} - \bar{\tau}_{NOR}^{PERFORMANCE} > \bar{\tau}_{ITA}^{LUCK} - \bar{\tau}_{ITA}^{PERFORMANCE} \qquad (4)$$

3.3 The four decisions

3.3.1 The timing of the decisions

Participants made four different decisions in the experiment, distributed along three parts. The timing of the four decisions is reported in Figure 2. Individuals were informed that the session consisted of three parts, but no hint was given as to what would have come in the ensuing part(s). After having administered the first part of instructions, people were asked to propose the level of taxation desired for the first part, τ_1. Afterwards, initial earnings were assigned, upon the completion of a task in the PERFORMANCE treatments. Initial earnings were not revealed. The decisive individual for the first part was then randomly selected by a participant who drew a numbered card out of a deck. The result of any randomisation was never revealed to subjects.

Instructions for the second decision were then administered, and subjects proposed their desired level of taxation for the second part, τ_2. Before initial earnings were assigned, subjects were asked to indicate their prediction over their *initial* earnings. We use this self-reported expectation over subjects' initial earnings as a measure of self-interest, because expectations of higher (lower) initial earnings should be associated with a lower demand for redistribution. We call such expectation η_i and we index it by the number of the decision. Initial earnings were then assigned, but not communicated to subjects, for the second part. This occurred upon the completion of a second round of tasks in the PERFORMANCE treatments. The decisive individual was then randomly selected for the second decision, without her identity being revealed. Finally, the third part of instructions was administered, people chose τ_3, and subsequently were asked to indicate their expectation over their initial earnings in Decision 3[6]. A third round of initial earnings assignment was then carried out. At this point, without prior announcement, each subject was communicated the initial earnings just assigned to him or her in the third part, and was given the chance to revise his/her previous choice of τ_3. We call the revised tax rate τ_4. The decisive individual for the third part was then randomly selected. Even in this case, we did not reveal the decisive

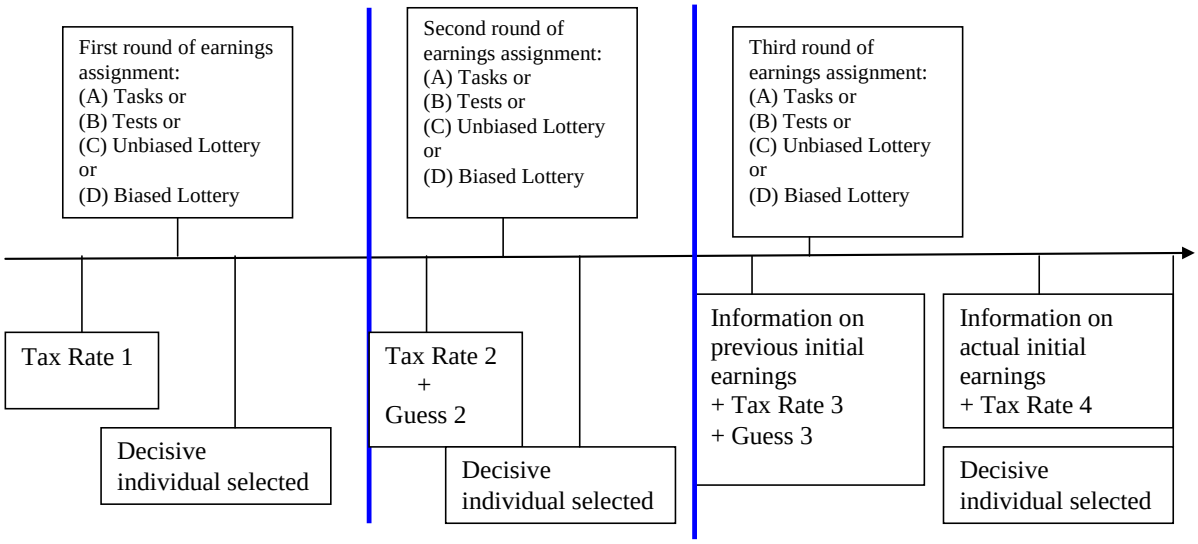
[6] This prediction was not asked in the first part, because, as we noted, self-interest was irrelevant in that decision. Moreover, it would have been little informative to ask one's expectations on her performance before having actually performed the task at least once.

individual's identity. Individuals were informed they would be paid for the outcome of just one of the three parts, which would have been randomly selected at the end of all the decisions. This was done in order to avoid income effects.

Subjects answered five comprehension questions before Decision 1 and three comprehension questions before Decision 2. In case of mistakes they were prompted to answer all questions again. If mistakes persisted, a researcher would go to the computer station, address subjects' doubts and re-explained, if necessary, parts of the instructions. Subjects were then invited to answer comprehension questions again orally to the experimenter. In no case subjects failed this last round of comprehension questions. This method enabled us to record the number of questions students answered correctly at the first and second attempt, thus giving us a measure of the promptness in comprehending instructions. After all subjects answered correctly, it was announced that everyone had passed the test and decisions over redistribution could be made.

After these experimental choices on redistribution, we carried out tests of risk and ambiguity aversion and a questionnaire (see section 3.4). Subjects earned an average of (or the PPP-equivalent of) $26 and the sessions lasted around 1 hour and 45 minutes. Payments were made privately in cash at the end of the session.

Figure 2: Timing of experimental decisions



3.3.2 Decision 1: The impartial spectator

The key characteristic of the first decision was that the decisive individual was assigned *as a matter of course* the median position – namely, 11 tokens - in the scale of final earnings. This was the case regardless of her initial earnings. Given that the median earner was unaffected by τ, the decisive individual's choice of τ could only affect others' final earnings, but left unchanged the decisive individual's own final earnings. This choice is equivalent to DPW's first experimental decision.

Since one's choice of τ became relevant only insofar as one becomes the decisive individual, we hypothesized that self-interest would not have mattered for this decision. Decision 1 placed the individual in the position of an impartial spectator, as in the famous approach taken by Adam Smith (1790; see also Sen, 2010). Therefore, we took Decision 1 to reveal the desired level of inequality G_i^* included in the second term of (1). Given the characteristics of the redistribution choice, we can infer that individuals having FS preferences would demand τ=100%. Since aversion to disadvantageous inequality has a larger weight than aversion to advantageous inequality, individuals gain in utility for each dollar transferred from the rich to the poor. Thus the median earner is better off when everyone earns the same. Any choice of τ would instead be possible according to Thurow's (1971) account, any level of inequality may be desirable by an individual. As for BO theory, since the decisive individual is earning exactly the average earnings, she is indifferent to τ.

3.3.3 Decisions 2: Behind a "thick" veil of ignorance

The second decision had the same structure as the first decision, but it dispensed with assigning the decisive individual the median position. On the contrary, the decisive individual kept her initial earnings, so her own choice of the tax rate affected both *her own* earnings as well as others' earnings. Decision 2 was no longer impartial because a subject's decision on τ_2 could affect both her own gains as well as others'. It may be deemed as a choice behind a Veil of Ignorance (VoI) because individuals had to decide

over the future distribution of earnings without knowing their actual position in the earnings scale[7].

If an individual believed with probability one that her earnings would be above (below) the median level, then self-interest would prescribe to demand a 0% (100%) tax rate. Nevertheless, depending on either the distribution of the individual's beliefs over her initial earnings or her risk attitudes, an individual might alter this strategy and move towards the interior of the strategy space *S*. For instance, self-interest would prescribe an interior solution should an individual attach substantial probability mass to the event of earning less than 11 tokens, even if her expected initial earnings were above 11 tokens. The higher the individual's risk aversion, the higher the tax rate being demanded.

Other-regarding preferences may also affect an individual's choice. If IA follows an FS utility function, then people expecting to earn less than 11 tokens should demand $\tau_2=100\%$, while the choice of people expecting to earn more than 11 tokens depends on the size of the disadvantageous inequality parameter. If this parameter is large enough, then even people whose self-interest would prescribe $\tau_2 = 0\%$ would in fact demand a positive level of τ_2 because higher equality compensates for the loss in the self-interest component of the utility function. Even in this case, no clear-cut prediction can be made if people's IA is modelled according to the BO utility function or to Thurow's model.

In terms of (1), τ_2 can be seen as being determined by the self-interest component incorporated in f_i, the demand for "social" insurance $h_i\sigma_i$, and the sense of justice G_i^*. We derive a measure of self-interest from subject's expectation over their level of initial earnings in Decision 2, which we denote η_2 (see section 3.3.1). Clearly, the higher (lower) subjects' η_2, the higher (lower) their incentive to demand a low τ_2 in order to preserve their earnings based on self-interest. As far as the PERFORMANCE treatments were concerned, individuals had gathered some experience on the task in the first decision, thus they could form meaningful expectations over their relative ability in

[7] Strictly speaking this decision differs from Rawls's (1971) original formulation of a VoI because this would require individuals to know neither their preferences nor their abilities. This is clear not the case in our experiment because subjects can have some informed basis to form subjective expectations over their relative capacity. However, the experimental literature, somewhat loosely, normally refers to a choice where an individual does not know her relative earnings compared to the rest of the group as one taken from behind a VoI.

the given task. The expectation was not monetarily incentivised to ensure that subjects' declared expectation did not affect their behaviour in the merit treatments. In particular, we feared that subjects may have put in a bad performance in the tasks/tests to make their prediction of a bottom-ranking finish come true, once it became clear that expectations on one's own behaviour were asked.

We expected Decision 2 to highlight relevant cross-country differences with respect to the level of *social insurance* that people demand in different countries.

3.3.4 Decision 3: Behind a "thin" veil of ignorance

The third decision had an identical structure to the second decision. The only difference lied in that *before* making their decision over τ_3 and before expressing their η_3, i.e. the expectation over initial earnings for Decision 3, individuals were informed of their initial earnings assigned in the first and second decision. This piece of information was particularly important in the PERFORMANCE treatments, because it was tantamount to receiving a signal over one's level of ability relative to others'. In the ORIGIN treatment, too, individuals could use this information to infer whether they were part of the favoured group or of the other one. Immediately after receiving this information, individuals were asked to indicate their choice for τ_3.

We refer to this third decision as being taken behind a "thin" VoI as opposed to the "tick" VoI of the previous decision, because of the greater amount of information people had over their own relative capacity in the PERFORMANCE treatments, or the probability of belonging to Group A in the ORIGIN treatment. Decision 3 followed the framework by Esarey *et al.* (2012). It permits a test of the POUM hypothesis. We interpret the signal subjects receive as a measure of the "current" position in the earnings scale. We can therefore estimate a subject's POUM by considering the difference between η_3 and subjects' past performances:

$$POUM_i = \eta_{i,3} - y^I_{i,2} \qquad (5)$$

We expect that, ceteris paribus, the higher an individual's POUM, the lower one's demand for redistribution. Clear enough, POUM may also be interpreted as a measure of self-confidence, limitedly to the PERFORMANCE treatments. POUM can in fact be taken to measure one's inclination to progress in the income ladder, this

measure being higher for individuals who are more confident in their abilities. In the LUCK treatments this variable may instead be interpreted as a measure of optimism, because the result of the lottery assigning initial earnings is independent from individuals' abilities.

3.3.5 Decision 4: Beyond the veil of ignorance

As already illustrated in section 3.3.1, the last decision was in fact a revision of the third decision. This decision was modelled upon DPW's third decision. People were informed of their *actual* initial earnings y_{i3}^{I} which they had just been assigned after the third assignment of earnings. This revision had not been announced earlier. Individuals could choose between leaving their previous choice of τ_3 unaltered or modifying it. We call the revised decision τ_4. Subjects were informed that τ_4 would be applied to everyone's earnings instead of τ_3. Decision 4 was thus taken from *beyond* the VoI because people were informed of their actual position in the earnings scale. Since uncertainty was by construction removed, risk aversion and the social insurance motive should have been irrelevant. Since there was no efficiency loss due to taxation, self-interest simply implied demanding either $\tau_4 = 100\%$ or $\tau_4 = 0\%$, depending on whether an individual was below or above the median position. Any choice departing from the corner solutions may thus be construed in terms of either conceding to the "rich" a portion of their earnings (when the "poor" demand $\tau_4 < 100\%$) or some willingness to benefit the "poor" (when the "rich" demand $\tau_4 > 0\%$)

Overall, the four experimental choices enabled us to assess the relative importance of inequality aversion, social insurance, self-interest, and the POUM hypothesis, in driving subjects' decisions over redistribution. Table 2 below summarises the relationship between our experimental design and our theoretical framework.

Table 2: Motivations relevance across experimental decisions

	Self-Interest	Inequality Aversion	Risk Aversion and Social insurance	POUM
Dec. I: Impartial	NO	YES	NO	NO
Dec. II: Thick VoI	YES	YES	YES, substantially	YES, moderately
Dec. III: Thin VoI	YES	YES	YES, moderately	YES, substantially
Dec. IV: Beyond VoI	YES	YES	NO	NO

3.4 Ambiguity and risk aversion tests and questionnaire

At the end of the four experimental decisions, we run monetary-incentivised ambiguity and risk aversion tests. Both tests were made up of three decisions, and subjects were informed that they would be paid according to the outcome of one decision out of the six. Relevant random draws would then be run by a student for that specific decision. In the ambiguity test individuals had to decide between participating in a random draw from two boxes. Each box contained 100 paper slips of two different colours, one colour ensuring the win of five tokens if extracted. The number of paper slips having one or the other colour in Box 1 was announced, so subjects could infer the probability of win. The probability of win from Box 1 was 50% in Decision 1, and it decreased to 45% and 40% in Decisions 2 and 3, respectively. The composition of colours in Box 2 was instead not announced. Subjects were informed that a random draw had been run from a discrete uniform distribution with support [0, 100] prior to the session. This determined the number of paper slips associated with the winning colour. The same Box 2 was used in the three decisions pertaining to the ambiguity aversion test. Subjects had to decide whether they wanted to select Box 1 or Box 2 as the

relevant one to determine their payoffs for the three decisions. Ambiguity-indifferent subjects should be indifferent between Box 1 and Box 2 in the first decision, but prefer Box 2 in Decisions 2 and 3. Ambiguity-averse subjects may instead still prefer Box 1 to Box 2 in Decision 2 and 3. Ambiguity-loving subjects should always prefer Box 2.

The risk aversion test had subjects choosing between participating in a lottery with a 50% probability of winning either five tokens or zero tokens. The alternative was to receive a fixed and certain payment, which was 2.5 tokens in Decision 4 (of this set of decisions), 2.1 tokens in Decision 5, and 1.7 tokens in Decision 6. Risk-indifferent individuals should have been indifferent between the lottery and the certainty equivalent in Decision 4, and then switch to the lottery in Decisions 5 and 6. Risk-neutral individuals may instead still prefer the certainty equivalent to the lottery in Decisions 5 ad 6. Risk-loving individuals should have always preferred the lottery. At the end of these six decisions, a subject was asked to randomly select the Decision according to which everyone would be paid in this second set of six decisions, and then some other subject(s) were asked to perform the random draw relative to the Decision that had been selected. As already mentioned in section 3.3.2, this measure of risk aversion offers us an estimate of the parameter σ_i, i.e. the purely individual component of risk aversion. We thought it important to also include a test of ambiguity aversion, because of its possible relevance for choices under uncertainty where probabilities are unknown, as in the PERFORMANCE treatments.

All experiments were conducted with z-tree (Fischbacher, 2007). Instructions and experiment protocol are reported in the Appendix: section 6.1.

3.5 Sample characteristics and experiment procedures

168 university students were sampled at Bicocca University (located in Milan, Northern Italy), Salerno University (located in Fisciano, Salerno, Southern Italy), Washington State University (Pullman, WA, North West of the USA), Mississippi University (Oxford, MS, South East of the USA) and Oslo University (Oslo, Norway). The two locations within the US and Italy were chosen to guarantee what appeared *a priori* a substantial degree of within-country cultural variability. Indeed, the analysis of questionnaire answers to questions tapping into subjects' cultural norms and values confirms the existence of relevant cultural differences within-country (see section 4.1).

We used a short questionnaire that potential participants filled out when signing up for the experiment to screen participants' citizenship and their household's place of residence. We only invited to the research sessions citizens of the country where the research was conducted whose households resided either in the region (for Italy) or in the state (in the US) where the university was located, or surrounding regions/states. In the rare cases of low turnout, we were forced to admit students who did not meet these criteria[8]. Such students have nonetheless been expunged from the analysis of the next section. In this way we can be assured that within-country comparisons reflect cultural differences in the respective populations.

The main controls to ensure between country (as well as within-country) comparability were taken from Buchan *et al.* (2009). In particular, the experiment script was back-translated from the original (in Italian) and discrepancies between the original version and the back-translated version were checked with the translator. The value of the tokens was adjusted so as to take into account differences in the purchasing power of national currencies, or of the national currency between different locations[9].

One of the authors (Gianluca Grimalda, GG) conducted all the research sessions. This allowed minimising the experimenter bias. Sessions in Italy were conducted in Italian (of which GG is mother tongue speaker) and sessions in the USA and Norway were conducted in English (in which GG is a fluent speaker). Given the generally high fluency in English of Norwegian University students, English was the language used in Norway, too. The room assistant was mother-tongue Norwegian in order to help with possible comprehension problems[10]. In all locations subjects were recruited through

[8] Because of technical problems with the recruitment system WA and MS, the initial sessions had a particularly low-turnout. Students not coming from the desired target areas, or from abroad, were therefore admitted to the session. Two extra sessions were conducted in MS to make up for particularly low turn-out in the initial sessions. In some cases, students declared in the post-experiment questionnaire an area of residence for their household different to the one indicated in the signing-up questionnaire. Should the area of residence not belong to the target area, the relative observation has been expunged from the analysis.

[9] We used the Economist Big Mac index to adjust the parity between the locations of Milan, Pullman, WA, and Oslo. We then used a comparison between the price of a cup of espresso coffee - a very popular consumption item in Italy - to adjust for the relative value between Milan and Salerno. The same could not be made within the US because most restaurant chains active nationwide adopt a policy of setting the same price across different states. Therefore we used the average value of worker wages in the manufacturing sector to adjust the relative token value between Pullman, WA, and Oxford, MS. In both cases the token value in Salerno and Oxford was around 8% lower than in Milan and Pullman, WA, respectively.

[10] A question was added to the questionnaire in Norway inquiring as to whether (a) the experiment being conducted in English created comprehension problems, and (b) whether the subject would have acted

emails, posters, and leafleting. In all cases the research was presented as being organised by a local researcher in collaboration with a team of researchers including GG. Each session lasted around 1 hour and 40 minutes, though LUCK treatment sessions were shorter given the absence of tasks or tests. Subjects in Milan were paid a show-up fee of 8 Euros and earned on average 22 Euros; subjects earned the PPP-equivalent (according to rules illustrated above) of these sums in the other locations.

4 Results

4.1 Questionnaire results

We first overview between and within-country differences with respect to views over society, BOD, and cultural characteristics. Descriptive statistics are reported in Table 3. The text of the question as they appeared in the questionnaire is reported in the Appendix: section 6.2. The first question, labelled MONEY AND WEALTH and taken from the World Value Survey, asked subjects if they felt that the distribution of money and wealth in their country was fair, or that money and wealth should be more evenly distributed. Alesina and Giuliano (2010) used a similar question in their multi-country analysis of determinants of preferences for redistribution. The percentage of people agreeing that money and wealth should be more evenly distributed was considerably higher in Italy (where the percentage of respondents agreeing is 82% in Milan and 90% in Salerno) than both the US (where it is 58% and 50% in WA and MS, respectively) and Norway (46%). The last three rows report the results of a Mann Whitney test over the null hypothesis that the observations come from the same distributions. We compare observations between countries and between locations within each country. Such difference is strongly significant at the 1% level between Italy and the other two countries respectively, whereas it is only weakly significant in Norway vis-à-vis the US. There is also strong evidence of some significant difference within Italy, but not within the US. The result about Norway is not entirely surprising if one takes into account the already very low levels of inequality existing in the country.

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differently had the research been conducted in Norwegian. Only 8 students (5% of the Norwegian sample) answered affirmatively to the first question, and only 1 subject answered affirmatively to the second question. S/he argued that the use of the English language made him/her think that the experiment had an international nature, and this affected her choice (though s/he did not state in which way). We conclude that the use of English in Norway did not affect any of our results in a relevant way.

The second item is the response to the question about what determines poverty (we label this variable POVERTY). The two options given were “lack of effort on his or her part”, vis-à-vis “circumstances beyond his/her control”. As expected, significantly more US participants stated that poverty is the result of lack of effort in comparison with Italian participants and Norwegian participants. There are no differences within US locations, and weak difference within Italy. Interestingly, there are no differences between the Norway’s and Italy’s samples.

A similar pattern emerges for another set of questions pertaining to subjects’ attitudinal views over economic mobility. The questions asked participants to state (on a 1 to 5 scale) how important several possible factors were for people “to get ahead and succeed in life”. Some factors may be considered under one’s control – namely, willingness to take risks; hard work and initiative; dishonesty and willingness to take what one can get. Some factors may be considered as lying outside one’s control – namely, ability or talent that a person is born with; money inherited from families; good luck, being in the right place at the right time; physical appearance and good looks; a person’s gender. We reversed the scale of the latter set of factors, and derived a summative index of how much an individual thought success is the result of factors under one’s control. We call this index LIFE_SUCCESS. As expected, US participants stand out as those believing that success is under one’s control significantly more than Norwegians and Italians. Even in this case, we find no difference between Norway and Italy, and no difference within the US. Perhaps surprisingly, significantly more participants from Southern Italy believe that success is under one’s control than participants from Northern Italy.

We also examined differences in values and social norms in our sample. We constructed a CONSERVATIVE INDEX on the basis of how strong participants thought that the following practices were not justifiable: homosexuality, abortion, prostitution, and euthanasia. This index revealed a strong divide within the US, with the Mississippian sample being significant more “conservative” than the Washington State sample. On the other hand, the two Italian samples are indistinguishable from each other, and overall the US sample results as significantly more conservative than the Italian one. Norwegian participants are the least conservative of the three countries, and again between-country differences are strongly significant.

Participants were also asked to locate their political views on a 1-10 scale, where extreme left corresponded to 1 and extreme right to 10. We call this variable RIGHT. Interestingly enough, there are some differences within Italy and within the US, but no appreciable differences between the US and Italy. On the contrary, Norwegian participants think of themselves as significantly more left-wing than participants in the other two States. We also used some items from Hofstede's (2001) COLLECTIVISM/INDIVIDUALISM scale. Here we found some strong differences within Italy but no difference within the US, with the Italians being significantly less individualistic than participants from the other two countries. Where the differences between countries were probably most striking is the response to the question asking people whether "most people can be trusted" or "one couldn't be too careful in dealing with people" (TRUST). Here only 24% of Italian subjects answered that others can be trusted, whereas this proportion rose to 35% for the US (although MS students were significantly less trusting than WA students), and to 84% in Norway.

Overall, country differences related to individual views over individual's economic mobility and success/failure in life seem to conform to the widely held view that US citizens are significantly more inclined to think of success as being under one's control. Interestingly enough, no such differences emerge between Italy and Norway with respect to these two variables. Other significant cultural differences, both within and between countries, emerged, pointing to substantial cultural variability in our sample.

4.2 Experimental results: Descriptive statistics and non-parametric tests

Table 4 reports descriptive statistics of the four experimental decisions and the ambiguity and risk aversion tests. The statistics merge data from different treatments, and offer a general overview of within-country and between-country differences. No sizable difference appears across Italian locations – apart from a weakly significant difference in Decision 1, whereas some significant differences emerge between MS and WA – all differences are significant except the last one. Redistribution is generally lower in the Southern location within both countries – the only exception being Tax Rate 2 within Italy. Moreover, differences between Italy and the US are either small – i.e. in Decision 1 and in the ambiguity aversion score - or non-existent. Redistribution is

instead significantly higher in Norway compared to each of the other two countries. Moreover, Norwegians show significantly *less* risk and ambiguity aversion than Italians and US students. This latter result was in contrast with our expectations. It could be accounted for by Sinn's (1995) argument that higher social insurance received from the state induces a higher propensity to take risks.

Figure 3 reports the histograms of Decisions 1 through 4 for each country. There is a substantial number of people choosing the extreme options of 0% and 100%. Demand for redistribution in the two PERFORMANCE treatments is lower than in the two luck treatments, as expected.

Figure 4 reports box plots for the four decisions, breaking down the results across locations within each country. The box plot[11] of Decision 1 shows that the Norwegian sample clearly demands more redistribution than the other two samples. There is no apparent difference between Italy and US samples as far as PERFORMANCE treatments are concerned, whereas there appear to be a small difference in the LUCK treatments.

Decision 2 shows a virtually unchanged picture for the US and Italy with respect to Decision 1, while Norwegians demand for redistribution drops. As a result, the Norwegian distribution is no longer different from that of the other two countries in the PERFORMANCE treatments. This result may be interpreted in terms of risk-seeking behaviour by Norwegian subjects. When Norwegian subjects were given the possibility to protect *themselves* against the risk of low incomes in Decision 2, they decided to decrease their overall demand for redistribution in comparison to the case when they could protect *others*.

Decision 3 seems to bring about some changes across countries, which are magnified in Decision 4. Thus we only analyse this last decision. It can be best appreciated by dividing the observations into the "rich" bracket and the "poor" bracket of the session, where "rich" means being above the median earning level, and "poor" means being below or equal to the median level. As mentioned in section 3.3.5, if rich

[11] Box plots are a way to describe a distribution of observations giving a synthetic overview of its main characteristics, i.e. the median value, its variance, its range, and the presence of outliers. Each box extends from the 25th percentile up to the 75th percentile of the distribution. The horizontal line within the box represents the median value. The two segments drawn above and below the box are delimited by whiskers that are given by the upper and the lower "adjacent" values. For a value to be considered as "adjacent" there must not exist "large" gaps between observations. If this is instead the case, the blox plot draws some circles below or above the whiskers.

(poor) people were only motivated by self-interest, than they should propose τ=0% (τ=100%). In this chart we can observe a sizable difference in behaviour between the rich and the poor, with the former demanding substantially less redistribution than the latter. All the same, while approximately 40% adopted the payoff-maximising strategy, the remaining 60% deviated from such a strategy.

Table 3: Descriptive statistics of attitudinal/cultural variables

Locations	1= Money & wealth in my country should be distributed more evenly; 0 = Fair distribution	1 = Poor b/c of bad luck; 0= poor b/c of lack of effort	1 = Success in life depends on factors under my control; 0 = otherwise	1 = Homosexuality, abortion, prostitution, euthanasia can never be justified; 0 = otherwise	1 = right-wing political ideology; 0 = left-wing	1="Collectivistic attitudes; 0 = "Individualistic" attitudes	1= Other people can be trusted. 0=otherwise
Milan	0.82	0.60	0.52	0.43	0.53	0.51	0.27
	0.39	*0.49*	*0.13*	*0.26*	*0.25*	*0.14*	*0.45*
Salerno	0.90	0.49	0.56	0.44	0.47	0.56	0.21
	0.29	*0.50*	*0.12*	*0.24*	*0.30*	*0.14*	*0.41*
WA	0.58	0.39	0.58	0.38	0.46	0.50	0.47
	0.49	*0.49*	*0.10*	*0.23*	*0.25*	*0.11*	*0.50*
MS	0.50	0.38	0.59	0.54	0.51	0.50	0.30
	0.50	*0.49*	*0.11*	*0.29*	*0.24*	*0.12*	*0.46*
Oslo	0.46	0.61	0.52	0.30	0.36	0.51	0.84
	0.50	*0.49*	*0.12*	*0.19*	*0.22*	*0.12*	*0.37*
WITHIN-COUNTRY DIFFERENCE: ITA	-2.356***	1.860*	-3.622***	-1.127	2.241**	-2.877***	1.401
WITHIN-COUNTRY DIFFERENCE: US	1.538	0,18472222	-0.724	-5.468***	-1.750*	-0.732	3.304***
BETWEEN-COUNTRY DIFF. US-IT	-9.250***	-4.294***	4.912***	-4.999***	-0.150	-3.779***	3.926***
BETWEEN-COUNTRY DIFF. US-NO	1.649*	-4.848***	5.507***	6.578***	5.659***	-0.435	-9.741***
BETWEEN-COUNTRY DIFF. IT-NO	9.441***	-1.378	1.471	5.901***	5.186***	2.595***	-12.569***

Table 4: Descriptive statistics of experimental variables

Locations	Tax Rate 1	Tax Rate 2	Tax Rate 3	Tax Rate 4	Ambiguity Aversion	Risk Aversion
Milan	45,35	38,87	41,67	42,77	0,16	0,11
	36,23	*34,92*	*35,83*	*41,36*	0,12	0,11
Salerno	39,51	40,3	40,59	36,35	0,17	0,12
	33,2	*34,94*	*35,08*	*36,72*	*0,12*	*0,11*
WA	41,8	42,81	49,93	40,78	0,13	0,11
	33,1	*33,97*	*37,15*	*39,19*	*0,11*	*0,12*
MS	33,95	34,52	34,8	34,57	0,16	0,11
	31,98	*33,36*	*34,27*	*37,38*	*0,13*	*0,11*
Oslo	53,2	45,2	50,2	51,1	0,12	0,08
	34,1	*34,7*	*36,5*	*40,7*	*0,12*	*0,09*
WITHIN-COUNTRY DIFFERENCE: ITA	1.265	-0.504	0.101	0,67	-0.396	-0.333
WITHIN-COUNTRY DIFFERENCE: US	2.429**	2.564**	3.933***	1.501	-2.005**	-0.695
BETWEEN-COUNTRY DIFF. US-IT	-1.748 *	-0.240	0,07	-0.748	-1.862*	-0.553
BETWEEN-COUNTRY DIFF. US-NO	-5,040***	-2,160**	-2,557**	-3,423***	2,044**	2,442**
BETWEEN-COUNTRY DIFF. IT-NO	-3.428***	-1.833*	-2.672***	-2,843***	3,605***	2,836***

The behaviour of the Norwegian poor stands out for their high demand of redistribution in comparison to other locations. The median τ_4 is close to 100% in the

Norwegian sample, against 30% in the Italian sample and 70% in the US sample in PERFORMANCE treatments. The Norwegian "poor" do not appear to make any significant difference between the PERFORMANCE and LUCK treatments, though the demand is marginally higher in the latter. According to a two-sided Mann-Whitney test, there is in fact no statistical difference between the two distributions in the Norwegian sample ($z=-1.164$, p-value>0.1, $N=83$). On the contrary, Italian "poor" react very sharply to the determinant of the earnings distribution, rising τ_4 considerably in the LUCK treatments in comparison with PERFORMANCE treatments ($z=-2.727$, $p<0.01$, $N= 168$). On the other hand, Norwegian "rich" are more redistributive than their US and Italian counterparts, but this difference is only significant with respect to the US sample in the PERFORMANCE treatments ($z=-2.133$, $p<0.05$; $N=130$). The difference is instead not statistically significant in LUCK treatments. These results may tentatively be construed as an internalization by Norwegian subjects of a norm legitimating them "not to fall behind" in the earnings scale, thus demanding full redistribution.

Another surprising result is the very low demand of redistribution by the Italian poor in the PERFORMANCE treatments. This behaviour would seem typical of a strongly "meritocratic" society, where poor people respect the entitlement of richer people to earn a larger income precisely because merit is recognised as a fair method to assign income. Even in this case we find evidence contrary to hypothesis (4).

4.3 Results from econometric analysis

4.3.1 The econometric model

We use a Tobit model censored at the two extremes $\tau=0\%$ and $\tau=100\%$. For all the first three decisions we report results for four different models. All models include dummies identifying treatments, the benchmark category being the RANDOM treatment. They also include the variables RIGHT and TRUST that were illustrated above. We take the variable POVERTY to measure a subject's BOD, focusing on the deservedness of the poor. We use this variable because a subject's views over the causes of poverty have been seen by many as revealing of their vision over opportunities in society (e.g. Alesina and Giuliano, 2010). Our results would remain qualitatively the same if we used other possible measures of BOD (see discussion in section 4.1).

We also include our measure of individual risk aversion obtained from the independent risk aversion test. RISK_AVER counts how many times the individual chose to participate in a lottery instead of receiving a fixed monetary payment out of the three decisions that were administered. The variable RISK_CONSIST controls for whether a subject violated the monotonicity assumption in the risk aversion test– that is, whether a subject was consistent in not "reverse switching" from choosing the risky choice to the non-risky one across the three decisions. We do not include the ambiguity aversion score because this is never a significant predictor of behaviour. Finally, we include GENDER and AGE as demographic controls. The dummy variable ECONOMICS identifies whether a subject attended Economics or other business degrees. A set of dummy variables identify a subject's religious confession. The benchmark category here is Catholic and Orthodox. PROTESTANT identifies all denominations classifiable as protestant. OTHER_RELIGION identify all other religious denominations that do not fall into Catholic and Protestant, such as Muslim, Hindu, Sikh, *etc*. Given the paucity of observations for these confessions it was not possible to identify each religious confession separately. Finally, ATHEIST identifies subjects declaring themselves as atheists, agnostics, or having no religion. As many subjects did not answer the question about their household's overall income, we include the variable MOTHER EDU that measures the level of education of the subject's mother. We interpret this as an admittedly imperfect measure of a subject's family economic background. This is a dummy variable identifying whether the subject's mother attained a university degree or a higher level of education. The results we report are robust to introducing further educational levels of mother's education. ETHNIC_MAJ is a dummy variable taking value of 1 if a subject belongs to the country's ethnic majority – that is, Caucasian white in all countries. COMPREHENSION counts how many incorrect answers the subject gave the first time she was asked to answer the comprehension quiz at the end of the first part of instructions. Although all subjects answered correctly the comprehension quiz after trying twice or finally asking the help of the experimenters, subjects who answered successfully at the first attempt may be thought of as having clearer or prompter comprehension of the interaction.

The four specifications being presented in Tables 5-8 differ as to whether data from different countries are merged or not. The first specification merges all the data and includes country dummies, with US as the benchmark category. This model is designed to test country differences and to study the general impact of our explanatory variables over the whole sample. The other three models only consider data from individual countries. Dummies identifying the Southern locations are used in models 2 and 3 to identify data from MS in the US sample and from SALERNO in the Italian sample.

4.3.2 Results from Decision 1

Table 5 reports the results regarding Decision 1 (D1). We first look at country effects. It is noteworthy that no differences emerge between Italy and the US, whereas Norwegians' demand for redistribution is significantly higher. Norwegians demand around 12 percentage points more than US subjects ($p<0.01$), and around 8.5 percentage points more than Italian subjects ($p>0.1$). That no difference emerges between the US and Italy is surprising because both in surveys and in our own questionnaire Italian people demand significantly more redistribution than US citizens in real life. Conversely, the pure "(dis)taste" for inequality, as measured by D1, seems to show that Italians are very much alike US respondents. We discuss this finding further in section 5.

Some (minor) differences across countries also emerge with respect to the way subjects reacted to the four different treatments they were presented with. Overall, differences across treatments are in line with hypothesis (3), with LUCK treatments triggering a higher demand for redistribution than EFFORT and ABILITY treatments. This corroborates the finding of DPW. The differences between the two merit treatments and the two luck treatments is significant at $p<0.01$. More specifically, both Italians and Norwegians demanded significantly less in the EFFORT treatment than in the baseline case. This is statistically significant at less than the 5% level in Italy and the 1% level in Norway. Conversely, US participants did not call for significantly less redistribution in this case. However, conducting a test over the difference between the coefficient for Norway and for the US yields only weak significance levels (β=-17.35,

p=0.066)[12], while the difference is not significant either between Italy and the US (β=-4.17, p=0.621) or Norway and Italy (β=-13.18, p=0.18). US participants reacted more to the ABILITY treatment, as they demanded about 10 percentage points less redistribution in this treatment compared to baseline. However this difference is only significant at the 10% level. The same difference is more pronounced in Italy (p=0.044), and is at the margins of significance in Norway (p=0.16).

Contrary to (3), we do not find significant differences between the two LUCK and the two PERFORMANCE treatments. US students were the only ones demanding higher redistribution in the ORIGIN treatment compared to the RANDOM treatment, whereas both Italians and Norwegians did the opposite. Overall, no difference emerges between RANDOM and ORIGIN. We also do not find significant differences between the ABILITY and the EFFORT treatments. Norway is the only country in which redistribution in EFFORT is sizably smaller than in ABILITY (16 points), but such difference does not reach statistical significance (p=0.23).

Overall, there do not seem to exist big differences across countries in the way individual performance and luck are judged in this first decision. If anything, European participants seem to react more to merit than their US counterparts, thus contradicting hypothesis (4). As for within-country effects, in both Southern locations in Italy and the US demand for redistribution is overall lower than in the North. However, the effect is not significant in the US (p=0.118), and is only weakly significant in Italy (p=0.052).

Among the other variables, RIGHT seems to exert a strong effect. Subjects positioning themselves on the extreme right of the political spectrum demand 26 percentage points of redistribution less than those positioning themselves to the extreme left of the political spectrum. This effect is persistent across countries and is largest in Norway (though the difference between countries is not statistically significant). This reassures that our experimental results have external validity. It also points to the large effect that political ideology has on individual choices. On the other hand, TRUST does not have any predictive power, and neither does POVERTY. The latter result is worth stressing. It indicates that BOD did not matter to subjects in the first experimental choice. This supports our conjecture that in our experimental situation subjects were not substantially influenced by the BOD they held in real life.

[12] We test for this hypothesis by running a regression with the same specification as model 1, adding interaction effects between countries and individual treatments.

Among the other individual variables, it is noteworthy that RISK_AVERSION has a significant impact on demand for redistribution. Overall, subjects who were least risk-averse were prepared to demand 11 points less redistribution than subjects who were most risk-averse. This is at first sight surprising because the decisive individual had no uncertainty over their earnings in D1, as these were fixed at 11 tokens. Hence, they had nothing against which to insure. However, it has been argued that individual risk aversion does indeed influence one's inequality aversion (Schildberg-Hörisch, 2010). As in D1 subjects are asked to act as "dictators" over others' redistribution, it is possible that they extended to others the same degree of protection against risk that they would have liked for themselves. Interestingly enough, this result is almost exclusively driven by the behaviour of US subjects. The US is the only country where this effect is statistically significant ($p=0.011$ in the US; $p=0.793$ in Italy; $p=0.511$ in Norway), although no significant difference emerges between the US and the other two countries ($\beta=-13.70$, $p=0.21$ for the null hypothesis that the RISK_AVER coefficient is the same for the US and Italy) or Norway ($\beta=-6.30$, $p=0.64$ for the equivalent test for the US ad Norway). All the same, this result may point to a different way of conceiving inequality in the US, in that one's sense of justice is greatly influenced by the degree of risk aversion.

There is no significant gender effect, though women appear to demand higher redistribution than men. Interestingly, and probably not surprisingly, Economics students demanded less redistribution than students from other degrees. This is significantly the case in both the US and Italy, but not in Norway. The impact is overall only weakly significant. The dummies identifying religion are never significantly different from 0. In line with expectations, the sign of PROTESTANT is negative, which confirms survey results that demand for redistribution is higher among Catholics. The magnitude of this effect is however very far from significance levels ($p=0.471$). Finally, MOTHER_EDU does not have any predictive power. It is worth noting that COMPREHENSION has a significant predictive power ($p=0.023$). Students who did not get the comprehension test right at the first attempt demanded less redistribution. This result also carries an interaction with the subject's ethnicity. At first sight, ETHNIC_MAJ does not have predictive power, although it is not far from significance ($p=0.17$). However, if we remove COMPREHENSION from the regressors,

ETHNIC_MAJ does turn out to be significant, although weakly (β=9.15, p=0.057). People from the ethnic majority demanded *more* redistribution than others, in contrast with survey evidence indicating instead that people from ethnic minorities – typically Black Americans – are those demanding more redistribution than white Americans (Alesina and Giuliano, 2010). Being these two effects confounded, we cannot be sure whether this is due to a real ethnic effect or to the fact that people from ethnic minorities had slower comprehension. A Mann-Whitney test over the null hypothesis that the distribution of COMPREHENSION is the same for people from the ethnic majority and from the ethnic minority is soundly rejected (z=-6.160, p<0.001).

4.3.3 Results from Decision 2

The most striking result comparing D2 and D1 is the disappearance of either between-country or within-country effects (see Table 6). τ_2 demanded by Norwegians is now on a par with that demanded by the Italians and the US participants. Moreover even the difference between the Southern location and the Northern location within Italy disappears. There is no difference between the redistribution demanded by Italians and US participants between D2 and D1. Conversely, Norwegians demanded significantly *less* redistribution in D2 than D1. As already argued in section 4.2, this can be construed as risk-seeking behaviour by Norwegian subjects. As in D1, behaviour in ORIGIN is not different from RANDOM, but redistribution demand in both the ABILITY and the EFFORT treatments is lower than in LUCK treatments.

The coefficient for η_2 - EXPECTED_EARNINGS - is, as expected (see section 3.3.3), negative and strongly significant in all three countries. No difference appears across countries. It is interesting, though, that ideological motivations are still significant even when controlling for self-interest. In fact, RIGHT is still a strongly significant predictor of τ_2, and this is the case in all three countries, the coefficient being even higher than in D1. The effect seems to be particularly strong in Norway, and the difference is strongly significant both with respect to the US (β=-46.04, p=0.011) and Italy (β-39.84, p=0.027). TRUST and POVERTY are again poor predictor of experimental behaviour, although POVERTY is now weakly significant for Norwegian subjects. Even in D2 RISK_AVERSION is a strong predictor of τ. However, the coefficient has now the same size in the US and Norway, although it is less precisely

estimated in the latter country. It is somewhat lower in Italy, although the differences across countries are not statistically significant.

No demographic variable is significant, and ECONOMICS is no longer significant as well. COMPREHENSION again has a positive sign and is significant, and this time ETHNICITY would not be significant in its absence.

4.3.4 Results from Decision 3

As in D2, no country effects emerge in Decision 3 (D3; see Table 7). A strong within-country effect emerges in the US, with students from MS demanding significantly less than students from WA. Coefficients within Italy are instead indistinguishable in the two locations.

We are interested in studying the POUM hypothesis using the difference between a subject's expectation and a subject's prior level of initial earnings (see section 3.3.4). Although the original formulation of the POUM applied specifically to citizens whose income is below the median, here we provide a general test and do not distinguish between "poor" and "rich" subjects. In Table 7, the variable $POUM_i$ is labelled EXPECTED_ADD_EARNINGS. Nonetheless, we control for the fact that "poor" and "rich" subjects will have conflicting prescriptions on which tax by adding the variable INITIAL_EARNINGS_D2. This is the information of the actual initial earnings in D2 that was communicated to subjects[13]. Clearly, the higher INITIAL_EARNINGS_D2, the lower should τ_3 be.

First of all, we note that EXPECTED_ADD_EARNINGS has an average that is greater than 0 in all locations and in all treatments (see Table 9). This is particularly surprising for the RANDOM treatment. Subjects were thus on average over-confident with respect to their earnings in the PERFORMANCE treatments, and over-optimistic in the LUCK treatments. Expectations of improvement were the highest in the EFFORT treatment. According to a two-sided sign test, the median is significantly different from 0 at less than the 1% level in each Italian and US location. However, the hypothesis that the median is different from 0 cannot be rejected for Oslo participants. On the contrary, in the ABILITY treatment only in the US locations are expectations of improvement

[13] Although the information of both initial earnings in D2 and D1 was released to subjects, we believe the latest was particularly informative for subjects. The results of our analysis remain the same should $POUM_i$ be modelled as a weighted average of y_{i2}^I.and y_{i3}^I.

significantly higher than 0 (p=0.065 in WA, p=0.049 in MS), whereas this is not the case either in Italian locations (p=0.53 in Milan, p=0.14 in Salerno), or in Oslo (p=0.74). This is consistent with the idea that subjects felt more able to control their performance in the EFFORT treatment than in the ABILITY treatment (see section 3.2). Overall, these between-country differences are sizable. If we merge the two PERFORMANCE treatments, US subjects result as being significantly more optimistic of improvement than Norwegian subjects (z=2.186; p= 0.029; N=283). The same is true for Italian subjects compared to Norwegian subjects (z=2.020; p= 0.043; N=251). However, no difference emerges between US and Italian subjects (z=0.041; p= 0.967; N=368). This result confirms the similarities between Italian and US subjects' behaviour and attitudes.

US participants have on average the highest expectations of going up the ladder in the RANDOM treatment, too. According to a Wilcoxon test, EXPECTED_ADD_EARNINGS median is greater than 0 in both WA (z=2.955 p= 0.003; N=58) and MS (z=1.978, p= 0.048; N=41). The median is only marginally significant in Salerno (z=1.677 p= 0.094; N=42) and outside significance level in both Milan (z=1.307 p= 0.19; N=42) and Oslo (z=0.695, p= 0.49; N=41). However, cross-country differences do not turn out to be significant in this case.

When entered in the regression, EXPECTED_ADD_EARNINGS is indeed significant in all three countries, and there does not seem to be sizable differences between countries[14].

RIGHT is again a strongly significant predictor of τ, along with RISK_AVERSION. Among demographic variables, the only significant effects are for ECONOMICS, though the effect is only weak.

4.3.5 Results from Decision 4

In order to analyse Decision 4 (D4) we separate the analysis between "Poor" and "Rich" (see section 4.2). The paucity of observations prevents us from breaking down the analysis by country, so in Table 8 we report the results for the merged dataset. The econometric analysis confirms the strength of the higher demand for redistribution

[14] However, differences do emerge considering individual treatments separately. EXPECTED_ADD_EARNINGS have a significantly higher impact on τ in the US than in the other two countries in the ABILITY treatment. This may tentatively suggest that the POUM hypothesis may be stronger in the US.

demanded by Norwegian “poor”. The coefficient in Column 1 shows Norwegian “poor” demanding a τ_4 about 25 (24) points higher than in US (Italy’s) “poor”.

As expected, demand for redistribution reacts to actual earnings, with poorest subjects demanding even higher redistribution than less poor subjects. RIGHT still has some effects, albeit weakly. What is interesting is that TRUST now has a strong positive effect over τ. Presumably, trust in others is connected with “poor” subjects feeling legitimated to demand redistribution from the “rich”. RISK AVERSION is no longer significant. This is consistent with our predictions, as subjects were faced with a decision where τ could not insure against risk of losses. It is also interesting that GENDER now has a significant effect, although weak. The negative sign implies that “poor” females demanded *less* redistribution than “poor” males.

The second column of Table 8 confirms the strength and the magnitude of the behaviour by the Italian sample. We have introduced interaction effects between locations and the ABILITY treatment, because the effects are particularly strong in this treatment. There are no significant differences between Italians and others in the EFFORT treatment. The omitted location is WA. Milanese participants’ demand for redistribution coefficient was 58 points lower in the ABILITY treatment compared to WA participants ($p=0.027$). τ_4 is also significantly lower in Salerno than WA ($p=0.09$). Differences are even more pronounced comparing the two Italian locations with MS students ($\beta=-60.31$, $p=0.010$ for Milan vis-a-vis MS, and $\beta= -45.07$, $p=0.047$ for Salerno vis-a-vis MS). Differences of about the same size emerge comparing the two Italian locations with Oslo students. The Italian “poor” were undoubtedly much more inclined to respect the entitlement of the “rich” in the ABILITY treatment.

As far as the behaviour of the “rich” bracket is concerned, it is interesting to note that Italians are overall more willing to redistribute towards the “poor”. Again, INITIAL_EARNINGS_D3 matters, but so does RIGHT. GENDER has a positive and significant effect, and the sign is consistent with the view that women tend to avoid choices at the extreme of the spectrum. The interaction effects in column 4 show that there is no specifically different behaviour of the Italian “rich” in the ABILITY treatment.

5 Discussion and conclusions

The most relevant results of our comparative research are in our view the following:

(A) Significant cultural differences emerge with respect to values and cultural norms within both US and Italy. However, experimental decisions are in comparison much less diverse. Such decisions differ within the US, whereas they are most of the times similar within Italy.

(B) Demand for redistribution is lower in PERFORMANCE treatments than in LUCK treatments, confirming previous research (DPW, 2014).

(C) Contrary to our expectations, no significant difference emerges either between the two LUCK treatments or the two PERFORMANCE treatments. A tentative interpretation with respect to the former result is that real-life wealth inequality (which are relevant in ORIGIN) are perceived as being of the same nature as the result of a purely random process (which are relevant in RANDOM). Hence, adding these two sources of inequality to one another does not bring any significant change in behaviour. The lack of difference between ABILITY and EFFORT treatments may be interpreted as evidence in favour of the Meritocratic hypothesis (see section 3.2).

(D) Significant country differences in the experimental demand for redistribution emerge across countries. Norwegian subjects show significantly higher demand for redistribution than the other two countries, particularly so in D1 (when self-interest is absent) and D4 (when self-interest offers clear-cut prescriptions). Small differences emerge instead between the US and Italy.

(E) Italy stands out as the country where the desire for redistribution is most sensitive to whether earnings are determined by luck or individual performance. Contrary to hypothesis (4), Italians turn out to be more “meritocratic” than US subjects.

(F) In the US, preferences for redistribution seem to be moulded by risk aversion, more so than in other countries.

(G) Country effects are greatly reduced in D2 and D3 in comparison to D1 and D4. This suggests a general tendency to demand similar levels of protection across countries when individuals are faced with risk on their earnings. The fall in demand for

redistribution between D1 and D2 also points to propensity for risk-taking behaviour in Norway.

(H) Around 40% of the sample act strictly according to self-interest in D4, but the remaining 60% depart from this strategy.

(I) The behaviour of Italian "poor" in D4 stands out for the low level of redistribution being demanded, particularly so in the ABILITY treatment. Conversely, Norwegian "poor" demand high levels of redistribution in both LUCK and PERFORMANCE treatments. This suggests that Norwegians perceive to have a specific "entitlement" to be the subjects of redistribution, whereas the Italian "poor" display pronounced "libertarian" attitudes. The behaviour of the US subjects fall in between Italians and Norwegians.

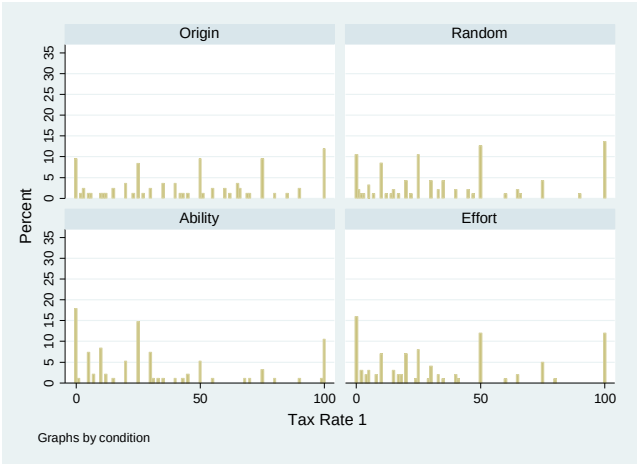
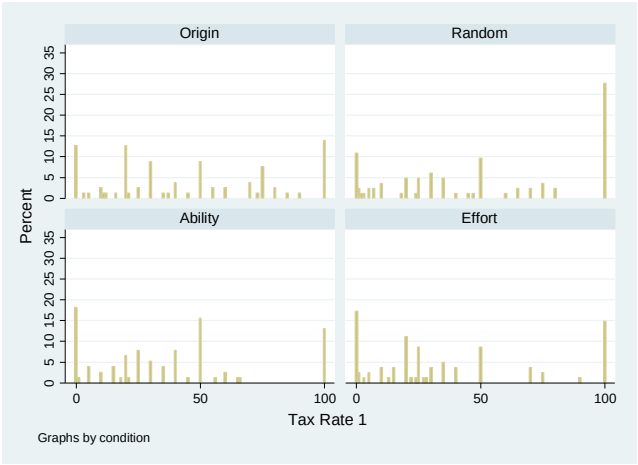
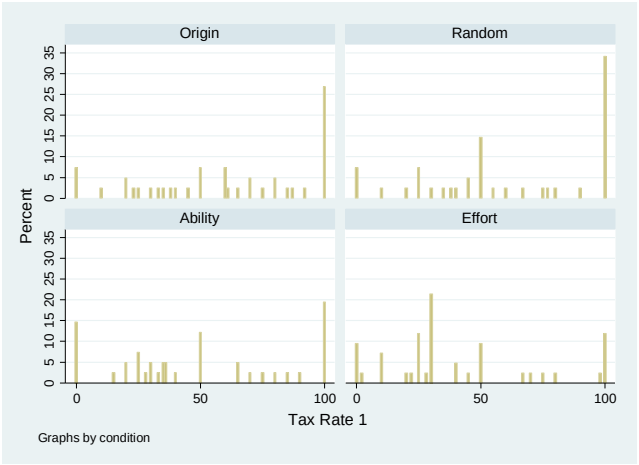
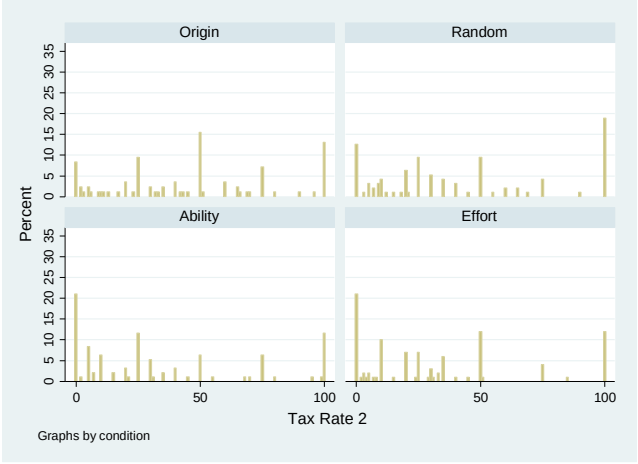
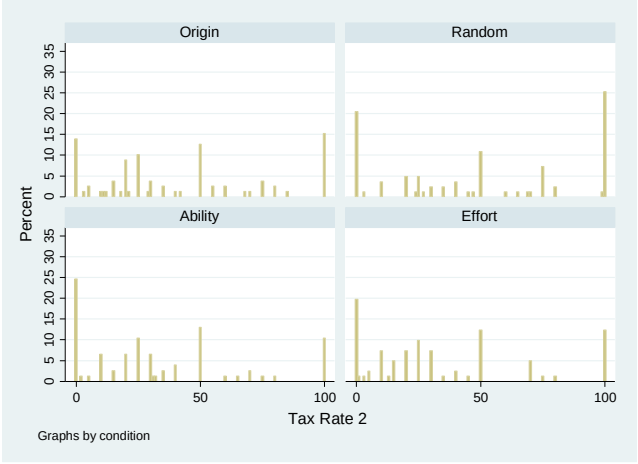
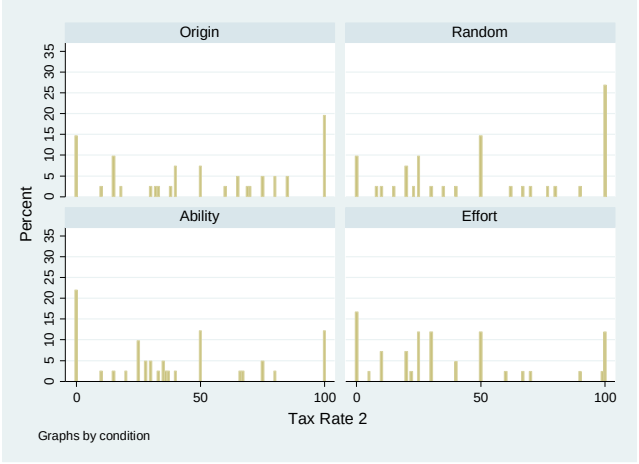
(J) Political ideology has the largest and most consistent predictive power of experimental decision, supporting the idea that experimental results have external validity. Our measures of BOD are instead insignificant predictors of experimental behaviour. It is noteworthy that TRUST exerts a significant effect in D4 with respect to the demand for redistribution of the poor.

(K) Experimental redistribution is significantly higher in Norway than Italy, in spite of the two samples holding comparable views over social mobility. On the other hand, experimental redistribution is very similar in the US and Italy, while real-life demand for redistribution is significantly higher in Italy than the US. While the latter result is compatible with the hypothesis that beliefs on real-life mobility are the main driver of demand for redistribution, the former is not. In other words, the high demand for redistribution in real-life by the Italians can be combined with the low demand for redistribution in our experiment if one thinks that Italians are very unsatisfied with social mobility in real life. According to the BOD hypothesis (see section 2.2), this will cause demand for redistribution in real-life to be high. Our experiments suggest that, in a hypothetical situation where equal opportunity of success is granted to everyone, aversion to inequality by the Italians would be no different from the US participants. Nevertheless, the fact that the Norwegians' demand for redistribution in our experiment differs so much from that of the other two countries tells us that the BOD hypothesis cannot be exhaustive, and that differences in preferences for redistribution also matter. Many sociologists have debated whether the US is truly "exceptional" with respect to

other countries in terms of attitudes of their citizens towards mobility in society, and have largely rejected this idea (Osberg and Smeeding, 2006). Using different database than the WVS, it seems that US citizens' views do not differ widely from those of other countries. On the contrary, it is the views held by citizens of the Nordic countries that really stand out as different from the rest. Hence, the results in our experiments seem to capturing a "Nordic exceptionalism", rather than an "American exceptionalism", in attitudes towards inequality. Obviously, this speculative interpretation of our results should be corroborated by further research in other countries.

Understanding the patterns and the ultimate reasons of such differences is something that cannot be directly addressed in this study. This evidence shows the existence of relevant cross-country differences and similarities in demand for redistribution and opens new perspectives on what may be considered "fair" or "unfair" inequality in Western countries.

Figure 3: Histograms of Decisions 1 and 4 per country

DECISION 1 - US	DECISION 1 -Italy	DECISION 1 -Norway
		
DECISION 2 - US	**DECISION 2 -Italy**	**DECISION 2 -Norway**
		

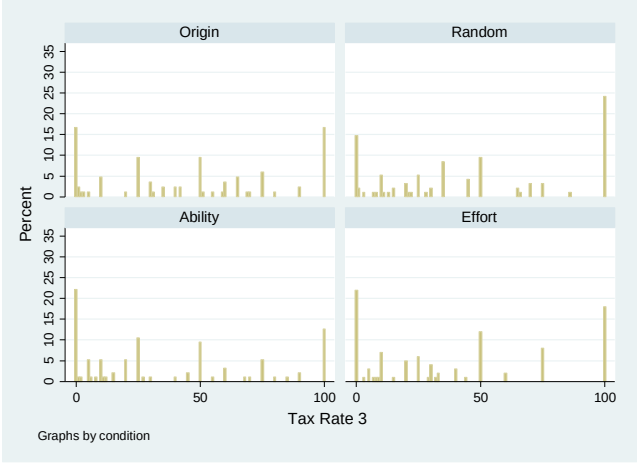
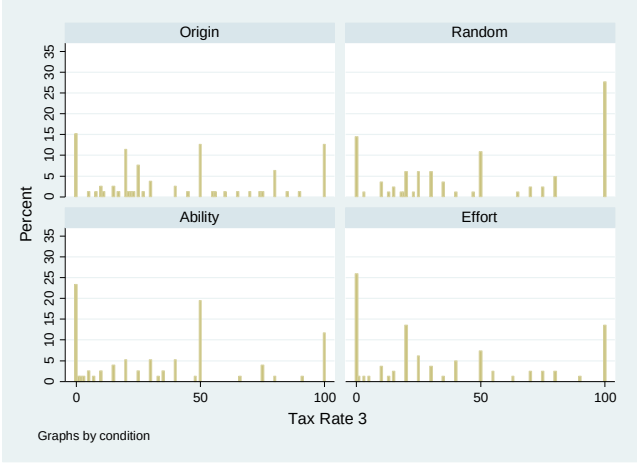
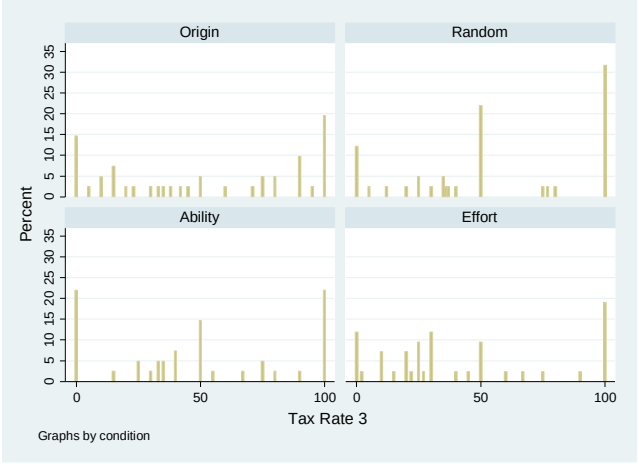
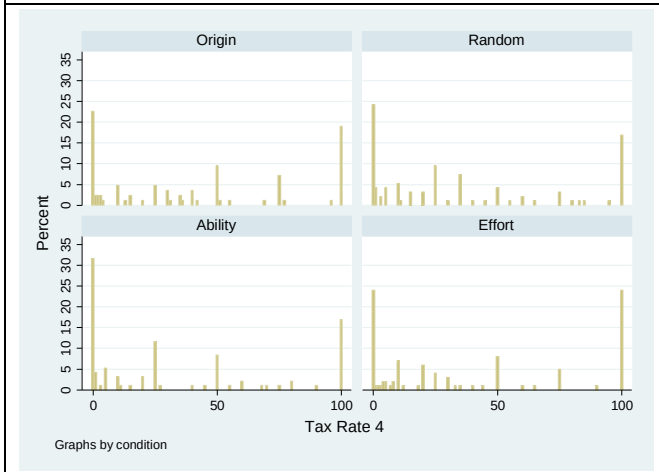
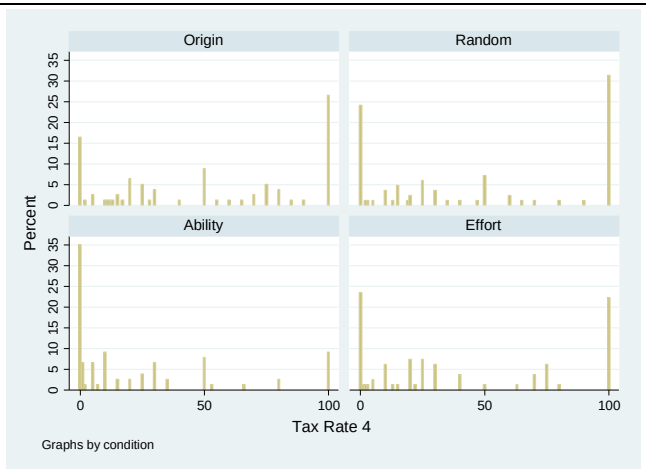
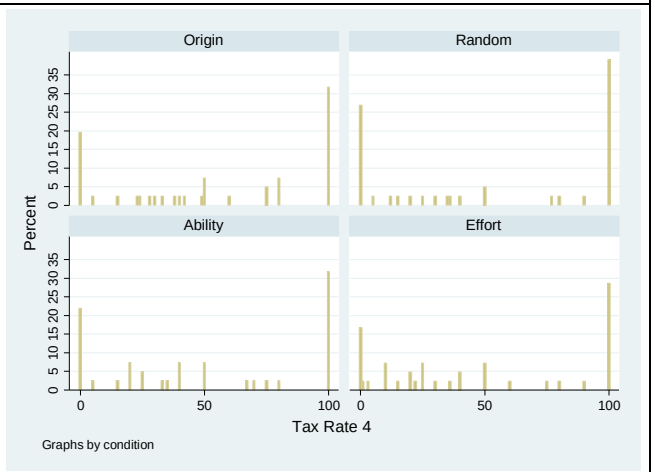
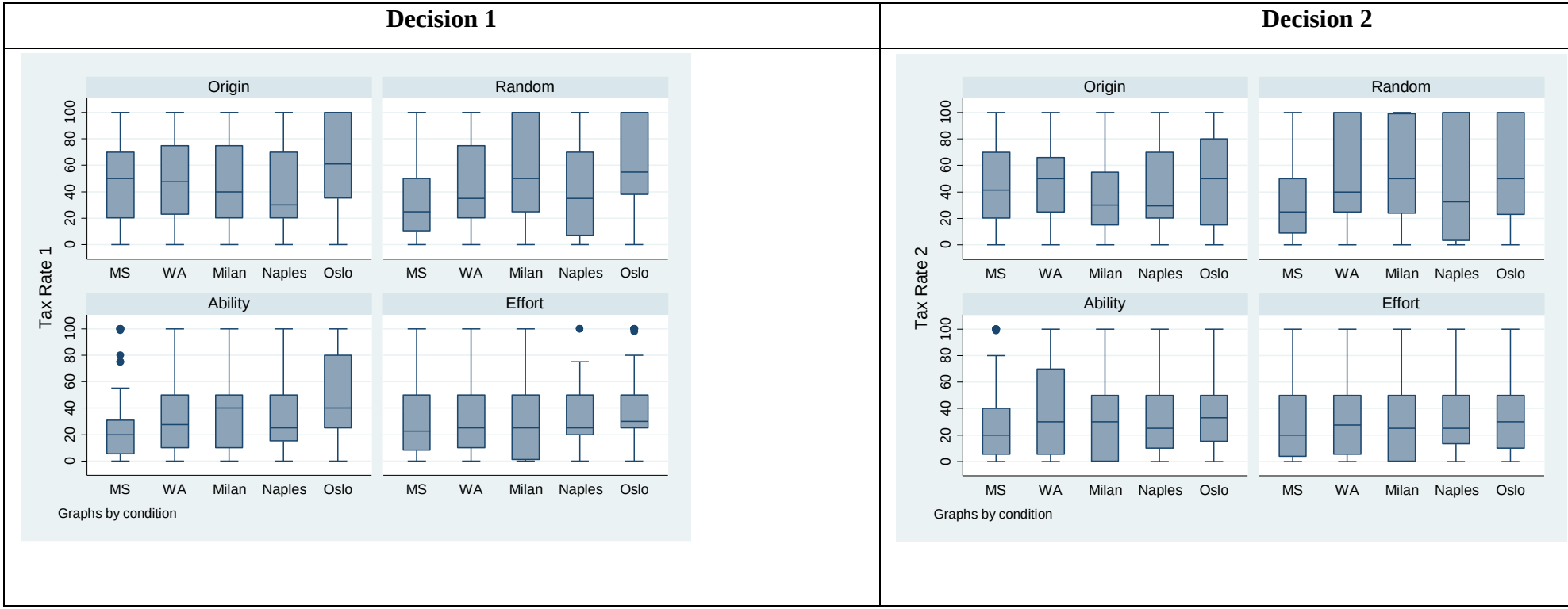
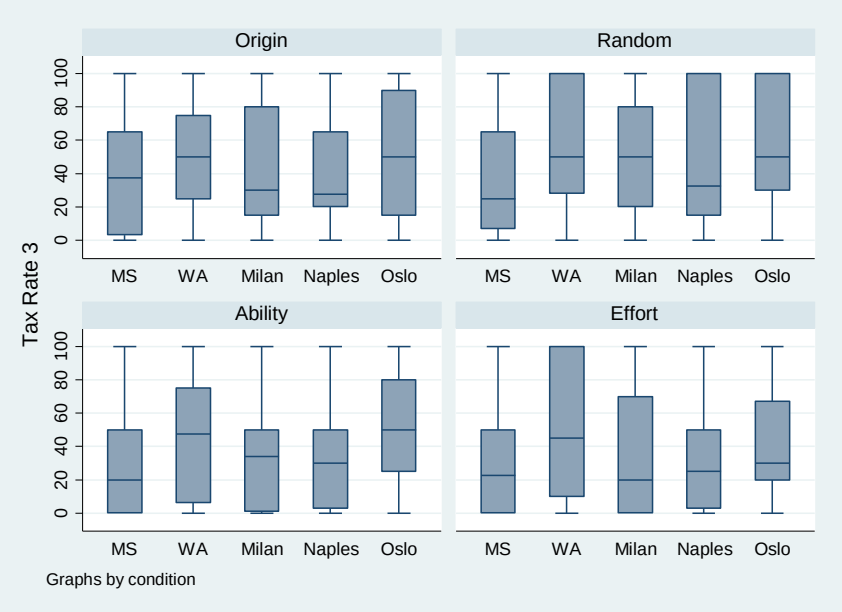
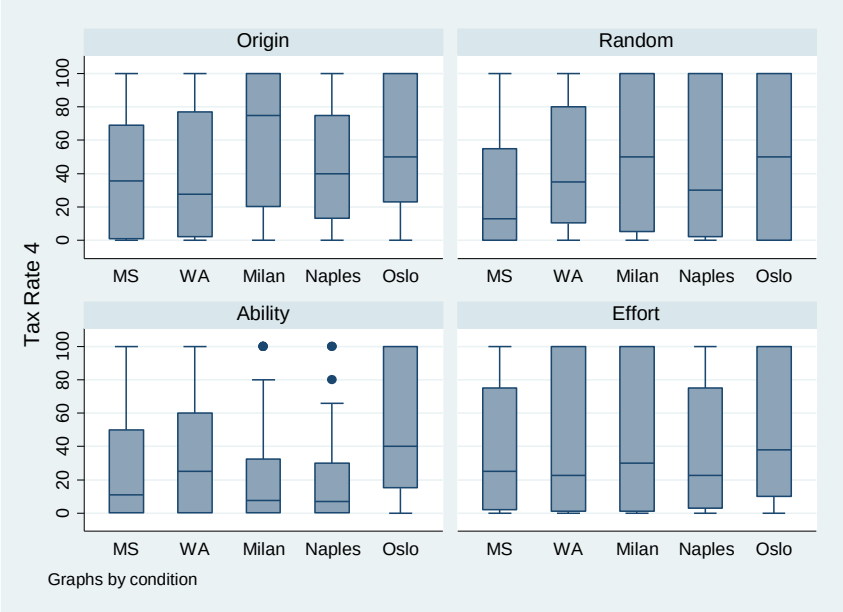
DECISION 3 - US	DECISION 3 -Italy	DECISION 3 -Norway
		
DECISION 4 - US	**DECISION 4 -Italy**	**DECISION 4 -Norway**
		

Figure 4: Box plots of experimental decisions



Decision 3	Decision 4
	

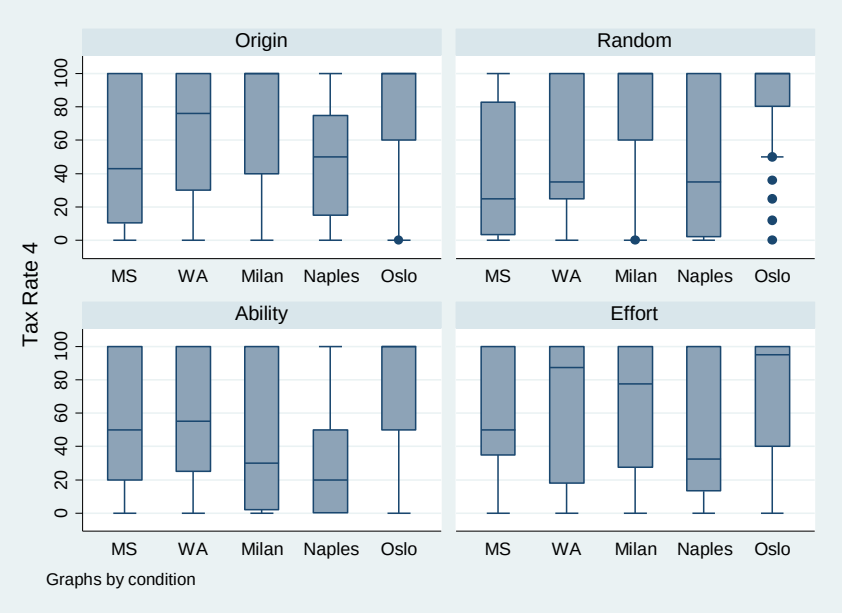
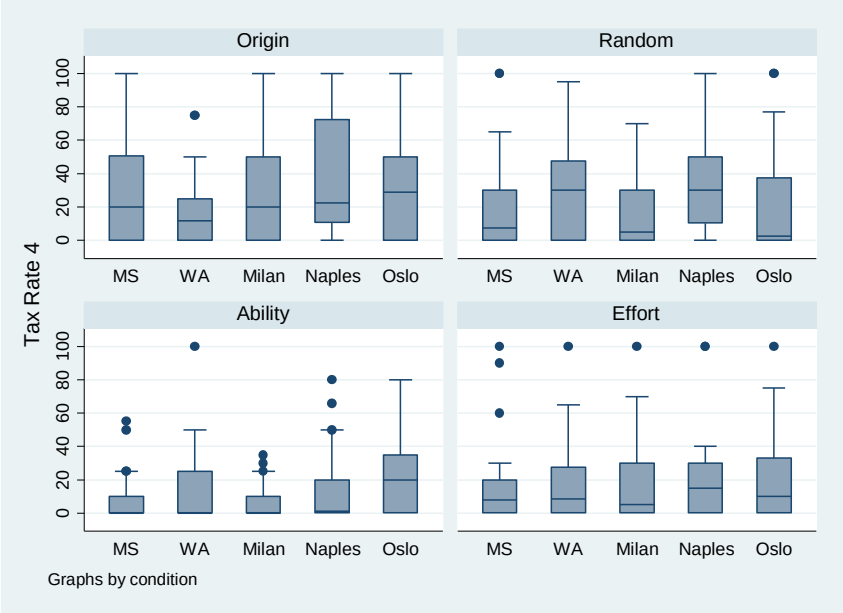
Decision 4 - Poor	Decision 4 - Rich
	

Table 5: Regression analysis Decision 1

DEP. VAR.	TAX RATE DECISION 1			
	ALL	USA	ITA	NOR
	(1)	(2)	(3)	(4)
ITALY	4.453			
	(5.160)			
NORWAY	12.92***			
	(4.912)			
MS		-7.266		
		(4.637)		
SALERNO			-13.18*	
			(6.748)	
ORIGIN_TR	1.099	7.625	-5.699	-1.423
	(4.469)	(6.521)	(7.876)	(10.52)
ABILITY_TR	-14.06***	-10.14*	-15.86**	-15.91
	(4.494)	(6.127)	(7.827)	(11.42)
EFFORT_TR	-16.24***	-6.447	-20.22**	-31.87***
	(4.500)	(6.461)	(8.074)	(9.923)
RIGHT	-26.79***	-24.56**	-31.09***	-41.22**
	(6.661)	(10.14)	(10.05)	(16.63)
TRUST	0.690	3.391	-8.002	10.87
	(3.603)	(4.878)	(6.261)	(10.20)
POVERTY	0.101	-2.829	0.337	6.763
	(3.257)	(4.630)	(6.001)	(7.866)
RISK_AVERSION	11.67**	17.55**	2.356	8.533
	(5.083)	(6.864)	(8.988)	(12.95)
RISK_CONSIST	0.459	3.098	-13.37*	13.10
	(4.636)	(6.550)	(7.941)	(10.63)
GENDER	3.064	-1.051	3.202	3.391
	(3.273)	(4.607)	(5.788)	(8.380)
AGE	0.267	0.891	1.104	-0.951
	(0.368)	(0.576)	(1.000)	(0.708)
ECONOMICS	-6.250*	-10.59**	-11.53*	10.45
	(3.681)	(5.258)	(6.573)	(10.73)

Table 5 (contd.)				
PROTESTANT	-3.839			
	(5.328)			
OTHER_RELIGION	-1.612			
	(6.300)			
ATHEIST	2.696			
	(5.271)			
MOTHER_EDU	3.728	10.26	3.230	-16.08
	(4.777)	(8.481)	(5.870)	(17.95)
ETHNIC_MAJ	6.739	2.890	14.60	12.02
	(4.904)	(5.482)	(25.30)	(10.99)
COMPREHENSION	3.850**	1.138	6.809**	3.955
	(1.694)	(2.273)	(3.198)	(4.103)
CONSTANT	17.58	13.21	13.85	56.52
	(15.49)	(21.11)	(43.41)	(41.69)
OBSERVATIONS	802	345	314	159
PSEUDO R2	0.0136	0.0142	0.0127	0.0211

Notes: Tobit model. Robust standard errors clustered across research sessions. Standard errors reported in brackets. ***=p-value<0.01; **=p-value<0.05; *=p-value<0.1.

Table 6: Regression analysis Decision 2

DEP. VAR.	TAX RATE DECISION 2			
	ALL	USA	ITA	NOR
	(1)	(2)	(3)	(4)
ITALY	0.635			
	(5.341)			
NORWAY	1.239			
	(4.811)			
MS		-7.689		
		(5.104)		
SALERNO			1.610	
			(6.973)	
ORIGIN_TR	-1.748	3.049	-7.450	-0.860
	(4.728)	(7.044)	(8.482)	(9.868)
ABILITY_TR	-16.48***	-11.68	-19.81**	-19.54**
	(4.859)	(7.163)	(8.367)	(9.740)
EFFORT_TR	-18.29***	-12.64*	-19.42**	-21.72**
	(4.760)	(7.216)	(8.397)	(9.984)
EXPECTED_EARNINGS	-2.073***	-1.856***	-2.139***	-2.673***
	(0.436)	(0.708)	(0.704)	(0.960)
RIGHT	-32.73***	-24.91**	-31.25***	-69.76***
	(7.111)	(10.75)	(10.98)	(14.98)
TRUST	-2.550	-0.0405	-9.672	4.513
	(3.679)	(5.342)	(6.239)	(8.986)
POVERTY	2.735	-1.945	1.896	13.24*
	(3.416)	(5.181)	(5.875)	(7.435)
RISK_AVERSION	15.93***	20.58***	10.06	20.52*
	(5.349)	(7.677)	(9.505)	(11.49)
RISK_CONSIST	2.565	-3.529	0.738	18.58
	(5.317)	(8.314)	(9.288)	(11.40)
GENDER	-3.597	-9.849*	-0.259	-6.209
	(3.466)	(5.233)	(5.866)	(7.777)
AGE	-0.0979	0.941	-1.819	-0.441
	(0.423)	(0.683)	(1.265)	(0.599)

Table 6 (contd.)				
ECONOMICS	-3.677	-1.168	-5.339	4.262
	(3.728)	(5.787)	(6.545)	(9.997)
PROTESTANT	-0.913			
	(5.672)			
OTHER_RELIGION	1.943			
	(6.785)			
ATHEIST	1.355			
	(5.472)			
MOTHER_EDU	2.334	3.969	2.562	-6.467
	(5.215)	(11.81)	(6.123)	(18.89)
ETHNIC_MAJ	4.469	2.824	-0.222	3.291
	(5.962)	(6.863)	(25.68)	(16.44)
COMPREHENSION	2.775	-0.0357	7.422**	1.326
	(1.763)	(2.508)	(3.205)	(3.391)
CONSTANT	71.69***	70.15**	98.98**	95.17**
	(19.19)	(27.77)	(49.98)	(42.01)
OBSERVATIONS	802	345	314	159
PSEUDO R2	0.0177	0.0166	0.0186	0.0364

Notes: See Table 5

Table 7: Regression analysis Decision 3

DEP. VAR.	TAX RATE DECISION 3			
	ALL	USA	ITA	NOR
	(1)	(2)	(3)	(4)
ITALY	0.670			
	(5.699)			
NORWAY	3.587			
	(5.557)			
MS		-18.48***		
		(5.960)		
SALERNO			0.669	
			(7.749)	
ORIGIN_TR	-7.308	-3.427	-14.04*	1.312
	(5.196)	(8.294)	(8.414)	(11.82)
ABILITY_TR	-16.81***	-16.72**	-20.03**	-6.207
	(5.148)	(7.646)	(8.336)	(12.61)
EFFORT_TR	-17.51***	-10.44	-23.35***	-15.62
	(5.251)	(8.496)	(8.647)	(11.43)
EXP_ADD_EARNINGS	-2.717***	-2.120**	-2.322***	-4.388***
	(0.500)	(0.830)	(0.756)	(1.179)
INITIAL_EARNINGS_D2	-3.628***	-3.101***	-3.849***	-4.382***
	(0.434)	(0.685)	(0.725)	(0.971)
RIGHT	-25.59***	-28.57**	-21.23*	-42.96**
	(7.718)	(12.28)	(11.42)	(18.21)
TRUST	4.687	5.597	-6.151	21.03*
	(4.156)	(6.178)	(6.470)	(10.77)
POVERTY	-0.401	-4.574	-0.650	5.472
	(3.773)	(5.856)	(6.150)	(9.022)
RISK_AVERSION	11.78**	19.85**	2.197	13.93
	(5.725)	(8.431)	(9.495)	(13.35)
RISK_CONSIST	6.255	9.021	0.813	0.787
	(5.833)	(9.845)	(8.497)	(19.72)
GENDER	-4.631	-8.031	-5.542	-4.011
	(3.787)	(5.729)	(6.204)	(8.939)

Table 7 (contd.)

AGE	-0.212	-0.104	-1.019	0.710
	(0.480)	(0.711)	(1.199)	(0.795)
ECONOMICS	-7.714*	-5.793	-5.235	-5.634
	(4.230)	(7.273)	(7.400)	(12.25)
PROTESTANT	1.295			
	(6.028)			
OTHER_RELIGION	-0.626			
	(7.582)			
ATHEIST	1.601			
	(5.552)			
MOTHER_EDU	-2.395	-8.906	0.862	-14.15
	(5.588)	(14.41)	(6.331)	(20.42)
ETHNIC_MAJ	0.846	-2.191	-6.910	20.57
	(6.382)	(7.758)	(23.23)	(14.49)
COMPREHENSION	2.411	-2.032	6.478**	5.985
	(1.950)	(2.931)	(3.246)	(4.073)
CONSTANT	98.55***	130.0***	119.9***	55.72
	(19.80)	(29.21)	(45.90)	(45.80)
OBSERVATIONS	802	345	314	159
PSEUDO R2	0.0217	0.0244	0.0224	0.0339

Notes: See Table 5

Table 8: Regression analysis Decision 4

DEP. VAR.	TAX RATE DECISION 4			
	ALL / POOR BRACKET		ALL / RICH BRACKET	
	(1)	(2)	(3)	(4)
ITALY	0.519		17.45**	
	(10.97)		(7.423)	
NORWAY	24.76**		4.403	
	(11.52)		(7.196)	
MS		-21.12		-3.093
		(13.56)		(8.989)
MILAN		31.51*		13.61
		(16.84)		(10.11)
SALERNO		-13.99		18.55*
		(15.22)		(10.12)
OSLO		11.43		-1.827
		(14.63)		(9.317)
ABILITY_X_MS		1.476		-13.41
		(24.83)		(18.68)
ABILITY_X_MILAN		-58.84**		-5.548
		(26.44)		(19.67)
ABILITY_X_SALERNO		-43.59*		-2.570
		(25.60)		(18.56)
ABILITY_X_OSLO		8.015		12.62
		(28.02)		(18.03)
ORIGIN_TR	-9.179	-8.528	11.81*	11.82*
	(10.18)	(9.780)	(6.641)	(6.681)
ABILITY_TR	-17.26*	4.491	-14.97**	-12.71
	(10.33)	(20.77)	(6.804)	(15.01)
EFFORT_TR	-5.436	-3.072	-3.842	-3.761
	(10.59)	(10.17)	(6.400)	(6.357)
INITIAL_EARNINGS_D3	-4.533***	-4.482***	-3.100***	-3.059***
	(1.305)	(1.256)	(0.819)	(0.826)

Table 8 (contd.)

RIGHT	-24.47*	-25.54*	-23.51**	-22.03**
	(13.77)	(13.23)	(10.63)	(10.72)
TRUST	27.80***	27.87***	-1.163	-0.816
	(9.183)	(8.904)	(4.961)	(5.018)
POVERTY	-6.906	-12.11	-0.853	-0.199
	(7.610)	(7.350)	(4.927)	(5.001)
RISK_AVERSION	0.537	1.972	2.430	2.729
	(11.27)	(11.12)	(7.333)	(7.294)
GENDER	-13.04*	-13.07*	10.43**	10.45**
	(7.598)	(7.373)	(4.825)	(4.866)
AGE	-1.495*	-1.559**	0.520	0.528
	(0.803)	(0.778)	(0.825)	(0.829)
ECONOMICS	2.131	-9.051	-8.996*	-7.463
	(8.391)	(8.750)	(5.086)	(5.470)
PROTESTANT	6.999	14.13	2.976	5.350
	(12.35)	(12.77)	(7.984)	(8.675)
OTHER_RELIGION	-16.65	-10.13	13.52	14.82
	(16.42)	(16.26)	(9.184)	(9.333)
ATHEIST	10.01	8.675	3.545	4.481
	(10.87)	(10.64)	(7.601)	(7.644)
ETHNIC_MAJ	-4.466	-1.252	-7.382	-8.239
	(12.12)	(12.03)	(9.453)	(9.538)
COMPREHENSION	12.30***	11.51***	-3.698	-3.869
	(3.318)	(3.236)	(3.095)	(3.153)
RISK_CONSIST	15.30	10.06	-0.389	-0.474
	(12.43)	(11.55)	(6.888)	(6.910)
CONSTANT	95.96***	108.5***	62.34**	62.75**
	(29.96)	(31.29)	(27.73)	(29.00)
OBSERVATIONS	376	376	426	426
PSEUDO R2	0.0361	0.0469	0.0217	0.0230

Notes: See Table 5

Table 9: Descriptive Statistics of Expected Additional Earnings in D3 per Location

Location		RANDOM	ORIGIN	ABILILTY	EFFORT
Milan	Mean	1.02	0.38	0.22	1.90
	St.Dev	7.76	6.18	4.75	4.62
	Obs.	41	37	36	39
Salerno	Mean	1.79	1.07	1.38	2.93
	St.Dev	7.36	6.84	5.15	4.38
	Obs.	42	42	42	42
WA	Mean	2.00	1.36	1.24	1.93
	St.Dev	5.49	5.93	4.37	4.15
	Obs.	41	42	42	42
MS	Mean	2.22	1.60	1.34	2.57
	St.Dev	6.98	6.49	5.80	4.11
	Obs.	54	42	53	58
Oslo	Mean	0.46	0.95	0.59	0.71
	St.Dev	6.04	5.47	3.10	5.16
	Obs.	41	41	41	42

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6 Appendix

6.1 Experiment Protocol for paper "Preferences for Redistribution in the US, Italy, Norway: An Experimental Study" (US locations)

NB: Text in italics below concerns procedures and organization and should <u>not</u> be read to subjects; Text highlighted in yellow varies across the four different treatments of the research; Text highlighted in green may be subject to revision.

Have SS waiting outside the lab. Assistants hand out the information sheet and consent form. They ask subjects to read the information sheet and if they agree to return a signed copy of the consent form. The information sheet is for subjects to keep. In the meantime the lead researcher checks students' registration by controlling their student ID. If not all 21 students come, stand-by participants are asked to participate in the session. When the group of 21 students has been formed, ask students to come one by one towards the entrance and give following instructions:

"Welcome. My name is Gianluca Grimalda and I am here with …. to conduct this research session.

Check everyone has handed in the consent form and say:

We are going to start with some preliminary operations. We will call your student ID numbers one by one. Please come to me when your ID number is called, exhibiting your student card. I would like you to draw a card from this deck numbered from 1 to 23. The number you draw will be your ID number for this research. This ID number is important because it guarantees your anonymity throughout the research and will ensure that you are paid the correct amount of money for your decisions. Your choices and answers will be recorded through this ID number that you draw, rather than through your Student ID number or your name. The payments will be made using that number as identification. It is important therefore that you keep this number safely, and show it to no one else apart from us, the researchers. After you have drawn your ID, take a seat at the computer terminal with the corresponding number, and double-click the icon in the center of the screen. This has the shape of a leaf, should be named "Client Number", and be displaying your corresponding ID number. Please wait quietly for the beginning of the research session. If you have any problems, raise your hand and an assistant will come to help you.

Students should go to their computer terminal in the room on their own. They can ask for assistance if they do not find it. In Treatment D, after the list of 21 participants is ready, the assignment to "Group A" and "Group B" is made. Students belonging to Group A are called before the others. Assistants make sure that they log in into z-tree before all the others.

Preliminary Instructions

Welcome again to this research project. A team of researchers is looking at the way in which people make decisions. The research team that is here today includes myself, Gianluca Grimalda, and my colleague Francesco Farina.

ASSISTANT 1 and, if possible, ASSISTANT 2 should be present in the room at this point and acknowledge the introduction.

In today's research session you will be asked to make decisions at your computer terminal. Your decisions involve interacting with other people who are present in this room. However you will not need to talk or communicate in any way with anybody. Your decisions will be processed through a computer program that networks all of the computers without disclosing your ID or your identity. The interactions are therefore anonymous.

Our research group will not attempt in any way to link your personal identity to your choices and responses. These will be recorded through the ID number that you have drawn on entering the room. Moreover, your payments will be handed out using that number as identification. At the end of this session, while you answer the questionnaire, we will compute your payments and place them inside envelopes that have your ID printed on them. We will then come to your place and hand out the envelope corresponding to your ID number.

Show a numbered envelope and receipts. Also say: You must then check the amount inside the envelope, and fill out a receipt stating the total payment you have received. Subsequently, please fold the receipt in two and place it in the large envelope marked 'RECEIPTS' that is attached to the door on your way out. At the end of the session, this envelope will be sealed and later sent to University administration offices without us making any attempt to connect your personal identity to your payoffs.

Every participant who completes the research today will earn $7 as show-up fee. On the top of that you will earn an additional amount that depends on the collective decisions made in the research. This second amount may vary from $1.30 to $27.30. Finally a further opportunity to increase your earnings will take place. We invite you to listen carefully to all instructions, ask us questions if you need clarifications, and make your decisions with care.

Please do not talk or communicate with other participants, or look at other participants' screens during the session. If there is something unclear feel free to raise your hand and ask me your questions. If you do not follow these instructions, we will be forced to exclude you from the session.

There are three parts to the session, but you will be paid according to the outcome of just **one** part of the research. This will be randomly drawn at the end of the session. Each part will have the same probability of being selected. At the end of the session we will make a random draw of one of three slips of paper numbered 1 to 3 to determine which part this is. The duration of this research session is approximately 100 minutes.

An Overview of the Procedures

The essential elements to determine everyone's earnings in this first part of the session are as follows:

1. Some **Initial** earnings. These will be recorded by us through our computer, but will not be communicated to you.

2. A **tax rate**. This will give you the chance to implement a redistribution of your initial earnings among your group. Everyone will be asked to put forward a choice.

3. Some **final earnings**. One among the tax rates you propose will be drawn at random and applied to everyone's initial earnings. The sum that is collected will then be divided in equal shares and transferred to each of you. This will determine everyone's final earnings.

4. The person whose tax rate is randomly drawn will be called the **"decisive individual"**. The final earnings for this person will be determined in a different way than everyone else's. This will be explained subsequently.

We are now going to examine in detail the various procedures. Please press the button OK.

The Initial Earnings

During this research we will not refer to dollars but to tokens. At the end of the session you will be paid in dollars according to the exchange rate of 1.3 dollars per token. Your "initial earnings" will be a whole number between 1 and 21, which means you will be allocated an amount varying between $1.30 and $27.30. How are everyone's initial earnings going to be determined? This depends on:

A) your performance in answering a series of 10 multiple-choice questions. These questions do not require specific knowledge but only ability in abstract reasoning. The better your performance, the higher your initial earnings. The person with the best performance will be assigned 21 tokens. The person with the second best performance will be assigned 20 tokens, and so on. The person with the poorest performance of all will be assigned 1 token. To determine the performance ranking we will first use the number of correct answers. If two or more people have the same number of correct answers, we will assign higher ranking to the person who has answered in the shorter time. In the quite unlikely case in which two or more people answer the same number of questions correctly in the same time, the higher level of earnings is assigned randomly by the computer. In this way each of you will be assigned one of the 21 earnings categories.

B) your performance in carrying out a series of 10 tasks. These tasks are extremely simple and do not require specific skills or ability. Concentration and some effort is all that is needed. The better your performance, the higher your initial earnings. The person with the best performance will be assigned 21 tokens. The person with the second best performance will be assigned 20 tokens, and so on. The person with the poorest performance of all will be assigned 1 token. To determine the performance ranking we will first use the number of correct answers. If two or more people have the same number of correct answers, we will assign higher ranking to the person who has answered in the shorter time. In the quite unlikely case in which two or more people correctly execute the same number of tasks in the same time, the higher level of earning is assigned randomly by the computer. In this way each of you will be assigned one of the 21 earning categories.

C) the outcome of a "lottery" which will involve all the participants in this research session. The luckier you are in the lottery, the higher your initial earnings. The lottery works as follows. Our computer will randomly assign each of you a number between 1 and 21. Each one will be assigned a different number, so all the categories from 1 to 21 will be assigned. The number-assigning process is completely random, without your computer number, the order of entering the room, or other factors, playing any role at all. Each of you will have an equal probability of drawing any number between 1 and 21. At the end of the draw, everyone will have assigned a number of tokens equal to the drawn number. This will be your "initial earnings".
(So, if you draw number 21 your initial earnings will be 21 tokens, etc.)

D) the outcome of a "lottery" which will involve all the participants in this research session. The luckier you are in the lottery, the higher your initial earnings. Your probability of success will also depend on the average income of the area where your family resides. The lottery works as follows. First of all, we have divided the 21 participants in this session in two groups. The 10 people among you whose family reside in areas with an average income relatively higher than others among those

represented in this room belong to group A. The remaining 11 people belong to group B. We have used the information on your ZIP code that you gave us when registering to determine to which group you belong. We have obtained the average income for that area, and we have assigned the 10 student IDs of those residing in the areas with the highest average income to group A, and the remaining 11 people to group B. At the moment of registering in this session, we have identified if you belong to group A or B and allocated a computer that our program recognizes as being part of either group A or group B. The order in which you have entered the room was not in fact random but it reflected your belonging to one or the other group. The information on which group you belong will nevertheless not be disclosed.

Is it clear how the allocation to groups A and B has been done?

So why is the allocation to groups A and B important? People included in group A will have a higher probability than that of people in group B of being assigned higher levels of initial earnings. The lottery process will work as follows. Our computer will execute a random draw assigning to each of you numbers lying between 1 and 100. People belonging to group A will receive two of such randomly drawn numbers, whereas those belonging to group B will receive one number only. Then, the person who has received the highest number among all numbers will be assigned the initial earnings of 21 tokens. The person who has received the second highest number will be assigned the initial earnings of 20 tokens. The process continues until all the earnings categories between 1 and 21 have been occupied. People belonging to group A receive two randomly drawn numbers so they have a chance twice as high of being assigned higher earnings categories than people belonging to group B. *In other words, people belonging to group A receive two "lottery tickets", whereas those belonging to group B only receive one.* In fact, the probability for a person belonging to group A of being assigned initial earnings greater than 11 is approximately twice as high than that of a person belonging to group B.

If there are no questions, please press the button OK.

Earnings redistribution

A certain **tax payment** will be taken away from every participant's initial earnings (we will explain later how such tax rate is determined). The tax rate could vary from 0% of initial earnings - in which case nothing will be taken away –to 100% - in which case the entire initial earnings will be taken away. All of the intermediate values of tax rates are possible. The amount of taxes collected will feed into the **group fund**. This will be divided in 21 equal parts and everyone will receive an equal share from the group fund. Final earnings are therefore one's initial earnings, minus tax payment, plus the transfer from the group, that is, one's share – equal for everyone - of the group fund.

Final earnings	=	Initial earnings	-	Tax payment	+	Transfer from group fund

We are now going to see some examples together.

***

Example 1

Suppose your initial earnings are 5 tokens and that the tax rate is set at 20%. This means you would have to pay in taxes 20% - i.e. a fifth - of your initial earnings. That is equal to 1 token. If everyone is taxed at 20%, what is the total amount collected in taxes? This computation only requires some easy algebra. The total initial earnings add up to 231 tokens. Thus, 20% of 231 is equal to 46.2 tokens. That is the amount making up the group fund. This amount is then divided equally among the 21 participants. This is equal to 2.2, which is how much everyone receives. Hence, your final earnings are so determined:

Final earnings	=	Initial earnings	-	Tax payment	+	Transfer from group fund
6.2	=	5	-	1	+	2.2
				(20% X 5)		(20% X 231 / 21

If there are no questions, please press the button OK.

***

Example 2

What are the final earnings for the person whose initial earnings are 20 tokens? Please try to work it out yourself entering the missing values in the table below. After having pressed the button OK the computer will tell you if you have not answered correctly.

Final earnings	=	Initial earnings	-	Tax payment	+	Transfer from group fund
18.2	=	20	-	4	+	2.2
				(20% X 20)		(20% X 231) / 21

The tax rate for this person is 20% - i.e. a fifth – of 20 tokens, which is equal to 4 tokens. The transfer received from the group remains 2.2 tokens. That means the final earnings for this person 18.2 tokens.

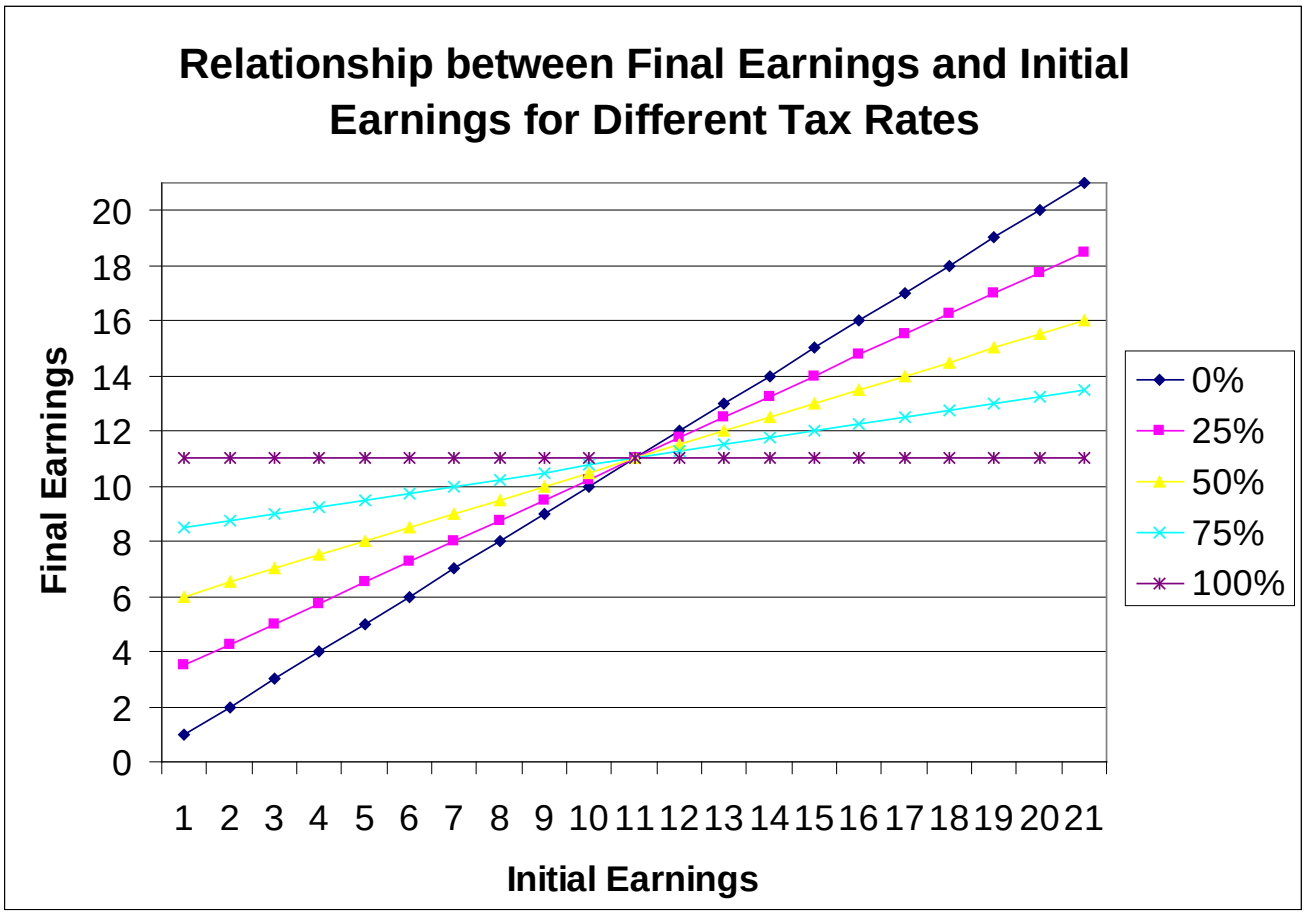
If these instructions are clear, please press the button OK.

Earnings redistribution

If this doesn't run on ztree, hand out page with graph.

The diagram below plots the relationship between final earnings and initial earnings for five different tax rates, 0%, 25%, 50%, 75%, and 100%. As the tax rate increases, the difference between the highest earnings and the lowest earnings goes down, as well as the differences in earnings of all other individuals at intermediate levels of earnings. If the tax rate is 100%, every participant will pay to the group fund all their initial earnings, and everyone will receive an equal transfer, hence everyone will earn 11 tokens.

You may also notice that the individual with initial earnings of 11 tokens always receives the same final earnings whatever the tax rate that is being chosen. Being this individual exactly in the median position of the earnings scale, the amount paid in taxes will always coincide with the transfer received from the group.



Press the ok button when you are sure everything is clear.

Table 10: Initial and final earnings for a given tax rate (Example)

Initial earnings	Tax payment	Transfer	Final earnings
1	0.25	4	4.75
2	0.5	4	5.5
3	0.75	4	6.25
4	1	4	7
5	1.25	4	7.75
6	1.5	4	8.5
7	1.75	4	9.25
8	2	4	10
9	2.25	4	10.75
10	2.5	4	11.5
11	2.75	4	12.25
12	3	4	13
13	3.25	4	13.75
14	3.5	4	14.5
15	3.75	4	15.25
16	4	4	16
17	4.25	4	16.75
18	4.5	4	17.5
19	4.75	4	18.25
20	5	4	19
21	5.25	4	19.75
	Sum of all tax payments = 124	Transfer to each individual: 124/21 = 4	Final earnings = Initial earnings – Tax + Transfer from group account

You can now use the computer calculator on the screen. After entering a value for the tax rate, pressing the button “Compute” will bring up the tax payments, the transfers from the group fund, and the final earnings corresponding to the specific tax rate that has been entered.
When you think you have acquired sufficient information, please press the button “Continue”.

Which tax rate is implemented? The "decisive individual"

Before (A) answering the questions / (B) carrying out the tasks /(C&D) participating in the lottery / that will determine / your initial earnings, everyone will be asked to indicate the tax rate that they would like to be applied to the group. At the end of this part a participant will be drawn at random and it will be the choice of this "decisive individual" to determine the tax rate applied to everyone's earnings.

The final earnings of the decisive individual are not determined as we have explained so far. The decisive individual will be assigned as a matter of course a fixed earnings of **11 tokens**. This will occur whatever (A) his/her position in the ranking derived from answering the questions / (B) his/her position in the ranking derived from executing the tasks /(C&D) the outcome of the lottery. The decisive individual will not have to pay taxes nor will s/he receive transfers. Conversely, all the other participants will keep their initial earnings as determined by the ranking, and the tax rate chosen by the decisive individual will determine their final earnings.

The decisive individual therefore takes on the role of **umpire** in the earnings distribution of the other 20 participants. His/her choice does not have any influence on how much s/he will earn because his/her earnings are fixed at 11 tokens. When you take this decision, therefore, take into account that your choice will be able to change to a greater or lower degree the earnings of all other participants. We thus invite you to take this decision with care.

Every participant has the same probability of being selected as the decisive individual. We have written your 21 ID numbers onto as many cards and we will ask one of you to extract one of these cards at the end of this part.

Show numbered cards.

The identity of the decisive individual will not be disclosed either when the extraction is carried out or at the end of the session. My assistants will check that I select the tax rate chosen by the randomly selected person.

Note that the group fund will not be reduced by the fact that the decisive individual will not have to pay taxes. It will be us, the researchers paying the amount of taxes due by the decisive individual with respect to his/her initial earnings. In this way the group fund will not be reduced.

If there are no questions, please press the button OK.

SUMMARY

To summarize, the procedures of Part 1 will take place in the following order: you will indicate a tax rate, (A+B) the series of questions/tasks will take place, (C&D) our computer will then perform the lottery that determines your initial earnings (and this will not be communicated to you). Finally, the decisive individual will be selected, whose choice of the tax rate will determine the final earnings of all participants.

If there are no questions, please press the button OK.

***

Comprehension Questions Part 1

Before you begin to make your decisions, we would like you to answer a series of 5 questions to make sure that you have understood correctly the characteristics of the interaction. Please click on what you believe to be the correct answer to each of the following questions. Decisions will begin after all participants have answered all questions correctly.

Also say: If you make one or more mistakes, you will have to answer all the 5 questions again. The computer won't tell you the question or the questions that are answered incorrectly, it will just have you reanswering all questions. If after this second attempt some mistakes remain, you should raise your hand and ask for the assistance of one of us.

*A list is created of the students who have made more than 2 mistakes in answering the questions (they can be identified by displaying the following status in the ztree control table: ***Question 1.3***). They also should raise their hand. LEAD RESEARCHER AND ASSISTANT 1 will go to their desks and identify the wrong answers. They begin by asking: "Why did you answer this way?" They do not give the solution but try to lead the students to the right answer. In doing that use keys below.*

Question #1: *(Correct answer: B)*

In Part 1 of the research, final earnings for all participants but one will be equal to:

- their initial earnings
- their initial earnings minus any tax that is applied plus an equal share of what has been collected in taxes
- 11 tokens

(A) is wrong, because in case of a positive tax rate the final earnings never coincide with the initial earnings.(C) is wrong because only the decisive individual (and

possibly another participant) are certain that he (they) will get a final earnings of 1 token.

Question #2 (*Correct answer: B*)

The tax rate that will actually be applied to determine earnings will be:

- the value chosen by the largest number of participants
- the value chosen by one randomly selected participant
- the average value of the tax rates indicated by all participants

The correct answer is (B), because the tax rate is chosen by the decisive individual, who is selected by a random draw at the end of Part 1 (A) and (C) are unfounded.

Question #3: *(Correct answer: A)*

If my initial earnings are 1 token and I am not the decisive individual, my final earnings could be:

- a number between 1 and 11 tokens, depending on the choice made by the decisive individual
- will certainly remain 1 token
- a number of tokens between 11 and 21 tokens, depending on the choice made by the decisive individual

If I have 1 token as my initial earnings, I will be stay put with 1 token only if the tax rate which was selected is equal to zero, which is not always true. Thus, (B) is wrong. If the tax rate is positive, I can at most get 11 tokens (in case the tax rate is 100%), so that (C) is wrong, whereas A is correct.

Question #4: (correct answer: B)

If I turn out to be the decisive individual, my final earnings will be:

- determined by *(A)* my position in the ranking derived from the performance in answering the questions *(B)* my position in the ranking derived from the performance in the tasks/ *(C and D)* the result of the random draw
- 11 tokens
- 21 tokens

This is clearly specified in the instructions: whatever is his initial earnings, the decisive individual is always assigned as a matter of course a fixed sum of 11 tokens.

Those are his final earnings, whatever his initial earnings happened to be. (A) is true for those who are not the decisive individual. (C) is unfounded.

Question #5: *(Correct answer: C)*

Treatment A) The person who is assigned initial earnings of 21 tokens is:

- selected by a random draw
- the decisive individual
- the person answering the highest number of questions in the shortest time

Treatment B) The person who is assigned initial earnings of 21 tokens is:

- selected by a random draw
- the decisive individual
- the person carrying out the highest number of tasks in the shortest time.

Treatment C and D) The person who is assigned pre-tax and transfer earnings of 21 tokens is:

- the person choosing the highest tax rate
- the decisive individual
- selected by the outcome of the lottery

Who is the person with the highest initial earnings depends on which treatment we are into: he will be the person with the best performance in treatments A and B, and the person to which the draw has attributed the highest number in treatments (C) and (D). Thus (A) is wrong for sure.(B) cannot be turned down, but in general is not true because the decisive individual is only by chance the one who has the highest initial earnings. DO NOT MENTION OTHER TREATMENTS!!

You will now have to indicate the tax rate you would like to be applied to the group should you be selected as 'decisive individual'.

Enter your tax rate in the box at the center of the screen.

This can be any number between 0 and 100.

Then, press the button "Proceed" at the bottom of the screen. After all have answered, we will move on to the *(A)* series of questions **/** *(B)* **series of tasks /** *(C and D)* **lottery**

(A) Questions / *(B)* Tasks / *(C and D)* Lottery

We are now going to proceed with (A) the series of questions / (B) the series of tasks / (C and D) the lottery / that will determine the initial earnings.

(Treatment A) Instructions on how to answer the questions

(Treatment A+B) ASSISTANTS 1 and 2 distribute the first set of questions or tasks.)

In the bundle distributed to you, you will find a series of ten questions.

Do not turn over the page until you are allowed to do so!

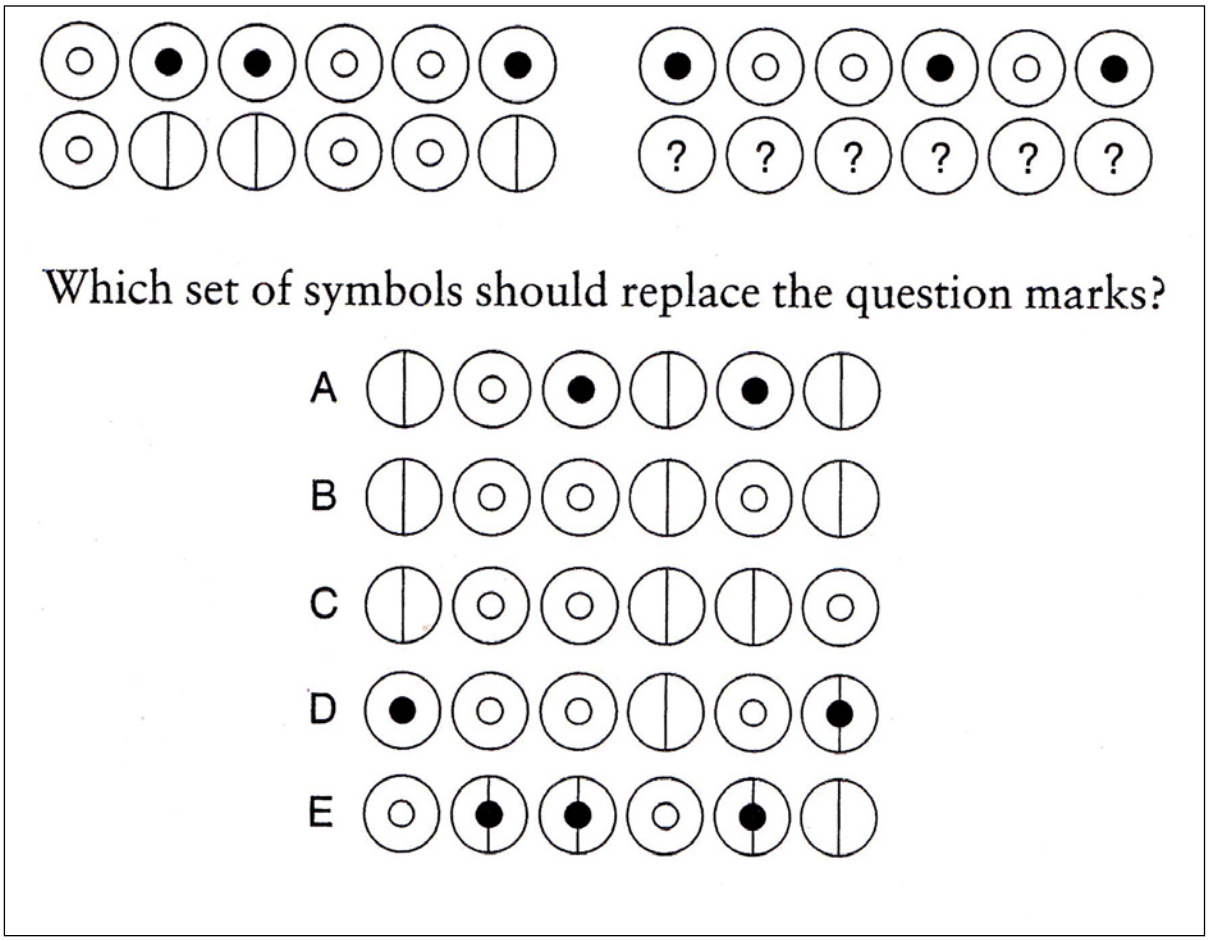
You will have 5 minutes to answer as many questions as you can. There will be 5 possible answers for each question. Once you have made your choice, enter your answer on the computer by selecting the corresponding option. When you are sure of your answer, press the button OK to move on to the next question. After you have pressed the button OK, it is no longer possible to change your answer. As for the total time of your answers, we will take into account the time elapsed at the moment in which you have pressed the button OK for the last time. For instance, if you answer 5 questions in 3 minutes and 30 seconds, and you cannot answer the sixth question, your total time of your answers that is valid for the determination of the ranking will be of 3 minutes and 30 seconds.

Are there any questions?
You can now turn over the page and start answering the questions.

Good luck with your work!

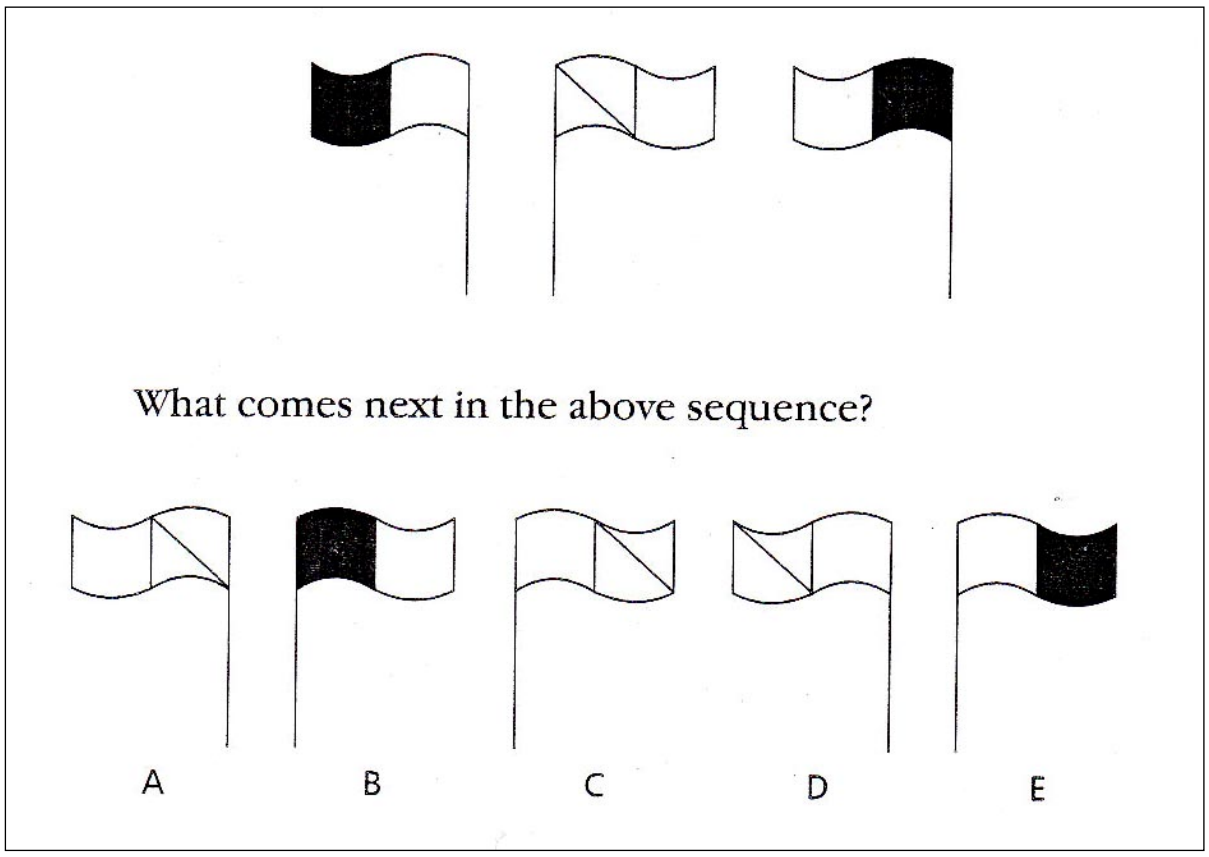
Sample of questions in ABILITY treatment[18]

1.1

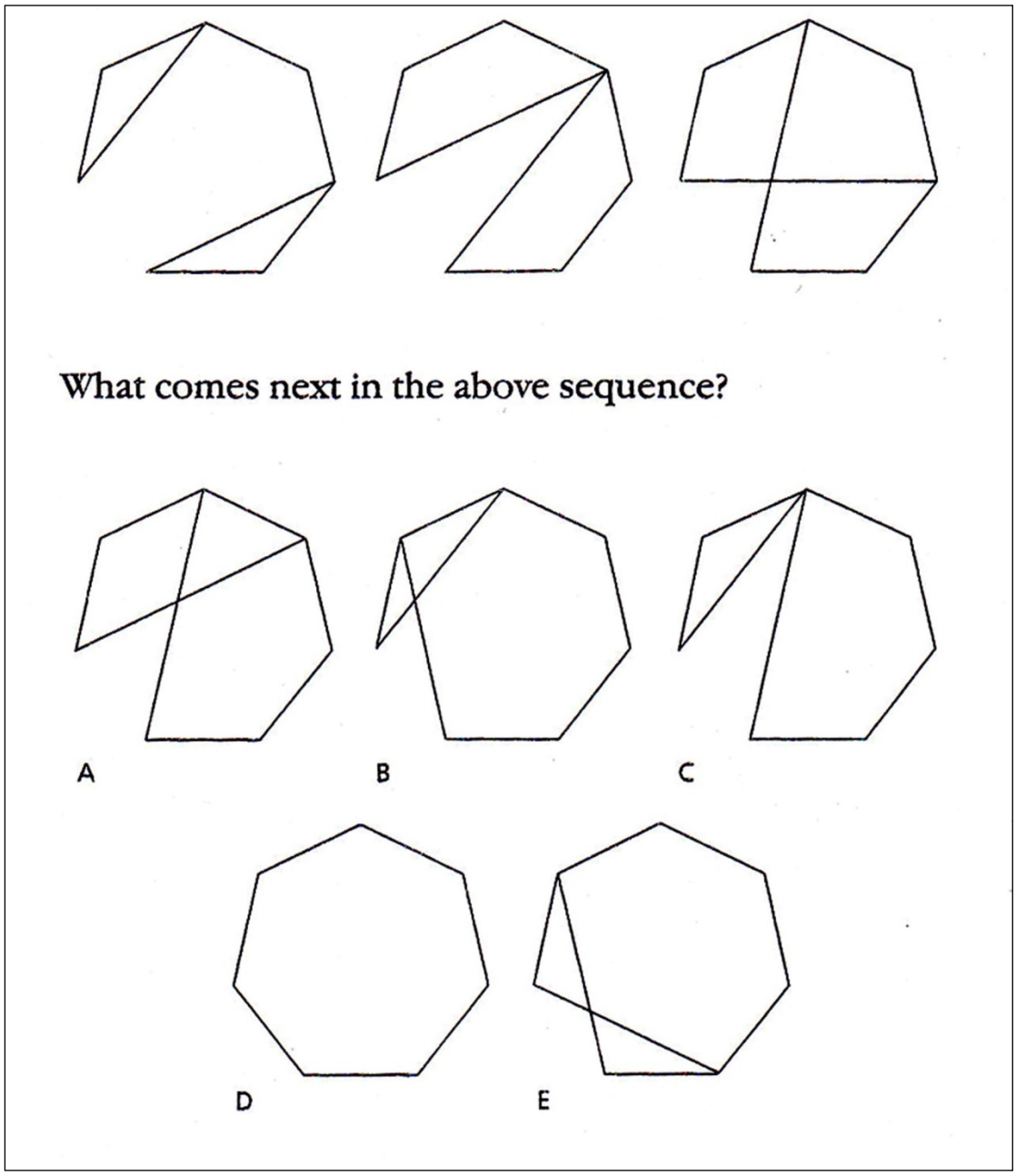


[18] There were three sets of questions, distributed during each of the three parts of the experiment. Other questions are available upon request.

1.2



1.3



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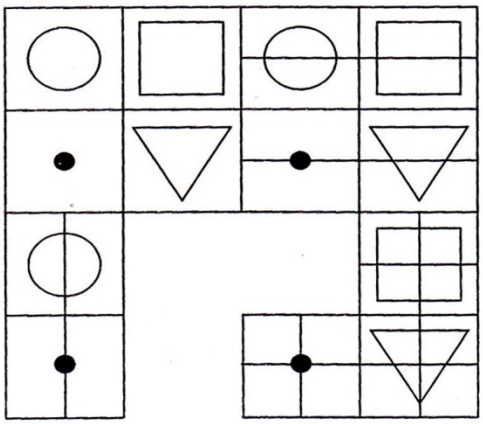

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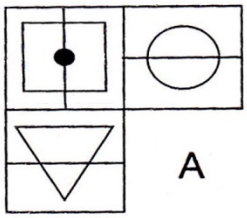
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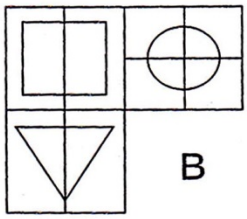
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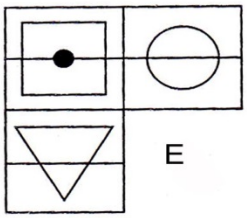
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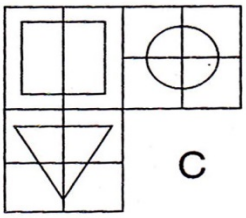
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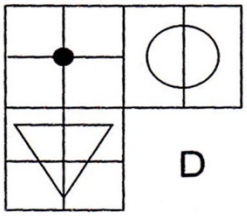
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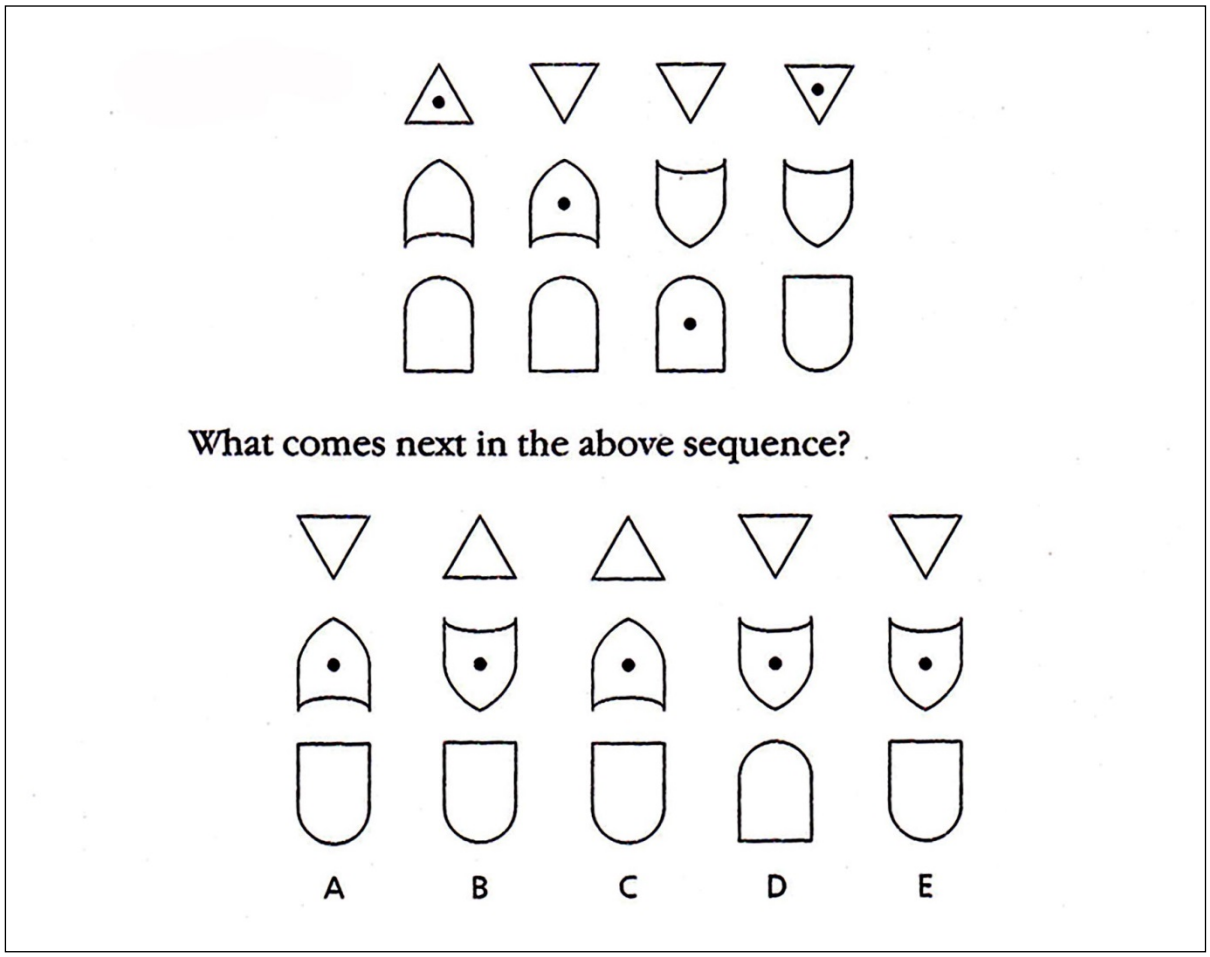

(Treatment B) Instructions on task executions

ASSISTANTS 1 and 2 distribute the third set of questions or tasks. They pay attention to leave them with the front page down, so that students see a blank sheet.

The objective of the tasks is to identify the letter lying at the intersection between a certain line and column within the grid of letters printed in the following pages. For instance, you may be asked to identify the letter lying at Line 3, Column 3, of Page 1.

0) Find the letter lying in the following position:
Page 1, Line 3, Column 3

If you go to the top row of page 1 and count 3 rows downward, and then you move along that line rightward until the third column, you will find out that the correct answer is "V". You will have 5 different options as possible answers, and you will have to select at the computer the option which you believe is correct. In this case, you should select the option number 2:

1) E 2) V 3) S 4) J 5) Z

When you are sure of your answer, press the button OK to move on to the next question. Please make sure of your answer before pressing OK. After having pressed the button OK, it is no longer possible to change your answer.

You will have 5 minutes to execute as many tasks as you can. As for the total time of your answers, we will take into account the time elapsed at the moment in which you have pressed the button OK for the last time. For instance, if you carry out 5 activities in 3 minutes and 30 seconds, and you do not have time to carry out the sixth, your total time of your answers that is valid for the determination of the ranking will be of 3 minutes and 30 seconds.

Good luck with your work!

Are there any questions?
You can go to the other page and start answering the questions.

NB: The three sets of questions are to be handed out one by one to avoid that subjects finishing one trial early will start answering the next. At the end extraction of decisive individual for Part 1.

Task – Series 1 Identify which letter lies in the following position:

Task – Series 1

1) Page 1, Line 1, Column 32

1) C 2) X 3) Y 4) O 5) R

2) Page 1, Line 8, Column 53

1) O 2) E 3) I 4) N 5) F

3) Page 1, Line 26, Column 51

1) N 2) F 3) A 4) C 5) E

4) Page 2, Line 8, Column 39

1) F 2) S 3) I 4) N 5) D

5) Page 2, Line 22, Column 60

1) M 2) R 3) K 4) A 5) Y

6) Page 2, Line 33, Column 47

1) G 2) J 3) O 4) X 5) F

7) Page 2, Line 36, Column 54

1) A 2) P 3) L 4) N 5) T

8) Page 3, Line 10, Column 59

1) J 2) Q 3) L 4) N 5) O

9) Page 3, Line 17, Column 46

1) Z 2) W 3) X 4) T 5) L

10) Page 3, Line 30, Column 53

1) X 2) E 3) D 4) I 5)N

Page 1

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Page 2

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Part 2

Part 2 follows the same procedures as Part 1, but presents an extremely important difference. The person randomly drawn as the decisive individual at the end of Part 2, will **not** be assigned a fixed payment of 11 tokens, but his/her final earnings will now be determined in the same way as the other participants. That is, the decisive individual will be subject to taxation– according to the very tax rate s/he has chosen – and will receive a transfer according to the same rules valid for other participants. Therefore, unlike Part 1, the decisive individual's choice in this second Part will influence both how much s/he will earn and how much others will earn.

The other procedures of Part 2 are identical to those of Part 1. After having asked you to indicate a tax rate, a *(A)* new series of questions / *(B)* a new series of tasks / *(C e D)* a new lottery will take place, which will determine everyone's initial earnings. At the end, we will randomly select the decisive individual for this second part. The tax rate chosen by the decisive individual will determine everyone's final earnings.

If there are no questions, please press the button OK.

Before asking you to make your decision, once again we want to make sure that you have understood correctly the characteristics of the interaction. Please select the answer you believe is correct to the following three questions.

Question #1: The decisive individual in Part 2 will be: *(Correct answer: C)*

- the same as in Part 1
- *(A)* the person at the top of the ranking determined by the performance in answering the questions (B) the person at the top of the ranking determined by the performance in the tasks (C and D) the person drawing the highest number in the lottery
- randomly selected at the end of Part 2

The instructions clearly state that a new draw will take place for the decisive individual at the end of Part 2, so that the correct answer is (C) and (A) is wrong. (B) is unfounded.

Question #2: *(Correct answer: A)*

If I am randomly selected as the decisive individual in Part 2, my final earnings will be:

- A sum depending on *(A)* the ranking deriving from the performance in answering the questions (B) the ranking deriving from the performance in the tasks (C and D) the result of the lottery, and by the tax rate I have chosen.

○ 11 tokens, regardless of (A+B) my position in the ranking (C and D) the result of the lottery.

○ A sum depending on *(A)* the ranking deriving from the performance in answering the questions (B) the ranking deriving from the performance in the tasks (C and D) the result of the lottery, and by the tax rate chosen by someone else.

Since the choice of the decisive individual determines the tax rate to be used to determine the initial earnings of all participants, the correct answer is (A). (B) would be true only as for the first part, (C) is true for those who are not the decisive individual

Question #3: *(Correct answer: A)*

If I am randomly selected as the "decisive individual" in Part 2, and I choose a tax rate of 0%, my final earnings will be:

○ identical to my initial earnings

○ 11 tokens, regardless of (A+B) my position in the ranking / (C and D) the result of the lottery.

○ the highest earnings

If the tax rate is zero, the final earnings equalize the initial earnings for all participants, and in particular for the decisive individual. Thus (A) is correct, (B) would be true in Part 1 but not in Part 2, (C) is unfounded.

You will now have to indicate the tax rate you would like to be applied to the group for the earnings of this second part should you be selected as 'decisive individual'.

Enter your tax rate in the box at the center of the screen.

This can be any number between 0 and 100.

Then, press the button "Proceed" at the bottom of the screen. After all have answered, we will move on to the *(A)* series of questions *(B)* **series of tasks** *(C and D)* **lottery**

Guess 2

Before proceeding to (A) the second series of questions (B) the second series of tasks (C&D) the second lottery, we would like to ask your prediction about your initial earnings in this second part.

Remember that if (A &B) you have the best performance in (A) answering the questions (B) executing the tasks (C and D) the lottery assigns you the highest number, then your initial earnings will be 21 tokens. If instead (A &B) you have the second best performance (C and D) you are assigned the second highest number in the lottery, then your initial earnings will be 20 tokens. If instead you (A) have the lowest level of performance in answering questions (B) executing the tasks(C and D) you are assigned the lowest number in the lottery, then your initial earnings will be 1 token.

This prediction will in no way affect your probability of being randomly selected as decisive individual.

Which initial earnings do you predict you will get?

Please write a whole number between 1 and 21.

_____

How sure are you about your prediction?

- Completely sure
- Some what sure
- Not at all sure

(A) Questions *(B)* Tasks *(C and D)* Lottery

(Treatment A+B) ASSISTANTS 1 and 2 distribute the second set of questions and tasks. They pay attention to leave them with the front page down, so that students see a blank sheet.

Part 3

Part 3 follows the same procedures as Part 2, but presents an important difference. Before proceeding to the choice of the tax rate and the determination of the "decisive individual", each of you will be informed of your initial earnings in Part 1 and Part 2, as determined by (A+B) your position in the ranking derived from answering the questions (B) executing the activities (C and D) the previous lotteries. However you will not be informed about your final earnings. After that, the procedures will be the same as in Part 2. After asking you to indicate a tax rate, (A) a new series of questions (B) a new series of tasks (C & D) a new lottery / will take place that will determine everyone's initial earnings. Finally we shall randomly select the decisive individual for this third part. The tax rate chosen by the decisive individual will determine everyone's final earnings.

If there are no questions, please press the button OK.

Initial earnings in the previous parts

Your initial earnings in the previous two parts were:

Part 1: 4/21
Part 2: 16/21

Choice of the tax rate (Part 3)

You will now have to indicate the tax rate you would like to be applied to the group for the earnings of this third part should you be selected as 'decisive individual'.

Enter your tax rate in the box at the center of the screen.

This can be any number between 0 and 100.

Then, press the button "Proceed" at the bottom of the screen. We will then move to the (A) third series of questions (B) tasks (C) third lottery.

Guess 3

Before proceeding to (A) the second series of questions (B) the second series of tasks (C&D) the second lottery, we would like to ask your prediction about your initial earnings in this third part.

Remember that if (A &B) you have the best performance in (A) answering the questions (B) executing the tasks (C and D) the lottery assigns you the highest number, then your initial earnings will be 21 tokens. If instead (A &B) you have the second best performance (C and D) you are assigned the second highest number in the lottery, then your initial earnings will be 20 tokens. If instead you (A) have the lowest level of performance of all in answering questions (B) executing the tasks(C and D) you are assigned the lowest number in the lottery, then your initial earnings will be 1 token.

This prediction will in no way affect your probability of being randomly selected as decisive individual.

Which initial earnings do you predict you will get?

Please write a whole number between 1 and 21.

_____

How sure are you about your prediction?

- ○ Completely sure
- ○ Some what sure
- ○ Not at all sure

(A) Questions *(B)* Tasks *(C and D)* Lottery

(Treatment A+B) ASSISTANTS 1 and 2 distribute the second set of questions or tasks. At the same time they should also collect the previous bundle)

Review

You now have the opportunity to change your previous choice of the tax rate for this third part. Below are shown your actual **initial earnings** for this third part, as determined by (A) your position in the ranking determined by the third series of questions, (B) your position in the ranking determined by the third series of tasks, (C&D) the third lottery.

If you decide to change your choice, you need to insert a new choice and this will become the tax rate that will be applied to the initial earnings if you are selected as the decisive individual. If you do not change your choice, the tax rate previously chosen will instead be applied should you be randomly selected.

Initial earnings in the third part

Your initial earnings in this third part are:

Part 3: 6/21

You have decided a tax rate of 60%. If you want to modify this decision, press the "Modify" button and a new window will appear where you will be able enter a different tax rate.

Now you can enter a different tax rate.

If instead you want to confirm the tax rate you already decided, press confirm.

After that Press the button "Proceed" at the bottom of the screen.

The decisions phase is now complete. We are now going to randomly draw according to which part you will be actually paid for. Here there are three cards numbered from 1 to 3,and I am going to ask one of you to draw one of these.

Ambiguity and Risk Aversion Tests

You now have a further opportunity to earn some money. There will be six questions that we would like you to answer. Your payment will be determined by only one of these. The question which determines your payment will be selected by a random draw that will be carried out at the end of the questions. Each question has the same probability of being drawn. Please answer each question carefully, because you will not know in advance which one determines your payment.

First Question

1) Consider the following scenario. There are two boxes, each containing 100 paper slips, which can be either red or grey. The composition of the paper slips in the boxes is as follows:
Box 1: Contains 50 red paper slips and 50 grey paper slips.
Box 2: The number of red and grey paper slips is unknown. It could be any number between 0 red paper slips (and 100 grey paper slips) and 100 red paper slips (and 0 grey paper slips). My assistants have previously had the computer randomly extract a number between 0 and 100, and have used that number to determine the number of red paper slips present in Box 2.

Lead Researcher: At the end of the session you can, if you will, control the content of the boxes.

Your task is to choice one among the two boxes. A paper slip will then be extracted from each box, and you will earn 5 tokens if the color of the paper slip extracted from the box of your choice is red. You will not earn anything if the paper slip is grey.
Are these instructions clear?

Please, make your choice between box 1 and box 2.

□ **Box 1** □ **Box 2**

Second Question

Consider the following situation. Two boxes contain 100 paper slips each, which can be either red or grey. The composition of the paper slips in the boxes is as follows:
Box 1: Contains 45 red paper slips and 55 grey paper slips.
Box 2: The number of red and grey paper slips is unknown. It could be any number between 0 red paper slips (and 100 grey paper slips) and 100 red paper slips (and 0 grey paper slips).
My assistants have previously had the computer randomly extract a number between 0 and 100, and have used that number to determine the number of red paper slips present in Box 2.

Your task is to choose a box among the two boxes. A paper slip will then be extracted from each box, and you will earn 5 tokens if the color of the paper slip is red.
Are these instructions clear?

Please, make your choice between box 1 and box 2.

□ **Box 1** □ **Box 2**

Third Question

Consider the following situation. Two boxes contain 100 paper slips each, which can be either red or grey. The composition of the paper slips in the boxes is as follows:
Box 1: Contains 40 red paper slips and 60 grey paper slips.

Box 2: The number of red and grey paper slips is unknown. It could be any number between 0 red paper slips (and 100 grey paper slips) and 100 red paper slips (and 0 grey paper slips).
A paper slip will be extracted from each box, and you will earn 5 tokens if the color of the paper slip is red. Your task is to choose a box among the two.
Are these instructions clear?

Please, make your choice between box 1 and box 2.

□ **Box 1** □ **Box 2**

Fourth Question

4) You can choose between participating in a random draw that gives you the possibility of winning 5 tokens, or receiving a set sum of money.

The random draw works as follows. We will take a box containing 50 red paper slips and 50 grey paper slips, and we will extract one of these. If the slip extracted is red you will win 5 tokens, if it is grey you will win nothing. Notice that clearly the probability that the outcome is a red slip or a grey slip is 50%.

The alternative choice is that you receive 2.5 tokens for certain. Your task is then to choose between the draw from the box or 2.5 tokens for certain. Please make your choice.

Please make your choice.

□ **Draw from the box** □ **2.5 tokens for certain**

Fifth question
You can choose between participating in a random draw that gives you the possibility of winning 5 tokens, or receive a set sum of money.

The random draw works as follows. We will take a box containing 50 red paper slips and 50 grey paper slips, and we will extract one of these. If the slip extracted is red you will win 5 tokens, if it is grey you will win nothing. Notice that clearly the probability that the outcome is a red slip or a grey slip is 50%.

The alternative choice is that you receive 2.1 tokens for certain. Your task is then to choose between the draw from the box or 2.1 tokens for certain. Please make your choice.
Are these instructions clear?

Please make your choice.

□ **Draw from the box** □ **2.1 tokens for certain**

Sixth question

You can choose between participating in a random draw that gives you the possibility of winning 5 tokens, or receive a set sum of money .
The random draw works as follows. We will take a box containing 50 red paper slips and 50 grey paper slips, and we will extract one of these. If the slip extracted is red you will win 5 tokens, if it is grey you will win nothing. Notice that clearly the probability that the outcome is a red slip or a grey slip is 50%.

The alternative choice is that you receive 1.7 tokens for certain. Your task is then to choose between the draw from the box or 1.7 tokens for certain. Please make your choice.
Are these instructions clear?

Please make your choice.

☐ **Draw from the box** ☐ **1.7 tokens for certain**

6.2 Text of questions used in analysis

We report below the questions from which some of our variables were derived.

POVERTY

In your opinion, which is more often to blame if a person is poor – strong effort on his or her part, or circumstances beyond his/her control?

(1) Strong effort, (2) Luck or circumstances beyond his/her control.

LIFE_SUCCESS

Below are listed several reasons why some people get ahead and succeed in life and others do not. Using a 1–5 scale, where '1' means not at all important and '5' means extremely important, please tell me how important it is as a reason for a person's success.

You can choose any number from one to five.

A: How important is willingness to take risks

B: How important is money inherited from families

C: How important is hard work and initiative

D: How important is ability or talent that a person is born with

E: How important is dishonesty and willingness to take what they can get

F: How important is good luck, being in the right place at the right time

G: How important is physical appearance and good looks

I: How important are connections and knowing the right people

J: How important is being a member of a particular race or ethnic group

K: How important is getting the right education or training

L: How important is a person's gender, that is whether they are male or female.

MONEY AND WEALTH

Do you feel that the distribution of money and wealth in this country today is fair, or do you feel

that the money and wealth in this country should be more evenly distributed among a larger percentage of the people?

A. Distribution is fair
B. Income and wealth should be distributed more equitably

HIGHEST TAX RATE

How much do you think is the highest tax rate on incomes in the US tax system?

RIGHT

In political issues people often refer to positions of ‘left’ and ‘right’. Where would you locate your opinions in the following scale, where 1 means “left” and 10 means “right”.

CONSERVATIVE INDEX

How justifiable do you think the following behaviours or practices are? Respond using the following scale from 1 to 5, where 1 means “It can always be justified” and 5 means “It can never be justified”.

a. Homosexuality
b. Prostitution
c. Eutanasia
d. Abortion

COLLECTIVISM/INDIVIDUALISM INDEX

Indicate for each of the following statements if you agree or not.

a. Parents and children must stay together as much as possible.
b. I feel good when I cooperate with others.
c. When another person does better than I do, I get tense and aroused.
d. I rely on myself most of the time; I rarely rely on others.
e. A woman needs to have children to be fulfilled.

A. Strongly agree
B. Agree
C. Neither agree nor disagree
D. Disagree
E. Strongly disagree

TRUST

Generally speaking, would you say that most people can be trusted or that you couldn't be too careful in dealing with people?

A. Can be trusted
B. Can't be too careful

RELIGION

To which religious denomination do you belong?

MOTHER_EDU

28. Which is the highest level of education that your mother achieved?

A. Primary school
B. Secondary school
C. High school
D. Undergraduate degree
E. Master
F. Ph.D.