WHICH RELATION BETWEEN GLOBALISATION AND
INDIVIDUAL PROPENSITY TO CO-OPERATE?
SOME PRELIMINARY RESULTS FROM AN
EXPERIMENTAL INVESTIGATION

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Abstract:

The paper reports on a theoretical framework for the study of the influence of globalisation on individual decision-making. The focus is on individual co-operative behaviour for the provision of public goods. First, I summarise relevant theories of globalisation and co-operation aiming to find a link between the two themes. Second, I illustrate the methodology of the research project "Globalisation, Co-operation and Trust: An Experimental Study", which will carry out an international study on the subject. Finally, I report on some preliminary results from a pilot study of the project. The explanandum is individual propensity to co-operate measured in experiments of nested public goods problem. The main explanatory variables are four dimensions of individual access into globalisation processes, derived from a questionnaire. Of these four dimensions, the cultural and the social dimension of globalisation appear to have a strong explanatory power on individual co-operation rates, although they have different signs. The other two dimensions, economic and political, do not seem to have comprehensive explanatory power. The relationship with social identity is also analysed.

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We can easily now conceive of a time when there will be only one culture and one civilization on the entire surface of the earth. I don't believe this will happen, because there are contradictory tendencies always at work - on the one hand towards homogenization and on the other towards new distinctions".
(Claude Levi-Strauss, 1978: 20)

1   Introduction

In spite of the rapid growth in research on globalisation, most of the studies seem thus far to have taken a "macro" approach, for instance investigating the impact of economic globalisation on a country's economic performance (e.g. Collier and Dollar, 2002), or on its poverty levels and income inequality (e.g. Sala-i-Martin, 2002). The same seems to be true for other social sciences[1]. Some (partial) exceptions are those studies that have looked at how social factors like culture and identity 'matter' for individual economic decisions (Henrich *et al.*, 2004; Inglehart, 2003; Akerlof, 1997). By stressing the diversity of behaviour among societies at different stages of economic development and historical evolution, some of these studies have implicitly hinted at the role that globalisation may play through reshaping those factors. However, studies systematically investigating the influence of globalisation on individuals' behaviour in their day-to-day decision-making, seem at this stage to be lacking.

The aim of this paper is to help bridge this gap, and investigate the complex relations among globalisation on the one hand, and individual decision-making on the other. The type of interaction analysed is co-operation problems for the provision of public goods. This focus is

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[1] Political scientists have typically focussed on the collective action of e.g. social movements in relation to globalisation; among countless examples of works of this kind, see for instance Castells (2004), for political resistance movements to globalisation; Falk, (1992) and Scholte (2000a) for 'global' civil society. Beck (1986) and Bauman (1998) analyse the reactions of individuals vis-à-vis globalisation from a sociological viwpoint; their angle is nonetheless on the relationship between an individual and the society as a whole, rather than among different individuals in specific contexts of interaction.

justified by the heightened importance of public goods at the various levels of human interactions, be they at the global[2], national, or local level. The essential question that is addressed is what influence the process of globalisation has on co-operation towards the provision of public goods at each of these levels.

This paper is part of the research project "Globalisation, Co-operation and Trust: An Experimental Study", (GCT hereafter) which will carry out an international study on the subject. This research project was launched by CSGR in spring 2004, and has brought together an interdisciplinary and international network of researchers[3]. Thanks to funds obtained by the National Science Foundation, a first wave of the research will be carried out in Argentina, Italy, Iran, Russia, South Africa, and the United States.

The primary goal of the project is to establish the existence of a relation between globalisation and individual propensity to co-operate from the empirical point of view. More precisely, we shall try to answer this question using the methodology developed in experimental economics. In experiments individuals are involved in 'controlled' situations of social interactions, which take place in isolated environments that are similar to laboratories in the natural sciences. Subjects are faced with monetary incentives, so that their 'observed' behaviour will typically be a decision on how to allocate a sum of money, provided by the experimenter, among different options. The structure of the payoffs and the design of the social interactions are intended to 'measure' individual preferences rigorously, as well as their changes in response to manipulations of the social environment[4].

The subjects who will take part in this research are involved in interactions that are modelled on Public Goods Games (PGGs). This is the typical situation used across a number of disciplines to pit self-interest against co-operation for the common good. In the experiments, participants will be playing these PGGs, and paid the real earnings that result, with people from

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[2] Co-operation to achieve the provision of global public goods has increasingly been seen as crucial to the growth of local and global prosperity (as discussed in the agenda set by the UN Millennium Development Goals). Such are those public goods that transcend national borders, such as the environment, public health, international justice, and international financial stability (e.g. Kaul et al. (2003)).

[3] Gianluca Grimalda (CSGR) launched the project, and is co-leader with Professor Nancy Buchan (University of South Carolina, Business); Professor Marilynn Brewer (Ohio State University, Psichology); Dr Margaret Foddy (Carleton University, Sociology and Anthropology); Professor Enrique Fatàs (Valencia University, Economics); Professor Rick Wilson (Rice University, Political Science) are part of the core research team. Other collaborators are Syed Ahasn (Concordia University, Economics), Fatemeh Bagherian (Tehran University, psychology), Iain Edwards (Monash University, South Africa, history), Saul Keifman (Universidad de Buenos Aires, economics), Francis Matambalya (University of Dar es Salaam, business), Luigi Mittone (University of Trento, economics), David Schrieber (University of Wisconsin, business).

[4] See e.g. Kagel and Roth (1995) and Camerer (2003), for introductory books on experimental and behavioural economics.

their own local area, from another area in their own country, and from different countries around the world. In this way, the tension between co-operating to increase local welfare and co-operating to increase overall global welfare is made salient for individuals.

If co-operation propensities are – in this methodology - 'measured' by subjects' behaviour in experiments, the impact of globalisation is primarily appraised through a questionnaire that subjects complete at the end of the experiment. Various questions assess subjects' participation in global relations. These vary to comprise the economic, social, cultural, and political areas of relations. Indexes of individual access to, and also exclusion from, globalisation are then constructed on the basis of subjects' answers to the questionnaire. These are then used to assess their relationship with subjects' experimental behaviour. The questionnaire also addresses a range of possible mediating factors of globalisation on individual decision-making, such as individuals' social identity and attachment to the local, the national and the global community. Other factors, such as subjects' values, attitudes towards globalisation, and some cultural aspects of the societies wherein they live, are also addressed in the questionnaire. Other statistical sources are used for explanatory factors that cannot be included in the questionnaire, such as the degree of ethnic heterogeneity in the area where subjects live.

Section 2 of the paper seeks to conceptualize the relation between globalisation and individual decision-making in co-operative problems[5]. In particular, after an analysis of definitions of globalisation and of theories of co-operation, an attempt is made to identify the possible links between these two. This is done first in relation to rational choice accounts of co-operation based on the idea of reciprocity. I then discuss various theories of social identity, and of their change vis-à-vis globalisation. These vary from the cosmopolitan idea that people expand the community to which they are attached to the whole humankind (Hannerz, 1992; Held, 1995), to the opposite view that individuals entrench even further to the local level (Castells, 2004) as an effect of globalisation. Since the relevance of one's identification with a group is seen as central in many theories of co-operation, the reshaping of social identity is

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[5] As mentioned above, this paper is part of the GCT project, which sees the collaboration of several researchers. See note 3. In particular, the framework that has been developed is joint work of the research team, whereas the analysis of the results from a pilot study is my own. More precisely, section 3 is entirely the outcome of joint work with other team members, as well as the questionnaire reported in the appendix. Section 2 is mainly the result of my theoretical investigations in the fields of globalisation, social norms, and social identity, although the presentation also draws substantially on discussions with other research team members, and on some materials taken from funds application presented to NSF. Finally, sections 4 and 5 are entirely the results of my own analysis, as well as the index construction reported in the Appendix. I have

obviously a relevant channel whereby globalisation influences co-operative behaviour. Other possible mechanisms, such as the change in social and cultural norms of behaviour in a given society, will only briefly be sketched out, given the difficulty of grasping changes at the meso-level within a research that focuses on the individual level. However, questions from the World Value Survey are included to control for these aspect.

Section 3 reports more specifically on the methodology of the research. Section 4 reports some empirical results from a pilot study carried out at the end of October 2005. Since the purpose of this study was to check the validity of the experimental design and the suitability of the questionnaire, the results derived from them cannot be generalised. In particular, the fact that the sample selection procedure did not aim to recruit people from the general public, and the too limited a number of observations represent their major limitations. Bearing this in mind, however, some of the patterns that emerge in this pilot study seem worth commenting. In particular, relevant country effects seem to emerge, with behaviour in the US leading to higher co-operation rates than in Spain. Second, access into globalisation appears to be a good predictor of experimental behaviour. Interestingly enough, various dimensions seem to bring about contrasting effects on individual actions. The cultural dimension of globalisation seems to have the strongest influence, and this goes in the direction of reducing an individual's co-operation rate. In particular, subjects who are 'culturally globalised' seem, *ceteris paribus*, to discriminate against the groups at the higher level than the local, that is, the national and the global group. The social aspect of globalisation seems instead to move in the opposite direction, leading to higher co-operation rates, and favouring the higher order group, though at a lower significance level. The political dimension of globalisation is only marginally significant for some aspects of the interactions, whereas economic globalisation never turns out to affect behaviour – though some effects emerge when subjects' income is controlled for. Social identity seems to account for subjects' behaviour mostly at the local level of interaction. Other explanatory factors, such as exclusion from globalisation, the presence of anti-foreign sentiments, and the type of culture, do not seem to exert significant influence on behaviour. Section 5 draws some preliminary conclusions, and highlights the topics that seem to deserve further attention in the next stages of the research.

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tried to make clear when what I am reporting is either my own contribution or contribution from the group by using either the first person singular or the first person plural.

2   Theoretical Framework

Offering a complete review of globalisation theories obviously lies beyond the objectives of this paper. The aim of this section is mainly to clarify the basic concepts underlying the theoretical framework of the project.

2.1   Globalisation

Most theories of globalisation hint at the transcendence – or compression - of space in human relations as the distinctive feature of globalisation. That is, the crux of globalisation is seen in the progressive elimination of physical boundaries to such relations. This is made possible by several factors. Technological progress has created networks of communication that completely transcend space and time. Drastic reductions in transport costs facilitate both trading activities and delocalisation of production on the economic side, and people migrations on the social side. Political events are capable of affecting at the same time people living in different parts of the world. The intensification of economic activities poses 'threats', e.g. to the environment, on a planetary scale. The range of activities that is affected by these changes is so broad that nearly all spheres of human relations are likely to be influenced. One could note that some of the factors of change have taken place in the very recent past, whereas others have been continuing for centuries. Although dealing with the question of the 'timing' of globalisation is rather unimportant for this research, this points to the difficulties implicit in comprehending such a multi-faceted concept.

Even if the question of distance is certainly central to globalisation, various theories differ on the emphasis they put upon it. Early definitions did not offer particular qualifications to this notion, but referred generically to *"the intensification of worldwide social relations linking distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa"* (Giddens, 1990: 27). Other conceptualisations have in turn emphasised the necessity of these links to be transnational (e.g. Beck, 2000), and then transcontinental (Held et al., 1999). Other theorists (e.g. Scholte, 2000: Chapter 2) go a step forward in arguing that the nature of globalisation is better captured by the idea of 'deterritorialization' – or 'supra-territorialization' - of human relations. He thus discusses globalisation as *"the spread of transplanetary and […] supraterritorial connections between people. From this perspective, globalisation involves reduction in barriers to transworld contacts. People become more able – physically, legally, culturally, and psychologically – to engage with each other in 'one world'."*

(Scholte, 2002: 13-4). In this sense, globalisation differs from the notions of internationalisation, westernisation, universalisation, and liberalisation, which have been proposed by others as the crux of globalisation.

The notion of supra-territoriality seems to offer a more solid theoretical background than other characterisations, and so it will be used in the rest of the analysis as the main theoretical benchmark. However, some further qualifications are both possible and necessary, especially considering that the unit of analysis of this research is at the individual level. First, one of the aspects that seems particularly relevant for the aims of our research is that of individual connectedness in supra-territorial relations. Not only has globalisation determined a change in the number and scale of an individual's connections, but also it has modified their nature. In particular, the so-called 'Information Technology (IT) revolution', has made it possible for people to enter in relations with each other through networks, and not merely by means of one-way or two-way relations. The consequences of these changes on social relations and their distinctiveness for globalisation has been pointed out by many authors, and has been extensively studied. For instance, Castells (2003) talks about a 'network society'. Others refer to 'globalism' as a state of the world involving networks of interdependence at multi-continental distance (Keohane and Nye Jr., 2000), and point out the aspect of 'complexity' associated with such networks (Tomlison, 2003). The scale and the type of inter-connections will play a crucial part in our research, as in fact one of the most important factors in the construction of a scale for the individual access into globalisation will be given by the individual's degree of connectedness in supra-territorial relations.

A second aspect that seems particularly relevant for our research is that which has been referred to as the *"intensification of consciousness of the world as a whole"* (Robertson, 1992), or of the earth as humanity's home (Scholte, 2000). Again, technological changes and the diffusion of communication media active on a world scale play an important part in this (e.g. Held *et al.*, 1999: Chapter 7). However, this is not merely the result of technical change, but is also a consequence of the growing interdependence among people and activities, which makes events and actions taking place at one side of the globe become relevant for people living at the other side. Moreover, global instances like threats to the environment or the inter-planetary spread of epidemics, give rise to a sense of a common fate for the humanity as a whole. As Giddens argues, with globalisation 'humankind becomes a "we", facing problems and opportunities where there are no "others" '. (Giddens, 1991: 27). This perception of the 'world-as-a-whole' seems to be a peculiar characteristic of contemporary times. Clearly, in the past there have been examples of individuals having a vision that arrived to encompass the whole

world. But this seems to be an exception, limited to the very few, rather than the rule. For instance, a survey carried out by the UNESCO in the 1960s found that more than 70% of the people sampled were not aware of events taking place outside of their place of residence (Tomlison, 2003). One is on safe grounds when saying that this proportion must be significantly higher today. The very large diffusion of the term globalisation has undoubtedly played a part in this, too, which is but one example of the reflexivity of the notion of globalisation. In our theoretical setting, such a heightened consciousness of the 'single world' will be considered not merely as a consequence of globalisation, but as one of its distinctive factors. Hence, it will form an integral part of our individual scale of access to globalisation.

A third and final aspect that needs to be mentioned regards the relationship between the local and the national level on one side, and the global level of interaction on the other. At first sight, one would expect that the rise in genuinely global relations is at the detriment of those at the lower level. In fact, several students see this effect taking place in the relationship between globalisation and the state. Many scholars argue that the state is progressively losing importance both in terms of political power and as a source of identification for individuals, as a direct consequence of globalisation. Although other scholars object that the power of the state is far from being wiped out by globalisation, and still holds on as one of the most effective sources of control over individuals and institutions, there is ground to put global and national relations in direct opposition to each other. Bauman (1998) argues that localisation and globalisation stand out against each other, too. In particular, localisation and globalisation are likely to mark a break in individual conditions that seems to bear the same connotation as the concept of 'class'. In a world of people continuously 'on the move', he argues, being localised denotes lack of access, and thus it is a sign of social deprivation and degradation. This is particularly serious as localities are losing their meaning-generating and meaning-negotiating capacity and are increasingly dependent on interpretations they do not control. A similar view may be found in some empirical studies (see Albrow, 1997).

However, other scholars see the dynamics between the local and the global level as more complex. Giddens (1990) argues that the decrease in some aspects of nationalist feeling linked to nation-states leads to the intensification of more localised nationalist sentiments. Robertson (1991) claims that the *dynamic* of globalisation involves a 'search for fundamentals', that is, a search for identity and expression both at the individual and at the societal level. Whereas this process was formerly seen by Robertson as implying a 'declaration' of identity of local societies (communities) *as a reaction to* globalisation, in his more recent works Robertson stresses that the expectation of identity declaration is built into the general process of

globalisation, and is thus a constitutive part of globalisation itself. Hence, as also stressed by others (Beck, 2000), far from being antithetical processes, globalisation and localisation may not only co-exist, but also they could be seen as essential to each other.

2.2 The Public Goods Problem

Public goods are characterized by two properties; first, they are non-rival in consumption, and second, they are non-excludable. The first property refers to the fact that the consumption of any individual in a group does not decrease the amount of the good available to other people. This may be due to the fact that the good is available in virtually unlimited supply – e.g. the oxygen present in the atmosphere – or because for its nature the good cannot be depleted – for instance, the formula to find the area of a triangle. In contrast, private goods are rival in consumption, in that someone's consumption precludes consumption by someone else. Non-excludable goods are instead those for which the provision of the good makes it impossible to exclude some individual of a group from its consumption. For instance, all would benefit from the administration of a vaccine against a contagious disease; every citizen would gain from the provision of security measures to reduce crime rates.

Clearly, goods may have different degrees of non-rivalry and non-excludability. *Pure* public goods are defined as those being at the same time non-rival and non-excludable to the maximum possible degree. However, some public goods may be not entirely non-rival in consumption, for instance were they available in large but not unlimited supply. In this case they may suffer of problems of congestion. For instance, the enjoyment of a park, or even the physical access to it, may be hindered were this to become overcrowded. Non-excludability is often dependent on the availability of technologies to exclude people and the associated costs in setting up such technology. For instance, access to public roads may be limited by the construction of toll gates, and access to an internet network may be subject to the knowledge of a password. Some public goods may be perfectly non-rival but still excludable, like for instance the chemical formula to produce Coca-Cola. Some others may be (virtually) non-excludable but rival in consumption, like fishing or hunting. Moreover, public goods may differ for the number of people who may have access to it, and their geographical location. So, the literature in international political economy has pointed at the importance of *global* public goods, in that their provision would extend to virtually every person on the planet. Typical examples are the environment, or the fight against diseases that may be spread across the planet. Some other public goods may have a more limited scale, like the construction of a road. In the present

research, we shall deal with pure public goods, which is made possible by the recourse to experimental social interactions.

The above examples should have highlighted the problems associated with the provision of public goods. In fact, the structure of the incentives is such that individual and collective interests typically diverge in their provision. That is, although everyone would benefit from the access to a public good, the individual costs exceed the individual benefits in producing them. On the other hand, the social benefits – namely, the benefits for the group as a whole, which the utilitarian approach often treats as the 'sum' of individual benefits (see e.g. Broome, 1999) – exceed the overall costs for their provision. This is a typical problem of co-operation, or, as it is also called, a social dilemma. The provision of the public goods will require some form of joint action by the members of the group, which will go against their own self-interest but will increase the benefits for the group.

The experimental studies of PGGs and of co-operation or selfishness in public goods provision is ubiquitous (see reviews of this literature in economics by Ledyard (1995), in psychology by Liebrand and Messick (1996) and in sociology by Kollock (1998)). The basic PGG involves a voluntary contribution mechanism (VCM) such that participants are endowed with a sum of money and are faced with the options of either keeping the money for themselves or allocating some or all of it to a public pot (a 'kittie'), where total contributions are multiplied by the experimenter and then shared equally among the agents. With appropriate constraints, this situation represents a typical co-operation problem, in that contributing nothing is always the payoff-maximing strategy for an individual, but contributing everything allows everyone to reach a better outcome, which corresponds to the socially optimal one. The factor at which contributions to the kittie are multiplied is called the social return from one's contribution, whereas the ratio between the social return and the number of agents is called the individual return from one's contribution – or, as conventional in the literature, Marginal Per Capita Return (MPCR). In fact, the MPCR represents the fraction of one's contribution to the public pot that will be returned to him/her. The general finding in the numerous experiments conducted on linear VCM PGGs is that the public good is provided at about 50% of its optimal level in one-shot interactions or in the first trial of repeated PGGs. That this result runs counter to economic rationality is mitigated by the observation that provision rates decrease as interaction goes on (Dawes and Thaler, 1988).

Various strands of the social sciences literature have sought to provide an account of co-operation in public goods problem situations. In this survey we shall focus in particular on two of these accounts. The first is a rational-choice based account, which is based on the notion of

reciprocity. The second account may be still construed in terms of suitably adapted model of rational choice, but this time the explanation does not rely solely on individual self-interest. That is, individuals must have some sort of social preferences involving other members of the group of people with which they interact (See Fehr and Schmidt, 2001, for a review). For instance, individuals may assign positive 'utility' to the 'success' of the group of which they are part[6]. Finally, other accounts are less consistent with rational choice models by emphasizing the aspect of obligation in complying with a certain social norm as an effect of group or societal influence. As a result, compliance takes place in the absence of a wilful choice by the agent. In the discussion below, I shall focus on the first two of these accounts, and I shall seek to envisage how globalisation may influence co-operation in societies. Finally, the implications of these considerations on individual experimental behaviour in our research will also be highlighted.

2.3 Rational Choice Accounts of Co-operation

An account of co-operation that has attracted wide attention and some degree of consensus across disciplines is that based on the notion of reciprocity. This may be seen most clearly when two individuals are involved in the same co-operation problem in several repetitions of the same interaction. The game-theoretic analysis of this type of 'extended' co-operation problem has shown that co-operation may be the rational action even for purely self-interested individuals. This is the case when the interaction does not have an end that is certain, and individuals have individual discount rates over the future that are sufficiently low, that is, individuals value future payoffs highly enough. In this case, a tit-for-tat strategy (Axelrod, 1984), which prescribes to start co-operating, and then replicate the counterpart's action in the last iteration of the game, may be shown to be a (subgame perfect) Nash equilibrium of the game.

The intuition behind this result is quite straightforward. What tit-for-tat prescribes to do is to stop co-operating when the other individual stops doing so. Since joint co-operation is mutually beneficial, an individual who stops co-operating will anticipate the loss due to lack of the provision of the public good in the future. This may be called the *threat* of the counterpart retaliating over the individual's lack of co-operation. Nevertheless, the fact that an individual is 'free-riding' on the counterpart's effort to provide the public good brings about a benefit in the current instance of the game. The result above may be restated by saying that, when individuals

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[6] In Ledyard (1995) a theory is put forward where the success of the group is identified with its members gaining a higher payoff than what they would have without being part of the group. Others models of individual behaviour accounting for co-operation in PGGs are altruism and reciprocal co-operation.

attach a sufficiently high value to future payoffs, then the threat of retaliation will exceed the short-term benefits from free-riding, thus establishing joint co-operation as the outcome of the interaction.

Outside of the game-theoretic jargon, this result says that in two-party repeated interactions, the structure of incentives may be sufficient to make individual and collective interests coincide. The same argument may in principle be extended to situations where more than two individuals are involved. For instance, Kandori (1992) analyses the situation of pairwise co-operation problems where the couple of agents interacting are drawn at random from a large population of agents. In this setting, a version of tit-for-tat can be shown to engender a self-enforcing co-operative norm. However, this only happens under stringent conditions on the size of the population, on agents' discount factor and on the frequency of the interactions. In fact, the generalization of the reciprocity argument to the case of a large population presents significant problems for its enforcement. First, as pointed out by Pettit (1989), the threat of retaliation associated with tit-for-tat may be rather ineffective in interactions involving large number of people. This is particularly true for 'fouls dealing' situations, i.e. those public goods problem where individual payoff varies discretely with the number of defectors in the population. In fact, the loss of surplus for the *(N-m)* co-operators in punishing the *m* defectors may be so large, when *N* is large and *m* small, to make the threat of retaliation non-credible. In other words, in some conditions, tit-for-tat may not be a subgame perfect Nash equilibrium. For instance, it really seems unlikely that the whole population of Londoners would start littering Hyde Park to punish the lone person dropping a hamburger bag.

The problem of the enforcement has to do with the fact that the 'punishment' of the defector is in itself a public goods problem of a higher order for the group. In some instances, the nature of the interaction would lend itself to less drastic forms of punishment than tit-for-tat. For instance, it may be possible to think at institutional settings where policing makes it possible to identify defectors and induce some costs directly onto them. Bowles and Gintis (2004) explore the possibility of ostracism as a form of punishment directly addressing the defector, and introduce the notion of "strong reciprocity" to characterize the behaviour of individuals who not only co-operate in public goods problems, but also are available to sustain some personal costs to punish defectors. In the experimental literature, individual propensity to punish, at positive costs for the individual, has been tested in several studies. The nearly unanimous response has been that individuals have a high propensity to punish the transgressors of a co-operative rule, even when this is costly to themselves (Oswald and Zizzo, 2000), and this leads to (near to) a fully co-operative equilibrium (Fehr and Gachter, 2000).

Other scholars argue that punishment may be less of a problem than what one may think at first. Once a norm is established, in fact, a natural disposition of resentment in not living up to the expectations of the other members of the group may be sufficient to bring about motivational incentives to comply with a co-operative rule. The idea that human beings have such a 'natural' disposition had been first put forward by Adam Smith in his *"Theory of moral sentiments"* (1759), and is now developed by proponents of the theory of 'normative expectations' (Pettit ,1990; Sugden, 2000) to explain compliance with social norms. In this theory, enforcement may thus happen at virtually no cost, as the presence of a convergent set of expectations on someone's behaviour may suffice to guarantee his/her compliance. According to this theory, merely raising one's eyebrow may suffice to guarantee the perpetuation of a social norm in a society.

2.4   **Globalisation and Social Identity**

2.4.1   **The Notion of Community**

Globalisation students have explored different possible ways in which globalisation may affect social identities. In what follows, I shall try to summarise what I think are the most relevant for the present project. The notion from which to start is that of 'community' - or 'ingroup' in the language of social psychology. The basic characteristic of a community is the existence of some type of characteristics – ethnic, cultural, physical, spiritual, *etc.* – that provide individuals with some reasons to belong to a group of people sharing that characteristic. The property of 'belonging' may be entirely objective and not elicit any particular feelings or emotions. For instance, I may be said to belong to the community of Italians resident abroad, even though I do not experience any particular 'feelings' of attachment towards it. It's the fact of being born in Italy and having an Italian national citizenship that directly determines my belonging.

Nevertheless, it has been widely demonstrated that most individuals associate to such a sense of belonging emotions and motivations to act that go well beyond a merely 'objective' sense of attachment. In fact, the most heroic and cruellest acts have been committed by individuals in the name of some community. Several studies have tried to give sense to these behaviours (see e.g. Hardin, 1995; Harrison, 2003). Social psychologists draw an analogy between the sense of *personal identity* that an individual experiences towards his or her *self*, and that of *social identity* that is experienced with respect to a *group* (Turner, 1982). For instance, what Sumner (1906) identified as the basic motivations of a member towards his or her ingroup, namely, the loyalty and the sense of privilege accorded to members with respect to

non-members, may be matched with self-integrity and self-esteem in the individual sphere. What is relevant for our analysis is that a community is generally associated with the interposition of a boundary between people 'belonging to' and 'being outside of' the group. Both the presence of an ingroup and an outgroup - the 'us' and the 'others' - have traditionally been deemed as necessary for the constitution of a community. The theoretical assumption we build on is that globalisation may affect this notion of social identity in several different ways.

First, and most obviously given the above definition, it may bring to the fore some non-territorial sense of identities. Secondly, regardless of the territorial character of the community, globalisation may redraw the previously existing boundaries between ingroups and outgroups. However, theories have been put forward that say that globalisation may act in either direction. In other words, according to the theorists close to the 'cosmopolitan' idea, more people may become included in the 'we-group' as an effect of globalisation. The enlargement of the 'we-group' may however reduce the strength of the attachment to the ingroup, in the absence of those elements – symbolic, emotional, historical, mythical *etc.* - that provide the basis for individual belonging. A possible negative effect of globalisation on the strength of individual identification with local and national communities has also been put forward by Putnam (2000) in his comprehensive analysis of the historical evolution of social capital in the American society. His argument is that economic globalisation may trigger a decline in business leaders' civic engagement, thus furthering the process of erosion of social capital already underway. Conversely, other theorists argue that globalisation may instead produce the opposite effect of excluding more people from the ingroup, or enhancing the sentiments of attachment to the ingroup and of distance towards the outgroup. Thirdly, according to the cosmopolitan idea, the we-group may become as large as encompassing the whole humankind. Although the extent to which the presence of an outgroup is really necessary in order to elicit sentiments of attachment to the ingroup may be questioned (see Brewer, 1996), this view seems to imply a major departure from the traditional ways of understanding social identity. Finally, most of the traditional views see a community as being predominant with respect to all others. An effect of globalisation may instead be to produce the loss of a 'primary' community as the basis for individual identity. Rather, several senses of identities may happen to be present in the individual characterisation of the self, which may lead to the view of social identities becoming 'hybridized'. Even in this case, this would bring non-obvious consequences on individual decision-making and the way the individual relates to others. In what follows I shall try to spell out these concepts more clearly, leaving to the next section their implications for individual decision-making in co-operation problems.

2.4.2 Globalisation and National Communities

National identity has been traditionally identified as the main source of social identity for individuals. According to Scholte's reconstruction (2000: 161-162), there are at least three basic elements concurring to form a national community: (a) the presence of a large population (this distinguishes a national community from a 'traditional' community); (b) attachment to a specific territorial homeland (which may not be physically inhabited in the case of a 'diaspora'); (c) emphasis of cultural attributes that set it apart from other people. Language and what has been defined by Max Weber as *the existence of shared beliefs on a common past and a common future*, are often important elements of the culture defining a community. Note that state-nation is only one among the possible examples of nations, though arguably the most common form.

In the vast literature on globalisation, one may find support for any of the possible positions as to the effect of globalisation on national identity. According to globalisation 'true-believers', the most important effect of globalisation is precisely to weaken the sense of attachment to the nation-state. A second view is instead that of the sceptics of globalisation, that is, those who say that globalisation has only a marginal effect on people's lives – or at least much smaller than what the globalisation supporters claim -, so that the state-nation holds on as the main sense of identity for individuals (see Smith, 1995: 5).

An alternative view is instead based on the notion of the 'ideology of resistance' (Castells, 2004; Calhoun, 1994). According to this position, globalisation triggers a reaction against global flows of objects, commodities, people, ideas, which may lead to an entrenchment in the state-nation community. In terms of the model depicted above, this mechanism may be deemed as making the presence of an 'other' more vivid to members of a certain ingroup, thus strengthening even further the boundary between the 'us' and 'them'[7].

Such a 'backlash' against globalisation may take place at different levels. First, it may strengthen the identity with the nation-state. This is the case when citizens find their shared interests threatened by globalisation, e.g. when trade is liberalized or restrictions to free movement of people are removed. This may also be the result of a direct action of national governments. In the words of Scholte (2000: 165), *"State-nations old and new have often*

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[7] Moreover, a functionalist account of nationalism in an age of globalisation is portrayed by Smith (1995: 4) along these lines: *"In this unprecedented situation [that of the modern era], nations and nationalisms are necessary, if unpalatable, instruments for controlling the destructive effects of massive social changes; they provide the only large-scale and powerful communities and belief-systems that can secure a minimum of social cohesion, order and meaning in a disruptive and alienating world".*

actively reaffirmed their cultural distinctiveness in the face of intensified globalisation[8]". But this effect is also evident at the level of non-state national communities, such as local communities, so-called ethno-nations (e.g. Basque, Scots, Quebecois), region-nations (e.g. the European Community, the League of Arab States, the organisation of African unity), and also communities that are not territorially contiguous, i.e. transworld-nations (e.g. the Chinese, Indians, Irish, Jews, scattered around the world). In some cases, a backlash against globalisation mechanism may be deemed to have been effective at this level, in particular for ethno-nations (see Mlinar, 1992), but also for other communities (Halpering and Scheffer, 1992). Similarly to what argued for nation-states, local sentiments may be triggered by global flows directly threatening the interests – and sometimes the very existence - of local communities[9]. According to others (e.g. Hobswam, 1990) ethno-linguistic nationalism is instead nothing more than an irrational response to the rapidity of global changes, which are not destined to survive the tide of globalisation. Whether these sentiments of local attachment are temporary or permanent, it is worth noting that they generally go along with disaffection – or even open conflict – with the state-nation (Keating, 2001), which is but another example of the complexity of globalisation. Finally, the same backlash idea may be applied at the level of movements of people, sometimes with violent and tragic implications. According to Castells (2004), fundamentalist movements – ranging from Al-Qaeda to American Christian fundamentalists – may be seen as the most extreme forms that such an 'ideology of resistance' may take.

2.4.3 Cosmopolitanism

The theories reported in the foregoing section still construe social identity as being associated with a territory. However, given the characterization of globalisation as being the rise of supraterritoriality, it may be expected that different and non-territorially-based sense of identity be formed as an effect of globalisation. In fact, at the other extreme of the spectrum of possible social identities, lies the cosmopolitanism idea, i.e. that of a community so large as to comprehend the whole humankind, what in the world of Hannerz (1992) may be called a 'global ecumene'. Were this view correct, then, clearly there would be no 'others' to refer to in order to define the 'us' (at least in the foreseeable future). The flourishing of several 'global' social movements around a variety of causes such as human rights or the environment, and the growing importance of global humanitarian relief operations are all instances of this

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[8] Examples of this are the measures taken by several governments to counter the encroachments of global English, and the surge of xenophobic parties all around the world (see Scholte, 2000: 164).

cosmopolitan conscience (Held, 1995; Chea and Robbins, 1998; Vertovec and Cohen, 2002). The importance of the notion of the growing awareness of the *world as a whole* as already been emphasised (see section 2.1). Secondly, other critics argue that people living in different parts of the world may converge to a similar form of identity by means of a process of homogenisation of culture, production, and values, as a consequence of the spread of capitalism and of the western way of life/culture (for a discussion see Tomlison, 2003; Shepard and Hayduk, 2002).

However, other critics point at the difficulties implicit in this idea, first and foremost the lack of a 'global culture' to which a world community may hinge upon (Smith, 1990). Moreover, the World Values Survey shows that the cosmopolitan idea is still a rather tepid one as a source of identity, though it shows some sign of increase over generations, (Norris, 2000).

2.4.4   Supra-national Communities and Hybridisation

Finally, there is a third view on social identity in relation to globalisation. This hinges on the idea that globalisation makes it possible to develop supra-national communities, which are deterritorialised in character; examples are various types of religious, racial, class, youth, gender, lesbian/gay, and class solidarities (Scholte, 2000). If taken singularly, these solidarities do not seem to alter the traditional way of construing a community in terms of "us" and "others" (Scholte, 2000), although they do no longer have a territorial linkage. We may then conjecture that this may lead to individuals having a 'set' of different identities, which are used in different social situations depending on the 'community' with which they are interacting (see also Arnett, 2002). Obviously, some of these identities may be territorially-linked, whereas some other may not be so. However, the overlapping of different social identities may even have a more radical effect, in that the individual's sense of identity may become a "hybrid", with several solidarities blended together and the self becoming fluid and fragmented (Scholte, 2000; Tomlison, 2003; Hannerz, 1992). This gives rise to a different model of social identity than the communitarian, as no neat group distinction and oppositions appear, thus making it more difficult for an individual to form reliable social bonds and foster social cohesion with a group (Scholte, 2000). Obviously, this may have a relevant impact on both the relative allocation of co-operation in our experiments, but also in its overall size.

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[9] See for instance the indigenous movement spurred by the deforestation in Amazonia; or the 1994 Nafta agreement that, according to some critics, has elicited the Zapatista rebellion; see Scholte, 2000: 168

2.5   Other Aspects

2.5.1   Globalisation and Culture

This distinction of three types of identities also carries over to the relationship between globalisation and culture. So, at one extreme we have the view that national culture survives because of (a) insignificant effect of globalisation; (b) a pro-nation-state effect; (c) an anti-nation-state – and pro-ethnic-minority - effect. At the opposite extreme we have the homogenisation thesis, according to which with globalisation the world is converging to a same set of common values. The latter view may either take a negative turn when emphasising the 'extinction' of local cultures, especially as an effect of a westernisation of the world and spread of capitalism, or take a more positive one when pointing to 'enlightened' notions such as the defence of human rights, *etc*. In between the two lies the notion of multi-culturalism and hybridisation of culture.

Culture may be a mediating mechanism of globalisation in our study, in that a shift in a society's culture may lead to a change in individual decision-making leaving the individual's social identity unaltered. Questions from the World Value Survey (WVS henceforth) are used in our questionnaire to take into account this aspect. However, culture seems a concept with a higher dimensionality than, for instance, social identity, so that it may be difficult to arrive to a measure of such a concept within a questionnaire.

2.5.2   Trust

Although our research takes co-operation as its main explanandum, it is almost inevitable that the concept of trust enters the picture as well. One of the most credited accounts of co-operative behaviour in PGGs is that individuals are conditional cooperators (Croson, 1999, Yamagishi and Yamagishi, 2003), that is, people cooperate only insofar as they expect (a sufficiently high number of) other people to co-operate, too. Hence, trusting others to co-operate is a pre-condition for actual co-operative behaviour. Therefore, we believe it necessary to measure participants' levels of trust in the other people with whom they are matched in the various PGGs.

Our measurement of trust is suggested by the work of Orbell, Dawes and Schwartz-Shea (1994) who argued that trust is the expectation of another's behaviour in a situation involving vulnerability. This definition concurs with a broad body of research conceptualizing trust as an expectation (e.g. Deutsch 1958; Rotter 1967; Williamson 1993). Although the degree of vulnerability one experiences in a PGG setting may be less than, say, the degree of

vulnerability in a trust game (in which the trustee typically acts as a dictator in returning the sender's investment), vulnerability is still present.

2.6 **Globalisation and Co-operation**

In section 2.3, I reported on theories of co-operation based on the idea of reciprocity. On the basis of the survey, one may expect that the impact of globalisation on co-operation may be relevant and negative. This is true for a variety of reasons. First, globalisation is likely to make the enforcement of social norms more difficult. Even assuming that such enforcement costs were manageable, what all of those accounts reviewed before have in common is to require personal forms of interaction between the defector and the punisher to bring about the compliance with the norm. As Sobel (2002) puts it, dense social networks "facilitate good behaviour by publicizing past actions and making it possible to punish non-co-operative actions". North (1990) also emphasises how norms of co-operation are mostly likely to arise in close-knit communities, because monitoring costs and the possibility of transmitting the information across people are lower than in less cohesive societies whose relations are more impersonal and less frequent. Since one of the effects of globalisation is to break such social networks, and transform personal, small-scale and frequent interactions characteristic of close-knit 'traditional' communities into anonymous, large-scale and rare social exchanges, this makes the enforcement of social norms more difficult, and thus endangers the associated co-operative outcomes.

Whereas the above argument obviously holds in particular to the local level of interactions, it is clearly less applicable to higher levels of interaction, given the increased difficulty of having personal and frequent types of relationship in these contexts. It is apparent that norms enforcement relies in this case to formal instruments of control and institutionalized agencies, such as a legal system and a policing service. However, there exists a second theoretical argument that implies a negative effect of globalisation even in these settings. By broadening the number of people involved in an interaction, and by making the nature of interactions more complex than before, enforcement costs are likely to increase even in co-operation problems at levels above the local. This is mainly due to the heightened informational problems in detecting 'deviant' agents, and to the possibility that the 'defectors' fall out of the jurisdictional boundaries to which legal and security systems may be applied. For instance, national governments are faced with increased problems in implementing anti-pollution laws, if the felonies happen outside their national boundaries. Agreements between trade unions and entrepreneurs to keep inflation under control and maintain social peace may be endangered by

increased competition from other people living in other countries. Moreover, the absence of effective systems of sanctions at the international level begets a lack of formal systems of punishment, thus making the reciprocity argument even more problematic (Edwards and Zadek 2003). Hence, both co-operation at the national and the global level may be endangered by globalisation.

The only way in which globalisation may be deemed as bringing about a positive impact on co-operation, in particular for what concerns the national and global level, is by making interactions more frequent than before. In fact, I have already stressed how the reciprocity account relies on relatively frequent interactions in order to make the temporal horizon of the interaction equivalent to the mathematical notion of an infinitely-long one. Therefore, inasmuch as globalisation makes interacting easier, it may also engender a positive impact at the level where this is the case.

A second theoretical hypothesis over the influence of globalisation on individual decision-making is that this is mediated by a changed consciousness of an individual's own identity through the increased engagement with one another. Thus, the traditional conception of 'us' and the 'others' is either likely to be entirely restructured, or to be transformed so that various conceptions coexist alongside each other and are used in different social situations (Arnett, 2002). This basic contrast in how globalisation influences individual identity suggests differing explanations for individuals' behaviour in co-operative problems in different contexts. One would obviously expect that the higher the identification with a group, the higher the propensity to co-operate at that corresponding level. However, in the previous sections I have emphasised how theories differ in what the influence of globalisation is going to be in terms of identification at the local, national, and global level. On the one hand, the cosmopolitan idea implies an expansion of the ingroup boundaries, so that an individual is likely to include people at a wider order than the local or the national into her own relevant community. Putnam (2000) discusses the link between economic globalisation and individual engagement with the local community emphasising the negative relationship between the two aspects. On the other hand, an even more radical entrenchment to 'local' concepts of identity may be triggered as a direct reaction to the process of homogenization that is often associated with globalisation (Castells, 2004). In addition to the argument illustrated above, social identity theory from psychology suggests that identification with a group typically rests on the perceived existence of a 'stranger' to the group, that is, individuals or groups who have different social/cultural/economic characterizations than those of the group to which one belongs (Messick and Brewer, 1983).

The process of globalisation may indeed make the perception of the 'stranger' more vivid and definite than before, thus leading to higher levels of in-group (or localized) co-operation.

Consequently, different predictions may be derived from these theories. As for the local level, the cosmopolitan argument implies that co-operation is likely to be either unaffected or reduced, were the strength of the attachment decrease as an effect of the expansion of the ingroup. The social capital argument, at least in Putnam's view, leads to a definite negative relationship. The resistance argument would instead lead to the prediction of a likely increase in local co-operation. As for co-operation at the national level, it has already been emphasised how globalisation studies see the relationship between the national and the global level as if the two levels could be pitted in direct contrast to each other. Hence, one may expect that higher globalisation would lead to smaller identification at the state-nation level, and thus decrease the individual propensity to co-operate at that level. However, I have stressed how a resistance argument may be applied at the state-nation level, too, so that this prediction may be reversed. Finally, the cosmopolitan argument is obviously most likely to predict an increased propensity to co-operate when applied to the global context. This may make people more concerned with the fate of other people, thus fostering co-operation in the global domain. However, this prediction may be reversed by considering that increased globalisation may actually raise the diffidence of individuals towards foreigners in many countries (Barth, 1995), as well as hinder rather than facilitate the achievement of a common system of shared beliefs on mutual behaviour (Nadelmann 1990; also see Ostrom 2003, for a discussion of the influence of shared norms on co-operation). Hence, even in this case existing theories do not agree on what impact globalisation will have on co-operation.

Several caveats apply to the above theoretical considerations. Firstly, what will be recreated in the laboratory is obviously a situation of interaction very different from what an individual may face in real life. Some individuals entering our research may have not consciously faced a situation of interaction at the global level in all of their life! Moreover, the participants of our research will be involved in one-shot interactions, whereas this is on the one hand inconsistent with the reciprocity argument highlighted above, and on the other hand this is to some extent inopportune in experimental settings[10]. In particular, one of the consequences of the one-shot nature of the interaction could be that individuals will frame the global co-operation

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[10] One of the reasons why participants in experiments are very often involved in repeated interactions, is that in this way they are given the possibility of familiarizing with the interaction. This also enables the experimenter to study 'learning effects'.

problem as one of whether to offer a donation to poorest countries or not[11]. Even with all of these limitations, and with due caution, I believe that it is appropriate to draw on these theoretical ideas to construe experimental individual behaviour. In particular, one may argue that people do apply a reciprocity type of heuristic in one-shot interactions, too.

3   Research Design

In this section the proposed research design of the GCT project is discussed. Specifically the following elements are presented; first, the experimental design involving a series of linear and nested PGGs, second, the questionnaire design, next, the selection of countries involved and the sampling procedures used within each country, fourth, the implementation of the design, and finally the controls that will be employed in the multi-country research to provide the greatest amount of confidence that our procedures and results are not culturally biased.

3.1   Experimental Design of the Public Goods Games

Participants in our research are faced with a series of three PGGs. Each game is independent from the other two games, and participants are matched with a different, randomly chosen group for each game. In each game participants are given 10 tokens which they may allocate as they choose. First, the standard version of linear PGG is employed in our experimental design as a baseline condition, as it captures the basic propensity to co-operate in the local environment. For the second and third games, we need a variant of the standard PGG in order to more clearly address the specific questions of our research. In particular, three factors need to be considered. First, we desire a game which would have external validity in terms of its representation of various levels of public goods, from the smaller local public good, to the larger global public good. Second, we want a design which would clearly highlight the tension an individual faces between keeping money for him/herself, contributing to the local public good, and contributing to the national or global public good. Third, we need a game which would be easily understood by the average person in both developed and developing countries.

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[11] This is one of the reasons why the core research group decided to change the experimental instructions. The current version label participants in the global co-operation problem as 'people coming from different parts of the world', whereas the previous version listed the countries actually sampled in the research. In that way, we are better able to grasp what the plain idea of 'the world' conveys to individuals.

To that end, we construct an experimental design using a nested PGG similar to that employed by Blackwell and McKee (2003) in economics and by Witt and Kerr (2002) in psychology. In a nested PGG, individuals have the option of keeping their endowment for themselves (I), contributing some of it to a local pot (L), and/or contributing some of it to a larger pot – in this case representing either a national (N) or global pot (G). Participants play two interactions involving this nested PGG, one in which the contribution entails a choice between the local and national pot (Decision 2), and a second in which the contribution entails a choice between the local and global pots (Decision 3). The local pot is comprised of the participant plus three other participants from the local area. The national or global pot consists of the participant's local group plus two other groups of four people, either from different areas of the same country, or from two different countries. Such nested PGGs allow us to study the impact of 'enlarging' the boundaries of an individual's social environment on his/her propensity towards co-operation. The design is seen schematically below:
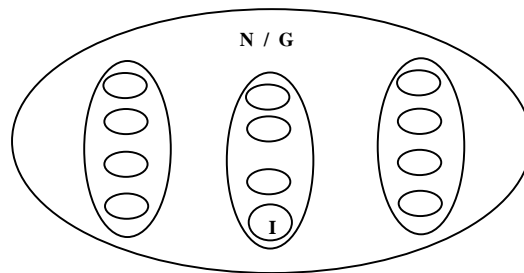

Figure 1

Importantly, this design fulfils our first two criteria in that it does realistically map onto the nature of local-global relations. In the global economy, globalisation does not exclude the local constituency but potentially expands the level of inclusion to both local and non-local participants. Secondly, our design also captures the tension between the different incentives from giving to the local vis-à-vis the global or national public goods. In our design, individual return – i.e. the MPCR – from giving to the local public pot is greater than that of the national or global pot; but on the other hand, the social return is higher in the latter. In this fashion, we are able to examine under what conditions individuals put global (or national) interests ahead of local ones when everyone might be able to benefit in the long run.

Preliminary tests of different versions of the games on college students in the US, Canada, and Spain in early fall 2004, demonstrated that a return ratio of 2:1 between the two pots – that is an MPCR of .50 for the local pot and of .25 for the global pot, for example - was

the most quickly grasped and easily understood, thus fulfilling our third criteria. (Prior research regarding the appropriate MPCR to implement yields ambiguous and conflicting conclusions, and thus could not serve as a guide[12]). In summary, our experimental design involves a total of three decisions for each participant, which are summarised in Figure 2, along with the variable definitions that will be used thereafter in the paper.

Decision 1 is a standard linear PGG with voluntary contribution mechanisms, where people interact with three other people coming from their own locality at a MPCR of 0.5. The marginal social return for a contribution to the local public pot, which measures the total return *to the group* of an individual's contribution to the public pot is then equal to 2. In fact, this is simply the product of MPCR by the number of people who are part of the group. Decisions 2 and 3 instead consist of nested PGGs, in that subjects will have two different public pots to which they can allocate their endowment. One is a local public pot, where again four people coming from the same local community can contribute. The second public pot includes the same subjects as the local one plus other two groups of four people coming from the same country (Decision 2) or from different parts of the world (Decision 3). The relative social returns are labelled MNSR and MWSR, respectively for the national and the global public pot. Because the participant is making these three decisions, between-game comparisons provide a form of control (rendering the actual choice of per capita and social returns and group size less of a concern). In fact, Decision 2 and 3 have the same parameter structure in terms of marginal per capita and social returns at the local and higher order level. Thus any differences between contributions in Decision 2 and Decision 3 can be attributed to the differences in the identity of the people – national rather than global - rather than to group size or payoff structure.

Our measure of trust is captured in the single question: "I expect the other 3 (11) members of my group to allocate to the local (or national or global) pot on average?" This question is asked of participants regarding each of their decisions in all four games.

Decision	Type of game	Type of interaction	Options available	Variables name	Parameters of the game
1	PGG at the	Non-Nested	- Personal account	P1	

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[12] The conclusions of both Ledyard (1995) and Kollock (1998) are that the relationship between MPCR and N is not yet fully understood. As for studies that have dealt with a nested structure, Wit and Kerr (2002) focused on the issue of categorization and framing in their study and never discussed the baseline effects of manipulating MPCR or N. Blackwell and McKee (2003) did manipulate the MPCRs of the global vis-à-vis the 'group' pots in order to study its impact on contributions to the public goods, but did not discuss the role of N.

	Local level				
			- Local public good account	L1	N=4, MPCR=0.5 MLSR=2
2	PGG at the Local/National level	Nested	- Personal account	P2	
			- Local public good account	L2	N=4, MPCR=0.5 MLSR=2
			- National public good account	N2	N=12, MPCR=0.25 MLSR=1 MNSR=3
3	PGG at the Local/World level	Nested	- Personal account	P3	
			- Local public good account	L2	N=4, MPCR=0.5 MLSR=2
			- World public good account	W3	N=12, MPCR=0.25 MLSR=1 MWSR=3

Figure 2

It should be noted that virtually all of our understanding of co-operation in the PGG is based upon the play of undergraduate university students. Furthermore, PGG research has focused on provision to pots in a local context. Our research, involving common people in each country participating in PGGs in local, national, and global contexts, departs from these norms. Participants to the research will be randomly selected through quota sampling techniques among the general public. In doing so it will extend the PGG literature, and increase understanding of the the extent to which this research is generalizable to different populations and contexts.

3.2 Questionnaire Construction

Our dependent variables are obtained in the PGGs just described and are an individual's allocation behaviour in a public goods setting involving local, national and global public goods. A number of (potential) independent variables for our analysis come from an individual level questionnaire at the end of the experiment. The whole questionnaire is not included in this paper, but a small extract of its questions and the account of how the indexes have been constricted are reported at the end of this paper. The items that formed the indexes of globalisation used in the analysis shown below are available from the author upon request.

The first and most important aspect that the questionnaire is designed to measure is individual exposure and participation in global relations. Although aggregate measures of globalisation exist, the number and the complexity of other factors that would play into the relationship between the 'macro' and the 'meso' level[13] on one side, and the micro-level on the other, is likely to make these measures poor predictors of individual experimental behaviour[14]. Therefore, the research group concluded that it was preferable to rely solely on individual level information, and to measure these from a questionnaire. Macro and meso level measures would instead be used for the selection of the environments, in order to maximize the variance in individual access to globalisation. Moreover, it was also argued that it would be the case to conduct the research within a relatively limited territory, in order to remove possible determinants of individual behaviour that were unrelated with globalisation. Such sources of disturbances would have instead occurred had the research been conducted in different regions within a country with significantly different culture, history, political situations, *etc.*

That developed for the present research is – to the best of our knowledge - the first example of an individual level (objective) scale of globalisation. In analogy with both the CSGR (2005) and the Foreign Policy (2005) indexes of country-level globalisation, the questionnaire

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[13] For instance, the CSGR and the AT Kearney – Foreign Policy globalisation indexes offer measures of globalisation at the country-level. Indices of exposure and participation in globalisation at a lower level may be obtained by considering the type of urban setting where a subject lives, with individuals living in larger urban settings being arguably more exposed and more able to access global relations than other people. Similarly, the degree of ethnic etetogeneity is also a determinant of the individual exposure to global relations.
[14] In the original setting of the research, it had been planned to recruit people from two radically different urban environments in each country. These would be a large urban area noted for its degree of interconnectedness with the rest of the world, both in terms of business activities and in migration or tourist flows, and a smaller city or town with a significantly lesser degree of interconnectedness. This would then be used as a 'meso'-level measure of exposure/participation into globalisation. However, although the presence of urban size effects was (midly) significant in the analysis conducted to test this research setting, the research group opted for excluding this variable from the analysis. In fact, the difficulties associated with having a

aims to capture individual access to globalisation under the social, cultural, political, and economic dimension. In particular, questions referring to social globalisation ask participants whether they possess/have access to tools of interpersonal communication, like telephones, internet, TVs, *etc.*, and, if so, whether they use them to get in contact with other people at the local, national, or global level. Cultural globalisation is measured both by an individual's access to international sources of information, arts, *etc.*, and by her degree of consciousness with typical global issues, such as global warming, spread of public diseases, *etc.* Political globalisation is measured by a subject's attitudes towards political international institutions, such as the United Nations, multilateral treaties[15], etc. Economic globalisation is instead measured by the subject's consumption habits in terms of purchasing from national rather than foreign or multinational producers. Such questions ask the frequency and the extent to which an individual is connected with other people, either directly (e.g. through means of communication) or indirectly (e.g. through purchasing products produced abroad and/or by multinationals, or through accessing international sources of information). Questions also tried to capture the territorial scale of such relationships, with relations at the international (global) level obviously counting more than interactions at the national or local level. Responses to these questions were aggregated into indexes under the four dimensions indicated above.

Other sets of questions are designed to capture different aspects that may directly influence individual behaviour, or mediate the influence of globalisation on it. First, some questions measure individual moral values. These are taken from the World Value Survey, and, according to Inglehart (2003), are the best predictors of what the author calls the self-expression Vs traditional dimension of culture. Second, another section asks standard questions referring to the degree of trust the subjects have towards other people living in her community. Third, a set of social identity measures aims to capture a possible relevant mediating mechanism between globalisation and individual behaviour. These are taken from two existing measures of social identity. One - from Yuki, Maddux, Brewer, and Takemura, (2004) YMBT henceforth - focuses on identity at the local, national and global levels. The other measure, from WVS, pits various communities against each other by asking to which of them an individual feels the greatest and the least sense of belonging. Fourth, some questions taken from the WVS are meant to

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homogenous cross-country measure of urban settlment size seemed too big to make of this variable a reliabe predictor.

[15] Admittedly, the index in this case measures attitudes towards political issues, rather than the actual participation in political activities on the global scale. However, we thought it was important to have a measure of the individual's involvement with such issues. Other questions within the questionnaire, which

measure the presence of possible sentiments of aversion towards foreign culture/people. Other questions from the PEW Global Attitudes Survey (2002) are designed to control for the correspondence between individual behaviour and the type of attitudes manifested in the other section of the questionnaire. Finally, standard demographic measures control for factors such as age, gender, level of income, ethnicity, education, and employment, *etc.*

3.3 Selection of Research Environments, Sampling Techniques, and Implementation

Research environments are selected for this project with the goal of representing a sufficient degree of variability on the globalisation spectrum as ranked by the aggregate CSGR globalisation index. Six countries have been chosen, with the aim of both maximizing the dispersion of each dimension of the CSGR globalisation indexes – namely, the economic, social, and political dimension – and of ensuring a sufficient geographic dispersion, so that each continent were represented. The choice fell on Italy and Argentina (respectively, at the highest and lowest positions in the economic globalisation sub-index); US and South Africa (at the extremes of the social globalisation index); Russia and Iran (at the extremes of the political globalisation index). This also ensures a sufficient level of dispersion with respect to the overall globalisation scale.

Second, we select several environments in each country which reflect differing levels of globalisation as indicated by a series of criteria, such as the relative presence of multi-national corporations (MNCs), and by the homogeneity or heterogeneity of the population (which may reflect the presence of immigrant populations). Clearly, data on these variables will not be accurate or available in all countries. In these instances, relying on the expertise of the local researcher, the environments will be selected to represent relatively "very globalised" and "less or little globalised" example within a given country. For example, within the US, two research environments that were chosen for a pilot study carried out in November 2004 were:

	Portage, WI	**Houston, TX**
Population	9,728	1,857,540
Demographics	98+% White	35% White; 32% Hispanic; 28% Black; 6% Asian

have not been analysed yet, ask more specifically about a subject's active involvement with political organizations.

MNCs	none	340 European cos; 110 Japanese cos.;
		3400 local business with intl. activities

Third, 200 participants are recruited in each country (with extra participants recruited to allow for non-respondents) according to a quota sampling method. The criteria which determine the sample are age (three categories: 19-30, 31-50, 51-70), gender (two categories: male, female), and social economic status (SES) (three categories: high, intermediate, and low). This determines a grid with 18 cells to be filled with equal numbers of participants in each cell, to the maximum extent possible. The manner of ascertaining the SES of participants will be left to the local researcher to determine which method or question is most culturally appropriate. Most often this question will regard education or type of employment (serving as proxies for low or high SES), and income, though we may expect subjects would be reluctant to reveal their income in a non-anonymous interview. Although suggestions for the manner of recruiting are provided to collaborators, the exact method employed will again be left up to the local researcher to determine the most culturally appropriate method. Sampling will happen in two stages: in the first contact, the position of a subject who is available to participate in the research is ascertained with respect to the three criteria above. Should the 'cell' in the grid occupied by the subject be filled already, then the subject is turned down. The administration of the experiment is oral, in order to allow as large as possible an inclusion of possible participants. This allows us to sample illiterate people, who are arguably at the lowest end in the participation to globalisation.

An experimental protocol, which explains how to conduct the various phases of the research, will be distributed to all local researchers. Moreover, experiment control is also guaranteed by the presence of a member of the core research team in each location. The experiment session will follow these phases. First, participants complete the series of three PGGs. The experiment sessions are to be conducted in groups of no less than four and no more than sixteen participants. Participants are told that they are involved in a series of decisions involving people from their own local area, some of whom may or may not be in the same room, from a different location in their own country, and from other countries around the world. The name of the other national environment is not revealed in order to avoid any stereotyping or bias in attitudes or behaviour which may occur in reaction to being paired with people from that environment (for example, a participant may have a preconceived notion about how someone from a small Midwestern town will behave). Likewise, participants are told that in the global PGGs they will be matched with people from other parts of the world. Even in this

case, the specific name of the countries chosen for the matching is not revealed in order to avoid any bias in attitudes which may occur. Next, the allocation data are computed on the same location, using an algorithm provided beforehand.

3.4   Experiment Controls

The international character of this research warrants that we control for country or culture-specific variables that could influence results. Specifically, we address the following as suggested by Roth et al. (1991), and modified by Buchan and Croson (1999) and Buchan, Croson and Dawes (2002).

1. Controlling for subject pool equivalency. To insure as similar a subject pool as possible, we are taking two measures. First, we use a method of quota sampling in each country as opposed to representative sampling. While a representative sample may be more externally valid, it would produce samples which are highly skewed in terms of age, gender or SES, depending on the location. Second, as discussed, we include a number of demographic questions on the questionnaire; answers to these questions will be entered as covariates in the final analysis of results.

2. Controlling for understanding. While in all experiments it is paramount that participants understand the experimental task, checking for participant understanding is absolutely crucial when subject pools of common people with varying levels of education are used. Therefore, built into the experiment instructions there is a basic understanding check, in which subjects are asked to answer some questions about the interaction. Obviously, subjects are repeatedly invited to ask questions to the experimenter should they be unclear with aspect of the interaction. If a subject fails to pass the comprehension check, his data will be expunged from the analysis.

3. Controlling for currency effects. We control for purchasing power parity by choosing denominations such that monetary incentives relative to subject income and living standards were approximately equal across countries (as in Kachelmeier and Shehata, 1992). These amounts are based on the most recent Big Mac index, when available, or on the most recent Workd Bank data for PPP factors. Recommendations of experts on each economy are also taken into account.

4. Controlling for Language Effects. To control for any nuances in language which may impact results across countries, instructions and questionnaire for each the experiments will be translated into the native language and back-translated into English using separate external translators.

4. Controlling for Experimenter Effects. To insure that the experiment is carried out in an identical manner in each country we first designed a detailed protocol to be followed by each experimenter. Second, the lead researchers conducted pilot testing of the experiment in various occasions among students at the University of Warwick and Carleton University, allowing each to see and carry out the experiment. Third, collaborating researchers who were not present at that pilot testing will be trained in the experimental procedures by one of the lead members of the team, and will (along with their local assistants) conduct a pilot test of the experiment with the core member watching and advising as to any irregularities.

4 Preliminary Results from a Pilot Study

4.1 Analysis of Experimental Behaviour

In the present section I discuss results coming from a pilot experiment in the US and Spain. This was conducted in October 2005 by three members of the core research team (Brewer in Columbus, Ohio, US; Wilson in Houston, Texas, US; Fatas in Valencia, Spain). The main purpose of the pilot experiment was to check whether order effects exist with respect to the questionnaire being administered before or after the experiment. Preliminary analysis confirms that such effects may exist. However, both the quantity and the relevance of such effects do not seem to require any major change in the design. The presence of such effects will have to be taken into account when interpreting the results from data analysis. The other aim of this pilot study was to check that procedures worked smoothly, and that the oral administration of the questionnaire did not create problems of comprehension to the subjects. The researchers who conducted the pilot all agreed this was the case. On average across countries, the experiment and the questionnaire lasted approximately 75 minutes, to which another quarter of an hour for paperwork and payment of the subjects have to be added.

In a pilot experiment conducted in November 2004, participants were recruited from the general public using the quota sampling method described earlier. Although time-consuming, we were thus able to check that this process of recruitment is feasible. In the present pilot, therefore, we recruited subjects from a population of university students. However, the presence of some retired students in the Spanish sample enables us to test the presence of possible age effects.

There was no show-up fee for participants in the US sample, whereas retired Spanish students were paid a show up fee of 7 Euros. The token value was half a dollar and half a Euro in the US and Spain, respectively, which ensure PPP-equivalency between the two currencies.

In total there were 98 observations; 39 from Ohio, 19 from Houston, and 40 from Valencia (of which 20 from the population of retired students). Average contributions and standard deviations (in parentheses) are reported in Table 1.

Average Contribution to Public Goods per Environment

	L 1	L2	N2	L2+N2	L3	W3	L3+W3
Total	6.07	2.33	4.76	7.12	1.94	4.64	6.58
	(2.99)	(2.01)	(3.09)	(2.99)	(1.73)	(3.26)	(3.21)
Spain Total	5.2	1.98	4.22	6.20	1.90	3.68	5.58
	(2.74)	(1.48)	(2.90)	(3.13)	(1.44)	(2.90)	(3.40)
Spain Students	4.61	1.70	4.35	6.04	1.30	3.39	4.70
	(3.17)	(1.64)	(3.41)	(3.91)	(1.29)	(3.29)	(3.81)
Spain Retired	6.06	2.35	4.06	6.41	2.71	4.06	6.76
	(1.78)	(1.17)	(2.11)	(1.66)	(1.26)	(2.33)	(2.39)
US Total	6.66	2.57	5.19	7.76	1.97	5.31	7.28
	(3.04)	(2.29)	(3.19)	(2.73)	(1.92)	(3.35)	(2.89)
US Ohio	6.69	2.85	4.72	7.56	2.28	5.00	7.28
	(2.86)	(1.83)	(2.63)	(2.46)	(1.86)	(2.99)	(2.60)
US Houston	6.58	2.00	6.16	8.16	1.32	5.95	7.26
	(3.47)	(3.02)	(4.02)	(3.25)	(1.92)	(4.01)	(3.51)

Table 1

As shown in Figure 3, co-operation rates are always higher in the US than in Spain, especially with respect to the Spanish student population. Note that in decision 2 and 3 the co-operation rate is given by the sum of the allocations towards the two pots available in those decisions. An inverse-U relationship seems to emerge across the three decisions. Mann-Whitney tests on the difference of mean contributions to common pot(s) in US and Spain confirm that the difference is always significant for L1 ($z = -2.249$; Prob $> |z| = 0.0245$); (L2+N2) ($z = -2.867$; Prob $> |z|$

=0.0041); and (L3+W3) (z = -2.533; Prob > |z| =0.0113). Moreover, a country dummy is significant in most of the econometric analysis that has been conducted.
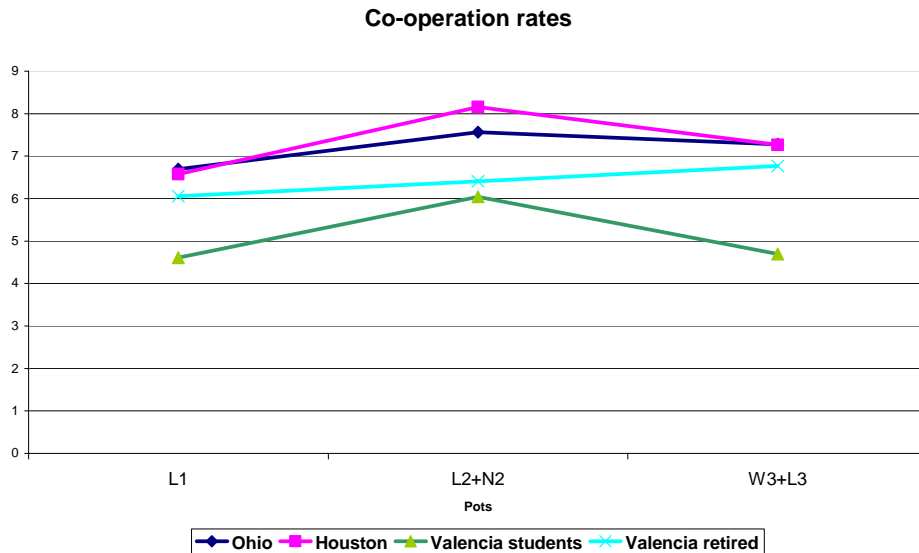
Co-operation rates

Figure 3

Not only are mean contributions different across countries, but significant differences emerge across decisions, too. Paired t-tests conducted on the difference of means in co-operation rates across the three decisions, confirm that they are significantly different from each other. Hence, individual propensity to co-operate appears to be sensitive to both the structure of the interaction – nested versus non-nested – and to the nationality of the people with whom an individual is interacting. In particular, overall co-operation decreases on average when individuals are interacting with foreigners and local people in a nested public goods interaction (Decision 3) than when they interacting with other fellow citizens (Decision 2). Figure 1 also shows that this is true for all groups of people apart from the retired population in Valencia, which points to the possible presence of age effects in how these 'framing' effects work.

The fact that co-operation rates are higher in both decisions 2 and 3 vis-à-vis decision 1 may be explained by the fact that individual co-operation propensity is influenced not only by the composition of the group but also by the *number* of groups participating in the interaction, especially when the difference is made salient to individuals, as is the case in our setting. For instance, one may conjecture that individuals whose co-operation is motivated by altruism would be willing to benefit both groups present in the interaction. Or, were the motivation of co-operation mainly of a conditional type, it may be supposed that individuals would be willing to differentiate their 'portfolio' allocation across the two different options.

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It is possible to discriminate at least preliminarily between these two conjectures by looking at the difference in the contributions that go to the local group in decisions 2 and 3. Given the nested structure of the interaction, an individual's total contribution that goes to the local group in Decision 2 and Decision 3, is given by $L2^T = L2 + (1/3)N2$ and $L3^T = L3 + (1/3)W3$, respectively. If co-operation was driven by altruism, one would expect that these two quantities would remain approximately constant across the two decisions. A reciprocal co-operation motivation would instead be consistent with a variation in the allocation to these two quantities. A two-tailed t-test conducted on the difference between $L2^T$ and $L3^T$ shows that these are significantly different (t = 2.5601; Pr(|T| > |t|) = 0.0120), with total contribution to the local pot being higher in Decision 2 than in Decision 3. Altruism, then, does not receive support in this sense. On the other hand, the reciprocal co-operation idea does not seem to be able to account for the difference in overall co-operation rates between Decision 2 and 3, whereas this result would be, at least in principle, compatible with altruism. Hence, a tentative conclusion is that these two models of co-operation do not receive particular support from these data. To be sure, other factors, such as the framing effect given by the polarisation between the local and the two different groups at the higher level, and also order effects[16], must play a role in accounting for individual behaviour.

4.2   Analysis of the Individual-level Globalisation Scales

For this reason, and more generally to test the influence of individual participation of globalisation on individual behaviour, it is interesting to study the effects that various indexes of participation into, and exclusion from, globalisation have on individual behaviour. As illustrated in section 3.2, these indexes have been derived from the questionnaires that participants were asked to complete before or after the experiment. Questions were designed to capture four different dimensions of participation in globalisation, that is, economic, social, cultural, and political. Moreover, an index of exclusion from globalisation is designed to capture the extent to which an individual cannot engage in relations because of lack of access to means of communication, information, *etc*. The presence of immigrants from abroad and of different ethnic groups in the area where the subject lives, also counted towards this index.

The correlations among the four indexes of economic, social, political and cultural globalisation, and the exclusion from globalisation, are reported in Table 2. One can note that the exclusion index is always negatively related with the participation indexes, which instead are

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[16] Order effects did not appear in the 2004 pilot studies, where the order of the then four decisions was

strongly positively among themselves. The correlation with other demographic variables is also reported in Table 3. I have here used the total index of access in globalisation derived from the economic, social, cultural, political indexes. People from the US seem to be overall more 'globalised' than people from Spain. (This is especially true from the point of view of social connections). Youngest people also appear to be more globalised. Gender appears to be a significant determinant of access to globalisation, with women appearing to be less globalised than men. This is true across all of the four dimensions of globalisation that have been considered. Another variable worth taking into account is the presence of familiar links outside of the individual's country of residence. As expected, this goes in the direction of increasing the globalisation index, especially as far as social relations are concerned. Finally, income is positively related to access to globalisation.

I have conducted a series of ordered logit regressions, having each individual decision in the experiment as a dependent variable, and some of the variables described above as independent variables. In particular, I have included a country dummy and age, and then the four dimensions of globalisation and the exclusion from globalisation as independent variables. The results of the analysis are reported in Tables 4 through 6. What seems to be particularly interesting is the relevance of some of the four dimensions in accounting for co-operation rates, and the fact that these seem to be moving in opposite direction to each other. In particular, table 4 (columns a, d, g) reports the results of the regression using L1, (L2+N2), and (L3+W3) as dependent variables. The cultural dimension is always significant and negatively related to individual co-operation rates. The social dimension shows instead some positive, but less strong, effects on co-operation rates. In particular, this regressor loses significance in Decision 3. The political dimension is instead never significant but in Decision 3, though rather weakly. The sign is therein positive. Finally, neither the economic dimension nor the exclusion index turns out to be significant in these regressions.

Due to a considerable drop in the observations – some of the subjects are reluctant to declare their household income – the control for income has not been included in the majority of the regressions. However, when this is done, the above results appear to be confirmed, if not strengthened (see table 4, columns c, f, i). In particular, cultural globalisation is always strongly significant, and negatively related to co-operation rates. The social dimension of globalisation is now significant in Decision 2, too. Finally, the economic dimension of globalisation is now weakly significant in Decision 2, the sign being negative.

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alternated.

In section 2 I illustrated how social identity and culture may mediate the influence of globalisation on co-operative decision making. It is then interesting to check for the presence of some of these effects in the experiment. We have more than one instrument to measure social identity. The first and more straightforward is given by a question drawn from the WVS asking which geographical group an individual feels to belong more strongly (see Appendix). The options are the locality where the subject lives, the national community, and the global community. The other instruments are indexes derived from answers to four questions asking the degree of attachment, closeness, identification, and liking with respect to the local, national, and global community (see Appendix). The latter set of three indexes has the advantage of not asking a ranking across communities, which is consistent with our theoretical framework. However, some observations are missing when using this index, so that, for the sake of comparability with the previous analysis, I shall use the question from the WVS as independent variable.

The analysis conducted using this social identity measure suggests that this does not significantly influence the results obtained above, with respect to *total* co-operation rates (see table 4, columns b, e, h). In particular, social identity is not significant either when used alone (not reported) or when used in conjunction with the other regressors (with the country dummy and age always present as control factors). Where this measure does turn out to be significant is in the explanation of the allocation to the local pots L2 and L3 (see table 5, column a, c). In this case, the more people state to belong to geographical groups closer to the local community, the higher their contribution to the local pot. This result seems important because none of the various dimensions of globalisation significantly affect behaviour with respect to these variables.

Some further insights into the underlying reasons of these relationships may be obtained by looking at how these indexes of access into globalisation affect the allocation into the common pots at the higher order, namely, N2 and W3, in relation to the lower order common pots, namely L2 and L3. In fact, there appears to be some evidence that these dimensions of globalisation affect behaviour mainly in the allocation to the higher order common pot. Social globalisation has a positive and weakly significant sign in the regression having N2 as the dependent variable (see table 5, column b), whereas cultural globalisation is negatively significant with respect to W3 (see table 5, column d). Although cultural globalisation is not significant in the regression for N2, the sign is therein negative. Neither of these variables are instead significant with respect to L2 and L3. Hence, there are some grounds to say that the way the relevant dimensions of globalisation affect co-operative behaviour is through

discriminating in favour – for the social aspect – and against – for the cultural aspect – the group of participants at the higher order level.

Another way to control for the existence of effects of mediation of social identity with respect to globalisation is by running a regression with social identity as the dependent variable, and the components of participation in globalisation as the independent variables. However, once country and age effects are controlled for, no significant effect of these variables appear (see Table 6, column a), if not for social globalisation influencing negatively social identification at the local level (see Table 6, column b) [17].

Finally, I have tried to verify whether other variables available in the questionnaire have any significant effects on individual behaviour, either directly or jointly with globalisation. A preliminary analysis does not bring about any significant result. In particular, the measures of what are defined as survival versus self-expression values in Inglehart (2003) do not seem to play a particular role in accounting for individual behaviour. The same is true for the trust measures, and for the questions tapping the presence of anti-foreign sentiments.

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[17] In both cases, political globalisation is significant when exclusion from globalisation is not included among the regressors.

Correlation Coefficients among Indexes of Participation to and Exclusion from Globalisation

```
           | Economic    Social   Cultural Political Exclusion
-------------+--------------------------------------------
Economic |   1.0000
Social   |   0.5291   1.0000
Cultural |   0.3785   0.5018   1.0000
Political|   0.3222   0.3553   0.4934   1.0000
Exclusion|  -0.3120  -0.4952  -0.5308  -0.8254   1.0000
```

Table 2

Correlation Coefficients among Total Index of Access in Globalisation and demographic indicators

```
           | glob_tot  us      age      gender   famres  income
-------------+----------------------------------------------------
glob_tot |   1.0000
us       |   0.0514   1.0000
age      |   0.1969   0.6569   1.0000
gender   |  -0.1348   0.3245   0.2660   1.0000
famres   |  -0.4265   0.0330  -0.2072   0.1270   1.0000
```

income | 0.2178   0.2794   0.2469   0.2605   0.0453   1.0000

Table 3

	Dependent variable: L1			Dependent Variable: L2+N2			Dependent Variable: L3+W3		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Country dummy	1.53*** (0.59)	1.55** (0.61)	1.19* (0.69)	0.88 (0.68)	0.88 (0.70)	0.91 (0.82)	1.76*** (0.56)	1.74*** (0.57)	1.81*** (0.60)
Age	-.030* (0.016)	-.031* (0.019)	-.025 (0.020)	-.003 (.016)	-.004 (0.019)	-.0054 (0.021)	-.035** (0.018)	-.034* (0.019)	-.033* (0.02)
Income			0.067 (0.093)			-.0007 (0.082)			-.093 (0.087)
Social Globalisation	4.37** (2.03)	4.43** (2.07)	4.32* (2.33)	5.94** (2.92)	5.95** (2.90)	7.36** (3.56)	3.97 (2.69)	3.93 (2.68)	5.66* (3.38)
Cultural Globalisation	-4.07*** (1.39)	-4.05*** (1.38)	-4.29*** (1.52)	-2.97** (1.31)	-2.96** (1.34)	-3.88*** (1.44)	-4.24** (1.70)	-4.28** (1.71)	-4.84*** (1.89)
Political Globalisation	1.58 (1.33)	1.60 (1.34)	0.84 (1.72)	0.40 (1.09)	0.40 (1.08)	0.43 (1.49)	1.83* (1.03)	1.82* (1.02)	1.98 (1.35)
Economic Globalisation	-0.70 (2.26)	-0.74 (0.26)	-2.10 (2.14)	-3.49 (2.39)	-3.50 (2.37)	-4.16* (2.52)	-1.45 (2.65)	-1.42 (2.63)	-2.15 (2.69)
Exclusion from globalisation	5.08 (3.82)	5.05 (3.80)	3.92 (4.67)	-0.48 (3.43)	-0.50 (3.49)	-1.14 (4.14)	4.28 (3.28)	4.32 (3.29)	4.57 (3.53)
Social Identity measure		-.027 (0.19)			-.0092 (0.19)			.025 (0.17)	
Wald Chi²	22.57	22.62	24.22	29.37	29.88	33.66	18.52	18.91	19.00
Prob > Chi²	0.0020	0.0039	0.0021	0.0001	0.0002	0.0000	0.0098	0.0154	0.0148
Pseudo R²	0.0478	0.0479	0.0550	0.0461	0.0461	0.0623	0.0507	0.0507	0.0632
N	98	98	87	98	98	87	98	98	87

Note: Ordered logit regressions.

Value for the constant has not been reported. Std. errors reported in parenthesis.

Country dummy assigns value of 1 to subjects living in the US, and 0 to those living in Spain.

Income is from Question 42c in the questionnaire.

Age is the year of birth of the subject. Hence, higher values correspond to younger subjects.

For social, cultural, political, economic globalisation, see the questionnaire for the questions entering these indexes, and for details of how the indexes have been constructed.

The social identity measure is from WVS, question 22 in the questionnaire.

Table 4

	Dependent variable: L2	Dependent variable: N2	Dependent variable: L3	Dependent variable: W3
	(a)	(b)	(c)	(d)
Country dummy	0.94*	0.53	1.11**	1.19**
	(0.55)	(0.62)	(0.50)	(0.58)
Age	-.025	-.010	-.04***	-.021
	(0.017)	(0.02)	(0.015)	(0.019)
Social Globalisation	-1.80	6.31**	-1.90	4.09
	(2.53)	(2.96)	(2.58)	(2.89)
Cultural Globalisation	-0.96	-2.35	-.067	-3.82**
	(1.69)	(1.61)	(1.77)	(1.73)
Political Globalisation	0.35	0.06	1.08	1.13
	(1.16)	(1.10)	(1.30)	(1.16)
Economic Globalisation	0.77	-2.74	0.76	-1.86
	(2.14)	(2.46)	(2.23)	(2.85)
Exclusion from globalisation	-3.59	1.61	4.38	0.76
	(3.54)	(3.13)	(3.77)	(3.03)
Social Identity measure	-0.45**	0.07	-0.35**	0.14
	(0.18)	(0.19)	(0.15)	(0.17)
Wald Chi²	15.52	9.43	28.36	14.85

Prob > Chi²	0.0498	0.3072	0.0004	0.0622
Pseudo R²	0.0383	0.0237	0.0452	0.0365
N	98	98	98	98

Note: Ordered logit regressions.

See Table 4.

Table 5

	Dependent variable: WVS Social identity		Dependent variable: YMBT Local Social Identity	Dependent variable: YMBT National Social Identity	Dependent variable: YMBT Global Social Identity
	(a)		(b)	(c)	(d)
Country dummy	0.54 (0.75)		-0.15*** (0.04)	-.012 (0.05)	-0.080 (0.058)
Age	-0.042* (0.022)		0.0020 (0.0015)	-.0023 (0.002)	-.0017 (0.0020)
Social Globalisation	3.21 (3.07)		-0.51** (0.23)	-0.16 (0.24)	0.24 (0.28)
Cultural Globalisation	2.06 (1.52)		0.12 (0.14)	0.20 (0.16)	0.067 (0.15)
Political Globalisation	1.30 (1.45)		-0.18 (0.13)	0.07 (0.13)	0.28 (0.19)
Economic Globalisation	-3.04 (2.40)		-.063 (0.22)	0.16 (0.22)	-0.226 (0.20)
Exclusion from globalisation	-2.26 (5.88)		-.007 (0.45)	0.62 (0.44)	0.47 (0.56)
Wald Chi²	26.23	F	6.96	1.89	2.33

Prob > Chi²	0.0005	Prob > F	0.0000	0.0810	0.0324
Pseudo R²	0.0893	R-squared	0.2617	0.1359	0.1533
N	98		97	96	90

Note: Ordered logit regression for column (a). Linear regression for remaining columns.

WVS social identity measure is from question 22 in the questionnaire.

YMBT social identity measures are from question 25-28 in the questionnaire.

Table 6

5 Conclusions

The purpose of this paper was to offer a work-in-progress report on the GCT research project. After presenting the theoretical framework, I have illustrated how the research will be conducted in the field. Finally, I have reported some of the results from a pilot conducted in the US and Spain on a sample of 98 individuals.

The nature of this pilot was to test the feasibility of the experimental protocol and of the questionnaire, so that the results obtained cannot be generalised. Moreover, the limited size of the sample and the fact that this mainly comes from a population whose relevant characteristics (gender, age, socio-economic status) have not been controlled for, should make us rather cautious in interpreting these results.

Bearing this in mind, significant country effects seem to emerge, with co-operation rates being consistently higher in the US population than in the Spanish population. Access into globalisation, as measured by the answers to a questionnaire that subjects were asked to complete, appears to have explanatory power on experimental co-operative behaviour. Overall individual participation in global relations has been broken down into four dimensions, that is, the economic, social, cultural, and political. Another index of exclusion from globalisation has also been derived from the questionnaire. The corresponding indexes have been used to explain individual behaviour by means of an ordered logit regressions, with a country dummy and age as controlling factors.

Cultural globalisation seems to have a strong predictive power on *overall* co-operation across the three decisions of the experiment. Most notably, the impact of the cultural dimension is, *ceteris paribus*¸ negative. The social dimension seems instead to have, *ceteris paribus*¸ a positive, though less strong, effect. The other indexes, instead, only have a marginal effect, if any, in some of the decisions. I have also pointed out how the cultural and the social dimensions seem to mainly affect overall co-operation through discriminating, respectively, against and in favour of the groups of people at the higher order, that is, compatriots in Decision 2 and foreigners in Decision 3.

I have also used the measures of social identity to test for the presence of mediating effect of this variable between globalisation and individual behaviour. The analysis conducted thus far suggests that, rather than social identity being a mediating factor for globalisation, it is a complementary factor in accounting for individual co-operative behaviour. In fact, social identity seems to influence the contributions to the lower order public goods, whereas globalisation has a stronger role in affecting contributions to the higher order public goods. Moreover, the globalisation dimensions do not seem to affect social identity directly, if not for the social and

political dimension with respect to social identity at the local level. In this case, the impact is negative. Finally, the other measures of cultural and value orientations, as well as other information drawn from the questionnaire, do not seem to affect individual behaviour significantly.

As stressed above, these results should be taken with extreme caution, given that the main purpose of this study was to test the feasibility of the experimental protocol rather than obtaining theoretical generalisations. Nevertheless, they seem to give evidence to the relevance of both participation in (some dimensions of) globalisation and social identity in predicting experimental behaviour. The execution of the project will serve as the ultimate test for these preliminary findings.

Appendix: Indexes Construction and Questionnaire

The questionnaire addresses various dimensions in which an individual is involved with globalisation. In particular, the questionnaire aims to measure an individual's participation in globalisation processes, which constitutes the main explanatory variable used in the analysis. Other aspects that may affect such relations, such as social identity, cultural values, are also addressed. Although these dimensions may at times overlap with each other, I have classified a question as belonging to only one dimension. Accordingly, the economic, social, cultural, and political indexes have been constructed by aggregating the answers to the corresponding set of questions. The exception is given by questions addressing what I have defined 'Exclusion from Globalisation'. Since having access to globalisation processes is a pre-condition to measure the extent of an individual's participation in them, several questions address both the existence for an individual of the means to participate in globalisation flows, and the extent of this participation. For instance, question 1 (reported below) asks both if an individual possesses/has access to various means of social connection, and, provided that this is the case, the frequency with which this means is used. Hence, such questions count both towards the elaboration of the exclusion from globalisation index, and to the participation indexes. More precisely, were an individual to answer that she has no access to a certain item (e.g. the option "I do not own this" in question 1), her answer would at the same time be classified at the lowest degree of participation into globalisation, and at the highest in the exclusion from globalisation.

There are various reasons to add an exclusion from globalisation index to the participation indexes. First, I already stressed that the interplay between an individual's exposure and her actual participation is key to discern between the two opposing conjectures of identification with groups at the higher order (cosmopolitan hypothesis), or at the lower level (resistance hypothesis). Second, the way the participation indexes are constructed makes it necessary to take into account the exclusion index, too. In fact, there is a substantial difference between a lack of access to a certain globalisation process and access with low participation, or even no participation with access. However, given the way the index is constructed (see more details below), such differences are somehow 'compressed' by attributing a one-point scale difference to these options, in spite of their substantive diversity. Hence, introducing the exclusion index helps take into account whether an individual's low score in the participation index is due to lack of access or to low participation.

Some examples of the way variables have been classified is reported in an extract of questionnaire items reported below. The following codes mean[18]:

[S] = Social Globalisation

[C] = Cultural Globalisation

[P] = Political Globalisation

[E]=Economic Globalisation

[Ex]=Exclusion from Globalisation

[SI]=Social Identity

All answers to the questionnaire have been normalized, so that the resulting scores vary within the [0,1] range. The original score has been divided by n-1, where n is the number of options available in a certain question. In this way, a score of 0 corresponds to the lowest possible occurrence of a certain character (e.g. lack of access to communication media in question 1), whereas a score of 1 is associated with the maximum possible occurrence (e.g. highest possible frequency in the use of a communication media in question 1). Moreover, when necessary, scores in the answers to the questions have been adjusted so that highest scores in the indexes correspond to highest participation in the globalisation dimension, or higher exclusion from globalisation processes.

For instance, in question 1 the scores have been normalized and transformed as reported in the table below:

Q1. How often do you normally use the following products or services?   Check one.

	Every day	At least once a week	At least once a month	At least once a year	Less often	Although I own this, I never use it.	I do not own this.
Original score	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Normalized score	1	0.833	0.667	0.5	0.334	0.167	0

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[18] Obviously, such key codes are omitted in the text distributed to subjects.

The normalized scores to all questions referring to a certain dimension of globalisation have then been summed up and divided by the number of the relevant questions to which the individual has answered. That is, non-answered questions have not been included in the count[19.] Hence, all the indexes vary within the [0,1] interval.

As for the multiple choice questions asking the area (local, national, international) in which a subject carries out a certain activity, e.g. Q2 (see below), I take into account which is the broadest area where the subject has contacts. In particular, I have assigned a value of 1 if the subject has international contacts; 0.5 if the subject has national contacts but no international contacts; a value of 0.25 if the subject only has local contacts; a value of 0 otherwise. In this way we measure the geographical extension of a subject's contacts in a lexicographic order, in line with the definition of globalisation that we are adopting[20].

In addition to the economic, social, cultural, political index of participation in globalisation, an overall index has also been derived. Summary statistics for these indexes are reported in table 7:

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[19] In the economic globalisation index, the "I don't know" answers to the question have not been included in the count, too. These may instead enter an 'awareness of globalisation' index.

[20] An alternative may be to measure the extent of a subject's overall degree of connectedness with others, without assigning a lexicogrophic ordering among the international, national, and local options. In other words, such an alternative index may take into account both the geographical extension and the number of social contacts that an individual has *at the same time*. For instance, this sums the {0,1} scores to questions asking the location of a subject's contacts, multiplying such scores by a factor of 0.5 for 'local area', 1 for 'national area' and 2 for 'international area'. Note that the two indexes may lead to substantially different results. For instance, a subject that has contacts only at the international level would receive the maximum score of 1 according to the global connections index (the one I actually used in the analysis), and a value of 2/3.5=0.57 according to the connectedness index. Only if a subject has connections at all levels, she would obtain a maximum score of 1 in the connectedness index, too.

Variable	Obs	Mean	Std. Dev.	Min	Max
glob_acc_tot	98	.5673294	.1019822	.3186274	.76375
glob_econo~c	98	.5897388	.1123778	.2142857	.8802083
glob_social	98	.5556549	.1055538	.2561728	.8209876
glob_cultu~l	98	.5312234	.1709718	.0555556	.9583333
glob_polit~l	98	.6289456	.2451088	0	.9333333
glob_exclu~n	98	.0992699	.0834918	0	.3214286

Table 7

As for the exclusion from globalisation index, the index counts how many times an individual has reported the lowest possible score in the relevant questions, and divides this sum by the number of questions. Note this corresponds to the "I don't own/I don't have access to" option in the relevant questions.

Indexes have also been constructed for the YMBT social identity measures. Scores to the four questions comprising this measure have been normalized in the same way as before, and then summed. When the answer has been 'I am not interested in this issue', no score has been added. Summary statistics, and correlation with the WVS social identity measures, is reported in tables 8 and 9 below.

Variable	Obs	Mean	Std. Dev.	Min	Max
si_local	97	.7837506	.1938844	.1428571	1
si_natiol	96	.7521081	.1771076	.1428571	1
si_global	90	.6060847	.1993697	.1428571	1

Table 8

	si_local	si_natiol	si_glo~l	belong1	belong5
si_local	1.0000				

```
 si_natiol |   0.5076   1.0000
 si_global |   0.0746   0.4097   1.0000
  belong1 |  -0.2852  -0.0619   0.2921   1.0000
  belong5 |   0.2936   0.0731  -0.2777  -0.5313   1.0000
```

Table 9

Research Questionnaire (Extract[21])

1. How often do you normally use the following products or services?   Check one.

	Every day	At least once a week	At least once a month	At least once a year	Less often	Although I own this, I never use it.	I do not own this.
Landline phone **[S/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Mobile phone **[S/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Internet **[C/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Email **[S/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Credit card **[E/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Postal mail**[S/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
A TV not connected to a satellite/digital/cable network **[C/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
A TV connected to a satellite/digital/cable network **[C/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Radio **[C/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$
Fax machine **[S/Ex]**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$

[S] 2a. Provided that you use the following products, do you use them to contact people living in your local area, in other parts of your country, or people living in other countries? Check all that apply.

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[21] This version has been used in the experiments held in Portage (Wisconsin, US). The items in bold are specific to the location where the research is run, thus would be changed in other locations.

	Local area	Other parts of my country	Other countries
Landline phone	$\square_1$	$\square_2$	$\square_3$
Mobile phone .	$\square_1$	$\square_2$	$\square_3$
Email	$\square_1$	$\square_2$	$\square_3$
Postal mail	$\square_1$	$\square_2$	$\square_3$
Fax machine	$\square_1$	$\square_2$	$\square_3$

[P/Ex] 7. Here is a list of organizations and institutions. For each of them, please tell me what kind of influence this group is having on the way things are going in the world. Is the influence very good, somewhat good, somewhat bad or very bad?   Check one.

	Very Good	Somewhat Good	Somewhat Bad	Very Bad	I am not interested in this issue.	I am not informed about this issue
The United Nations	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
Large multinational companies or companies from other countries	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
International Organizations like the World Bank, IMF and the World Trade Organization	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
NGOs--that is non-governmental organizations such as the **Red Cross**	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$

[SI] 22.   Which of these geographical groups would you say you belong to <u>first</u> of all?

The world as a whole	**North America as a whole**	**The US as a whole**	**Wisconsin**	**Portage**
$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$

[SI] 23.   Which of these geographical groups would you say you belong to <u>next to the first</u>?

The world as a	**North America as**	**The US as a**	**Wisconsin**	**Portage**

whole	**a whole**	**whole**		
$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$

[SI] 24.   Which of these geographical groups would you say you belong to <u>least of all</u>?

The world as a whole	**North America as a whole**	**The US as a whole**	**Wisconsin**	**Portage**
$\square_5$	$\square_4$	$\square_3$	$\square_2$	$\square_1$

[SI] 25.   How strongly do you feel attachment to your community in **Portage, in the United States**, or to the global community?

	Not attached at all						Very attached	I don't think about this issue
Your local community	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$
Your country	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$
The global community	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$

[SI]

26. How strongly do you define yourself as a member of the **Portage community, the American community**, or the global community?

	Not at all strongly						Very	I don't think about this issue
Your local	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$

community								
Your country	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$
The global community	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$

[SI] 27. How close do you feel to other members of the **Portage community, the American community**, or the global community?

	Not at all Very close close							I don't think about this issue
Your local community	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$
Your country	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$
The global community	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$

[SI] 28. How much do you like people from your local community, your country, the global community?

	Not at all Very much							I don't think about this issue
Your local community	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$
Your country	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$
The global community	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$	$\square_7$	$\square_8$

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