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EXPERIMENTS IN GAMES : A CROSS-CULTURAL PERSPECTIVE

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TABLE OF CONTENTS

Introduction : A definition of concepts

The relevance of culture

"*Cultura animi philosophia est*"[1] With this metaphor drawn from the agricultural field, Cicero was the first scholar to introduce the concept of culture in the first century BC, in this case in order to define philosophy as the "culture of the soul/spirit". Therefore, one can note Cicero's will to grant the concept of "culture" a more abstract meaning, without taking away its idea of a useful process initiated with the aim of giving a concrete result, such as culture is primarily defined in agriculture, *cultura* meaning "the action of cultivating the soil"[2]. The thought of an abstract mind path that finds its expression in concrete forms of behavior is essential to the understanding of the various definitions of culture. From a more contemporary view, Cambridge dictionary has defined it as "the way of life, especially the general customs and beliefs of a particular group of people at a particular time"[3], which is the most widespread and commonly accepted definition. However, other definitions should be sought in order to search for Cicero's essential dimension of abstract to concrete and fruitful process when he first used the term of culture and which is essential to the dimension we will give to culture throughout this work. In a book on urban sustainability, professor Paul James succeeds in re-establishing this idea by stating "Culture is defined as a social domain that emphasizes the practices, discourses and material expressions, which, over time, express the continuities and discontinuities of social meaning of a life held in common"[4]. Further than a set of practices and beliefs, culture is thus described as a means of expression of a certain social signification, thus becoming a way of interpreting life and the world. Another useful definition going in the same sense is the one given by UNESCO in 1982 stating that culture can be perceived as "the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a society or social group" but it also explains that it is "what makes us specifically human, rational beings, endowed with a critical judgment and a sense of moral commitment"[5]. During the following analysis, we will try to keep in mind this fundamental utilitarian dimension of culture.

Before linking up the concept of culture with other important notions, it might seem legitimate to ask oneself: despite having been thought, re-thought and analyzed over and over again

[1] CICERO, M.T., translated by Bouhier and D'Olivet (1812), *Tusculanes,* p.273.
[2] CNTRL, *Ethymology of « culture »,* < http://www.cnrtl.fr/etymologie/culture>, 2012.
[3] Cambridge dictionary, *Definition of « culture »,* <http://dictionary.cambridge.org/de/worterbuch/englisch/culture>, 2014.
[4] JAMES, P. (2014), *Urban Sustainability in Theory and Practice : Circle of Sustainability,* p.53.
[5] UNESCO (1982), Mexico City Declaration on Cultural Studies.

for millenniums, why are cultural and cross-cultural studies more than ever of great relevance in our era? First of all, because more and more scholars seem to perceive culture as a disruptive element when studying a certain social behavior, thus taking more the role of a barrier to understanding than a means of interpretation. While questioning the role of culture, anthropologist Mary Margaret Steedly takes the example of a fieldwork on the Karo Bataks, a small society based in Indonesia and highlights the difficulty of analyzing them anthropologically due to complicated task of defining their culture and therefore drawing an explanation out of it, since Karo among themselves had varying definitions of it, depending on whether they were a male or a female, Karo Christians or Karo spirit mediums. Steedly thus came to the conclusion that once she put aside and liberated herself from the cultural factor, she was able to finally see the events as a "series of social moments in which people struggled to make sense (or to take advantage) of circumstances more or less beyond their control."[6]

Following a similar mind path on a broader scale, Steedly recalls the danger of making use of the term of "culture" in a study as an explanatory fact since it holds the same peril as other "useful categories" like "gender" or "experience"[7], since these terms have now become too general and have almost been overused, the consequence of it being that everything and nothing can be explained by a cultural factor. Therefore, culture seems to be forced to count as an "explanatory mechanism",[8] losing its identity by itself. Moreover, we can observe the broadening of the concept of culture, due to the numerous studies and re-evaluations made around this term. Steedly indeed confirms the non-existence of an "American culture" for example, but emphasizes the creation of micro-cultures such as "LA culture" or "teen culture", thus diminishing the aim of an overall concept of culture[9].

The last remark regarding the reassessment of culture is based on a personal observation, which is the globalization of culture. Such as Professor Henry Louis Gates describes it with the expression of "Coca-Colonization"[10] referring to the greater diffusion of music and consumable goods (Coca-Cola for example) in contrast to literature or political ideas, we might be moving towards a global identity thanks to the globalization of culture, especially of mass culture. During the last ten or twenty years, nobody could for example miss the homogenization of musical trends throughout the world for example. Whether one goes to a metropolis in Asia, America or Europe, the exact same songs will sound on the radio.

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[6] STEEDLY, M. (2013), *What is Culture ?,* In : GARBER, M. B., FRANKLIN P.B., WALKOWITZ R.L. *Field Work : Sites in Literary and Cultural Studies,* ed. Psychology Press, p.21-22.
[7] *ibid* p.22-23.
[8] *ibid.*
[9] *ibid* p.23.
[10] GRICE, HELENA, *Review of Field Work: Sites in Literary and Cultural Studies*, p.259.

Considering, on the one hand, these recent critical assumptions of the role of culture in analyzing social issues and keeping in mind, on the other hand, the acceleration of cultural upheaval due to globalization, it is more than ever interesting to lead a cross-cultural study to re-evaluate the importance and the relevance of the cultural factor in the present and future studies.

The link between culture and behavior : a cut with rationality

Now that we have more precisely defined culture and tried to explain why a re-evaluation of its accuracy in studies seems unavoidable, we might enter the core of the subject by recalling a time in which studies on economic behavior were missing the abstract dimension that culture holds within itself to explain a concrete phenomenon. Proving that a certain element is missing in traditional economics will enable us to show to what extent culture is important in explaining human behavior. According to the Oxford dictionary, the economic man is defined as "A person who makes rational decisions in order to achieve their most preferred outcome given the constraints upon choice. The model of economic man is very specific in its view upon the process of choice, but it achieves generality by placing no restrictions on the nature of preferences or on constraints upon choice."[11]. Considering this definition, the focus is put on the individual's rational side and the preference of a by himself privileged outcome. Other than the concept of rationality, one might add the concept of "self-interest" to the traditional economic behavior. Back in the 18th century, economist Adam Smith emphasizes the individual's tendency towards self-interest in his work "An inquiry into the nature and causes of the wealth of nations". He invokes the existence of an invisible hand that results in transforming the so-called public interest into an addition of each individual's self-interest. He reasons in the following manner: "He (or she) generally, indeed, neither intends to promote the public interest nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention"[12].

However, this means of perceiving all individuals as "economic men" driven by rationality and self-interest, has been largely questioned. Acting in a rational way indeed means that mistakes

[11] Black. J., Hashimzade N., Myles G., *Definition of « economic man »,* A dictionary of Economics (5 ed.), <https://www-oxfordreference-com.acces-distant.sciences-po.fr/view/10.1093/acref/9780198759430.001.0001/acref-9780198759430-e-936# >, 2017.

[12] SMITH, A.(1838), *An inquiry into the nature and causes of the wealth of nations,* p.184.

shouldn't ought to be repeated over and over again[13], but simple human behaviors and historical events have shown otherwise. In an article re-evaluating the accuracy of the "homo economicus", the following observations are made regarding financial choices and rationality for instance, which enable us to understand traditional economics' weaknesses: "If financial decisions and capital markets are driven by rational thinking, then why does the manner in which the crisis developed seem so irrational? Is there something else besides the crude analysis of numbers and facts that should be taken into account when explaining and forecasting how humans deal with money?".[14] In his work "The theory of moral sentiments", Adam Smith himself has highlighted the importance of social relationships and the inherent morality necessary to understanding individual's behavior and that would lead to a more altruistic view: "How selfish so ever man may be supposed, there are evidently some principles in his nature, which interest him in the fortunes of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it."[15] Although Smith talks about caring for others being in the individual's "nature", the point we want to focus on is that this altruism seems to be based on "principles" which can only be taught from a social entity. Thus, other factors seem to be corrupting the "economic man" 's self-interested behavior and our aim is to prove to what extend culture is one of the major factors.

Since the 1990s, several disciplines, such as neuro-economics or behavioral economics, have tried to reason in this sense by pulling away from traditional economics in order to explain human behavior and by introducing new factors. In the scope of this work, we will try to explain the reciprocate link between an individual's behavior and culture. During this time in which more and more cultural studies are conducted and the concept of culture is broadening, how interesting is it to connect culture and behavior?

Starting off on the simpler side, an explanation on how behavior shapes culture should be sought. If we retake UNESCO's 1982 definition of culture as "distinctive spiritual, material, intellectual and emotional features", it appears obvious that these features need a means to be expressed in order to be perceived and defined by others as such. This means of expression are encompassed in the term of behavior, which the Oxford dictionary presents as "the way in which one acts or conducts oneself, especially towards others"[16]. Furthermore, in his work "The Interpretation of Cultures", anthropologist Clifford Geertz takes human behavior, which differentiates itself from the animals, as the starting point of culture, that according to him has an interpretative aim : "Believing, with Max Weber, that man is an animal suspended in webs of

[13] Unknown author, *The Benevolence of Self-interest,* The Economist, <http://www.economist.com/node/179495>, 1998.
[14] RINALDI, A. (2009), *Homo Economicus?,* EMBO reports.
[15] SMITH, A. (2002), *Adam Smit : The theory of moral sentiments*, p.11.
[16] Oxford University Press, *Definition of: « behavior »,* Oxford Living dictionaries, <https://en.oxforddictionaries.com/definition/behaviour>, 2017.

significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretative one in search of meaning. It is explication I am after, construing social expression on their surface enigmatical."[17] If culture were the brain, behavior would thus be its mouth.

The more complex issue relies in explaining how culture shapes different types of behavior. In this part, other than focusing on the general human behavior, we will particularly contemplate two types of behavior whose relevance will be explained in the first part of this work and which need a previous definition in order to be useful in this analysis: fairness and punishment. In her essay of the re-evaluation on what culture is, Mary Margaret Steedly presents a medieval historian friend's view on culture. Indeed, for her it was "an enabling concept that allowed her to shape the fragments of archival material regarding nonelite populations into some coherent form."[18] Therefore, what is applicable to archival elements can also count for social studies. Culture would thus be seen as a form of storing and classification, giving a coherent form to differences and thus outlining the different types of social behaviors. Several studies have been realized in order to show to what extend culture can strongly shape behavior. In 2005, Nisbett and Miyamoto, two professors in the department of psychology at the university of Michigan, published a paper aiming at showing the influence of culture on perception resulting in a certain type of behavior based on a comparative study between Westerners and Asians. After presenting several cognitive exercises and games to the participants from both cultures, they came to the conclusion that Westerners were more analytic, put a focal object at the center of their reflection and tended to use categorization, whereas Asians could be defined as holistic, very context-dependent and focused on relationships between several elements rather than on the central object.[19] This paper clearly proves that culture is a fundamental factor in shaping cognition and thus the resulting behavior caused by a certain perception.

A crucial point to the following study relies in finding out the influence culture has on fairness. Since Güth et al. 1982[20], economists, anthropologists, sociologists, and philosophers have used behavior in a certain class of games as a proxy to study fairness. The different kinds of games will be explained in detail later on in this work. Shortly said, the aim of these games is to determine the propensity that individuals have to share a monetary sum that is given to them and their willingness to punish in case of non-sharing, in order to in the end determine how fair this social group is. It is thus relevant to this work to evaluate the results of cross-cultural experimental games. The very first attempt at producing such a cross-cultural study was lead by Alvin Roth and his-co-

[17] GEERTZ, C. (2008), *The interpretation of cultures,* p.2.
[18] STEEDLY, M. (2013), *What is Culture ?,* In : GARBER, M. B., FRANKLIN P.B., WALKOWITZ R.L. *Field Work : Sites in Literary and Cultural Studies,* ed. Psychology Press, p.22.
[19] NISBETT, R., MIYAMOTO, Y. (2005), *The influence of culture : holistic versus analytic perception,* TRENDS in Cognitive Sciences, p. 467-473.
[20] GÜTH, W. et al, (1982) *An experimental analysis of Ultimatum Bargaining,* Journal of Economic Behavior and Organization 3, p. 367-388.

workers in 1989-90. They decided to compare the behavior of students from Ljubljana, Tokyo, Jerusalem and Pittsburgh through the ultimatum game and some differences regarding the amount of fairness, although not truly significant, were noted. The authors' conclusion is the following: "Our data thus lend some support to the hypothesis that the subject-pool differences observed in this experiment are related to different expectations about what constitutes an acceptable offer.... Consequently, we offer the conjecture that the observed subject-pool differences are cultural in character."[21] A wider and more ambitious study was conducted a few years later by playing the games in 15 societies all over the world, for example the Manichengua in Peru or the Sangu in Tanzania. The main findings were that no society proved to be purely self-interested, contrary to what traditional economics might insinuate, and that greater disparities were noted between these groups than in the first study[22]. These results thus clearly show that culture shapes fairness. However, one should keep in mind the several issues that rise when analyzing fair behavior.

According to the Oxford dictionary, the concept of being fair is defined as "treating people equally without favoritism or discrimination"[23]. What is meant by "equally"? Do we see it as a child would understand it, thus a 50-50 split or while playing the game, should one player take into account the fact that in real life, the other player has much less means than him, might need this money and thus should be given more? Other problems regarding the measurement of fairness have to be kept in mind throughout this study. In his book "Experiment in Economics", professor Ananish Chaudhuri highlights the difficulty of doing these experiments when conducting a study with individuals who speak a different language and that the personality of the experimenter might affect the results of the experiments because of the players' reception to him[24]. On the relationship of fairness and culture, Chaudhuri arrives to the following conclusion: "The large variations across the different cultural groups suggest that preferences or expectations are affected by group-specific conditions, such as social institutions or cultural fairness norms."[25]

Finally, it seems interesting to shed light on the link between punishment and culture. Punishment is indeed defined as "the infliction or imposition of a penalty as retribution for an offence."[26] Here again, drawing our attention on the used words is important. An offence can as a matter of fact be understood on a juridical ground as the breach of a defined rule as it can also be perceived as an emotional lesion of a viewpoint. One way or the other, the definition of an offence,

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[21] CHAUDHURI, A. (2009), *Experiments in Economics: Playing fair with money,* p.66.
[22] *ibid* p.68.
[23] Oxford University Press, *Definition of: « fair»,* Oxford Living dictionaries, <https://en.oxforddictionaries.com/definition/fair >, 2017.
[24] CHAUDHURI, A. (2009), *Experiments in Economics: Playing fair with money*, p. 62-63.
[25] *ibid* p.70.
[26] Oxford University Press, *Definition of: « punishment»,* Oxford Living dictionaries, <https://en.oxforddictionaries.com/definition/punishment>, 2017.

which conditions the punishment, thus appears to be very culture dependent. According to Jean Ensminger and Joseph Henrich, the propensity to punish in cross-cultural studies has come under clear variations throughout the different games[27]; striking examples will be given throughout the work. We have thus proved the reciprocal relationship between culture and behavior with an emphasis on fairness and punishment.

I) Introducing the games

As we have already stated earlier, we can clearly see that humans do not permute/ behave as the laws of pure economics would state; it seems that humans are not and have not evolved to be self-interested and selfish individuals who care only about maximizing their profits and, more generally their utility. At least, they do not maximize their utility in the way that classical economics would want them to. In fact, classical economy correlates utility maximization with the maximization of economical and financial profits. Findings in the field of behavioral economics instead, show us that utility maximization should not be equated with profit maximization pertaining to money or other financial and economic gains, but rather, to a maximization of all interests in an individual's life which include, but are not limited to: economic gains, social prosperity (being seen by others as fair, just, good, trustworthy, useful), other more culture-specific factors, which we will analyze later on.

Moreover, we have also noted that behavior depends on culture and vice versa. As such, the propensity of individuals to factors like altruism may and will differ depending on culture and provenience. This is why we have made this paper a cross cultural analysis. In order to analyze this propensity and the changes in statistical factors, which influence one individual's behavior and decision making, social researchers have devised specific games and experiments which are played to give results and compute these statistical and factual changes. We will introduce some of these games shortly. However, we must first give a definition for these games in order to understand them and better comprehend their given results. The first definition we must give is that of an experimental economic game. In order to do so, we must first pass by the definition of an experiment. According to Merriam Webster dictionary, an experiment is "an operation or procedure carried out under controlled conditions in order to discover an unknown effect or law, to test or establish a hypothesis, or to illustrate a known law"[28]. As such, an experimental economic game is a procedure, which is used in order to test out new or to illustrate known economic theories.

Regarding the experiments' broad utility in economics, Professor Alvin Roth highlights

[27] ENSMINGER, J., HENRICH, J. (2014), *Experimenting with social norms: Fairness and Punishment in cross-cultural perspective*, p.286.
[28] Merriam-Webster dictionary, *Definition of : "experiment",* https://www.merriam-webster.com/dictionary/experiment>, 2017.

three main functions that he qualifies with his own expressions: experiments must aim at "Speaking to Theorists" by conducting tests and modifications on already established theories. Furthermore, they must contribute to policy-making, an activity which Roth defines as "Whispering into the Ears of Princes". Finally, "Searching for Facts" is the experiments' third utility since new findings can be made thanks to the collect of pieces of information on situations.[29] Following a similar mindset, Professor Ananish Chaudhuri stresses the usefulness of experimental games and the versatility of the experiments' utility going beyond economics: "There have been a lot of innovative and exciting findings in this area that have raised questions about the conclusions reached by traditional economic theories; findings, that I think, would be of interest to people outside the discipline."[30] Chaudhuri redacted this statement in 2009 in his work *Experiment in Economics*, more than 20 years after Roth's explanation about experiments' utility, thus confirming his theory of experimental games having an interdisciplinary scope and being an effective way to question traditional economics with the collection of interesting new data. The theories, which are the subject of this paper are based on assumptions made in game theory and are, therefore, to be defined as experimental games. More specifically, the games, which will be illustrated as follows, can be considered as cooperation and coordination games.

These games are experiments where players are able but are not forced to cooperate in order to reach a better situation than the one in which they both started together. These games, in fact, leave players a strategic possibility with which, if they so choose and in accordance with one another, they can both come out in a better situation or rather with a higher overall utility than the one they had at the start. In most cases this usually permits them to come out of the experiment with more money that they had to begin with. However, we observe that player do not imperatively choose this option even when they are fully aware of all their possibilities. In fact, Colin Camerer and Ernst Fehr define game theory as "a mathematical language for describing strategic interactions and their likely outcomes. A game is a set of strategies for each of several players, with precise rules for the order in which players choose strategies, the information they have when they choose, and how they rate the desirability ('utility') of resulting outcomes"[31]. As such, making a cross-cultural analysis using these types of experimental games is useful in order to measure the tendencies of people to use those strategies and their overall propensity to cooperate in order to maximize their utility or, on the contrary, to analyze when, how and why people would chose not to do so and whether that leads to a different kind of utility maximization. The games we will mainly focus on are the Ultimatum Game, The Dictator Game and The Third Party Punishment game (or

[29] ROTH, A. E., (1986), *Laboratory Experimentation in Economics,* Economics and Philosophy, 2, p.245-246.
[30] CHAUDHURI A. (2009), *Experiments in Economics : Playing fair with money,* Preface.
[31] CAMERER C.F, FEHR E. (2003) *Measuring Social Norms and Preferences Using Experimental Games: A Guide for Social Scientists*, p.57, In : Henrich et al., *Foundations of Human Sociality : Economic Experiments and Ethnographic Evidence from Fifteen Small-Scale Societies,* Oxford University Press.

Third-Party Dictator Game). But before we talk about these games in specific I believe it is useful to explain just why Experimental games are relevant to explain behavior, culture and ultimately the differences and similarities between people when confronted with the same situations and choices.

The truth is that researchers create relations between experimental results and real life behaviors by looking for the Nash Equilibrium in all of their experiments. Before we go into explaining what a Nash Equilibrium is, we can state another definition to clarify things even further: Camerer and Fehr go on explaining the effects of game theory by saying that it "consists of two different enterprises" one being "using games as a language or taxonomy to parse the social world" and the other "deriving precise predictions about how players will play in a game by assuming that players maximize expected 'utility' (personal valuation) of consequences, plan ahead, and form beliefs about other players' likely actions"[32]. In particular, researchers are interested in seeing how players act in subsequent games to see if they get the handle of the possible strategies, also called "bundles", and seeing the evolution of their behavior. From this analysis they can derive, using mathematical formulas, the Nash Equilibrium. From this particular equilibrium, they can make assumptions and verify possible hypothesis on the real world behavior of population.

The Nash Equilibrium, now, can be defined "as set of strategies" (one for each player) who form or reach an equilibrium if "the given player is choosing the strategy which is a best response (i.e. gives highest expected utility) to the other players' strategies"[33]. As we just stated earlier, running experiments repeatedly enables researchers to view when, if and why players switch to "better strategies, given what others have done", something which usually leads to an equilibrium. The fact of playing an experiment repeatedly is sometimes called a "Groundhog day" design due to the character of that particular movie repeating the same day over and over again whilst correcting all of his errors along the way. Economists, therefore, expect players to learn the mechanisms and what to expect from the other player (thus arranging their own strategies) in order to maximize their give utility and thus reaching a Nash Equilibrium. There are a few ways to reach a Nash Equilibrium; players can either act or not, react or not. The only thing necessary is for the action or reaction to lead to the best possible outcome for the player making it, compared to whatever the other player has decided.

Now that we have properly introduced what experimental economic games are, how they function and what researchers look for when they run them, we can talk about why they are an accurate tool to measure social behavior and also some problems which might be encountered. I believe that a good basis for such an analysis is that of a paper made by Steven Levitt and John A. List in 2006 at the University of Chicago. The title of the study is "What do Laboratory

[32] *ibid* .
[33] *ibid.*

Experiments Tell Us About the Real World?" and although it focuses more on the precautions one must take to make good and correct inferences from results of laboratory experiments results on the real world, it does also bring about all of the strengths and the successes that these experiments have given over time.

In fact, they introduce their paper by stating "The allure of the laboratory experimental method in economics is that, in principle, it provides ceteris paribus observations of motivated individual economic agents, which are otherwise exceptionally difficult to obtain using conventional econometric techniques. Lab experiments provide the investigator with a means to directly influence the set of prices, budget sets, information set, and actions available to actors, and thus measure the impact of these factors on behavior within the context of the laboratory"[34] and by backing up their said statement by explaining that in reality this approach, the "explosion of research in experimental economics", soon changed the whole profession. They do so even citing the Nobel Prize Committees praise of Vernon Smith's work and contribution, reporting their commentary as saying that his work has "established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms"[35]. They add that although it is true that if not careful about all the possible variables in play the results of a laboratory experiment could be falsified, their findings, and what they argue therefore, is that "Even for those experiments that are affected by our criticisms, it is quite likely that the qualitative findings of the lab are generalizable, even when the quantitative magnitudes are not"[36]. By stating this, they are in fact saying that even though sometimes the results of laboratory findings may not be close to 100% correct on a quantitative basis (because of the shortcomings we will state in the next paragraph), they are almost certainly useful and correct for a qualitative analysis. That is almost perfect for our case as the inferences to be made in cross cultural analysis are mostly qualitative rather than quantitative even though basic statistical math is used. In fact they give two simple examples which clearly show that qualitative behavior in the real world can be successfully represented and re-created in a laboratory setting by talking about the findings of Horowitz et al. (2006) and Brookshire et al. (1987) on demand behavior. Both cases show strong similar behavior between population in laboratory experiment and that analyzed in real world markets, a result that they consistently find as well in other types of games including matching markets, social dilemmas, voting games and auction games.

These arguments are also brought forward and supported by Camerer and Fehr, as they make a comparison with social science by stating that experimental economics is better to explain

[34] Levitt D. S., List A. J., *What do Laboratory Experiments Tell Us About the Real World?*, University of Chicago, June 2006, p.1.
[35] *ibid.*
[36] *ibid.*

behavior and making qualitative analysis; “Games impose a clear structure on concepts that are often vague or fuzzy. Social scientists often rely on data like the General Social Survey, in which participants answer questions such as, 'In general, how much do you trust people?' on a 7-point Likert scale. It would be useful to have questions about trust that are more concrete, tied to actual behavior, and likely to be interpreted consistently across people (see Glaeser et al. 2000). A question like 'How much of $10 would you place in an envelope, knowing it will be tripled and an anonymous person will keep as much as they like and give the rest back to you?' is arguably a better survey question-it is more concrete, behavioral, and easy to interpret”[37]. These are only a few examples of the strengths of an economic experiment analysis and they suffice for the point we were making here but we will add upon these when talking about the individual games case by case as they have their own strengths.

Now that we have highlighted the strengths of experimental games in economics, we can do the same for their apparent weaknesses and shortly talk about what are the things to look for when seeing if a paper’s findings hold up or not. The main argument brought forward as a “downfall” for experimental economics is that which we have talked about earlier, the fact that quantitative finding may not always be on point and, as such, Levitt and John add to their previous statements by saying that “The types of experiments we should be particularly wary of are those that purport to estimate "physical constants" such as particular parameters of individuals' preferences”. They close their statement by giving these variables, which must and should always be held accountable when making an inference when they say that “the choices that individuals make depend not just on financial implications, but also on the nature and degree of others’ scrutiny, the particular context in which a decision is embedded, and the manner in which participants are selected to participate”.[38] In fact, laboratory experiments do exert a different type of scrutiny, a different context (and thus a different emphasis on the process used) and a different selection process (obviously).

There are also, problems which come from the instructions which are given to the players (which can be from any country or society ranging from and occidental university student to an indigenous person in a closed society) and making sure that these instructions are well understood. It is of fundamental importance that the experiment and the games that are being played resonate clearly and without fault in the participant’s minds as any misunderstanding could potentially jeopardize the study. However, as we have stated earlier, the games are played repeatedly in order to avoid such occurrences. Also, researchers who are most experienced with these types of laboratory

[37] CAMERER C.F, FEHR E. (2003) *Measuring Social Norms and Preferences Using Experimental Games: A Guide for Social Scientists*, p.85.
[38] Levitt D. S., List A. J., *What do Laboratory Experiments Tell Us About the Real World?*, University of Chicago, June 2006, p.1.

experiments, such as Joe Heinrich, have also given general guidelines to follow which are essential to the success of the findings.[39]

Therefore, not only do instructions have to be clear and clearly understood but researchers as well as reader must also pay attention to all the variables which may lead to falsified quantitative findings and should rather focus on the qualitative inferences that can be made using the correct steps. When doing so, experimental economics games are an essential part of studying populations' behaviors and especially, showing why and when behaviors differ from the laws and assumptions of classical economics.

Now that we have presented the value of such experimental games on making real world inferences, we can finally individually analyze the three main games on which this paper will talk about: The Ultimatum Game, The Dictator Game and the Third Party Punishment (or modified Dictator Game).

1) The Ultimatum Game

A) A brief history of the most used experimental games

The Ultimatum Game was thought of and invented in the early 1980's, in 1982 to be precise, by Werner Güth, Rolf Schmittberger and Bernd Schwarze, three economists at the University of Cologne. They thought of the game when studying the behavior of people in bargaining situations. More specifically, they were interested in those bargaining situations in which the first person in the relation gives another person an "ultimatum" offer. In other words, a "take it or leave it" type of offer. [40].

In order to bring this vision to light and to infer results that would satisfy their demand, they thus decided to create this game which not only gives them results on people's selflessness but also gives invaluable insight in how people bargain. It has since become one of the most if not the most used experimental game for making inferences on how people bargain and on how much a population tends to punish, thus serving amongst other things as a indicator of fairness in a given society. As such it has left a great legacy in its close to 30 years of existence influencing many economist, may they be game theorists or otherwise. The reason for its success might not only be the correctness of its assumptions and results but many economists have also praised its simplicity as the main reason for its longevity. In

[39] Boyd, R., Henrich J., *Cross-Cultural Ultimatum Game Research Group*, Unpublished article.
[40] CHAUDHURI, A. (2009), *Experiments in Economics : Playing fair with money*, p.39.

fact, as the economists, now mostly for his works in game theory, Eric Van Damme puts it, "the 30 year history of the UG shows the importance of continuity, cumulativeness and simplicity in science. One further lesson is that assumptions that are originally introduced as "first approximations," over time, get to be viewed as being part of the core of a discipline"[41]. In fact, this whole article was written by a myriad of economists praising the Ultimatum Game's legacy and explaining how they felt its influence. Perhaps, Eyal Winter's contribution to the paper may also be apt to summarize the overall idea behind the paper itself which praised the versatility and relevance of Güth's game: "Ultimatum Bargaining is discussed in every serious course on negotiations in top MBA programs, simply because the game is the most transparent and insightful tool to demonstrate the role of psychology and emotions in real-life negotiations. To this extent the UG has influenced not only research in the field of bargaining but also the education of bargaining practitioners in both their professional and their private life. Bargaining practitioners were probably aware of the role of psychology in bargaining even before ultimatum bargaining, but the Güth et al. (1982) paper and those that followed moved the issues of emotions, fairness, and social norms to the forefront of the research and educational agenda in bargaining."[42]

B) Explaining the game and its variations

As we have stated in subsection (a) above, the true merit of the Ultimatum Game is its simplicity and the possibility it gives to researchers to apply it in many situations. The key to understanding the Ultimatum Game is to understand why it was created in the first place and that is to measure the reaction of individuals to ultimate offers, which they may or may not consider as fair offers, in all bargaining situations. This may be in normal everyday situations for example when people meet at a market and bargain for a price but it can also be transposed to other situations, for instance when discussing with neighbors about the possibility of eventually spending a collective amount of money on something which is supposed to better the living conditions of all the members (but may only be useful for, say, half of them). The Ultimatum Game not only measures the propensity of people to make or not to make fair offers but it also measures the willingness of people to accept whichever such offer might be. This, in a bargaining situation where there actually isn't much bargaining (in the first, original version of the Ultimatum Game) because there is actually only one offer and one answer per game (so without counting the repeats).

[41] DAMME E.V, KENNETH G. B et al (2014), *How Werner Güth's ultimatum game shaped our understanding of social behavior,* Journal of Economic behavior and organization, p.293.
[42] *ibid.*

Another key to understanding the game is, understanding the fundamental result of it which we could arguably state as the confirmation in a game that humans are not the pure self-interested, utility maximizing individuals classic economic theories make them out to be.

Now we can actually describe how the game works and what its variations are. The original Ultimatum Game organized by Werner Güth was player at the University he taught at in 1982 by some of his students. The experiment was organized as such:
"Forty-two participants were paired into groups of twos to form 21 pairs. One player in each pair is called the "*proposer*" while the other is called the "*responder*". Each proposer was given a sum of money which ranged from 4marks to 10 marks. Three proposers received 4 marks, three received 5 marks, three received 6 marks, three received 7 marks, three received 8 marks, three received 9 marks and finally three proposers received 10 marks. Each member of the pair knew *exactly* how much money the proposer of the pair was given. Their task was simple. Each proposer was asked to suggest a split of this initial endowment between him and the responder he was paired with. But there was a catch: the responder had to agree for either to receive any money!"[43] So, as we can see, money was assigned to a randomized player and he was paired with another randomized player in the pool of students who were selected. From there, the first player, the "proposer", must decide how much he wants to allocate to the second player. However, if the second player decides, for whichever reason, to refute that offer, than neither the players get any of the money which has been allocated. This relatively simple system is able, as we said, to show us how much the first players are willing to allocate, from money that was given to him "for free" (meaning that he didn't actually have to work or produce anything in order to receive it), as so to compute his level of fairness and it also shows us how much the second player is willing to accept or his minimum level of fairness accepted. The interesting thing with these types of experiments is that they somewhat show the psychological processes that go through the minds of people as they try to decide the best possible allocation that they should make for their offer to be accepted. That is, of course, because if their offer is not accepted then they would not receive anything. As such, in order to maximize their chances to receive a part of the money (which is better than receiving nothing) then they must think about what the other players might accept and what they might not accept. This alone shifts the whole idea behind the classical economics theory: if people were purely self-interested and where only cared about maximizing their utility, then the second players to whom the money is offered by the proposers would never refuse. That is because, some money as little as it is, is still better than no money especially if they don't have to work for that money. As such, even accepting

[43] CHAUDHURI A. (2009), *Experiments in Economics : Playing fair with money,* p.39.

the lowest offer possible, they would still be maximizing their utility given their situation. This automatically gives space to develop a theory that there is actually a minimum offer acceptance rate from each receiver (more on this later in our next point).

A very good example to illustrate this, is given by Ananish Chaudhuri, who recalls and story told by Camerer, as he talks about the bargaining situation between a photographer and tourists: *"I once took a cruise with some friends and a photographer took our picture, unsolicited, as we boarded the boat. When we disembarked hours later, the photographer tried to sell us the picture for $5 and refused to negotiate. […] Being good game theorists, we balked at the price and pointed out that the picture was worthless to him. (As I recall, one cheapskate (either Dick Thaler or myself) offered $1.) He rejected our insulting offer and refused to back down."*[44]

Here, the picture is actually not worth that much to the photographer (it is worth only the price of one photo paper which we assume is quite low or at least lower than what Camerer offered him) whereas it would probably mean a lot more than what the photographer asks Camerer but neither would budge in their respective bargaining offers (they both make an ultimatum offer!). Thus, neither managed to maximize their utility because Camerer did not receive his picture even if he had paid less than the actual probable worth of it and the photographer refused money which was more than the price he would have received if he had accepted Camerers' offer and in the end decided to keep a picture which probably did not mean much to him at all. But even given all of this, both actors consciously decided to refuse winning something valuable because they think that the offer of the other is unfair to them. Moreover, this finally explains and illustrates quite well the idea that people are willing to punish what they feel like is an unfair behavior or offer, even if they have to pay lose something out of it. This (that is the fear of rejection), amongst other factors, as we will explain later on is also considered as one of the reasons for human "fairness", and it is observable the more the game is played by a single set of players.
Thus, we can see how much this simple example actually reveals on human behavior and on their propensities in bargaining situations.

This, however, is not the only version of the Ultimatum Game. In fact, there also exists a variation to it often called the "strategy-based" Ultimatum Game. We can see it

[44] *ibid.*

being used notably by Jean Ensminger, Abigail Barr and Joseph Heinrich in their cross cultural study.[45]

The strategy-based Ultimatum Game resembles the classical version in its spirit but shifts one variable: as in the original Ultimatum Game, there are two players, one being the "proposer" and the other being the "respondent", with the proposer receiving a set amount of money which he then has to share with the respondent. However, here before the respondent actually gets to hear the offer that is being made by the proposer, he must write on a piece of paper each offer for which he would respond with a rejection. As such, this somehow forces the respondent to make an intelligent, binding and thought out decision about what exactly he would and would to accept without knowing anything about what the proposer would do. This drives us a little bit closer to that aforementioned concept of a "minimum accepted offer".

In addition, as in the Ultimatum Game, the consequence of a rejection is that of loss of the money by both parties. The addition of this detail or rather of this variation also adds a psychological facet or dimension to the game but as the authors remind us the result is the same: "If people are motivated purely by income-maximization, player 2s will always accept any positive offer; knowing this, player 1s will offer the smallest nonzero amount", which also leads to our second observation that "because this is a one-shot anonymous interaction, rejections of positive offers provide a measure of player 2's willingness to engage in costly punishment; we refer to this as *second-party punishment"* .[46] However, it can and must be noted that some studies have shown that less punishment is being applied when the strategy based game is being played and that it has a added quality about it that is that "the strategy method improves comparability, as it ensures that each individual placed in the responding role responds to the same set of possible stimuli"[47] which plays well into our paper and has to be noted.

As such, we have presented the game as it was thought of originally and its most utilized variation, at least in cross cultural analysis, which is the strategy method. We can now talk about the most relevant experiments for the literature as well as its major findings.

[45] ENSMINGER, J., HENRICH, J. (2014), *Experimenting with social norms : Fairness and Punishment in cross-cultural perspective*, p.113.
[46] *ibid*, p.115.
[47] *ibid.*

C) Most relevant examples and findings

The first example we can give perhaps is the original Ultimatum Game played by Werner Güth in 1982 as it is really, for obvious reason, the blueprint to all other games, which came after it. As we have stated earlier, the game was played with university students, 42 in total (so 21 proposers and 21 respondents). What the expectations were going into the experiment at the time, as regarding the eventual Nash Equilibrium that was to follow, mirrored those one would have with a classical theory of economics and, as such, the experimenters expected the proposers to offer as little as possible and for the respondents to accept anything. However, the findings suggest that there were way more offers of 50% or more than originally expected and that there were also more rejections than expected. To make sure that the results would hold up, the game was played a second time and a test was given out to the participants to check their capacity at solving harder problems. The results strengthened the assumption that the students felt and which indicated that if they did offer too low an amount, they would end up with nothing. They also confirmed the prior results that indicated that when propositions that were considered unfair for whichever reason were made, they would be rejected. Interesting to see is also that there were more rejections the second time around than the first time. Here following you can find the reported graphs depicting these results:

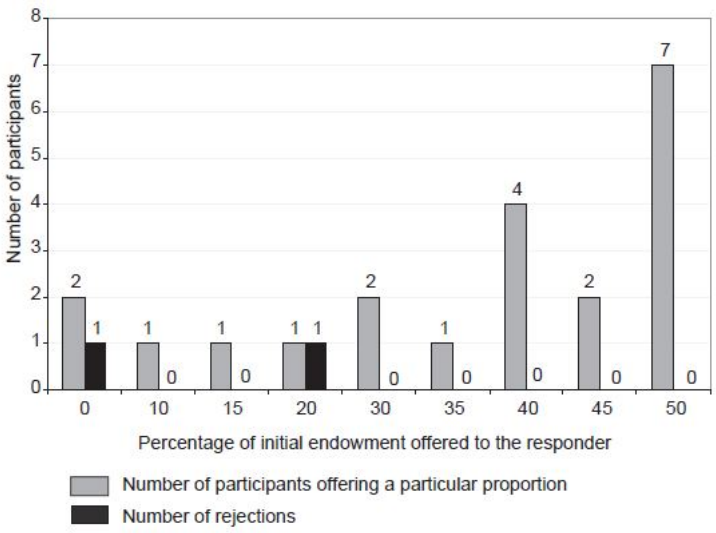


Figure 2.2 Güth *et al.* (1982): proportional offers made by proposers and rejection rates (*inexperienced* subjects). Figure created by author on the basis of data provided in the original study.

Source: Chaudhuri A.(2009), *Experiment in Economics: Playing fair with money*, p.42.

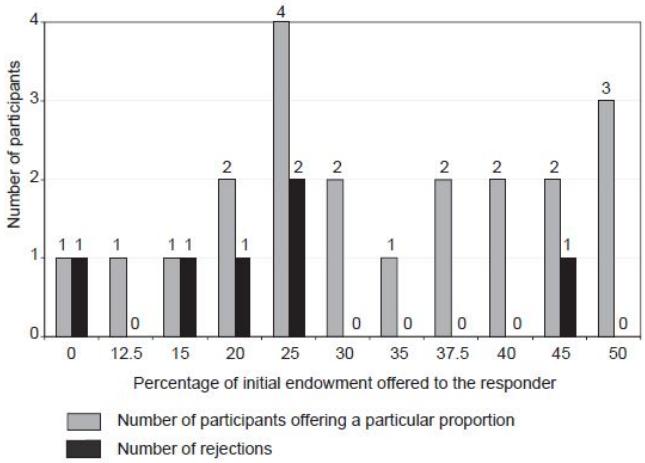


Figure 2.3 Güth *et al.* (1982): proportional offers made by proposers and rejection rates (*experienced* subjects). Figure created by author on the basis of data provided in the original study.

Source: Chaudhuri A. (2009), *Experiment in Economics: Playing fair with money*, p.42.

As we can clearly see from both graphs, the amount of rejection rises from 2 to 4 and the number of offers 50% or more lowers from 7 to 3. Most offers though, stay at around 25% to 45% which shows the clear will of people to stay in the "fair zone" which we could now confirm as being around the 30% mark (86% offered at least 20%). This was and still is a major finding in this field and one which would influence a great amount of research after it.

For instance, a great follow up to this Ultimatum Game is the experiment done by Richard Larrick and Sally Blount in the University of Chicago in 1997. The goal of the experiment was to decipher the reason behind why people rejected offers which would actually bring them to a situation which is better than the one in which they were previous to the game. More specifically, they wanted to understand whether the respondent were rejecting offers below a certain proportional amount (for instance, the minimum amount that they individually would take) because it left them economically worse off than their respective proposers or whether it was because they felt the proposed amount per se was unfair and that, therefore, the proposer was an unfair person [that needs to be punished]. To do so, they based their studies on a pre-existing theory which leads them to believe that people in general are more willing to accept losses or events that they consider as being "unfair" to them if that particular thing happened because of an aleatory variable. For instance, people would be more willing to accept the destruction of their homes if it happened because of a natural disaster than if it happened because of vandalism and violation of private property by another human of institutional entity. As such, Larrick and Blount devise an experiment based on the Ultimatum Game but which branches off into two other games (and subsequent results) : the first game is an ordinary Ultimatum Game, the second one is an Ultimatum Game played with a third "disinterested" party who will

actually be the "proposer" for the final allocation, the third is a two party Ultimatum Game played with a roulette which has to be spun in order to know the amount which will be proposed.[48]

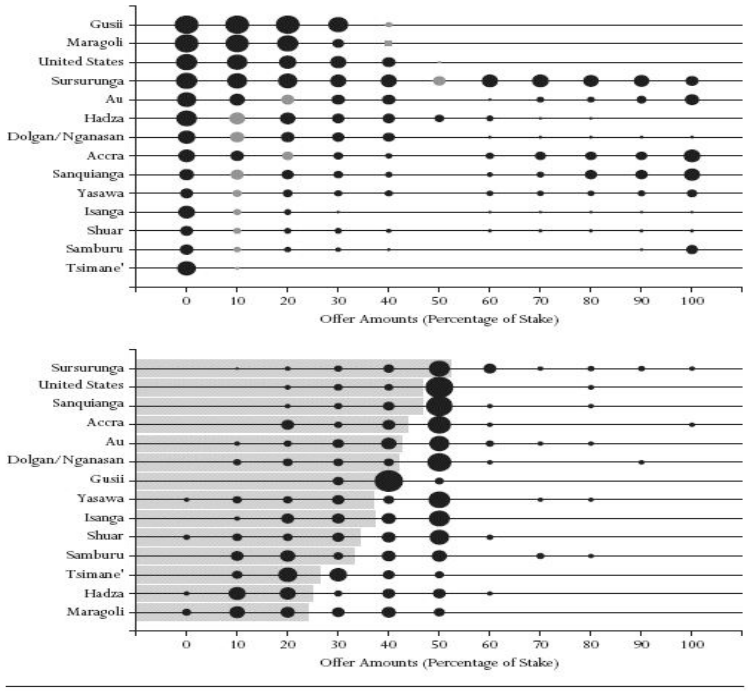
The results of these games were quite revealing as it showed clearly that the respondents were willing to accept a lower offer when the allocation was made by a third disinterested party or when it was allocated by chance. She computed this by comparing the answers that all players gave when they were asked at the beginning of the game what was the lowest amount they would accept in each game. The answers showed that, on average, the players would accept 2.91$ out of 10$ in the first, 2.08$ in the second and 1.20$ in the third[49]. So, clearly, we see a decreasing function proportional to the degree of "chance" of the allocation.

We can take the two previous examples as a strong basis for the general theory reported earlier in this paper that people are generally driven by an idea of fair behavior in their actions as well as in their decisions and that they are generally willing to punish a behavior that they deem unfair. Now that we can take this as a clear statement, we can talk about our third example which is the most relevant for our paper. This is the one of the cross-cultural analysis done by Joseph Henrich, Jean Ensminger, Abigail Barr and Richard McElreath across 14 cultures including the Gusii (Kenya), the Maragoli (Kenya),The United States, the Surusunga (Papua New Guinea), the Au (Papua New Guinea), the Hadza (Tanzania), the Dolgan/Nganasan (Russia/Siberia), the people of Accra, the Sanquianga (Colombia), the Yasawa (Fiji), the Isanga (Tanzania), the Shuar (Ecuador),the Samburu (Kenya) and the Tsimane'(Bolivia).

This study takes the whole study of population's behavior a step further. Not only because this is an experiment played cross culturally and with players who are not part of a student body in university or otherwise, but also because it manages to prove a further point than those we have already stated abundantly earlier: if we have now understood that people are willing to punish unfair behavior, we can now also prove that different societies/people will punish differently (the amount of punishment varies)[50]. We could so say that the amount of punishment given depends of culture which is a strong assumption to make. The following graphs will illustrate the results of their experiment:

[48] BLOUNT S. (1995), *When Social Outcomes Aren't Fair: The Effect of Causal Attributions on Preferences*, Organizational behavior and human decision processes, p.131-144.
[49] *ibid.*
[50] ENSMINGER, J., HENRICH, J. (2014), *Experimenting with social norms : Fairness and Punishment in cross-cultural perspective*, p.186.

FIGURE 4.2 *The Ultimatum Game: Distribution of Rejections (top) and Offers (bottom)*



Source: Project data.
Notes: The top panel shows the frequency of rejections across offers in the UG for each population. The bubbles' areas represent the portion of the sampled population (listed along the *y*-axis) who rejected offers at the amounts marked along the *x*-axis. The largest bubbles indicate that 100 percent of the sample rejected. Gray bubbles mark the income-maximizing offer (IMO). The square marks the IMO for the Maragoli, who made no rejections at that offer amount. The populations are ordered from bottom to top according to the frequency of rejections for offers of 10 percent of the stakes. No rejection data were collected for offers above 50 percent in the U.S. sample (see Chapter 3). The bottom panel shows the histogram of offers and mean offers for each population. The bubbles' areas represent the relative frequencies of offers at each of the amounts listed along the *y*-axis. The horizontal gray bars reach to the mean offer for each population. The populations are ordered by mean offer amount.

Source: Ensminger J., Henrich J. (2014), *Experimenting with Social Norms: Fairness and Punishment in Cross-Cultural Perspective*, Chapter 4.

Here we can clearly see visually the distribution of punishment per given offer for each population. We notice that the major distribution of rejections is from offers ranging 0% to 25-30% as expected and that the rate of rejections gradually reduces as we approach the 50% mark. However, we can also note something quite interesting and that is the presence of "hyper-fair" offers and we do notice that they are being rejected a lot more in some societies than in others. In particular, there are bigger rejections of hyper fair offers in the Sanquianga of Colombia, the Sursurunga of Kenya and the people of Accra. We will go into this better later but for now we can only add that according to the researchers as well as other who analyzed the phenomenon, the fact that there are "hyper fair" offers does not arise from confusion.[51]

In order to analyze further the results of the cross-culture analysis Ensminger and Henrich also add more variables which we could correlate in order to give us a deeper understanding of these said results. These variables are Market Integration, World Religion and age. The result of this further analysis shows that these variables are "large, positive and

[51] *ibid* p.192.

significant predictors of UG offers"[52]. In fact they go further by stating a crucial element/"rule" in cross-cultural analysis which is: "going from a fully subsistent economy with a traditional religion to a fully market-dependent economy with a world religion means an increase in UG offers of eighteen to twenty-six percentage points"[53]. This, moreover, covers a lot of the range of variation that's observed in the societies.

Now that we have finished presenting some of the biggest relevant examples of the Ultimatum Game (we could not present all of them as there are really a lot of relevant papers on the matter), we can move on to presenting the next two games: the Dictator game and the Third Party Punishment.

2) The Dictator Game

A) A brief history of the Dictator Game

The Dictator Game was first thought of and played close to 25 years ago in 1986 by Daniel Kahneman on the heels of the studies made with the ultimatum game. As the ultimatum game, the goal of the Dictator Game is to measure fairness and some sort of punishment in populations. The main results also point out to evidence against the rationally self-interested individual concept of behavior proposed by classical economics[54]. It was thought of as a simpler and more stripped down version of the already simple Ultimatum Game, as to bring the rawest analysis of fairness through its concept, which we will explain later.

Kahneman had the idea about the Dictator Game as part of his program to turn "textbook assumptions into behavioral hypotheses"[55]. That is because, due to its format, the *"homo economicus"* assumption made by classical theory should be much more prevalent here but that's exactly what Kahneman wanted to disprove. Ever since, the game has become rather popular amongst experimentalists, especially because of its simplicity and because of its flexibility. In fact, the game has been used to analyze many more variables[56].

[52] *ibid.*
[53] *ibid.*
[54] LEVITT S., DUBNER S. (2010), *Superfreakonomics*, p.106.
[55] ENGEL C. (2010), *Dictator Games: A Meta Study*, Max-Planck Institute for Research on Collective Goods.
[56] *ibid.*

Now that we know more about its history, we can go into describing the game itself.

B) Explaining the game and its variations

First of all, we can describe the original dictator game that we just mentioned in the previous paragraph, as it is a little bit different than all the other dictator games that came after. This is the text from that original Dictator Game:

"You will be matched at random with two other students, and you will get to share some money with one or both of them. If the two people made different decisions in the first stage (e.g. one of them took $10 and one took $18), then you must make a decision about how to allocate the money. Call the person who took $10 and gave the other one $10 student E (for even). Call the person who took $18 and gave the other one $2 student U (for uneven). Your choices are as follows: you may allocate $5 to yourself, $5 to student E, and nothing to student U; or you may allocate $6 to yourself, nothing to student E, and $6 to student U".[57]

Here as we can see the first player is still presented with a choice in what to do: he must choose between an explicitly unfair decision and an explicitly fair decision before being presented with another choice where he must choose whether to give more or less money (at his loss). This is a version which has not been used too many times after because it is seen as bringing too many constraints to the game (even if here it's simply a binary choice) compared to the next version we will describe. In fact, as we stated earlier, the dictator game is supposed to be the most stripped down version of the games measuring fairness and it has this reputation because of the total freedom it leaves its players.

The most common version of the dictator game, in fact, is one where the "proposer" is given full powers. He is the one to decide how much of the "manna from heaven" he wants to allocate to the respondent and must not wait for an answer from him. In fact, once he has decided how much money to allocate to himself and the other player, the game ends and the proposer walks away with that money. So, clearly, this is like an Ultimatum Game minus the variable of second player punishment because no one will get to admonish the "dictator" one his choice is made, even is he decides to keep 100% of the money for himself. Here, even though we do not get a measure for punishment, as it is inexistent, we do get the best form of fairness measurement. A purely self-interested actor here would have no

[57] *ibid.*

qualms over taking all of the money or leaving very little to the next player as he does not need to fear rejection. This, by far, has been the most used version of the Dictator Game and the one who has brought more results.

However, there are still some errors and what some experimenters say are variables which lead to marginal errors in the studies which have been found in the game and, thus, some versions of the game which take into account these errors have been run. One such version is the "double-blind" Dictator Game. This version of the game has a change in the "anonymity" variable. In fact, whereas in normal games there is anonymity only between the two players (which, for instance, can be placed in different rooms) here there is also an element of anonymity between the players and the experimenter. The reason for this, is that researchers believe, as we have already previously stated at the beginning of this paper, that there could be a correlation between the results or more generally the behavior of the players and the personality and way of exposing the game of the experimenters. As such, keeping all of them anonymous would solve that problem. Ananish Chaudhuri explains the procedure of a double-blind dictator game as follows:

"Usually experimental economists carry out double-blind protocols by assigning letters or numbers to participants and participants then picking a letter or number at random. Participants then make decisions on pieces of paper which are deposited into a locked box so that the experimenter cannot see those decisions. The experimenter then pays the participants on the basis of the numbers or letters assigned and deposits these payments into another locked box. Participants pick up the payment that matches their letter or number from the locked box using keys given to them at the beginning of the session."[58]

Here, the experimenter cannot know to whom was assigned a specific number or letter and therefore he cannot match the decisions made with a particular participant. As such the rule of anonymity is respected and the experimenters personality or his way of exposing the problem or the possible "obligation" which the proposers may feel due to the inherent feeling of being watched and scrutinized are to be, in theory, annulled for a purer result.

Now that we have given a few methods used to run the Dictator Game we can talk about the most relevant cases.

[58] CHAUDHURI A. (2009), *Experiments in Economics : Playing fair with money*, p.57.

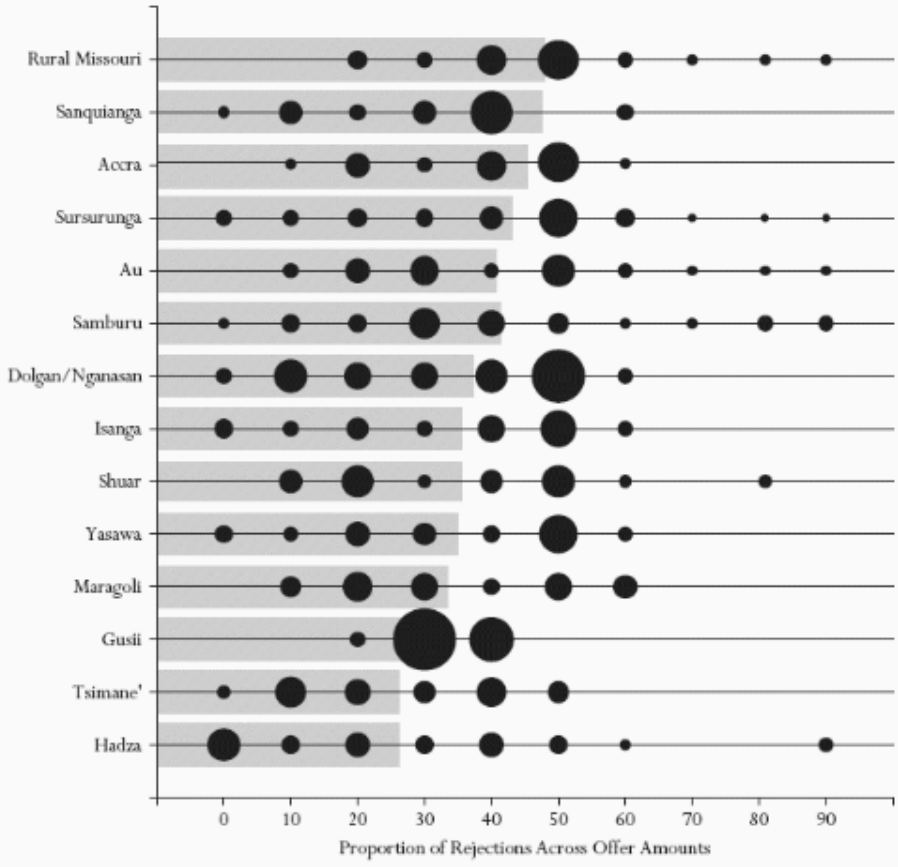
C) Most relevant examples and findings

If we take the example set for Ultimatum Game earlier, we can first talk about the results of the first dictator game run by Kahneman. As we reported earlier, this experiment is slightly different than the "usual" ones as it leaves a binary option to the proposer. Nonetheless, the results of the experiment mirrors the previous findings of the Ultimatum Game and also mirrors, at least in final verdict, the other versions of the dictator game. It does so because in this game "74% of the participants chose the first option although it cost them $1 more"[59]. So even when given full powers over ones earning the game showed that humans would prefer the more equitable and less self-interested choice. This was a marquee finding in this field as it opened up new doors for experimentation on fairness and it also seemed to put the final nail in the homo economicus theory.

Second, since we've just stated that the original Dictator Game mirrors the more classical ones in findings, we can take the cross-cultural analysis example made by Ensminger, Henrich et al. for the purpose of this paper. To do so we can first of all report the explanatory/illustrator graph, which we can then comment:

[59] ENGEL C. (2010), *Dictator Games: A Meta Study*, Max-Planck Institute for Research on Collective Goods.

FIGURE 4.1 *The Dictator Game: Distribution of Offers*



Source: Project data.
Notes: Reading horizontally for each of the fifteen populations listed along the left vertical axis, the area of each bubble represents the fraction of our sample that made that offer. Each horizontal set of bubbles thus provides the distribution of offers for each population. The gray bar reaches to the mean offer for each population and is the measure by which the table is sorted. Three offers of 100 percent, two from the Dolgan/Nganasan and one from Accra, are not shown.

Source: Ensminger J., Henrich J. (2014), *Experimenting with Social Norms: Fairness and Punishment in Cross-Cultural Perspective*, Chapter 4.

Here, the horizontal axis represents the proportion of offers compared to the total stake and the bubbles represent the proportion of the given population that made that particular amount of offer. As we can clearly see visually, the major concentration of offers is in between 30% and 50% it seems. Looking at the official results reported by the experimenters, we find that of the 427 offers made:

- 5% are 0% offers
- 38% are 50-50 splits
- 9% are hyper fair offers (offer of over 50%)
- 85.5% are offers between 10% and 50 %.

This, once again, shows unambiguously that the players of the Dictator Game were much fairer than what general economic theory would assume. In fact, the proportion of 0% offers is actually the minority offer in these cross-cultural games. This is further supported by the fact that 41% of that 5% of 0% offers came from only one population, which are the Hadza[60].

To explain the variations that they found across cultures, they conclude by saying that "moving from a fully subsistence-oriented society with a traditional religion to a market-integrated economy with a world religion predicts an increase of twenty to twenty-four percentage points in DG offers, which captures the full range of variation across populations in mean DG offers."[61]

As such, the variable "Market Integration" and "Religion" has a quite strong and positive relation on fairness measures as Dictator Games offers.

The third example we can take is that which we introduced earlier with Double Blind Dictator Game. The game we can take is that made also by Carolyn K. Lesorogol and Jean Ensminger. These games were played in three communities (the Orma and the Samburu in Kenya and a group in central Missouri) between 2001 and 2003. The game was organized as such: "For the DBDG, thirty-two Samburu, forty-six Orma, and fifty-eight U.S. players were randomly divided into player 1s and player 2s. The game instructions, which had been translated and back-translated in the local languages in Kenya, were read to each group."[62] The fact that it was a double blind dictator game means that it was completely anonymous. The result of this study showed that the players still made positive offers to the respondents even with full anonymity. There was no drop-off in the amount percentage of offers in the two east African communities but there was a slight one in the population of Missouri. Tough, that drop-off was so slight that it does not warrant real attention[63].
Therefore, this game not only gave a good cross-analysis of fairness in 3 different cultures but also managed to disprove experimenter/anonymity-effect and also confirmed dictator game results. Now that we have talked about the history and relevant examples of dictator game we can finally move on to our last game, the Third Party Punishment.

[60] ENSMINGER, J., HENRICH, J. (2014), *Experimenting with social norms : Fairness and Punishment in cross-cultural perspective*, p.296.
[61] *ibid.*
[62] *ibid.*
[63] *ibid.*

3) The Third Party Punishment

A) A brief history of the Third Party Punishment

The Third Party Punishment games are actually the least "popular" amongst those we just analyzed. Although there are a few examples of third party punishment games being used in order to study some population behaviors, there have been only a handful of relevant studies on the strengths of Third Party Punishment. The focus, as we have repeatedly stated along this paper, has been on second party punishment seen in Ultimatum Games (and all of its later adaptations). The papers in which we find the results of Third Party Sanctions are for instance: the aforementioned paper made in 1986 by Kahneman, Knetsch and Thaler[64] and that of Turillo, Folger, Lavelle, Umphress and Gee in 2002[65]. These, until 10 years ago, were lone examples, which, as we can see by their publication dates, were far in between. A very relevant paper which focuses on the real strengths of Third Party Punishment however, is the one made by Ernst Fehr and Urs Fischbacher in 2004[66].
More on this in the next part.

B) Explaining the game

The point of the Third Party Sanctions games is to compute the willingness of people to sanction the behavior of another person or other people if they deem that behavior to be wrong in a certain way, whether that be because they believe it is "unfair", "selfish" or whatnot. An important accent must be put on the word "willingness" because in most third party punishment games, sanctioning one of the other players requires the "punisher" to lose something of his, for instance, a part of his monetary endowment. That is a great tool because it permits us to measure the "pro-sociality" level in a given population or in other cases (we will give one in the next paragraph) it can measure some factors, which are hardly measurable like the level of "discrimination" or "social discrimination" in certain societies.

A Third Party Punishment game is, as such, played with tree players. Usually the first player receives an amount of money as well as the third player leaving the player without any money. Then, here is where things can change: either it is a variation on the

[64] KAHNEMAN, D., KNETSCH, J.L., THALER, R.H. (1986), *Fairness and the Assumptions of Economics,* The Journal of business, p.285-300.
[65] TURILLO, C. J., FOLGER, R., LAVELLE, J. J., UMPHRESS, E. E., & GEE, J. O. (2002). *Is virtue its own reward? Self-sacrificial decisions for the sake of fairness*. Organizational Behavior and Human Decision Processes, p. 839-865.
[66] FERHR E., FISCHBACHER. (2004), *Third Party Punishment and Social Norms,* Evolution and Human Behavior 25, p.63-87.

Dictator Game in which case the first player can decide whether or not to allocate some of his money to the second player or a variation on an Ultimatum Game in which case the first player has to make an offer (even if it the lowest possible offer). The twist here is that unlike in dictator an ultimatum game, the punishment is given by the third player, thus the name third party punishment. The key though, is that in order to administer this punishment, the third party has to "use" and, therefore, loose part of his initial monetary endowment. This is especially more present in the variation on the Ultimatum Game in which case the rules to the third party having to use a fixed amount of money proportional to the amount of money he wants to take away from the player he punishes in order to administer said punishment. However, we must not be confused in thinking that punishment can only be administered on the first player. I fact, for example, in cooperation/trust games where the second player who eventually receive a part of money from the first one must decide whether or not to send a part of that money back (with a give pre-set multiplier) to the first player, the second player can also be punished by the third party. The idea is that the third party can punish literally any behavior or decision he deems not fair or negative, as long as he uses his own endowment to do so. However, he has no obligation to do so and could also come out as a self-utility maximization winner in the game leaving any of the other two players as potential "losers" without him being punished.

Either way, clearly, this is still based on the idea that sociality is given by norms and that "norms are enforced due to the expectation that violations of the behavioral standard will be punished"[67].

C) Most relevant examples and findings

The first example we are going to take is that of the major work by Fehr and Fischbacher. The goal of this paper was to examine the characteristics and strengths of thirst party punishment. To do so the experimenters ran a few experiments in order to prove that third parties in games would be willing to enforce norms they believe in even if that enforcement would end up costing something to them. Although they ran a few different games, such as a "strategy –based" TPP, the most used game was a variation of the dictator game which they promptly named the "Third-Party Dictator Game" (TP-DG). The game ran as a dictator game with this variation:

"In this treatment, player A has an endowment of 100 points and he can transfer 0, 10,

[67] *ibid.*

20, 30, 40 or 50 points to player B who has no endowment. The third party, which we denote as player C, is endowed with 50 points. Player C has the option of punishing player A after observing A's transfer to B. Player A's payoff is reduced by 3 points for every punishment point that player C assigns to player A. In principle, player C could assign up to 50 punishment points to A, i.e., C could use his whole endowment for punishing A. At the end of the experiment points were exchanged into real money at an exchange rate of 1 point = CHF 0.3." [68]

The results of this paper go clearly in the direction of their previously stated hypothesis: against the idea that a third party punisher would only care about his endowment and not loosing any of it, they notice that all third parties decided to punish at various proportionally increasing degrees the farther the dictator offers were from a clean 50-50 split.

In order to know the reason for these results, they also ran a questionnaire. Taking into account the answers of this questionnaire, they conclude that the main reasons for such punishments are "driven by negative emotions and negative fairness judgments towards norm violators"[69]. They conclude by stating an important point for further analysis made later in this paper that is that, it seems that the single punishment by a third party if probably not enough to render the act of norm violation (whichever that may be) "unprofitable". In fact, these sanctions are on average much less effective than a "direct" punishment by the player or person who is being harmed (as it is the case I the ultimatum game). As such, the best way to an effective and powerful "enforcement mechanism" to social norms, is the presence of more than a single third part sanction on the same norm violation.

The second example we can take is one, which leads us in a route a little bit different. This one, as we announced earlier, is one that computes the level of "discrimination" in a given society using the TPP. The paper is written by Karla Hoff, Mayuresh Kshetramade and Ernst Fehr and deals with the issue of Castes in India[70]. In this paper, a Third Party player game is organized with members of different castes in India in order to prove that, even though the normative regime, which permitted caste discrimination at a State level does not exist in India anymore, discrimination on this basis is still practiced and is still felt every day. In their words, the paper wants to study how the caste system "affects the individuals"

[68] *ibid.*
[69] *ibid.*
[70] HOFF, K., KSHETRAMADE, M., FEHR, E. (2011), *"Caste and Punishment: the Legacy of Caste Culture in Norm Enforcement,"* Economic Journal, pages 449-475.

willingness to punish violations of cooperation norm".[71] Here, the game is played on the basis of a cooperation game rather than that of a dictator game as in the first example:

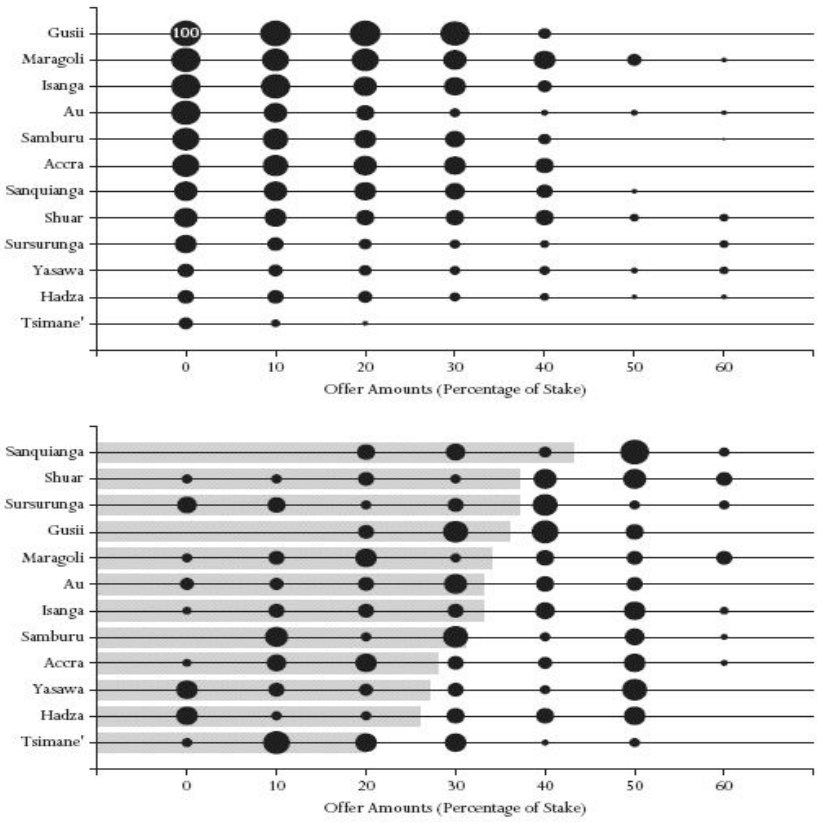
"We implemented four treatments, called HHH, HLH, LLL, and LHL. The first letter in each treatment indicates the caste status – high (H) or low (L) – of player A, the potential injured party; the second letter indicates the caste status of player B, the potential norm violator; and the third letter indicates the caste status of player C, the third party punisher. The subjects in the experiment were informed about the caste status of the matched players in an unobtrusive way"[72]

Precisely, this study shows that the TPP is a really useful tool to use in order to compute not only the overall willingness to punish from member with different statuses (castes) but also for types of "double standards" in punishment. That is, with this set-up, we could clearly see if High Caste member were more willing to punish when the potentially harmed party was a member of their own caste for one and for two if in addition the player committing the injury is a member of a lower or different caste then theirs and vice versa. The game was run in triples comprising all of the possible distributions of caste members for a total of 205 triples.
Sparring very interesting (but many) details, the overall result of the experiment shows that without a doubt and in every case lower caste members punished less than higher caste members. A possible answer to why that is, is that Higher Caste member simply care more about the position of people in the same caste as them and thus are more willing to punish if they see one potentially harmed. Thus the paper did prove that Third Punishment games can prove the underlying (positive or negative) discrimination in societies, in particular case here in the Indian Society.

Our third and final example comes once again from the cross-cultural analysis provided by Ensminger, Henrich et al. In this experiment, 12 populations were made to play the Third-Party Punishment Game. In order to comment this analysis here is the graph representing results:

[71] *ibid.*
[72] *ibid.*

FIGURE 4.3 *The Third-Party Punishment Game: Distribution of Punishments (top) and Offers (bottom)*



Source: Project data.
Notes: The top panel displays the distributions of decisions to punish across the possible TPG offers. For each population labeled along the *y*-axis, the areas of the bubbles display the fraction of the sampled population who were willing to punish at that offer amount (along the *x*-axis). Inside the zero offers for the Gusii we placed a "100" to indicate the size of a bubble if everyone punished. The populations are ordered according to their willingness to punish offers of zero. The bottom panel provides the histogram for offers made in each population. The area of each bubble represents the fraction of the sampled population who made the offer. Both plots stop at offers of 60 percent along the *x*-axis because very little punishment and few offers occurred above this amount. Populations are ordered according to their mean offers.

Source: Ensminger J., Henrich J. (2014), *Experimenting with Social Norms: Fairness and Punishment in Cross-Cultural Perspective*, Chapter 4.

Here, in the top panel, the histogram shows us the proportion of each population who punished the given offer amount by the size of the bubbles. We can see that most populations heavily punished any offer below 40%. The bottom panel histogram instead represents the proportion of offers that was made for each population. Here, somehow in accordance with the top panel representation, we see that most societies offered mostly from 30% to 50% i.e. the amounts which are not punished. The only population, in fact, who offer the lowest amounts like the Tsimane (10% and 20%) are also those who punish those offers the least.

As such, this study clearly shows a similar pattern to those we described in the Ultimate Game and the Dictator Game, even though there is a lot of variation in the willingness to punish across populations (insert citation). For instance, as we just stated, the Tsimane are much less willing to punish low offers whereas the Gusii and the Samburu almost always (around 90%) punish lower offers.

Important also, is noting that according to the experimenters, world religion in this game has not given us any positive or big relation as it has is the Ultimatum and Dictator Games, but that Market Integration and other economic variables stay relevant and take more important role.

II) A small cross-cultural study

Out of the thirteen case studies proposed in Jean Ensminger, Josef Henrich et al's work *Experimenting with Social Norms,* we chose to focus on two particular cases: that of the Samburu People in Kenya and that of the Sanquianga in Colombia. The interesting factor between the two in their level of market integration, which is proportionally higher than in the other cases, which would in theory indicate that the results of the games would skew the same way; in reality, however, we do see that because of culture specific factors the results do not find a resemblance or do in some case but for totally different reasons. That, I believe is the utility and the real interest in making a cross-cultural analysis this way.

1) First case study: *Gifts of Entitlements: The Influence of Property Rights and Institutions for Third-Party Sanctioning on Behavior in Three Experimental Economic Games* by Carolyn K. Lesorogol

This Chapter was written by Carolyn K. Lesorogol, an American professor and researcher in social development and dynamic social change at the George Warren Brown School of Social Work. This work on the influence of property rights and institutions in the Samburu pastoral societies in Kenya represents part of her larger work in investigating the transition to private land ownership in said society in Kenya.[73]

Before diving into the research and the games with their respective results, we can talk about the population, which is studied and we can possibly also discuss the relevance of some of their habits on the results of the said research.

[73] Washington University in St. Louis, *Carolyn Lesorogol's Bio,* George Warren Brown School of Social Work, <https://brownschool.wustl.edu/Faculty/FullTime/Pages/CarolynLesorogol.aspx>, 2017.

The Samburu are Nilotic people who are somewhat related to the Maasai but distinct to them. They are semi-nomadic pastoralists who have a gerontocracy. The fact that they are pastoralists means that they use a brand of agriculture that is mainly concerned with the raising of livestock. Reportedly, they herd cattle, sheep and goats, although camels are becoming increasingly common in the district. »[74] The fact that they are a gerontocracy is defined as following according to the Oxford Dictionary: "A state, society, or group governed by old people".[75] Further than the idea of respect for the elders, it means that the rulers/norm regulators of their societies are elders while the young don't usually occupy positions of that respect. They are also nomadic, which means that they more around quite a lot in search of the best places to live. However, Carolyn Lesorogol manages to precise that they are mainly divided between lowlands and highlands.[76] Another important, actually quite essential, factor is their propensity to cooperate. In fact, their habits of herding make them quite prompt to cooperation. They do so by sharing their respective herds. This alone can make us predict a certain type of behavior in the games we described in the earlier part. In fact, we can predict that hey will choose the path of fairness as a society and that this will apply because the high level of needed cooperation in their social organization should higher the rate of the offers. This does not yet, however, give us a true hypothesis to predict the rates of rejections and punishment for those who defect from these rules. Nonetheless, cooperation does not simply restrict itself in herding. In fact, it expands in many other factors. The article defines some of them: there is cooperation between younger and older women when carrying out simple but daily tasks like the fetching of wood and there is widespread cooperation between the women of the village in general. The examples cite younger women fetching wood for the elders while the older women watch the children or sometimes select women carrying out tasks such as going grocery shopping to the city alone but carrying the instructions and groceries for other women who could not go to the city.[77] These factors, which may seem like details or normal things, (maybe not in our increasingly individualistic societies) actually carry a great message of trust between the people or at the very least one of admitted dependence on one another for daily task.

As we said, their main subsistence mean is through herding and in order to maintain order in this system, they use forms of property rights. In fact, "among Samburu, livestock are owned individually"[78]. Land, however, is of collective management, even though the Kenyan government

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[74] LESOROGOL, K. C. (2014), *Gifts of Entitlements : The Influence of Property Rights and Institutions for Third-Party Sanctioning on Behavior in Three Experimental Economic Games,* In : ENSMINGER, J., HENRICH, J., *Experimenting with social norms : Fairness and Punishment in cross-cultural perspective*.
[75] Oxford University Press, *Definition of « gerontocracy »,* Oxford Living Dictionaries, < https://en.oxforddictionaries.com/definition/gerontocracy>, 2017.
[76] LESOROGOL, K. C. (2014), *Gifts of Entitlements : The Influence of Property Rights and Institutions for Third-Party Sanctioning on Behavior in Three Experimental Economic Games.*
[77] *ibid.*
[78] *ibid.*

has been passing reforms since the 1970s to change some of the land property laws. Lesorogol also claims that this system holds up quite well if following the criteria set by Nobel Prize Winner Elinor Ostrom in determining "effective management of a common-pool resource"[79]. These criteria include more importantly the "access and use to monitoring systems" and "graduated sanctions for violators" which are respected, specified and enforced.[80]

These factors can further push us towards a hypothesis, this time tough for punishment. The fact that there are specified norms and that they are apparently respected and enforced so well may indicate that, in fact, we are going to find results which show that the propensity to punish those who defect from these social norms (given the importance place on cooperation) will be at least mid to high.

Adding to this, evidence has shown that the Samburu are actually more and more reliant on markets for subsistence[81]. In other words, their Market integration rate is growing positively. As we have already stated previously, there is a positive relation between offers and market integrations. A further look into the population tells us that even though the rate of education is quite low (1,4 years), more than half of the population claimed to speak the National language (Swahili) more or less which can be seen as an indicator of market integration or of general will for integration with others[82]. The game was played with 117 players with more women than men and was played within the terms set out for the cross-cultural analysis work which we cited many times earlier. This means that the stakes were calibrated to compensate for one day of work for the players.

The results show that the Samburu behave like most of the populations we described earlier and that is that they show clear concern in fairness in most aspects. In fact, their distribution can be considered as "normal" with most of the offers in all games coming in between 30% and 50% of the stakes. Their rejection rates in the Strategy Ultimatum Game and the Third Party Punishment game show that they also reject like most other populations studied a proportional decrease nearing the 50% of the stake offers. However, there is a 90% rate of rejection to the lowest possible offers, which shows a quite high rate of intolerance for unfair offers. Moreover, as we announced earlier, there is also the presence of hyper fair offers. Important to note tough, is that there is a wide amount of variation in the offers even though they seem concentrated which reveals that there isn't actually a single precise norm for offers.

A curious case was brought up though, as offers in Ultimatum Game were lower (sometimes with offers reducing by a significant margin) then they were in the Dictator Game. This would be unusual as there is a possibility of being punished in the Ultimatum game whereas there is in the

[79] OSTROM, E. (2005), *Understanding Institutional Diversity*, Princeton University Press.
[80] LESOROGOL, K., C. (2014), *Gifts of Entitlements: The Influence of Property Rights and Institutions for Third-Party Sanctioning on Behavior in Three Experimental Economic Games*.
[81] *ibid.*
[82] *ibid.*.

Dictator Game. This, however, according to Lesorogol, was most probably due to the Ultimatum Game being played after the Dictator Game and that, as such, players who were not able to make that much money from the first game were literally trying "to make up for it" in the second. This is consistent with the findings of Edwins Laban Gwako in the same cross cultural project, who states that the Gusii and Maragoli (other populations of Kenya) have a tendency to compute their earning with a merger of the two games (according to interviews give after the games) [83]. Another interesting result is that the propensity to punish by a third was found to be higher than for punishment by the respondents in the ultimatum game. Put simply, this means there were more people willing to punish an unfair behavior on others at a cost than people willing to punish the same behavior done to them.

To explain the variation in the results, Carolyn Lesorogol runs a few tests on individual level variables such as age, sex, years of education, household wealth, individual total income and household size. The results do not show too many significant results to explain variation except for one variable: age. That is interesting because, as we previously stated, the Samburu are a gerontocracy, which means that the upholding of the rules is mostly left to the elderly. The results of her analysis seems to reflect this as there is significant change in the Minimum Acceptable Offers (MinAO) and Lowest Unpunished Offers (LUO) according to age with older players having higher MinAO to reject lower offers and a lower LUO. The one standard-deviation change in age leads to a 9.3 % point difference in LUO actually. This means clearly that older players will tend to uphold norms of fairness more so than the younger players even at a cost.[84]

These results would suffice to conclude on the case of the Samburu people of Kenya as we have more or less found confirmation or at least we have found data that backs up some of the hypothesis that we have stated early on in this case-specific study by simply looking at the structure of their society. However, Lesorogol makes a further analysis before concluding. In fact, her study would not be complete if she didn't answer the main question which she had set herself at the beginning which is that of seeing if the way in which the games were et up actually had role in the way the games were perceived and therefore played by the Samburu given their pre-existing institutional systems.

The answer is not exact but highly probable. Regarding the result of the Third Party game, which we recall were somewhat surprising due to the fact that third party punishment was higher than second party punishment in the Ultimatum Game, Lesorogol makes a distinct statement by saying that the game itself cues a socially induced response from the players due to the way their

[83] *ibid.*
[84] *ibid.*

dispute settlement is made. In fact, the Samburu settle disputes by using, usually, a council of elders to adjudicate sanctions on those not having respected the norms. This is in line with what we have found an also suggests that the Samburu are much more used to find themselves in the position to attribute sanctions to others by being the third party in the dispute[85].

Another fact that may lead to such a result from the researcher is the importance given to property rights and how the perceptions of these may skew the results of the game one way or the other. In fact, Lesorogol argues that the way in which the original stakes are attributed may lead the players to either comprehend that the stakes is attributed to both players (even though it's the first player who gets to make the first decision on how to adjudicate/divide the sum between himself and the other player) or on the contrary, to believe that the stake is only attributed to the first player and that, therefore, player 2s must not feel entitled[86] to any of it (thus in actuality reducing the number of rejections for lower offers).

She, thus, argues that the way in which the games are played may lead to an enticement of players to play it differently then they according to the situation and to their previously existing institutions and beliefs. More specifically she synthetizes the idea as such: "These results suggest that culturally specific institutions relating to notions of property rights and modes of sanctioning help explain behavior in economic games."[87] Nonetheless, we can say that for the purpose of our paper, the results of this analysis is more than satisfactory in providing more facts showing the importance of culture and social norms in the behavior of people, especially in situations when fairness and punishment come into play.

Moreover, it also shows us the behavior of a people who have important property rights instilled in their "common" norms, which is something that is somehow unique in the whole cross cultural work.

If ever we could raise a critique for this particular study, it would be that the games were only a one shot. As such, even tough Carolyn Lesorogol came to her own conclusion and managed to extract the information she set out to get, we as readers would not benefit from the same types of Nash equilibriums that are present in the games which were played repeatedly and which permitted the players to adapt their strategies according to the results (and therefore message) that they wished to reach.

[85] *ibid.*
[86] *ibid.*
[87] *ibid.*

2) Second case study: *Social preferences among the people of Sanquianga in Colombia* by Juan-Camilo Cardenas

This study aims at showing the game outcomes and the related conclusions observed on Afro-Colombian people from villages in Sanquianga, which is a natural park bordering the Pacific Ocean at the South-Western side of the country accommodating 11 000 inhabitants. The author of the study is Colombian and his name is Juan-Camilo Cardenas, now Professor at the School of Economics of the "Universidad de los Andes" in Bogotá. He holds a Bachelor's degree in Engineering of the "Universidad Javeriana" and a Master's degree and a Ph.D. in Environmental and Resource Economics at the University of Massachusetts[88].

First of all, it might useful to understand why this population was chosen in order to conduct experimental games. Cardenas explains that this region suffers from a "lack of formal institutions"[89] and thus, the individuals are more dependent on the extraction and direct use of natural resources. The fact that they seem to be obliged to solve problems by their own means in order to survive due to the state's absence has created an interesting phenomenon of generosity and mutual aid. The author particularly describes the emergence of the concept of *"cambio de mano",* which refers to the action of doing labor for free for another person knowing that it could be the other way round in the future.[90] Another example, following the previously presented logic, given by Cardenas is the one of fishermen giving a part of their fishes to their neighbors, since on another day, they could return the favor.[91] Knowing that the experimental games principally aim at measuring the fairness of an individual's behavior and his propensity to punish, it is interesting to observe whether the from the facts proven altruistic behavior is reflected in the games' results.

Beforehand, one might shift one's attention on the Sanquianga population's social, demographic and economic features before introducing the functioning of the games. This tropical humid region is mainly dependent on resource extraction from the forest and fishing activities. A strong market interaction and integration can be noted with the purchase of little quantities of food

[88] Cardenas, J-C, *Curriculum Juan-Camilo Cardenas,* < https://economia.uniandes.edu.co/files/profesores/juan_camilo_cardenas/d5c_cvjc2017.pdf>, 2017.
[89] CARDENAS, J-C (2014), *Social Preferences Among the people of Sanquianga in Colombia,* In : ENSMINGER, J., HENRICH, J., *Experimenting with social norms : Fairness and Punishment in cross-cultural perspective.*
[90] *ibid.*
[91] *ibid.*

on a very regular basis, but only very few individuals participate in wage labor and a small minority possess material wealth with exchange value on the market.[92]

In order to conduct the experiments, 186 participants from the villages of Amarales (72 out of 1500 inhabitants) and Bazan (114 out of 2300 inhabitants), which are separated by a few miles, were gathered, insisting on the fact that each person had to be from a different household. The experiments were conducted in the local school in groups of 20 people based on who arrived first. After having heard the playing rules, the individuals played and were then lead to a different room administered by a monitor who tried to make sure people did not talk about the game.

The three games described in the first part of our work were conducted on the people of Sanquianga: the dictator game, the Ultimatum Game and the Third-Party Punishment Game, with Player 1 (the proposer) and Player 2 (the respondent) being the same in the first two games. The sum proposed was of 10 000 Colombian pesos, which is the equivalent of 3 or 4 dollars[93]. In accordance with previous works, it was observed that most Player 1s acted fair by offering half of what they had. The percentage of fair offers increased from the dictator game to the ultimatum game (from 43 to 70 percent), thus showing that the latter game encourages fairness, but nonetheless, 57 percent of Player 1s didn't change the amount offered going from one game to the other. The most frequent offer in the third-party game also revolved around 50 percent, with a lesser significant but worth noticing proportion of individuals choosing to offer 20 or 30 percent. [94] Apart from some subtleties, these results on the Sanquianga population only confirm the conclusions drawn from previous games. A positive correlation was found between the amount offered and the household size coupled with the years of education contrary to household wealth in Dictator Game's and Ultimatum Game's Player 1.[95]

More striking comments result from analyzing Player 2 in the two first games and Player 3 in the latter. Regarding the Ultimatum Game, greatly unfair offers received severe rejection whereas 50-50 offers were never rejected. A closer look lead to crystallize out two kinds of behaviors, since half of Player 2s accepted all kinds of offers, thus being defined as conformist, whereas the over half didn't accept greatly unfair proposals, thus being perceived as hyper-fair, in the end resulting in few rejections. To clarify these types of behaviors, Cardenas opted for a smart strategy. He collected answers from Player 2s regarding the following questions:

- *« How would you have felt if you received an offer of zero from player 1? »*

[92] *ibid.*
[93] XE Currency Converter, *COP to USD*, <http://www.xe.com/currencyconverter/convert/?Amount=10000&From=COP&To=USD>, 2017.
[94] CARDENAS, J-C (2014), *Social Preferences Among the people of Sanquianga in Colombia.*
[95] *ibid.*

- *« How would you have felt if you had received an offer of 10 from player 1? »*

The majority of answers is quite striking, since it reflects great altruism, acceptance for the situation, whatever the outcome, and wisdom by invoking their "conscience", "heart" or "The One up there", but the answers also display a certain emotional rejection of very unfair results.[96]

Player 3's behavior confirms the previously described tendency with 50-50 offers not being punished and void offers being punished by 62,5 percent of the players. Cardenas explains that Player 3's behavior mainly shows that the latter is willing to give up a certain amount of his initial stake with the aim of upholding social norms.[97]

In addition to the three more traditional experimental games, Cardenas opted for a remix of the Dictator Game by using sealed envelopes, which enabled Player 1 to choose his offer in private. Although no hyper-generous offers were noted, 14 out of 15 offers amounted to at least 30 percent[98], which once again displays the tendency of generosity.

The overall conclusion that was confirmed by these experiments is that a part of the people of Sanquianga could be seen as "hyper-fair" because of their strongly symmetrically reluctance of inequality, in a more extreme way than what had been suggested in previous studies (Cardenas here quotes Ernst Fehr and Klaus Schmidt[99]), whereas the other part seems quite conformist, thus accepting any offer. As for the main factors explaining these results, the author quotes "wealth, age, household size and education"[100] as being mainly relevant. Cardenas also explains that since the villages chosen were quite small and the probability of people knowing each other was high, the propensity to share might have been higher.[101] Moreover, the results might also have confirmed that having few private assets would lead to a more sharing-friendly behavior, which once again follows the results of previous studies.[102] The author concludes by saying that this altruistic and supportive behavior is necessary to the region's survival due to the absence of state intervention. [103] The expectation of observing a very fair behavior in this population sample was thus fulfilled.

From a personal point of view, this article describing the three experiments was very clear and precisely tackled. The compilation of answers to the questions asked to the players shed light on the understanding of this people's mentality. It would have been useful to pursue the efforts in this direction by for example giving a more important place to religion (although having already

[96] *ibid.*
[97] *ibid.*
[98] *ibid.*
[99] *ibid.*
[100] *ibid.*
[101] *ibid.*
[102] *ibid.*
[103] *ibid.*

been mentioned in the introductory chapters) or to other cultural factors and to conduct the experiment on a larger number of people and/or with a greater sum of money. Other ideas in order to carry on the experiment would be to conduct it under the same conditions in a naturally protected area in another part of Colombia, for example on the Atlantic Coast, where there also is an important Afro-Colombian population. It would thus be interesting to see whether the by Cardenas described heritage from slavery (that resulted in the above described idea of *cambio de mano*) also applies on other Afro-Colombian villages or if the found results are more of a consequence of the other factors (wealth, household size etc). To take the research even further, another way to test the relevance of the Afro-Colombian argument would be to conduct a similar experiment with two indigenous villages, for example by comparing two Wayuu settlements in the Colombian Guajira region on the Atlantic Ocean.

III) Prosocial behavior and economic performance : game conduct in Germany and in Italy

Reasons for this experiment and main hypothesis

The reason why I think this experiment is relevant is because if we managed to find a correlation between pro-sociality and economic performance in a big economy, that would not only be something that has not been really done before, at least with the experimental games that we talked about earlier, but it would also give credit to all the work which has been done up until today in this field. In fact, I do believe that the analysis of the behavior of people should be much more present when discussing the overall functioning of a society and of a country and that also includes, obviously, its economic functioning.

The prop of doing this analysis with an economic game is that there already are great results which show that these games are apt in computing pro-sociality through fairness and willingness to punish.

The logic behind why we pick these two countries in particular? Aside from the fact that I know about their respective culture in a personal and quite close manner, these two are also somewhat a perfect pair for comparison as far as countries in Europe go. That is because of all its similarities: somewhat shared history, in the same economic area (EEA), part of the European Union...etc. Yet, as we will explicit a little bit later, they also have their differences both culturally and economically. Italy indeed had a GDP of 1821,6 billions dollars[104] in 2015, whereas Germany

[104] Trading economics, *GDP of Italy*, https://tradingeconomics.com/italy/gdp, 2017.

had one of 3364,4 billion dollars.[105] Economically, these two countries can somehow rival each other in way that, for instance, Belgium and Italy or France cannot because of the respective size of the countries and of their historical differences. Italy and Germany, in fact, are two relatively big sized countries territorially speaking and don't have huge colonial pasts, which would give them access to more resources. As such, there isn't really any starting "unfair" advantage on the part of any of the two countries, at least not after the Second World War. However, the figures that really come out in the end and are more measurable, are the economic ones, which show that Germany is economically more prosperous today. Therefore, I believe this example is more relevant than comparing any "Latin cultured" country to any " Germanic cultured" country. [106]To add a final point to this, as we will see later, we could also make the argument that even though Germany was divided after the War, there can be also some historical facts and figures which show that Italy has also been "divided" in two economically speaking after the War. Keep in mind that these are just arguments to show why it is truly relevant to compare the growth of each country over the years after the Second World War without making systematic errors such as comparing countries with different history and or size.

As for the arguments to show that the populations of Italy and Germany do behave differently and in a manner that may affect their overall surroundings, these exist and we will talk about them as well later on.

Looking at these two main factors, respective culture and overall economic performance, our hypothesis will be that pro-sociality may affect the economic functioning of a country. More specifically, the hypothesis that can be made is that according to which a higher level of pro-sociality leads to a better economic performance. What we would expect to find in these experiments, therefore, is that there is a higher level of pro-sociality in Germany than in Italy, which would mostly express itself in the results of a Third Party Punishment game. That is due to the fact that overall Germany has an economy with higher performance and its people also have the reputation of having what can be defined as a "pro-social" behavior. This type of behavior, as we explained thoroughly earlier, revolves a lot towards the respect of laws and social norms above all.

To incorporate what we have already analyzed in the first two parts of this paper, we can also make some general remarks. Firstly, as was stated in the papers on the Samburu and on the Sanquianga (as well as in the introductory chapters of Ensminger and Henrich's cross-cultural

[105] Trading economics, *GDP of Germany*, https://tradingeconomics.com/germany/gdp, 2017.
[106] MOLINA, P. et al. (2014) *Emotion understanding: A cross-cultural comparison between Italian and German preschoolers*, European Journal of Developmental Psychology, p.592-607.

compilation study)[107], Market Integration and World Religion are two very important factor in the results of the Games and they both affect fairness positively, In fact, we stated that the higher the Market Integration and the more individuals participated to a World Religion, the more the offers were going to be fair and the more propense they were in being willing to punish. In short, the argument is that being market integrated leads to a higher propensity to cooperate because of higher interdependence and being part of a World Religion usually means that one believes in a god which in most cases has the power to punish individuals who deviate from certain norms at a certain point. This last argument leads researchers to believe that people who belong to a World Religion are more used to the idea of being punished by a "third party" and that they, thus, accept this punishment more easily and also administer this punishment with more ease. There is also the argument that, apparently, communities with a high number of populations are also more propense to punishment (because people are less likely to meet on a day to day basis and the factor of anonymity is better preserved). All of these factors, although relevant, are not providing us with facts that show difference between Italy and Germany. On the contrary, the clear argument is that both countries are quite obviously in the same category of Market Integration, population (both of them are well over the 5000 people mark that was used as an index for "high population" in the article) and both have populations who participate mainly in a World Religion (in both cases Christianity).

We can also find interesting information in the case studies that we made in the last part. For instance, when studying the Samburu, we saw that when people had internalized judicial norms of private property rights it had an effect on the way that the experiment was understood and in the overall results. This is a definite clue that we should look for juridical facts, which may or may not skew our results or our overall conclusions one way or the other. Secondly, in another case study which was done by Abigail Barr called "The Effects of Birthplace and Current Context on Other-Regarding Preferences in Accra"[108] shows us that there is a difference in the results of the games depending on the birthplace of the individuals. Even though the dichotomy in this particular game is between "urban born" and "rural born" individuals, we assume that it is quite safe to say that the overall birthplace of one person and the associated factor which come with it (i.e. the norms which are absorbed or appropriated in the first few years after birth). In any case, since it is quite difficult to find statistics on the proportion of urban born and rural born individuals, it would be interesting to ask this to the individuals participating at some point during the experiment.

[107] ENSMINGER, J., HENRICH, J. (2014), *Experimenting with social norms : Fairness and Punishment in cross-cultural perspective.*

[108] BARR, A. (2014), *The Effects of Birthplace and Current Context on Other-Regarding Preferences in Accra,* In : ENSMINGER, J., HENRICH, J., *Experimenting with social norms : Fairness and Punishment in cross-cultural perspective*.

As such, before going forward and analyzing findings on general and economic behavior of both Germans and Italians, we will make a quick analysis or comparison on their judicial systems to see if we can get an early look at their possible propensity to punish and everything that may follow that.

Is this idea backed up by economic, political and juridical facts ?

Beforehand, we have to gather some evidence in the economic, psychological, juridical and political domains in order to grasp both Italian and German systems and their derived mentalities, which could on the one hand affect their overall economic performance and could on the other hand, influence their choices during the games. The importance of cultural factors has been clearly shown throughout this work. The author of the study on the Sanquianga people in Colombia Juan-Camilo Cardenas, stressed the relevance of slavery heritage in order to understand hyper-fair tendencies. Although no such extreme behaviors should be expected in European cities, it is important to take into account these more subjective factors with the aim of incorporating them when speculating on the game results.

We will go over some basic facts in the judicial systems in Germany and Italy as doing a detailed analysis would require a certain high level of knowledge in both systems and could constitute a paper on its own.

This first thing I think would be interesting to see is the number of disputes that we have per year in each country. Having this figure, we would see in reality which of the two are more confrontational when it comes to protecting their own civil rights or norms and who are more willing to "punish" or "fight" for it. This is implicit but this may also be an index for the probability that a problem may arise and for the efficiency in resolving it. According to the "*Systèmes judiciaires européens Edition 2014 (données 2012) : Efficacité et qualité de la justice*", the number of civil and commercial procedures who were raised in 2012 per 100 000 people was actually much higher in Italy then in Germany; the graph shows that there were around 2613 new contentious affairs brought up in Italy against the 1961 in Germany. The figures also show that there were more procedures solved in that year in Italy (3430) than in Germany (1968). Overall the "Clearance rate", or the number of cases solved per cases received in a year, is higher in Italy (highest rate in Europe) at over 130% against a rate between 100 and 110 % in Germany. However, it is difficult to interpret these figures because it shows that both systems are highly functional but that Italy receives overall more procedures per year. Another graph, though, shows that the rate of clearance for serious criminal law procedures is higher in Germany (higher than 100%) than Italy (below 100%). This

alone though is still inconclusive as there are no enough factors and variable included, I believe, to really make a conclusion out of these graphs other than by saying that both judicial systems work at high rate and are well functioning.

Another factor, though, which I believe is of relevance, is the way in which judicial sentences are pronounced in both countries. In Germany, for procedures and instances who allow a maximum punishment of 4 years sentence (*Amtsgericht*, a 1st instance local court), the presence of members of the civil society is needed to pass judgment. In fact, these members actually have the same voting power then the judge in cases.[109] In Italy, this is a much less present institution: it only exists in the *Corte di Assise* (a Second instance court) and these "popular" judges do not have the same voting power as the Judge, albeit a lower one. If they vote for a sentence contrary to that of the judge, the will of the judge will pass[110].

This is actually an important factor as it tells us two things: for one, people in Germany might be more active in their respective cities and communes local judicial cases because of the power which they hold and because they are selected on a randomized base starting at the age of 25; this may lead us to believe that they are more willing and used to participate in the punishment of norm violating individuals and that , therefore, this should show in the Third Party Punishment Game, as it did with the Samburu.

Although there might be other facts, which we could find with a much deeper knowledge on the judicial systems, I believe that these two simple facts can orient us towards our solution and may act as contributing factors in the results of the games.

We can now talk about the other factors, behavioral/cultural and economical factors, which may also be of relevance.

On a more cognitive level, we tried to find hints in a study on emotion understanding between preschoolers (3-11 years old) in Germany and in Italy. This work presented in the "European Journal of Developmental Psychology" from 2014 by Molina et al. aimed at stressing cultural diversity "within the Western industrial world". They first addressed the dichotomy between collectivism and individualism that shifted to the difference between on the one hand independence and individuation (Great Britain) and interdependence and group membership (Japan, India). The firsts seem to be related with stronger "emotional expressivity" whereas the latter are linked to "higher social intelligence". While it seems difficult to find differences between Non-Western and Western societies, it appears more difficult to find concluding results on the European level for example. By conducting a Test of Emotion Comprehension (TEC) on a sample 967 Italian and 80 German children, authors wanted to draw conclusive remarks on the difference of behavior between Italians and Germans, which could be of great interest to the following-up experiment

[109] Gerichtsverfassungsgesetz, *Laws 28 to 58*, <https://dejure.org/gesetze/GVG/28.html>.
[110] Legge 10/4/1951 n. 287, *Riordinamento dei giudizi di assise,* G.U. 7/5/1951 n. 102.

simulation. Moreover, the idea of interdependence (Italy) and independence (Germany) is particularly observable in the differences of parental style, with Italian parents not encouraging autonomous behavior by children and German parents not being present at bed-time for example to make their children more independent. Unfortunately, the test results showed that there was no significant difference on emotion understanding between German and Italian preschoolers; only the idea that Germans were more individualistic and Italians more collectivist was reinforced.[111] In the sake of our research, German individualism could insinuate that since their state has a higher economic performance, they completely rely on him in order to address their personal interests to their best and are thus more propense to punishing free-riders. This can only be considered a theory in regards to these first findings.

The second study regarding ethical judgment in business between Italian and German students conducted in 2013 by Stedham and Beekun appeared to be much more relevant to our research. In their work, the authors define business ethics as "the right thing to do", "the code of conduct". They link power distance, which is the "degree to which members of a society accept inequities", "standard of rightness", to the ethical judgment. According to previous research conducted by Stedham and Beekun, high and low power distance has very different interpretations on a broader scale. Whereas high power distance implies less importance given to ethical issues, "overlook on questionable actions", low resistance against power abuse, greater acceptance for bribes, and moral principles being more defined by the peers than by the universal ethical conduct code, low power distance is found in entities which fight against power abuse, organize power in a more decentralized way and base their judgment on more universal values. A study made by Hofstede in 2001 showed that the power distance was low in Germany (35/100) and medium high in Italy (50/100), some numbers that could be very useful to our research, since Italians would thus appear as less fair because of a lesser importance given to moral principles and shady situations being more frequent whereas Germans would not be accepting these types of inequities and would be less affected by their peers. The results did not fully expect our expectations. First of all, the differences between German and Italian results were not very significant. Regarding whether they would listen more to their peers than to their moral judgment, no real difference was noted between both nationalities. More interestingly, results showed that "Germans would be harsher in their ethical judgment based on justice criteria than Italians". Germans are indeed presented with a binary thought by categorizing everything in "fair/unfair", "black/white". Contrary to the previous study, both Germans and Italians were considered individualistic, but with Italians being more

[111] MOLINA, P. et al. (2014) *Emotion understanding: A cross-cultural comparison between Italian and German preschoolers*, European Journal of Developmental Psychology.

individualistic than their neighbor. This assumption could support our hypothesis, since Italians being more individualistic could imply that they wouldn't hesitate in being less fair in order to maximize their own profit in a state that doesn't always seem to look after them (corruption problem for example, an issue that will be raised later on). Moreover, the authors of a study evoke a critique that has to be remembered, which is that graduate business students are maybe not the most representative sample of their respective population.[112]

The third study is one chosen from the European Economic review in 2016 by Dieckmann et al. regarding tests made on efforts and honesty among Europeans. While 5 countries were chosen (France, Germany, Italy, Netherlands and Spain), we will mainly focus on the cases of Germany and Italy. Two types of games were conducted: a volunteering game and an honesty game. The study tries to prove various assumptions, but we will draw our attention to the comparison between the expectations of the behaviors (by the own nationality and then by the other four nationalities) and the actual behavior. The expectation made by the various countries displayed a "north/south pattern" with Germans being expected to score the best at both games and Italians the worst at both. The results showed that that Germany scored best in both games, lower than expected in the first game and exactly as expected in the honesty game (this is relevant to our research), whereas Italy scored less than expected in both games but placed second-worst in the first game and third-worst in the second game. The authors thus concluded that the North/South categorization perception was too exaggerated and these European countries often misinterpreted their neighbors.[113] For our research, this seems to prove that Germans could be more honest than Italians in our game simulation and if a cross-cultural game was made, Germans and Italians could fall into stereotypes about each other that could not be entirely correct.

Another way to compare the German and the Italian systems is to see which public policies and social factors could affect the citizens' views on fairness and punishment. An interesting example is the one of the North/South and East/West cleavage. It is a well-known fact that for many years, there has been an unequal treatment of the Northern and Southern side of Italy and it would be accurate to see what responsibility and function the state has in this phenomenon, particularly after the Second World War. On the other hand, Germany has been reunified in 1990 after being separated for almost 30 years, leaving an East Germany with much lesser performant economy than in the West side. Although the situations are not fully comparable, the state's response has been very different. Since 1991, the German state has indeed collected a solidarity surcharge

[112] STEDHAM, Y., BEEKUN, R. (2013), *Ethical judgment in Business : culture and differential perceptions of justice among Italians and Germans,* Business ethics : a European Review, p.189-201.
[113] DIECKMANN, A. et al (2016), *On trust in honesty and volunteering among Europeans: Cross-country evidence on perceptions and behavior*, European Economic review, p.225-253.

Solidaritätszuschlag, 5,5% of the income tax, primarily in order to contribute to the reconstruction of East Germany and support the reunification[114]. On the other hand, the creation of the "Einaudi line" in 1947 in Italy, which aimed at strengthening trust in currency and was preparing the application of the Marshall plan, favored the production recovery of the Northern side of the country and neglected the South.[115] This cleavage can still be observed today. This example thus shows the government can be seen as the figure for a carrying State for the overall economy in Germany on the contrary to Italy. Moreover, German citizens could perceive a greater fairness around them and could thus apply this same fairness in games. This tendency can be confirmed by the corruption index presented by Transparency International, with Italy ranking 60/176 and Germany 10/176.[116]

Experimental games and practical conduct

Now that we have confirmed and clarified our hypothesis, we will proceed to the description of the experimental games. Following the mindset of Ensminger and Henrich's case studies, we first wanted to compare two villages or two cities in Germany and in Italy and we wished to conduct the research with students within this territory. However, the previously presented research has shown us that we have to select the broadest sample as possible in order to obtain the most accurate results and that choosing graduate students might not be representative of the population.

Knowing that Italy has 20 regions and Germany 16 *Länder,* we decided to establish 6 categories (high school student, university student, worker with a diploma, worker without a diploma, housewife/houseman, unemployed person) and take 5 persons in each category. We would thus have a sample of 600 individuals in Italy and 480 individuals in Germany, thus a total of 1080 participants. The experiments will be promoted three months in advance in the local journals, in universities, in schools, on social media and on the official webpages of the cities. The application will be done via the Internet and after two months, 5 participants in each category will be randomly picked. The study will be conducted in the capital of every region with an experimenter who is a Professor in economics, hence has a solid knowledge on the experimental games. We will cover the cost for transport to the capital of each region. The experiment will be held on a Sunday. The rules of the experiments will be sent by email two weeks before the experiment and questions will be able to be asked by email. Since the experiments involve both Italians and Germans, the rules have to be redacted once in Italian, once in German, and then they have be translated twice by a

[114] Vereinigte Lohnsteuerhilfe e.V., *Was ist der Solidaritätszuschlag?,* Lohnsteuerverein, <https://www.vlh.de/wissen-service/steuer-abc/was-ist-der-solidaritaetszuschlag.html>, 2017.
[115] Raftopoulos R., *Italian economic Reconstruction and the Marshall Plan : A reassessment,* Politische Italien-Forschung, Universität Giessen, 2009.
[116] Transparency International, *Corruption index*, <https://www.transparency.org/country/>, 2016.

professional translator in order to see whether the same result is reached and the rules will be understood accurately in both countries.

The experiment will be held at a university that will have accepted this mission in advance. Three games will be conducted according to the rules described in the previous case studies: the Dictator Game, the Ultimatum Game and the Third-Party Punishment. The first offer is of 10€. The total number of participants is divisible by 3, so all members will be participating in all three games, the first two requiring 2 individuals and the third one three. On the day of the experiment, 30 people will come to the university. After the experimenter has repeated the rules and clarified any doubt, the 15 randomly picked couples will play the Dictator Game. After a 5 minute break in which the Professor's/experimenter's assistants will make sure people don't communicate among each other and in which water bottle and fruits will be distributed, the Ultimatum Game will be played. After a 15 minute non-supervised break, randomly formed groups of 3 will play the Third-Party Punishment.

A critique that can be made to this game is that it is conducted within a region, thus diminishing the role of interregional tensions if a game at a national level had been organized. This decision was made knowingly, since we want to keep the "purest" version of the games in order to determine an Italian and a German result with as few obstacles as possible. An additional point an be made in that there could be inter-social category forms of discrimination, which can not be accounted for in this game but could be the subject of an additional study. After the results have been found for each region, the experimenter will enter them into a website and a mean of all results of the respective country will be calculated, thus permitting us to draw conclusions on a national level. Another possible critique, which could be made, is that the games should be played more times repeatedly.

Expected conclusions

The studies evoked in this part have shown us that while in our everyday lives, we might observe striking variations between German and Italian behavior, for example in the parental style, this is only an impression and in the facts, no significant or shocking difference has been found in the approach towards fairness. However, Germans tend to dislike inequity a little more and tend to be a little fairer. Disliking inequity could thus lead to having a greater rate of punishment as a consequence. We will try to transfer these findings into our games.

Ultimatum and Dictator Game :

As all of the cases that we have talked about in this paper and as all the cases presented in

papers we have researched seems to suggest, the reality is that we should not find significant differences between the mean offers and rejections in both countries. We can assume that the mean offers and mean expected offers would be around 40 to 45 % of the pie which suggests that they would be very fair offers (but not hyper-fair). If there was to be a slight difference, we assume that it would be in the rate of rejections, which should be slightly higher in Germany, according to the research findings that we have presented in the previous part, since Germans seem to stronger dislike inequity. We believe that the real difference might be found in the Third Party Punishment Game.

Third Party Punishment:

In the Third Party Punishment Game, there should be a clearer even if slight difference in the results. The research we have lead suggests that we should find more propensity to punish in Germany than in Italy. That might not be the case when confronted with the stakes but this hypothesis is quite reliable.

However, these games may not be enough to observe results that may lead to what we consider is a thorough final result. That is why we think that it may be of use to organize one more game, which may lead to a more convincing answer. This game would be a variation of the Third Party Punishment Dictator Game and would involve one more element: the game would be the same as an ordinary Third Party Punishment game but with an added variable. That variable is that we would ask players B and C to note on a piece of paper the average offer that they expect the Player A to make. Then we will ask players C to also note down the Minimum Average Offer that they think would be fair to make. As such, we can make an average of the sums Player B and C wrote and reliably take that as the "norm" or what is thought to be acceptable as an offer. Then, once player A makes the offer, we can compute the number of times that player C has punished him for an amount lower than that average. This would, I believe, give us the propensity to punish a norm violator, given the fact that punishing him also means losing something.

Once we have this result, we can compare it in an effective cross-cultural analysis and state which of the two countries seems the most pro-social. Our hypothesis suggest that Germany would be the one to hold that position but we cannot, obviously, state that for sure as some factor may have been overlooked. This, may point us in the right direction regarding our second possible assumption which that this pro-social behavior is a difference maker in economic performance and development and would also show that computing the behaviors of a people is central to

understanding its economy and the way that a State works.

Conclusion

In conclusion, I think that the most important thing that we can take away from this paper is the real importance of conducting cross-cultural games in the multi-faceted world of today and the importance that behavior has and the role it plays in the analysis of economic factors. The results of all the games showed us one important thing that is of fundamental and essential value in our views about economic theory today. That element is the fact that individuals are not self-centered people, who only care about maximizing their utility and who would do anything to benefit their strict interests. What those results show us instead, is that variables such as the perception of fairness in bargaining situations and the propensity to punish when faced with a situation one considers unjust are important factors in day to day lives of people who make up the economic sphere. If anything, it shows us the importance that new sciences such as that of behavioral economics thoroughly deserve the added importance and weight that it has been getting with each passing year because the results of its games clearly show and back up a lot of its assumptions while providing a smart and valuable critic to those made by classical economics.

Before talking about the games, we showed that it was completely relevant to make games that correlate culture, behavior, fairness and punishment. Then, we described each of three major games of experimental economics, The Ultimatum Game, The Dictator Game and the Third Party Punishment Game, with their respective variations, major experiments and major findings. We then briefly discussed the results and findings of two cases that we found particularly of value by doing a case-study analysis on two major papers: one made by Juan-Camilo Cardenas on the people of Sanquianga and one made by Carolyn Lesorogol on the Samburu people of Kenya. The results put us in a position to make a good analysis on what to expect from societies with high market integration and who present distinct variables of their own, like the *cambio de mano* (in the Sanquianga community) and the presence of strong juridical institutions at the heart of the society (in the Samburu community). These results showed us the importance of an experimental analysis using these said games in order to capture some of the essence of why people behave in such a way or another as well as the Importance of conducting research with the purpose of doing it in a cross cultural framework. In other words, it showed us that, although the results of an experiment might be the same mathematically, the reasons behind decisions and therefore behind different Nash Equilibriums may be completely different and that that difference may be due to very distinct cultural factors. There is importance thus given in not being “fooled” by numbers. This analysis also put us in the right direction pointing towards proposing our own cross-cultural analysis; that is

the one which we illustrated in the third part of this paper and whose goal is that of finding out if there is a real difference in the variable "pro-sociality" between Italians and Germans. This variable, as we explained, may then bring us closer towards perhaps finding a somewhat "hidden" variable for traditional economics, which would explain in a certain, different, way the economic performance of a given society.

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Riassunto In Lingua Italiana :

Esperimenti nei giochi : Una perspettiva interculturale

INTRODUZIONE: DEFINIZIONE DEI CONCETTI

LA RILEVANZA DELLA CULTURA

Numerosi sono stati quelli che hanno provato a definire il termine di "cultura". Il primo è stato Cicero con la metafora agricola *"Cultura animi philosophia est",* definendo in questo modo la filosofia come la "cultura dell'anima o del spirito". Fino a lui, l'idea di cultura è sempre stata basata su un processo concreto e Cicero è dunque il primo che ci aggiunge una dimensione astratta. Tuttavia, la cultura, benché astratta, prende di nuovo una forma più materiale se l'analizziamo attraverso i comportamenti umani. Gli autori più recenti hanno definito la cultura come qualcosa che va oltre il concetto di bagaglio di pratiche e abitudini; in fatti lo hanno anche definito soprattutto come un mezzo di espressione per un significato sociale che può cosi diventare una forma di interpretare la vita e il mondo. Questa dimensione utilitarista della cultura è una che si deve tenere in mente durante la lettura di questo lavoro.

In realtà, il fattore "culturale" è di maggior rilevanza nelle opere analitiche contemporanee. È diventato cosi importante che può infatti occasionalmente costituire una barriera alla comprensione di un certo fenomeno, come tutti termini soggetti a certa categorizzazione utilitarista come il "genere" o "l'esperienza". Inoltre, questo concetto è stato confrontato a un fenomeno di allargamento. Negli Stati Uniti ad esempio, non si parla di una reale unificata "cultura americana" ma si parla piuttosto di "cultura LA" o "cultura teen", qualcosa che ci può far penare a una certa diminuzione di un unico concetto di cultura.

Queste considerazioni, in oltre, ci fa pensare che la realizzazione di un analisi interculturale è di un importanza ancora più capitale nel mondo di oggi, un mondo sempre più globalizzato e dove le culture entrano sempre di più in contatto l'una con l'altra. In un mondo, dunque, dove capire le culture e i comportamenti diventa, in realtà, essenziale.

LEGAME TRA CULTURA E COMPORTAMENTO : L'ALLONTANAMENTO DALLA RAZIONALITÀ

Questa parte cerca di dimostrare che la cultura è l'elemento che completa le lacune lasciate dalle teorie economiche classiche. Le teorie classiche in fatti parlano di un "homo economicus". Prima di parlare dei giochi e descriverli, spieghiamo il pensiero dietro questo concetto che possiamo definire come "prerequisito" ma che è centrale nei concetti di economia classica. In quanto tale, descriviamo l'uomo economico è infatti come un individuo razionale, interessato solo a se stesso e attratto solo all'idea della massimizzazione dei suoi interessi o, per usare il termine propriamente economico, la sua utilità. Questa definizione dell'uomo però, come dimostriamo, è ampiamente contestata, specialmente nell'ambiente del economia comportamentale e della teoria dei giochi. In fatti, a partire dagli anni novanta, nuove discipline come la neuro-economia o l'economia comportamentale hanno sviluppato modelli che provano ad allontanarsi dalle teorie dell'economia tradizionale, introducendo nuovi concetti come l'equità (o piuttosto la propensità ad essere equi) che sono fattori da tenere in conto in quanto fattori principali nell'analisi. Quindi è interessante determinare il legame tra il comportamento umano e la cultura. Da un lato, dato il fatto che il comportamento è caratterizzato da pratiche spesso concrete, si può dire che è in qualche modo l'espressione materiale delle idee "astratte" della cultura e che possono così essere percepite dagli altri. D'altra parte, studi hanno dimostrato che il comportamento è fortemente condizionato dalla cultura. Un esempio notevole è lo studio condotto dai professori Nisbett e Miyamoto nel 2005 che ha verificato che c'era una chiara differenza di percezione tra gli occidentali e gli asiatici. Infine, anche è stata discusso la correlazione positiva tra la cultura e entrambi l'equità e la pena.

Una volta definito il concetto di cultura e dimostrato che essa potesse realmente influenzare il comportamento, bisognava illustrare come la cultura può influenzare il comportamento. Per fare ciò, bisogna definire le teoria dei giochi sperimentali e la loro utilità a questo fine. I punti centrali intorno ai quali si costruisce questo lavoro sono i concetti di equità, di punizione e di pro-socialità. In questo stesso senso, i giochi che descriveremo servono proprio a misurare e calcolare la presenza di questi fattori in culture e popolazioni.

I) INTRODURRE I GIOCHI

La prima definizione che diamo è quella dell'esperimento, definito da Merriam Webster come " un'operazione o una procedura condotta sotto condizioni controllate e con l'obbiettivo di scoprire

un effetto o una legge sconosciuta, per testare o stabilire un ipotesi or per illustrare una legge conosciuta". Dopodiché definiamo il concetto di teoria dei giochi che viene in realtà definita già da Camerer come "un linguaggio matematico per descrivere interazioni strategiche e i loro probabili esiti, un gioco è un bagaglio di strategie per ogni giocatore, con delle regole precise per l'ordine nel quale i giocatori possono scegliere le loro strategie, per l'informazione che avranno quando fano la loro scelta e come considerano la desiderabilità degli esiti che vi risultano". Per dirlo in modo diverso, in ogni gioco sperimentale i giocatori devono scegliere quale strategia sarebbe la migliore per giungere a un risultato favorevole a loro. Questo resultato favorevole si potrebbe presentare come un risultato dove il giocatore è riuscito, per esempio, a massimizzare la sua utilità guadagnando la quantità massimale di denaro che poteva guadagnare visto che la maggior parte dei giochi sono pensati in modo da includere denaro. In questo caso, il giocatore è l'individuo al quale si pensa quando si parla di "homo economicus". Una parte importante dei giochi, infatti, permette a uno dei giocatori di scegliere un'opzione, o meglio, una strategia, che gli darebbe questo risultato. La gran parte dei giochi, però, non obbligano mai un giocatore a fare questa scelta e ogni gioco introduce proprie variabili che fanno nascere altre possibilità (ed ogni variabile aiuta a analizzare diversi tipi di comportamento). Nel caso, dunque, nel quale il giocatore non sceglie questa possibilità "massimizzante" per lui, esso non è più il rappresentante della classe "homo economicus". La cosa interessante è giustamente questa, che nella maggior parte dei casi i giocatori non prenderanno la prima opzione, ma cercheranno di scegliere la o le strategie che comporteranno un certo livello di condivisione del denaro con l'altro o gli altri giocatori.

In questo mondo, ci sono giochi che cercano di misurare la "fiducia" che esiste tra certi giocatori membri di una società e ci sono giochi che cercano di misurare, come nel nostro caso, l'equità, la propensità a punire certi comportamenti e la pro-socialità. I giochi che vogliono misurare il livello di fiducia sono normalmente dei giochi detti di cooperazione o di coordinazione. In questi giochi, normalmente il primo giocatore ha la possibilità di condividere una parte del danaro che gli viene dato a un secondo giocatore, ma ha anche la possibilità di non farlo. Nel caso lo facesse, però, questa somma sarebbe moltiplicata con un moltiplicatore predefinito prima di "arrivare" dal secondo giocatore. Una volta arrivato il gioco può anche finire. Il secondo giocatore ha, però, la scelta di poter rimandare una parte o la totalità della somma ricevuta al primo giocatore facendola di nuovo passare per questo moltiplicatore. Sapendo tutto questo, entrami i giocatori avrebbero in realtà interesse a mandare la somma la più alta che possano mandare per in seguito ricevere una somma molto più alta. Il problema però è ben questo : c'è sempre una possibilità che l'altro giocatore ferma il gioco decidendo di non rimandare niente lasciando chi ha appena passato il turno con molto meno di quello che sperasse ricavare essendo fiducioso. Siccome non si può, in realtà, mai sapere la mossa dell'altro, viene difficile giocare con questa semplice strategia che però sembra la migliore e che sarebbe la più massimizzante per entrambi i giocatori se potessero mettersi

d'accordo ed essere sicuri che l'altro rispetterà questo legame fiduciario.

I giochi che, invece, misurano la propensità ad essere equi a punire e ad essere pro-sociali, sono organizzati in un modo diverso e sono spiegati nella parte che segue visto che, come abbiamo accennato più volte, sono il soggetto di questo lavoro. I giochi più importanti di questo genere sono il gioco dell'ultimatum (Ultimatum Game), il gioco del dittatore (Dictator Game) e il "Third Party Punishment" e sono di questi che parleremo.

1) L'ULTIMATUM GAME

Il gioco dell'ultimatum è un tipo di gioco inventato da Werner Güth, Rolf Schmittbberger e Bernd Schwarze, giocato per la prima volta nel 1982 nell'Università di Cologne in Germania. Questo tipo di gioco è probabilmente il più popolare per misurare il livello di equità et per misurare la propensità di punizione da parte di un "secondo" (in opposizione alla punizione da parte di un "terzo" che vediamo in una parte successiva). Il gioco è popolare sia per i sui risultati, per il fatto che era praticamente il primo del suo genere e che per la sua inerente semplicità. In questo gioco, una somma di danaro viene data a due giocatori ma solo il "primo" può decidere dell'allocazione di questo. Il punto però, è che qui se il secondo giocato non è d'accordo per qualsiasi motivo con questa allocazione, esso può rifiutare. Il rifiuto dell'offerta comprende la perdita della totalità del danaro per entrambi i giocatori. Gli elementi curiosi e interessanti di questo gioco sono molteplici. Quelli di maggior importanza pero sono che, per prima cosa in realtà secondo la teorie di economia classica il secondo giocatore non avrebbe mai una ragione di rifiutare una somma di danaro per quanto possa essere piccola in questa situazione perché è danaro che "cade dal cielo" visto che non lo possedeva prima di giocare e non ha dovuto fare niente per averlo. Il rifiuto di codesta somma è dunque una contradizione del concetto di "homo economicus". E la prova, invece, che esistono cose più importanti per individui che la massimizzazione dell'utilità intesa come danaro e che ci sono invece fattori dei quali dobbiamo tener conto, uno tra i quali è la percezione dell'equità. E la prova che un individuo può rifiutare una somma di danaro praticamente regalata per lo scopo di punire la persona che decide l'allocazione se percepisce quest'allocazione come "ingiusta" o "iniqua".
In questa parte spieghiamo anche che esiste una variazione di questo gioco che possiamo solo tradurre come "gioco dell'ultimatum strategico".

Per illustrare questi concetto, parliamo di alcuni esperimenti tra i quali : il primo gioco dell'ultimatum di Güth nel 1982 , il gioco dell'ultimato preparato da Richard Larrick e Sally Blount a l'università di Chicago nel 1997 e i giochi dell'ultimato che sono stati organizzati da Jean Ensminger, Henrich et. al per l'analisi interculturale che hanno preparato e pubblicato nel 2014.

2) THE DICTATOR GAME

Il gioco del dittatore è una variazione del gioco dell'ultimatum che è stata esperimentata per la prima volta nel 1986 da Daniel Kahneman. Il gioco è una versione ancor più semplice del gioco dell'ultimatum in quanto non appare la variabile di punizione. Invece, questo è il gioco che misura la forma più pura di equità. Questo è dovuto al modo nel quale è strutturato il gioco : codesto comincia esattamente come nel gioco dell'ultimatum (cioè con una prima allocazione di denaro dal ricercatore ai giocatori) dopodiché il gioco cambia perché il primo giocatore a cui viene dato il compito di fare la seconda allocazione di denaro tra se stesso e il secondo giocatore ma questa volta quest'ultimo non ha la possibilità di rifiutare la proposta. Viene dunque a meno la possibilità di punire un'offerta "ingiusta" e lascia tutto il potere nelle mani del primo giocatore. L'esito generale interessante che esce fuori 25 anni dopo il concepimento di questo gioco è che anche qui la maggior parte delle persone non decide di tenersi tutto il danaro ma cercano invece di fare una divisione "equa" della somma avvolte offrendo anche il 50%.
Anche in questa parte cerchiamo di descrivere le variazioni per questo gioco come il "Double Blind Dictator Game".

Per illustrare questi propositi, abbiamo descritto alcuni tra gli esperimenti più importanti che usano questo metodo, alcuni tra i quali sono : il primo gioco del dittatore organizzato da Kahneman nel 1986, la serie di giochi fatti da Ensminger, Henrich et al. Nella loro analisi interculturale pubblicata nel 2014 e del "Double-Blind Dictator Game" organizzato da Carolyn Lesorogol e Jean Ensminger tra il 2001 e il 2003 in Kenya.

3) THE THIRD-PARTY PUNISHMENT

Il Third Party Punishment game è probabilmente quello meno usato tra i tre che descriviamo. Questo non è però qualcosa che rispecchia la sua utilità. Questo gioco, infatti, è utile soprattutto per misurare la propensità degli individui a punire un comportamento che per loro non è coretto o giusto. Come si può dedurre dal nome, è un esperimento che si gioca con tre giocatori questa volta invece di due. In fatti, questo esperimento è organizzato in questo modo : una somma di denaro viene "data" a un primo giocatore e a un terzo giocatore mentre il secondo non riceve niente. Il primo giocatore deve decidere quanto della sua somma vuole condivider con il secondo. Una volta la condivisione fatta, il secondo giocatore non dispone di strumenti per "punire" il primo se non è d'accordo con l'assegnazione. A questo scopo, il terzo giocatore può, se lo decide, punire il primo usando una parte del denaro che gli è stato assegnato ad inizio gioco. Per ogni unità di denaro che lui decide di usare (e perdere) una certa proporzione di denaro sarà tolto al primo giocatore. Qui, dunque, il terzo giocatore dovrebbe punire, se crede che questa azione è necessaria, il primo giocatore che secondo lui avrebbe infranto il limite di "equità" (che può essere vista anche come la

norme sociale" perdendoci qualcosa.

Per illustrare questo concetto, presentiamo i seguenti giochi: il Third Party Punishment Game organizzato da Fehr e Fischbacher nel 2004, il gioco organizzato da Karla Hoff e Ernst Fehr nel 2011 in India e l'insieme di giochi presentati da Ensminger, Henrich et al. nella loro analisi interculturale pubblicata nel 2014.

II) UNA PICCOLA RICERCA INTER-CULTURALE

1) PRIMO CASO STUDIO:

***GIFTS OF ENTITLEMENTS: THE INFLUENCE OF PROPERTY RIGHTS AND INSTITUTIONS FOR THIRD-PARTY SANCTIONING ON BEHAVIOR IN THREE EXPERIMENTAL ECONOMIC GAMES* DA CAROLYN K. LESOROGOL**

Questo caso studio rileva i risultati dei tre giochi che abbiamo descritto nell'ultima parte nel ambito di uno studio della popolazione dei Samburu in Kenya. L'aspetto interessante di questo caso è l'analisi dei risultati dei giochi in una società che ammette diritti di proprietà e un sistema giudiziario abbastanza avanzato rispetto agli altri casi presenti nel analisi interculturale. Le tendenze che ne riescono sono quelle di un analisi "tipo". Cioè, la maggior parte degli individui cercano di adottare una strategia che gli permette di condividere quasi la metà della somma di danaro che gli viene data (circa il 40%). Nel Third Party Punishment Game, si nota anche una propensione un po' più alta del solito a voler punire chi non si comporta i maniera che viene vista come "equa". Quello che è interessante sono le ragioni per le quali si ritrovano questi risultati che sono, come detto, probabilmente la presenza di istituzioni giuridiche che non ci sono sempre nelle società che sono analizzate. Questo dimostra, tra l'altro, che i giochi possono tener conto di variabili che sono più complesse e che non sono sempre al centro della ricerca stessa.

2) SECONDO CASO STUDIO:

***SOCIAL PREFERENCES AMONG THE PEOPLE OF SANQUIANGA IN COLOMBIA* DA JUAN-CAMILO CARDENAS**

Questo caso studio rileva i risultati dei tre giochi descritti qui sopra nel ambito di un esperimento organizzato con un popolo Afro-colombiano che abita nella riserva naturale di Sanquianga. Il caso è interessante perché questa popolazione vive in un area quasi abbandonata dallo Stato, il che li obbliga in realtà ad essere più cooperativi e a condividere di più nella vita reale.

Due tendenze escono fuori in particolare dai risultati : una tendenza a offrire più del 50% del danaro (anche se non è l'offerta media), e una tendenza ad essere conformisti nel senso che gli individui mostrano la volontà di accettare quasi qualsiasi proposta gli viene fatta.

III) COMPORTAMENTO PROSOCIALE E PRESTAZIONE ECONOMICA : CONDOTTA DI UN GIOCO IN GERMANIA E IN ITALIA

In questa parte, prendiamo quello che abbiamo visto ed analizzato nelle parti precedenti per proporre un caso studio nuovo. Questo caso studio prende come popolazioni per partecipare ai giochi quella italiana e quella tedesca. Lo scopo dell'analisi e quello di calcolare la propensione ad essere "equi" e la propensione a punire un comportamento non percepito come pro-sociale in entrambi le società. L'ipotesi che ammettiamo è quella secondo la quale una proporzione più alta di "pro-socialità" espressa tramite la propensione a punire e ad essere equi in un paese o una società, potrebbe essere un fattore importante nell'efficienza economica di questa società.

Per arrivare a una conclusione, analizziamo anzitutto perché è rilevante pensare a questo tipo di paragone tra l'Italia e la Germania, comparando la loro storia, il loro modello giuridico, la loro economia, le politiche pubbliche rispettive ed alcune variabili comportamentali e cognitive che erano già state sottomesse ad analisi.

Il tipo di esperimento che abbiamo proposto comprende l'applicazione dei tre giochi che abbiamo descritto più l'aggiunta di un gioco che è una variazione del Third Party Punishment Game. Proponiamo un analisi che prende in considerazione la proporzione più rappresentative di entrambi le popolazioni : per fare questo proponiamo di prendere 30 persone scelte in maniera aleatoria per ogni regione e Land, prendendo 5 persone per ogni categoria sociale da noi prescelte (per un totale di 6 categorie). In totale, questo comprenderebbe la partecipazione di 1080 persone (600 Italiani e 480 Tedeschi).

Gli studi precedenti, ci mostrano che una variazione tra i comportamenti dei due popoli non dovrebbe essere significativa nei giochi e che i risultati dovrebbero rispecchiare quelli che sono già stati trovati per paesi occidentali "sviluppati". Le nostre ricerche, però, indicherebbero che i Teschi tendono ad essere più "equi" in certe situazioni e avrebbero una maggiore aversione per l'iniquità. In più, i Tedeschi dovrebbero anche dimostrare una maggior propensione a punire comportamenti che sono considerati come non "pro-sociali". Per avere un risultato più conclusivo, concludiamo col dire che un applicazione di questi giochi potrebbe essere interessante per uno studio più comportamentale dell'economia.