



UNIVERSIDADE CATÓLICA PORTUGUESA

The effects of leader's perceived empathy,
group commitment and individualism on team
cooperation, under "Public goods game"

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Universidade Católica do Portuguesa, Católica Porto Business School
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por

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RESUMO

O conceito de empatia, que corresponde à capacidade de uma pessoa compreender e experienciar os sentimentos de outra pessoa, ou, vulgarmente conhecido como a capacidade “de nos colocarmos nos sapatos do outro” tem vindo a ganhar relevância, nomeadamente a importância da capacidade de demonstrar empatia no local de trabalho. O nosso estudo pretende compreender como é que a empatia percebida do líder influencia a cooperação da equipa sob contingências monetárias, e qual é o papel da cooperação, compromisso ao grupo e individualismo dos participantes nesta relação. Com este objetivo, elaborámos uma investigação experimental com 83 estudantes, recorrendo ao “Jogo do Bem Público” para testar a cooperação entre pessoas do mesmo grupo, ao mesmo tempo que manipulámos a empatia do líder sob três condições experimentais distintas (líder empático, líder neutro, líder não empático). Simultaneamente, medimos o individualismo/coletivismo e compromisso ao grupo com recurso a autorrelato. Os resultados mostram que (1) a empatia percebida do líder está positivamente correlacionada com a cooperação, onde a empatia cognitiva surge como preditor significativo da contribuição; (2) o compromisso ao grupo está positivamente correlacionado com a cooperação, onde o compromisso normativo surge como preditor significativo da contribuição; e (3) o individualismo está negativamente correlacionado com a cooperação.

Palavras-Chave: empatia; cooperação; compromisso ao grupo; individualismo.

ABSTRACT

The concept of empathy, which corresponds to the capacity of an individual to understand and experience the feelings of other or, generally known as, the capacity to “put yourself in someone else’s shoes”, has been rising relevance, namely the importance and consequences of the capacity to demonstrate empathy, at the workplace. Our study aims to understand how perceived leader’s empathy influences team cooperation under monetary contingencies, and the role of participants’ cooperation, group commitment and individualism in this relation. For this purpose, we have conducted an experimental research with 83 students, using a “Public Goods Game” to test the cooperation among groups, while manipulating leader’s empathy under three different conditions (empathic leader, neutral and non-empathic leader). At the same time, we have measured individualism/competitiveness and organizational commitment using self-reports. Results show that (1) leader’s perceived empathy is positively correlated with cooperation and cognitive empathy appears as the only significant predictor of contribution; (2) group commitment is positively correlated with cooperation and normative commitment is the only significant predictor of contribution; and (3) individualism is negatively correlated with cooperation.

Key Words: empathy; cooperation; group commitment; individualism.

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INTRODUCTION

To manage people requires distinct skills, since every person is unique, particularly today, that new generations are becoming more instructed and are paying more attention to their personal development. At the same time, we have been observing an adjustment in organizational structures, changing their hierarchical system to become flatter, less formal and with less chains of command. Nowadays, the exercise of power requires not only the authority provided by each power position but also some important soft skills like empathy. This change makes us question how the companies are able to sustain cooperation among teams with such structural changes.

Although there is no consensus regarding the definition of empathy (Davis, 2006; Singer & Lamm, 2009), which represents a difficulty when studying it, for the purpose of this study, we have assumed that empathy embraces two dimensions. The cognitive and emotional dimensions which reflect the ability of an individual to deeply understand and experience the feelings of others, by observing them (Davis, 1980). Consequently, the aptitude or ability of being empathetic will influence our relations with others. This is particularly relevant at the workplace, where people spend so much time with their colleagues and leaders and where they are so many times asked to work together and help their peers.

The term of cooperation arises from situations in which an individual pays a personal cost (i.e. time, effort, economic resources) to help other individual(s) achieving a benefit (Jordan, Peysakhovich, & Rand, 2015). In organizational contexts, it is frequent that people are asked to cooperate with their colleagues to achieve better results, but it is also very recurrent that people decide to help their mates even without being asked for. Individual and contextual factors have been widely studied to explain how workers are able to cooperate in organizations.

For example, people can decide to cooperate motivated by the opportunity of achieving personal goals (individualists) or simply be driven by the intention helping others achieving common goals (collectivists) (Wagner and Moch, 1986).

Furthermore, organizational commitment is a psychological state which incorporates the relationship between the employee and the company and the effects of this relation in the decision to stay or not to stay in the organization (Meyer & Allen, 1991) which is positively correlated with the cooperation between teams and can be stimulated by the empathic emotion of the leaders (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002).

Although these concepts have been discussed before, we have found no research providing evidence about how empathy, cooperation, individualism and organizational commitment influence each other, under monetary contingencies. Therefore, the research question we propose to answer is “What are the effects of leader’s perceived empathy, individualism and group commitment on team cooperation, under Public goods games?”

The current study was designed to test whether the perception of an empathic leader can motivate cooperative behavior among teams. We have used an experimental methodology, including “Public goods game”, while manipulating the empathy of the leader and assessing the levels of individualism and group commitment of the participants using self-reports. This procedure was presented to 83 participants, who were divided into three conditions, based on the empathic emotion shown by the leader of each group.

In the subsequent sections a review of the existing literature will be presented followed by “Current study” section where we present our hypothesis. The research method will be described including the experimental procedure and the scales and measures we have used. Finally, the research results will be

presented and discussed. The main conclusions will be set forward followed by the research limitations and recommendations for future studies.

1.LITERATURE REVIEW

1.1 Empathy

Adam Smith firstly suggested the term “sympathy” to refer to the way we perceive how the other person is feeling, by imagining how we would feel in similar circumstances (Smith, 1790). The author explains that individuals tend to sympathize more with the others’ joys than with others’ sorrows, which make people prone to expose their prosperity and hide their adversity. In the same vein, Coase (1976) argues that sympathizing not only make us concern more about the ones around us, but also become more aware of the way people do perceive ourselves. This means that by sympathizing we will be more conscious about certain decisions that will affect other people’s lives.

Sympathy is related to empathy (Davis, 1996), a concept that emerged from a German term, “*einfühlung*”, primarily developed over the nineteenth century, by Friedrich Theodor Vischer and his son, Robert Vischer, considering empathy in aesthetics (Vischer & Yanacek, 2015). This first notion of *einfühlung* was related with aesthetics empathy; that is, the ability to understand a piece of art by projecting ourselves into it (Nowak, 2011). Later, in 1909, Titchener introduced the notion of empathy. Commonly, empathy is seen as the translation of the German term (Duan & Hill, 1996), though it refers to the psychological sense of the term, concerning the phenomenon by which an individual experience changes in his or her feelings and emotions, by observing other individuals (Davis, 2006).

Although the concept has been under study for more than a century, there is still no consensus around the definition of empathy (Davis, 2006). As Singer and Lamm (2009) have described in their review, “The Social Neuroscience of Empathy”, almost every researcher in this field has his or her own definition of

it. For this reason, Davis (1996) states that empathy is hard to operationalize in a consistent way.

For many years, empathy had been accepted as an unidimensional concept (Duan & Hill, 1996). Some experts defended that empathy was mainly a cognitive phenomenon (Buie, 1981; Deutsch & Madle, 1975; Woodall & Hill, 1982), consisting in the capability of one to deeply understand others' emotional state, without the need of experiencing it. In turn, others argued that this was mainly an emotional phenomenon (Rogers, 1959; Stotland, 1969; Mehrabian & Epstein, 1972), expressing the ability of an individual to experience the feelings of another.

Currently, a multidimensional conceptualization of empathy - embracing both, cognitive and emotional dimensions - is the most common approach in literature and helps to reconcile different perspectives (Davis, 1980, 1983). In fact, Davis (1996) developed an organizational model of empathy, treating empathy as a group of mechanisms connecting the responses of a person with the observation of another person's experience. In this sense, Davis (1996) highlights the relation between the cognitive and emotional magnitudes of empathy. An empathetic prototypical episode is sequential, which means that each component influences the successor component and is influenced by the preceding component.

Through an empathetic prototypical episode, Davis (1996) recognized four different components (antecedents, processes, intrapersonal, and interpersonal outcomes) in the interaction between the observer (the person who will display empathy) and the target (the object of empathic response from the observer). "Antecedents" refer to specific characteristics of the person (observer and target) and situation. Observer and target have certain individualities that can influence how they act during the interaction. We can divide those individualities into "biological capacities for empathy" (e.g. capacity to imagine other perspectives.), "individual differences" (personal characteristics that can affect the way each

person will experience an empathetic episode, for example, the propensity to feel empathy for a person in sorrow) and “learning history” (associated with the development of empathy-related values and behaviors.). Each empathetic situation arises from a specific context, which is moderated by the “strength of the situation” (the ability to stimulate an emotional response from observers, for example, strong demonstrations of negative emotion, especially by vulnerable targets, are more likely to produce powerful responses from the observer) and “observer/target similarity” (the resemblance between the characteristics of observer and target, which can affect the intensity of the observer’s response, for example, larger similarity between both, is believed to intensify the empathic response from the observer). “Processes” refer to the tools needed to produce the outcomes. There are three distinct groups of processes that require different levels of cognitive aptitude to their execution. “Noncognitive” that require very little cognitive ability and include “primary circular reaction” (e.g. when a newborn cries in response to hear another baby crying) and “motor mimicry” (related with the tendency for observers to mechanically imitate the target.). “Simple cognitive processes” involve at least an elementary degree of cognitive ability from the observer. Those include “classical conditioning” (procedure in which the observer relates a specific stimulus to a an affective response), “direct association” (when the observer recognizes some specific emotion, facial expression or other sign in the target that reminds him or her about some personal past experience, this can induce a response) and “labelling” (when the observer uses simple signals to suppose about the target’s experience, for example, some circumstances are related with the state of happiness, like college graduations) processes. Lastly, “advanced cognitive processes” implicate the highest grade of cognitive ability and contain “language-mediated association” (for example, when the target announces “I have been fired” even if no facial sign of sadness transpires, this may create an empathic response from the observer,

based on his/her past experience), “elaborated cognitive networks” (which are much related with the previous concept but without the mandatory need for language-based communication) and “role taking” (associated with the effort made by the *observer* to comprehend the *target’s* situation, by imagining the other's perspective.). These processes result in “intrapersonal” and “interpersonal” outcomes. “Intrapersonal outcomes” refer to the “affective” and “non-affective” (cognitive) effects that occur on the observer in consequence of observing the target. The “affective” outcomes refer to the emotional responses experienced by the observer and are subdivided into “parallel” (when the observer reproduces the feelings of the target) and “reactive” (when the emotional states observed in the target produce affective reactions in the observer, for example, the feeling of compassion in response to a target in need) outcomes. “Non-affective” outcomes result from a cognitive contact with the target and have two classes, which are “interpersonal accuracy” (when the observer can predict with accuracy the feelings of the target) and “attributional judgements” (judgements made by the observer towards the target’s behavior). “Interpersonal outcomes” refer to the behavioral reactions from the observer to the target and embraces “helping” (when the observer offers help to the target in need.), “aggression” (when the observer reacts aggressively to the target) and “social behavior” (related with the importance of displaying empathy to mediate the relation between the observer and the target)

Based on the multidimensional approach of empathy, Davis (1980) developed the interpersonal reactivity index (IRI), used to measure each dimension of it, affective and cognitive. This index is segmented into four subscales (Davis, 1980): (1) “fantasy”, that measures the tendency of the individual to create fictitious situations; (2) “perspective taking”, that assesses the tendency of the individual to adopt others’ points of view; (3) “empathic concern”, that reflects the capacity of the individual to experience feelings of compassion and

concern for others; and (4) “personal distress”, that reveals the feelings of anxiety, apprehension and discomfort when experiencing tense interpersonal circumstances. “Perspective taking” measures the cognitive dimension of empathy, while the other three are related with the affective dimension.

Affective and cognitive empathy are important aspects of the organizational life, in general, and specially of subordinate-leader relationships (Kellett, Humphrey & Sleeth, 2002, 2006; Mahsud, Prussia, & Yukl, 2010).

It is common to perceive someone as a leader based on his or her mental skills, but this perception can also be affected by the leader’s emotional abilities (Kellett et al., 2002). For instance, one of the most common distinctions among the leadership styles is between “task-oriented” and “interpersonally oriented” (Bales as cited in Eagly & Johannesen-Schmidt, 2001, p.786). The approach tends to be autocratic and the former leadership style focus in doing whatever it takes to complete the tasks required to meet organizational goals by following rules and procedures, whereas the latter refers to a style that centers more attention in maintaining good interpersonal relationships to maintain employees satisfies with their work (Eagly & Johannesen-Schmidt, 2001).

Cronshaw and Lord (1987) proposed that people create particular behaviors in their minds that they associate to a leader. When they recognize those behaviors in others, they will easily perceive them as leaders. Moreover, after carrying out an investigation on complex task performance with more than 160 people, Kellett, Humphrey & Sleeth (2002), concluded that there are two behavioral ways affecting the perception of someone as a leader in a small group, which are the demonstration of emotional abilities, for instance empathy and the demonstration of cognitive abilities to perform complex task. The results suggest that both behaviors have similar importance. However, the relation between empathy and perceived leadership is stronger, suggesting the importance of empathy for effective leadership. It seems important to note that, maybe, this

relation (between empathy and perceived leadership) is enhanced in one specific leadership style, called “transformational”, which refers to leaders who put a lot of effort on mentoring and empowering their subordinates, in order to develop a better performance from them, to achieve the organizational goals (Bass & Riggio, 2006) . In comparison to “transactional” and “laissez-faire” leadership styles, the first referring to leaders who develop exchange relationships with their followers, setting goals and responsibilities for each of them, and the second referring to a complete failure in assuming any responsibilities concerned with managing (Eagly & Johannesen-Schmidt, 2001), empathy and emotional intelligence play an important role in “transformational” leadership actions (Barbuto & Burbach, 2006). This is in line with Goleman (1998), who argues that the most effective leaders have in common a high degree of emotional intelligence, namely, to manage interpersonal relationships. Indeed, Skinner and Spurgeon (2005), proved in their study that there is a positive correlation between three of the empathy’s subscales (“empathic concern”, “personal distress” and “empathic matching”) and the “transformational” leadership style, no correlation between those three subscales and “transactional” leadership style and a negative correlation between the same three subscales and the “laissez-faire” leadership style. Remarkably, Choi (2006) explained in his study that charismatic leadership is composed by three main components, which are envisioning, empathy and empowerment. Each of these components will have an impact on followers and empathy, in special, will stimulate the need for affiliation, which is the need for human comradeship and to feel part of a group. When studying the impact of leadership style and emotions on subordinate performance, it was further observed that the perception of high “transformational” leadership style as self-reported by more than 120 subordinates, raises the optimism of the workers which, indirectly, contributes to the increase of team performance. In other words, the team’s perception of

their leader's style and their beliefs about his or her capacity to achieve organizational goals play an important role for the leadership's styles to have an impact on performance (McColl-Kennedy & Anderson, 2002). In the same vein, Sadri, Weber and Gentry (2011) carried out a study with a sample of 37 000 leaders from all around the world. The researchers assessed the bosses' ratings from each leader and compared it with the subordinates' ratings about leaders' empathic emotion. The authors found the higher ratings of empathic emotion perception from the leader's subordinates were positively related with the higher ratings of performance from the leaders' bosses' perspective. This study gathers evidence for the importance of the perception of empathic emotion on effective leadership (Sadri et al., 2011).

From the reviewed evidence both cognitive and affective abilities, are important features for an effective leader, with empathy emerging as an essential trait of leadership in the 21st century.

1.2 Cooperation

Cooperation in human civilizations is grounded upon social norms (Fehr & Fischbacher, 2004) - standards of behaviors - and can have varied definitions. Rand & Nowak (2013) defined it as the "cost" that one pays for the other to receive a benefit and stated that there is a dilemma when we talk about cooperation in a competitive world.

Johnson, Skon, and Johnson (1980) highlighted an important difference among cooperative and competitive situations, stating that in the former situation the goals of the individuals who are cooperatively connected are positively correlated while in the latter context, the goals of the individuals who are competitively connected are negatively correlated. In other words, when people embrace a cooperative strategy, each personal achievement means an achievement for all the members of the group, which does not happen when

people choose a competitive strategy. The authors also found in their study that students under the cooperative condition outperformed the students under the competitive condition in three out of four tasks they were asked to accomplish and suggested that this have resulted from the cooperative discussion.

In an era where we are constantly reminded that we must be more competitive in order to be more successful, what makes us concern and empathize with someone who is competing with us? It remains unclear, what exactly motivates the decision to cooperate or to compete (Fehr & Fischbacher, 2004). On one hand, it is known that emotions tend to play an important role in cooperation (Rilling, Gutman, Zeh, & Pagnoni, 2002), on the other hand, there is the “norm of conditional cooperation”, which is associated with the decision to cooperate or not cooperate accordingly to what the other members of the group do (Fehr & Fischbacher, 2004). Interestingly, Bogaert, Boone and Declerck (2008), explained that cooperation also depends on the expectation of the individual about their partners’ willingness to contribute, which will increase his or her own motivation to act cooperatively for the shared goal. However, this “motivation” is not enough, the person must not feel that the partners are trying to take advantage of his or her intention to cooperate in alliance, so the level of fear of being abused must be low.

In organizations, the concept of organizational citizenship behavior (OCBs) refers to the personal and voluntary decision to cooperate with our peers with no intention of receiving any reward for that (Organ, 1988). OCBs are divided into seven main dimensions, which are: “helping behavior”, “sportsmanship”, “organizational loyalty”, “organizational compliance”, “individual initiative”, “civic virtue”, and “self-development” (Podsakoff, MacKenzie, Paine & Bachrach, 2000).

Transformational leadership impacts trust in the leaders which affects OCBs (Podsakoff, MacKenzie, Moorman & Fetter, 1990). Recall that

transformational leaders are the ones with higher levels of empathic emotion (Barbuto & Burbach, 2006), which can lead us the idea that the empathy of the leader will indirectly increase OCBs of the subordinates, that is, to influence cooperation in the workplace. In their study regarding collective dilemmas, Bianco and Bates (1990), found out that leadership has an impact on initiating cooperation among groups. In addition, Choi (2006) suggested that charismatic leadership is more effective when dealing with collectivist followers, which are individuals more likely to sacrifice their personal goals for the sake of their group's goals (Triandis, Brislin, & Hui, 1988). Moreover, Wagner and Moch (1986) proposed that the motivational basis for cooperation at the workplace can differ from individualistic to collectivistic nature of each person. This means that from individualism point of view, people decide to cooperate driven by the possibility of satisfying personal interests whereas, according to collectivism position, should cooperate with the intention to accomplish common goals, even if, sometimes, it means to give up on personal interests. This is somehow related to the idea that collectivists tend to be more cooperative, while individualists tend to be more competitive (Triandis, as cited by Chen, Chen and Meindl, 1998, p.291), which is in accordance with the fact that individualism improves values like competition, freedom, utilitarian pursuits, independence and the desire to be distinguished (Sakalaki, Kazi & Karamanoli, 2007).

Furthermore, the OCBs also play an important role on individuals' organizational commitment. For example, the OCBs dimension of "organizational loyalty" and "organizational compliance" correlates to organizational Commitment. We can define organizational Commitment as a psychological state which, on one hand, defines the relationship between the employee and the organization and, on the other hand, affects the decision to maintain or not maintain the relation with the organization. It has three components: "affective commitment", related with the emotional connection, the

feeling of identification with and engagement with the organization; “continuance commitment”, resulting from avoiding the costs that leaving the company would mean and “normative commitment”, referring to a sense of obligation to remain in the organization (Meyer & Allen, 1991). One of the antecedents of commitment is transformational leadership, which is positively correlated with the affective component of commitment (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Apparently, this component is also the one with greater impact in the cooperation among employees, resulting from its larger correlation with work behaviors, like OCBs, followed by normative commitment (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002), rising the idea that empathic emotion of the leader will positively influence the cooperation between employees, by rising their commitment.

2. CURRENT STUDY

Based on the reviewed literature it is possible to set forward how constructs like empathy, individualism/collectivism and organizational commitment are related to cooperation. Although the literature highlights the importance of such relations, we have identified a lack of research explaining the complexity of these relations, namely about how perceived leader's empathy influences cooperation under monetary contingencies, and the role of participants' cooperation, group commitment and individualism in this relation. For this purpose, we used the "Public goods game" to test the cooperation among groups, while manipulating leader's empathy under three different conditions, related with the reaction of the leader to the fellow's delay, who arrived using a clutch: empathic leader, who has shown empathy when reacting to the delay of the fellow; neutral leader, who has not shown any emotion when reacting to the delay, and the non-empathic leader, who has not shown empathy when reacting unpleasantly to the delay. At the same time, we have measured individualism/competitiveness and group commitment using self-reports. Consistent with objective of our study, we aim to test the following hypothesis:

H1: Participants exposed to the non-empathic leader will contribute less when compared with participants exposed to the empathic leader.

H2: Participants with higher levels of commitment with the group, will have higher contributes.

H3: Participants with higher levels of individualism and competitiveness, will have lower contributes.

3. METHODOLOGY

3.1 Sample

The sample of our study was composed by 83 students, aged between 17 and 41 years old. The average age of the participants was 20.88 years old (SD = 3.325), where 47% were female participants. The participants have studied, on average, for 12.87 years (SD = 3.446) and 61% have studied socioeconomic sciences, while 33% have studied life and technologies and 6% have studied social sciences and humanities. Regarding to the self-reported socioeconomic level, 8.4% belong to the lowest income tercile, while 28.9% belong to the middle tercile and 62.7% belong to the highest income tercile.

3.2 Instruments and measures

1. "Public Goods Game": with the intention of accessing the levels of cooperation of each subject in the experiment, participants were asked to complete the public goods game, using Qualtrics platform. In this game participants were randomly organized in groups of four elements and each person received 2€ and had to decide between keeping the money or donating a part of it to the common Project. When the test was finished, all the donations were doubled and equally divided by all the participants. This procedure was explained to all the participants, before they play started playing the game (Rand, Greene, & Nowak, 2012). The maximum amount of money that each participant was able to obtain was 5€ (If he or she donated 0€ and the rest of the elements in his or her team donated 2€). On the other hand, the minimum amount of money that each participant was able to obtain was 2€, in case all the individuals in the group would contribute with zero to the common project. If all the elements in

the group would contribute with 2€ to the common project, each individual would receive 4€ at the end of the experience.

2. IRI: after some tests, Davis (1980) came to the final version of seven items for each sub-scale, consisting in sentences that participants are asked to evaluate on a scale from 0 (does not describe me) to 4 (describe me very well). A Portuguese version of this Index was developed and tested in 2010. In this version, each sub-scale is composed by six sentences, instead of the original seven, due to a need for adjustment. The results were in accordance with the original version of the instrument (Limpo, Alves, & Castro, 2014). In order to understand how the participants perceived their leaders' empathic emotion, we have used a scale based on this Portuguese version (adapted from Limpo, Alves, & Castro, 2014). We made an adaptation of this index, in order to measure the empathic emotion of the leader from the participants' perspective. The original index measures four dimensions of empathy, however, we have decided to include only two of them which are the most interesting ones when trying to dissociate cognitive and affective scopes of empathy: (1) "empathic concern" (e.g. "The main investigator appears to have concerned feelings for others."; 5 items; $\alpha = .820$) and (2) "perspective taking" (e.g. "The main investigator appears to find it difficult to see things from the "other guy's" point of view."; 5 items; $\alpha = .762$). Using a Likert scale from 0 ("Completely disagree") to 4 ("Completely agree").

3. Individualism/collectivism: with the objective to measure the levels of individualism/collectivism of each participant, we have used this scale, based on the Portuguese version of it (adapted from Dias-Oliveira & Pasion, unpublished). With this scale we can measure five subscales of individualism/collectivism. Nevertheless, with the intention to not extend the experiment too much, we have decided to use only four of them, which were the most relevant to our study: (1) "competitiveness" (e.g. "Winning is everything"; 4 items; $\alpha = .794$); (2)

“preference for individual work” (e.g. “I prefer to work with others rather than work alone”; 2 items; $\alpha = .692$); (3) “supremacy of individual goals” (e.g. “People in a group should be willing to make sacrifices for the group’s wellbeing”; 2 items; $\alpha = .599$) and (4) “supremacy of individual interests” (e.g. “A group is more productive when members follow their own interests and concerns”; 3 items; $\alpha = .656$). Using a likert scale from 0 (“Completely disagree”) to 4 (“Completely agree”).

4.Organizational commitment: with the intention to understand the levels of group commitment of each participant, we have adapted the Portuguese version of the organizational commitment scale (adapted from Nascimento, Lopes & Salgueiro, 2008) to the group context. Using this original scale, we can evaluate three dimensions of the organizational commitment, however, with the same objective to not extend the experiment, we have selected only two of them: (1) “affective commitment” (e.g. “I did not feel ‘emotionally attached’ to this group”; 3 items; $\alpha = .729$) and (2) “normative commitment” (e.g. “This group deserves my loyalty”; 6 items; $\alpha = .891$). Using a likert scale from 0 (“Completely disagree”) to 4 (“Completely agree”).

3.3 Experimental manipulation

The manipulation of the independent variable (perceived empathy of the leader) was produced in accordance with the reaction of the leader to a pre-defined delay of a fellow. We had two leaders and two fellows working with us during the experiment. One of the leaders was a woman and the fellow in her room was a man, while the other leader was a man and the fellow working in his room was a woman. The fellow in each room arrived 15 minutes late in every experiment, using a crutch and claiming that he or she had to go to the Hospital

and that it took longer than expected to reach the faculty. Depending on the condition we were testing, the reaction of each leader was different:

(EL) The leader was sincerely concerned with the fellow and offered help for he or she to sit in the chair. Showed gratitude for the fact that the fellow still showed up.

(NEL) The leader has unpleasantly reacted to the delay, unconcerned with the situation and stating that the fellow should have been better organized, in order to avoid letting everyone waiting in the room.

(N) In this situation, the leader did not show any emotion about the delay and normally proceeded with the experiment.

3.4 Procedure

We have used two methods to recruit students to our experiment. Firstly, the experiment was introduced in the program of the course of Organizational Behaviour of Católica Porto Business School, Universidade Católica Portuguesa. Simultaneously, we have written an e-mail (see annex 1.1), inviting students for our experiment, giving them a small explanation and leaving a link to an online form (see annex 1.2), where they could register for the experiment. We have asked some Professors to share the e-mail with their students and we also shared it with our colleagues.

After receiving the enrolment of the participants, we have allocated them, randomly, to one of the three conditions possible, which were defined according to the empathy of the leader of each group. Once all the participants were allocated to a certain session, we contacted them informing which session they would attend and asked them to confirm (see annex 1.3). After receiving a confirmation, the participants received a standardized e-mail explaining how to reach the room and making them aware of the importance of arriving on time

and, if possible, arriving five minutes earlier. We have tried to empathize the importance of being punctual with the objective of avoiding the possibility of having participants arriving after our fellow (see annex 1.4). All the participants received the same e-mail.

On the day of the experiment we had two teams of collaborators to assure that everything would work appropriately. One of teams were at the entrance of the room where the experiment took place, in order to guarantee that nobody would come in after the experience had started. Otherwise, we would risk that someone would show up at the same time as the fellow or even later. Another one, composed by three people who pretended to be studying at the tables at the hall, who would participate in the experience when needed, in order to ensure that the number of participants was always a multiple of four.

The experiment was carried out on a computer room in Católica Porto Business School, Universidade Católica Portuguesa, where all the participants signed the informed consent (see annex 2.1), received all the instructions (see annex 2.2) and played the “public goods game” (See annex 2.3). After this, they were asked to fill the “Game understanding questions” and “Perceived leadership questions” (see annex 2.4 and 2.5). Then, participants completed the self-report measures (IRI; Individualism/Collectivism; Organizational Commitment) together with some fillers (e.g. “I believe that my colleagues have compassion feelings about less positive things.”), which were randomly organized (see annex 2.6). Finally, they were asked to answer sociodemographic questions (see annex 2.7).

At the end of the experiment, we had made the debriefing about what have happened in each session, explaining that the delay of the person with the crutch as well as the reaction of the leader to this delay was all planned, in order to analyze how it would affect their decisions on the “Public goods game”. After

this, each participant received a certain amount of money, while equating own and others performance.

3.5 Statistical analysis

Regarding normality assumption, skewness and kurtosis did not differ significantly from normality, except for supremacy of individual interests (I/C) with a skewness of 1,225 (SD=0,264) (Andy Field, 2018). In what concerns the homogeneity of variances, there were no violations of normality (all $p > .05$).

We have made the “Manipulation check” test using a One-sample *T* test with the reference value of two (half scale point) and a one-way ANOVA on perceived leadership by condition (EL, N, NEL) to assure that the main investigator was perceived as the leader of the experiment context. We also ran a one-way ANOVA comparing each condition (EL, N, NEL) on the participants’ perceptions about the empathic emotion of the leader, in order to assess significant variations in leader’s empathy across the designed manipulations.

In order to compare the effects of leader’s empathic emotion on participants’ contributions for each condition (hypothesis 1 testing), a one-way ANOVA on participants’ contributions (monetary value donated to the group), was conducted considering the different conditions (EL, N, NEL).

We have also carried out a Pearson moment-product correlation, including the variables of H2 and H3 (group commitment – affective and normative, and individualism - competitiveness, preference for individual work, supremacy of individual goals and supremacy of individual interests) and participants’ contribution. To better isolate the significant effects of the dimensions of each measure, while accounting for the shared variance between these dimensions, we carried out independent multiple linear regression models.

4. RESULTS

Experimental manipulation:

In this experiment, 29 participants were under EL condition (35%), while 25 were under the NEL condition (30%) and the other 29 were under the N condition (35%). Table 1 shows the patterns of results regarding the answers to the manipulation-check questions related with the perception of the main investigator as the leader, the perception of empathy of the leader, as well as the participants' contribution by condition.

Perception of main investigator as the leader:

The analysis showed that the main investigator was perceived as a leader, $t(82) = 5.86, p < .001$ (Table 1). When comparing the three groups no significant effects were found, $F(2;80) = .571, p > .05$.

Leader's perceived empathy:

There were significant differences on the leader's perceived empathy across conditions ($F(2;80) = 10.723, p < .05$). Post-hoc tests revealed significant differences in leader's perceived empathy between the "NEL" and "N" conditions and between "NEL" and "EL" groups (all $p < .05$). Perceived empathy was lower in the "NEL" condition compared to both "N" and "EL". When comparing "EL" with "N", there was a marginal effect ($p = .061$) showing a trend towards higher perceived empathy in the "EL" condition.

TABLE 1

Means (and Standard deviations) for the NEL, EL, N conditions and Total sample, considering Perceived leadership of the main investigator; Perceived leader's empathy and Contributions.

| | NEL | EL | N | TOTAL |
|---|-----------------|-----------------|-----------------|-----------------|
| Perceived leadership¹ | 3.00 (1.323) | 3.07 (1.486) | 2.69 (1.466) | 2.92 (1.425) |
| Perceived leader's empathy² | 18.96 (5.327) | 25.59 (6.156) | 22.97 (4.101) | 22.67 (5.850) |
| Contribution³ | 109.44 (62.831) | 117.48 (72.596) | 129.66 (71.937) | 119.31 (69.215) |

H1: Participants exposed to the non-empathic leader will contribute less when compared with participants exposed to the empathic leader.

There were no significant differences between the average contribution of the participants from the different conditions, $F(2;80) = 0.582, p > .05$.

Additionally, we conducted an exploratory analysis on the correlations between empathy (total score) and contribution, showing that there was a significant positive correlation between these two variables, $(r(83) = .257; p < .05)$.

When dissociating the two main dimensions of empathy (cognitive empathy and affective empathy), the regression analysis showed a significant model ($F_{(2,80)} = 5.66, p = .005$), with both predictors explaining 10.2% of the total variance in contribution ($R^2 = .102$). Beta coefficients revealed that cognitive empathy was the only significant predictor of contribution ($\beta = .450; p = .003$), with increased cognitive empathy being associated with greater contributions.

¹ See annex 2.5

² See annex 2.6

³ See annex 2.3

H2: Participants with higher levels of commitment with the group will have higher contributes.

There was a significant positive correlation between contributions and group commitment (total score) variables, ($r(83) = .335; p < 0.05$).

The regression analysis revealed a significant model with normative commitment and affective commitment as predictors of contribution ($F_{(2,80)} = 5.596, p = .005$), with both predictors explaining 10.1% of the total variance ($R^2 = .101$). Beta coefficients show that normative organizational commitment was the only significant predictor of contribution ($\beta = .343; p = .017$), with increased normative commitment being associated with greater contributions.

H3: Participants with higher levels of individualism and competitiveness, will have lower contributes.

There was a significant negative correlation between contributions and individualism/collectivism (total score) variables, ($r(83) = -.251; p < 0.05$).

The regression analysis revealed a non-significant model when using individualism/collectivism dimensions (competitiveness, preference for individual work, supremacy of individual goals, supremacy of individual interests) as predictors of contribution ($F_{(4,78)} = 2.18, p = .079$). However, beta coefficients show that individualism/collectivism – competitiveness was the only – and a marginal - predictor of contribution ($\beta = .203; p = .065$) with increased competitiveness being potentially associated with smaller contributions.

5. DISCUSSION, CONCLUSION AND FUTURE DIRECTIONS

The main goal of the current study was to provide a comprehensive analysis on the complex relations between empathy, individualism/collectivism, group commitment and cooperation among teams and their leaders. For this purpose, we have carried out an experimental procedure, to assess the levels of cooperation of the participants, under monetary contingencies, by manipulating the empathy of the leader in each group of participants. Additionally, we measured participants characteristics that are thought to affect cooperation (i.e., individualism/collectivism and group commitment).

Concerning the experimental manipulation, it was possible to observe that the main investigator was perceived as the leader of the experimental context, and that the “Non-Empathic Leader” (NEL) condition was the one in which the leader was perceived as less empathic comparing to the other conditions. In this sense, we can assume that the manipulation was successful, showing that when the leader had a non-empathic reaction to the delay of the fellow who arrived with a clutch, the levels of perceived empathy were lower. At this point, we should acknowledge that the difference between the “Neural” (N) and “Empathic Leader” (EL) conditions did not reach the significance threshold, despite the trend for the level of perceived empathy to be greater in “EL” condition, when comparing it to the “N” condition. This may be due to the low number of participants in each condition and may also reflect the difficulty in making a distinction between these two conditions, since the “N” condition corresponds to what the participants were expecting a priori from an occasional interaction (i.e., person who arrives late due to legitimate reasons) with a (strange) person.

In sum, this initial interaction between the leader and the fellow tends to be what is expected between two individuals who do not know each other.

Nonetheless, in an organizational context, once there is a regular and continued interaction between individuals, it is expected that differences in empathic reactions to be more easily detected, not only because of the employees' expectations but also because of the behavior and attitudes of the leader, observed by the employees in their day-to-day relation. Therefore, with a large sample and with a more continued interaction, it would be expected to detect at the significant level the observed trend towards the higher perceived leader's empathy in the "EL" condition.

Our first Hypothesis (H1) stated that participants exposed to the non-empathic leader would contribute less when compared with participants exposed to the empathic leader. H1 was not confirmed, but there was a significant positive association between empathy (total score) and contribution, indicating that higher perceived leader's empathy is associated with higher cooperation. This result is somehow in agreement with Podsakoff, MacKenzie, Moorman and Fetter (1990) when they argue that transformational leadership - the one associated with higher levels of empathy from the leader (Barbuto & Burbach, 2006) - impacts trust in the leaders which, in turn, affects cooperation. In the reviewed studies, authors tend not to dissociate the two main dimensions of empathy, however, when accounting for cognitive and affective empathy as distinct dimensions, it was evidenced that cognitive empathy emerged as the unique significant predictor of contribution (i.e., cooperation).

We can relate this result of cognitive empathy with the fact that the participants would better expect the leader to understand the reason of the delay from the other's perspective (i.e., cognitive empathy) than to really experience his or her feelings of pain (i.e., affective empathy), since they did not know each other before. This does not mean that affective empathy is less important than the cognitive dimension, but in this experimental context an excessive

manifestation of affective empathy could compromise the scenario credibility. Even in organizational contexts, the affective dimension of empathy can take longer to be perceived by others, as shared emotional experiences may be less recurrent and expected. Although the results do not confer significant relevance to affective empathy on team cooperation, this does not mean that it is not important in more continuous relationships, even when they are professional in nature. To better test this hypothesis in an experimental setting, it would be important to include the leader as part of the group, as frequently occurs in the organizational context. In the current experiment, the leader was not a real member of the group (did not benefit from the group cooperation). The non-empathic reaction of the leader in the “NEL” condition may have, thus, generated a *fault-line* - fictitious separation between different groups (Bezrukova, Jehn, Zanutto, & Thatcher, 2009) - between the leader and the participants, leading people to maintain their levels of contribution because they were only contributing to their groups, instead of punishing the group when the non-empathic leader is part of it (i.e., there were no negative consequence for the leader if they would have decided to contribute less in the economic game).

Our second Hypothesis (H2) stated that participants with higher levels of commitment with the group would have higher contributes. This is in accordance with Feather and Rauter (2004) and Guo (2018) studies which have revealed a positive correlation between commitment and cooperation. Our results suggest that only the normative dimension of commitment was a significant predictor of contribution. These results are in contradiction to what was defended by Meyer, Stanley, Herscovitch, and Topolnytsky (2002), that affective commitment dimension is the one with greater impact in the cooperation among employees. We believe that this is justified by the lack of affective relation between the participants, along with the fact that the experimental setting implied a certain level of cognitive load (once it involved the need for deciding what would be the

best strategy to get the best result) which can have suppressed participants' affective and emotional abilities.

In the organizational context, where people have a continuous relation with the company's environment, values and mission, while they can cultivate personal relations with their peers and leaders at the same time, affective commitment can also be an important variable. From the current results, individuals tend to cooperate more because they are likely to have a feeling of responsibility and concern towards people who are part of their group.

Our third Hypothesis (H3) stated that participants with higher levels of individualism and competitiveness, would have lower contributes. This hypothesis was confirmed, and the results are congruent with other studies. For example, Triandis (as cited by Chen, Chen and Meindl, 1998, p.291) study, found that collectivists tend to be more cooperative, while individualists tend to be more competitive and Cárdenas, Dreber, von Essen and Ranehill (2015) study show that there is a negative correlation between competitiveness (measured as "willingness to compete") and cooperativeness.

A deeper analysis of the results suggests that, even if the negative correlation between contributions and individualism/collectivism (total score) was significant, competitiveness was the only predictor marginally significant of contribution, meaning that competitive people tend to cooperate less. Perhaps their behavioral patterns are more related with individualist people, which is in agreement with the study mentioned above. Nevertheless, it is important to note that cooperation and competition have been growing importance in investigation, but most of the studies focus on one or another, separately, when there is a lack of research showing how competitiveness and cooperativeness act together and what are the relations between them, which, in the modern World,

where individuals are asked to find a balance between both, would be very interesting (Cárdenas, Dreber, von Essen and Ranehill, 2015).

To conclude, it is important to underline that there are differences in studying the interaction between the variables we have operationalized in this study in experimental or organizational contexts. Nonetheless, using an experimental approach has several advantages (Shaughnessy, Zechmeister and Zechmeister; 2012), including such as the control for confounding variables that emerge in organizational settings misleading the researcher to incorrect conclusions. In our specific case, by using an experimental method we have avoided dealing with the indirect effects of variables like the “previous relationship between the leader and the team members” or the “previous relationship between the team members” and consequent impressions about each other, unavoidably present in organizational contexts where people have a day-to-day relation, which could camouflage the phenomena we were studying. Moreover, due to this continued relation, it would be hard to manipulate the leaders’ empathy in organizational contexts, since it could be contradictory to their usual behavior and could discredit the study. Furthermore, we foresee two other advantages in using experimental method, which are the possibility of establishing causal relations between variables and the possibility of replication in sequential studies. It is also worth mentioning that although the experimental approach has its potentialities, it posits several challenges to the generalization of these findings to the organizational context, and future studies should also focus on the study of these phenomena in its natural contexts.

With this study we were able to provide a more comprehensive picture of the complex relations between empathy, group commitment and individualism and cooperation, demonstrating that leader’s perceived empathy is positively correlated with cooperation, with cognitive empathy appearing as the only

significant predictor of contribution; group commitment is positively correlated with cooperation, with normative commitment being the only significant predictor of contribution; and individualism is negatively correlated with cooperation.

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7. ANNEX

Annex 1: Emails and messages sent to the participants.

1.1 First mail, sent for the potential participants

1.1.1 Portuguese version

Caro/a colega,

Encontro-me neste momento a desenvolver um projeto de investigação sobre tomada de decisão na Católica Porto Business School.

No dia 30 de Setembro vou realizar uma experiência comportamental de tomada de decisão em laboratório de informática, com a duração aproximada de 30 minutos.

A participação na experiência tem associada uma pequena remuneração monetária.

O estudo decorrerá num dos laboratórios da Universidade Católica do Porto, Rua Diogo Botelho 1327, Foz e são 6 sessões: 16h00, 16h30, 17h00, 17h30, 18h00, 18h30.

Caso estejas interessado/a em participar em alguma destas sessões, preenche, por favor, o formulário que envio no link seguinte.

<https://forms.gle/1joKNwEWv5NyKEnZA>

Apelo à tua colaboração para o bom desenvolvimento desta investigação.

Grata pela atenção,

Ana Núncio

1.1.2 English version

Dear colleague;

I am currently developing a research project about decision making at Católica Porto Business School.

On September 30th I will conduct a behavioral decision-making experiment in a computer lab, lasting approximately 30 minutes.

The participation in the experiment has a small monetary remuneration associated.

The study will take place at one of the laboratories of the Catholic University of Porto, Rua Diogo Botelho 1327, Foz and there are 6 sessions: 4pm, 4:30pm, 5pm, 5:30pm, 6pm, 6:30pm.

If you are interested in attending any of these sessions, please fill out the form in the following link.

<https://forms.gle/1joKNwEWv5NyKEnZA>

I appeal to your cooperation for the good development of this research.

Thanks for the attention,

Ana Nuncio

1.2 Online form where participants could sign for the experiment

1.2.1 Portuguese version

Nome:

Contacto de e-mail para o qual pretende ser contactado:

Contacto telefónico (opcional):

Horários em que se pretende inscrever (selecionar todas as opções em que se encontra disponível, embora apenas vá participar numa sessão):

- 30 de Setembro, segunda-feira das 16h00 às 16h30
- 30 de Setembro, segunda-feira das 16h30 às 17h00

- 30 de Setembro, segunda-feira das 17h00 às 17h30
- 30 de Setembro, segunda-feira das 17h30 às 18h00
- 30 de Setembro, segunda-feira das 18h00 às 18h30
- 30 de Setembro, segunda-feira das 18h30 às 19h00

1.2.2 English version

Name:

E-mail address you want to be contacted:

Mobile phone (opcional)

Schedules in which you want to sign in (you should select all the options in which you are able to take part, even if you will only attend to one of them):

- 30th September, Monday, from 4pm to 4:30pm.
- 30th September, Monday, from 4:30pm to 5pm.
- 30th September, Monday, from 5pm to 5:30pm.
- 30th September, Monday, from 5:30pm to 6pm.
- 30th September, Monday, from 6pm to 6:30pm.
- 30th September, Monday, from 6:30pm to 7pm.

1.3 Second e-mail, sent to the registered participants, asking for a confirmation.

1.3.1 Portuguese version

Cara(o) NOME;

Em nome dos investigadores principais deste estudo, agradeço a disponibilidade para participar no trabalho de investigação.

Tendo em atenção a disponibilidade manifestada, venho informá-la(o) de que fará parte do grupo de dia 30/09/2019 das HH:MM às HH:MM, no laboratório EC -102 (-101), da Universidade Católica do Porto, Rua de Diogo Botelho, 1327, 4169-005 Porto.

Confirma a sua presença?

Grata pela atenção;

Ana Núncio

1.3.2 English version

Dear NAME;

On behalf of the main investigators of this study, I appreciate your availability to participate in the investigation work.

Having your availability in mind, I hereby inform you that you will take part in the group of 30/09/2019, from HH:MMpm to HH:MMpm, at the EC -102 (-101) laboratory of Universidade Católica do Porto, Rua Diogo Botelho, 1327, 4169-005 Porto.

Do you confirm your presence?

Thanks for your attention;

Ana Núncio

1.4 Third e-mail, with relevant information

1.4.1 Portuguese version

Cara(o) NOME;

Em nome dos investigadores principais deste estudo, agradeço a confirmação de presença na sessão de 30/09/2019 às HH:MM, no laboratório EC -102 (-101), da Universidade Católica do Porto, Rua de Diogo Botelho, 1327, 4169-005 Porto.

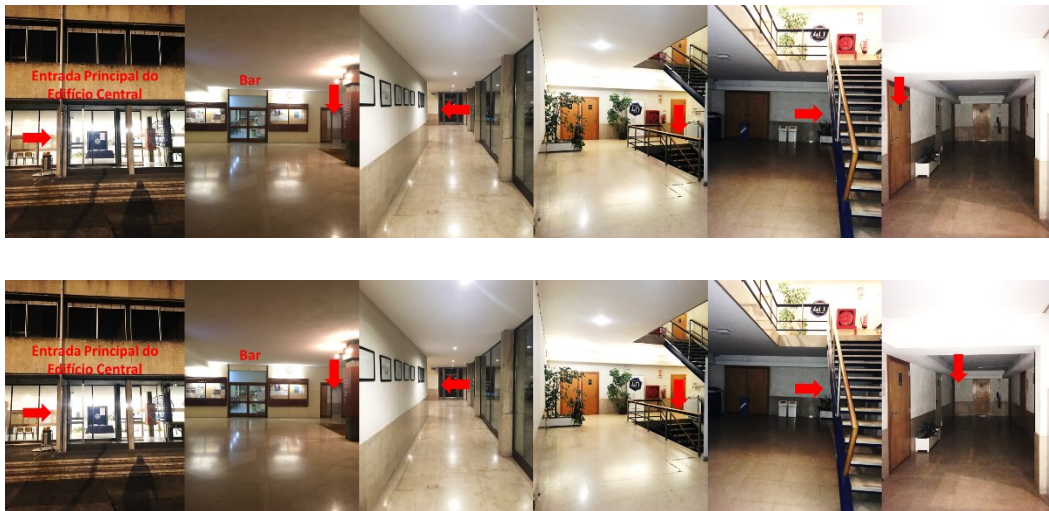
Caso não saiba onde se localiza este laboratório, veja, por favor, as indicações que envio em anexo.

Esta é uma experiência que funciona em grupos, pelo que é necessário que todos estejam presentes para que possamos dar início à experiência. Desta forma, é muito importante respeitar os horários e, se possível, chegar 5 minutos antes da hora combinada.

Grata pela atenção;

Ana Núncio

anateresanuncio@gmail.com



1.4.2 English version

Dear NAME;

On behalf of the main investigators of this study, I want to thank you for confirming your presence at the session of 30/09/2019 at HH:MMpm, at EC -102 (-101) laboratory of Catolica University of Porto, Rua de Diogo Botelho, 1327, 4169-005 Porto.

In case you do not know where the laboratory is, please check the directions attached to this e-mail.

This experiment works in groups, which means that we need everyone to be present in order to begin the experiment. Having this in mind, it is very important to respect the schedules and, if possible, arrive 5 minutes before the agreed time

Thanks for your attention;

Ana Núncio

anateresanuncio@gmail.com

Annex 2: Qualtrics instructions presented to all the participants.

2.1 Screen 1 - Information consent letter

2.1.1 Portuguese version

Este trabalho de investigação tem como objetivo estudar a tomada de decisão económica.

Nesta experiência os sujeitos irão jogar o “Jogo do Bem Público” onde irão executar uma tarefa de tomada de decisão económica.

A experiência terá a duração de 30 minutos e envolve um jogo de computador e a resposta a breves questões sobre o mesmo. O “Jogo do Bem Público”, em conjunto com 4 pessoas que nunca terão acesso à identidade uma das outras. Essas 4 pessoas serão atribuídas ao grupo de forma aleatória e, do desempenho do grupo, resultará uma compensação monetária proporcional. Esse valor será calculado no final da sessão. Depois da realização do jogo, serão apresentadas algumas questões relativas à compreensão do jogo, aos dados pessoais de cada participante, bem como algumas questões relacionadas com a experiência de participação.

Os dados recolhidos serão tratados de forma anónima e confidencial e em momento algum será pedido o nome ou dados pessoais sensíveis. Os dados serão utilizados apenas para fins de investigação e serão sempre analisados em grupo para efeitos de publicação. A participação na experiência não envolve nenhum prejuízo para a pessoa e é voluntária, pelo que pode desistir a qualquer momento.

Para mais informações contacte – Eva Oliveira (eoliveira@porto.ucp.pt).

- Li as informações e aceito participar neste estudo
- Li as informações e não aceito participar neste estudo

2.1.1 English version

This investigation work has the objective to study the economic decision-making process.

During this experience, the individuals will play the “Public Good Games” where they will execute a task of economic decision making.

The experiment will last for 30 minutes and requires a computer game and the answer to brief questions about it. The “Public Good Games”, together with four people who will never get access to each other’s identity. Those four people will be randomly assigned to the group and, from the group performance, will result a proportional monetary compensation. The value is calculated at the end of the experiment. After playing the game, some questions related with the comprehension of the game, personal data and the participation experience will be presented.

The data collected will be anonymously and confidentially examined and we will never ask your name or other sensible personal data. The data will only be used for investigation purposes and will always be analyzed in groups for publication effects. Your participation in this experiment does not involves any loss and, once it is voluntary, you can quit at any moment.

For more information, please contact - Eva Oliveira (eoliveira@porto.ucp.pt).

- I have read the information and accept to participate in this study.
- I have read the information and do not accept to participate in this study.

2.2 Screen 2 - Game Instructions

2.2.1 Portuguese version

Foi selecionado aleatoriamente para fazer parte de um grupo com mais 3 pessoas. Cada pessoa do seu grupo, incluindo você, recebe as mesmas instruções e 2 euros para esta experiência. A sua tarefa consiste em decidir quanto deste montante guarda para si mesmo e quanto (se algum) contribui para o projeto comum do grupo. As contribuições são realizadas em cêntimos, sendo que pode decidir qualquer valor entre 0 e 200 cêntimos (2 Euros) em incrementos de 2 cêntimos por exemplo, contribui 0, 2, 4, 6, ..., 82, ..., 122, ..., 200 cêntimos. As contribuições monetárias de cada membro do grupo para o projeto comum irão ser duplicadas e depois divididas por todos os 4 membros do grupo de forma igualitária. Ou seja, ao contribuir com 2 cêntimos para o projeto comum, nós iremos duplicar esse valor (total 4 cêntimos) que será dividido por todos os 4 membros do grupo (1 cêntimo para cada elemento). Se todos os membros do grupo optarem pela contribuição coletiva máxima (2 euros), o dinheiro de toda a gente irá duplicar, cada um recebendo 4 euros. No entanto, se todos os outros elementos do seu grupo fizerem a contribuição máxima (2 euros cada) para o projeto comum, ao contrário de si, que decide manter os seus 2 euros (ou seja, contribuindo com 0), você irá ganhar 5 euros enquanto os outros elementos do grupo apenas ganharão 3 euros cada. Não existe decepção neste estudo, ou seja, será realmente agrupado com outros participantes que também terão de tomar uma decisão. Após todos os elementos do grupo tomarem a decisão relativa à contribuição monetária o jogo termina e o montante real, resultante da decisão de todos, será dividido.

2.2.1 English version

You have been randomly selected to be part of group together with three other people. Each person of your group, including you, will receive the same instructions and 2 euros for this experience. Your task consists in deciding how much from those two euros you want to save and how much (if any) you want to contribute for the common project of the group. All the contributions are made in cents, which means that you can contribute with any value from 0 to 200 cents (2 euros) in additions of 2 cents for example, 0, 2, 4, 6, ..., 82, ..., 122, ..., 200 cents. The monetary contributions of each member of the group for the common project will be duplicated and then equally divided between all the 4 members of the group. In other words, if you contribute with 2 cents for the common project, we will duplicate that value (total of 4 cents) which will be divided between all the 4 members of the group (1 cent per element). If all the members of the group choose for maximum collective contribution (2 euros), everybody's money will be duplicated, which means that everyone will receive 4 euros. However, if all the elements of your group decide to make the maximum donation (2 euros each) for the common project, contrary to you, who decides to keep your 2 euros (this means you contribute with 0), you will receive 5 euros while the other elements of the group will only receive 3 euros each. This study does not involve deception, this means that you will really be grouped with other participants who will also need to take a decision. After all the elements of the group decide about the monetary contribution, the game finishes and the real amount resulting from de decision of all, will be divided.

2.3 Screen 3 - Contribution decision

2.3.1 Portuguese version

Use o slider para escolher o seu nível de contribuição.
A sua contribuição: 0 cêntimos -----slider-----200 cêntimos (2 euros).

2.3.2 English version

Use the slider to chose your level of contribution.
Your contribution: 0 cents -----slider-----200 cents (2 euros).

2.4 Screen 4 - Game understanding questions

2.4.1 Portuguese version

As próximas duas questões pretendem avaliar a compreensão da tarefa de tomada de decisão em que acaba de participar.

1. Que nível de contribuição tem um maior pagamento para o grupo como um todo?

0cents; 25 cents; 50 cents; 75 cents; 100cents; 125cents; 150cents; 175cents; 200cents

2. Que nível de contribuição tem um maior pagamento para si pessoalmente?

0cents; 25 cents; 50 cents; 75 cents; 100cents; 125cents; 150cents; 175cents; 200cents

2.4.2 English version

With the following two questions we intend to evaluate your comprehension of the decision-making task you have participated.

1. Which level of contribution have the higher return for the group, as a whole?

0cents; 25 cents; 50 cents; 75 cents; 100cents; 125cents; 150cents; 175cents; 200cents

2. Which level of contribution have the highest payment for you personally?

0cents; 25 cents; 50 cents; 75 cents; 100cents; 125cents; 150cents; 175cents; 200cents

2.5 Screen 5 – Perceived leadership questions

2.5.1 Portuguese version

Responda às 2 próximas perguntas relativas à experiência.

1 - Em que medida se sentiu na obrigação de contribuir?

Responda numa escala de 1 (Nada) a 5 (Muito).

2 - Encarou o investigador principal como a pessoa que liderava esta experiência?

Responda numa escala de 1 (Nada) a 5 (Muito).

2.5.2 English version

Answer to the next 2 questions relatively to the experience.

1 – To what extend did you felt compelled to contribute?

Answer in a scale from 1 (Nothing) to 5 (Very much).

2– Did you face the main investigator as the leader of this experience?

Answer in a scale from 1 (Nothing) to 5 (Very much).

2.6 Screen 6 - Empathic emotion perception, Individualism/Collectivism and Organizational Commitment questions

2.6.1 Portuguese version

As próximas afirmações têm como objetivo fazer o levantamento de experiências relacionadas com a participação. Classifique as próximas afirmações de 0 a 4 de acordo com a sua opinião. É de primordial importância que responda de forma espontânea e sincera. Não há respostas erradas ou certas, ou perguntas com truques.

Deve responder a cada afirmação, considerando que:

0 - Corresponde a “Discordo totalmente”.

1 - Corresponde a “Discordo”.

2 - Corresponde a “Não concordo nem discordo”.

3 - Corresponde a “Concordo”.

4 - Corresponde a “Concordo totalmente”.

SHAM. Acredito que os meus colegas tenham sentimentos de compaixão por coisas menos positivas.

IC-OI2. Pessoas que pertencem a um grupo devem compreender que, por vezes, têm de fazer sacrifícios em prol do grupo, como um todo.

CO-N3: Sentir-me-ia culpado se deixasse o meu grupo.

CE5. O investigador principal aparenta ser alguém que, antes de criticar outra pessoa, tenta imaginar como se sentiria se tivesse no seu lugar.

CO-N2 (r): Senti que não tinha qualquer dever moral em colaborar com o grupo.

SHAM. Acredito que os meus colegas têm dificuldade em ver as coisas do ponto de vista dos outros.

CE1 (r). O investigador principal aparenta ter dificuldade em ver as coisas do ponto de vista dos outros.

SHAM. Acredito que os colegas do meu grupo tentem pôr-se no lugar da outra pessoa.

CE2. O investigador principal aparenta tentar compreender melhor os outros, imaginando a sua perspetiva de ver as coisas.

IC-TI1. Prefiro trabalhar com outras pessoas do que trabalhar sozinho.

CO-N4: Este grupo merece a minha lealdade.

CO-A3: Este grupo acabou por ganhar significado para mim.

IC-II1. Um grupo é mais produtivo quando os seus membros seguem os seus próprios interesses e preocupações

CO-A1 (r): Não me senti “emocionalmente ligado” a este grupo.

IC-C2. Fazer o meu melhor não é suficiente; é importante vencer.

IC-C4. O sucesso é a coisa mais importante na vida.

AE1. O investigador principal aparenta ter sentimentos de preocupação pelos outros.

AE2 (r). O investigador principal aparenta não sentir muita preocupação quando os outros estão a ter problemas.

CO-N5: Mesmo que fosse uma vantagem para mim, sinto que seria incorreto não cooperar com este grupo.

IC-II3. Um grupo é mais eficiente quando os seus membros fazem o que querem fazer, em vez daquilo que o grupo quer que o façam.

AE5. O investigador principal aparenta ser uma pessoa de coração mole.

CO-N6: Sinto que tenho um dever para com este grupo.

SHAM. Acredito que os meus colegas tenham sentimentos de preocupação pelos outros.

IC-C3. Sinto que ganhar é importante, quer no trabalho, quer ao jogo.

IC-II2. Um grupo é mais eficiente quando os seus membros fazem o que pensam ser melhor, em vez daquilo que o grupo quer que façam

IC-C1. Vencer é tudo.

AE3 (r). O investigado principal aparenta não se deixar perturbar muito com as desgraças dos outros.

CO-N1: Senti que tinha uma obrigação para com as pessoas deste grupo.

AE4. O investigador principal aparenta ter sentimentos de compaixão por coisas menos positivas.

CE3. O investigador principal aparenta acreditar que uma questão tem sempre dois lados e tenta olhar para ambos.

IC-OI1. As pessoas que integram um grupo devem estar dispostas a fazer sacrifícios pelo bem-estar do mesmo.

CO-A2 (r): Não me senti como fazendo parte deste grupo.

IC-TI2. Trabalhar em grupo é melhor do que trabalhar sozinho.

SHAM. Acredito que os meus colegas de grupo tentem imaginar-se no lugar da outra pessoa.

CE4. Quando está aborrecido com alguma situação, o investigador principal aparenta tentar pôr-se no lugar da outra pessoa por um momento.

2.6.2 English version

The following sentences have the objective to analyze experiences related with your participation in this experiment. Classify them from 0 to 4, in agreement to your opinion. It is fundamental that you provide honest and spontaneous answers. There are no right or wrong answers or trick questions.

You must answer, considering that:

0 - Correspond to "Totally disagree".

1 - Correspond to "Disagree".

2 - Correspond to "Neither agree or disagree".

3 - Correspond to "Agree".

4 - Correspond to "Totally agree".

SHAM. I believe that my colleagues have compassion feelings about less positive things.

IC-OI2. People who belong to a group should realize that they sometimes are going to have to make sacrifices for the sake of the group as a whole.

CO-N3 (r). I would feel guilty if I leave my group.

CE5. The main investigator appears to be someone who, before criticizing somebody, tries to imagine how would it feel to be in their place.

CO-N2 (r). I did not feel that I had any moral duty to collaborate with this group.

SHAM. I believe that it is difficult for my colleagues to see the things from the “other guy’s” point of view.

CE1 (r). It seems to be difficult for the main investigator to see the things from the “other guy’s” point of view.

SHAM. I believe that my colleagues try to “put themselves in the others’ shoes”.

CE2. The main investigator appears to try to understand others, by imagining how things look from their perspective.

IC-TI1. I prefer to work with others rather than work alone.

CO-N4. This group deserves my loyalty.

CO-A3. This group has gained a great deal of personal meaning for me.

IC.II1. A group is more productive when members follow their own interests and concerns.

CO-A1 (r). I did not feel “emotionally attached” to this group.

IC-C2. Doing your best isn’t enough; it is important to win.

IC-C4. Success is the most important thing in life.

AE1. The main investigator appears to have concerned feelings for others.

AE2 (r). The main investigator appears to don’t feel sorry for other people when they are having problems.

CO-N5. Even if it would be advantageous for me, I feel that it would be incorrect to not cooperate with my group.

IC-II3. A group is more productive when members do what they want to do rather than what the group wants them to do.

AE5. The main investigator appears to be a pretty soft-hearted person.

CO-N6. I feel that I have a duty to my group.

SHAM. I believe that my colleagues have feelings of concern about others.

IC-C3. I feel that winning is important in both work and game.

IC-II2. A group is more efficient when members do what they think is best rather than what the group wants them to do.

IC-C1. Winning is everything.

AE3 (r). The main investigator doesn't appear to be disturbed by other people's misfortunes.

CO-N1. I felt that I had a personal obligation to the people in this group.

AE4. The main investigator appears to have compassion feelings about less positive things.

CE3. The main investigator appears to believe that there are two sides to every question and try to look at them both.

IC-OI1. People in a group should be willing to make sacrifices for the group's wellbeing.

CO-A2 (r). I did not feel a 'strong' sense of belonging to my group.

IC-TI2. Working with a group is better than working alone.

SHAM. I believe that my colleagues try to imagine themselves in the others' place.

CE4. When upset with someone, the main investigator appears to try to "put herself/himself on the others' shoes" for a while.

2.7 Screen 7 – Demographic questions

2.7.1 Portuguese version

Qual a sua idade?

Qual é o seu género:

Masculino

Feminino

Prefiro não responder

Número de anos que concluiu com sucesso na escola, sem contabilizar com as reprovações:

Qual a sua principal área de formação?

Ciências Socioeconómicas

Ciências da vida e Tecnologias

Ciências Sociais e Humanas

Artes e Desporto

Selecione, aproximadamente, o rendimento mensal médio do seu agregado familiar (ou seja, o somatório dos ganhos individuais dos moradores de um mesmo domicílio por mês contando com o seu, caso trabalhe). Caso não tenha a certeza, aponte a sua melhor estimativa.

Inferior a 419€

Entre 420€ - 629€

Entre 630€ - 839€

Entre 840€ - 1049€

Entre 1050€ - 1259€

Entre 1260€ - 1679€

Entre 1680€ - 2095€

Entre 2096€ - 2514€

Entre 2515€ - 3354€

Entre 3355€ - 4189€

Entre 4190€ - 5029€

Superior a 5030€

2.7.2 English version

How old are you?

Qual é o seu género:

Male

Female

I prefer not to answer

Number of years have you successfully concluded in school, without leads:

Which is your main study area?

Socioeconomic Sciences

Life and Technology Sciences

Social Sciences and the Humanities

Arts and Sports

Select, approximately, what is the average monthly income of your household (ie. the sum of individual earnings of residents of the same household per month, including yours, if you work). If you are unsure, give your best estimate.

Lower than 419€

Between 420€ - 629€

Between 630€ - 839€

Between 840€ - 1049€

Between 1050€ - 1259€

Between 1260€ - 1679€

Between 1680€ - 2095€

Between 2096€ - 2514€

Between 2515€ - 3354€

Between 3355€ - 4189€

Between 4190€ - 5029€

Higher than 5030€

2.8 Screen 9 – Final information

2.8.1 Portuguese version

Obrigado pela sua participação até aqui.

Permaneça no seu lugar para que se possa proceder ao pagamento da sua compensação.

2.8.2 English version

Thank you for your participation.

Please remain in your place, so we can make the payment.