

ISCTE  **IUL**
Instituto Universitário de Lisboa

IUL School of Social Sciences

Department of Social and Organizational Psychology

Does it matter who is ostracizing you? Manipulating warmth and competence social
dimensions as the source

Daniel Alves da Silva Freire

Dissertation submitted as partial requirement for the conferral of *Master in Social and
Organizational Psychology*

Supervisor:

Doctor Elizabeth C. Collins, Research Fellow

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Abstract

Ostracism – the act of being excluded and ignored – has been shown to have negative psychological consequences such as decreases in feelings of belonging, self-esteem, meaningful existence and control, as well as decreases in cognitive performance. Many attempts have been done in the research to find moderators, but the negative consequences seem to happen regardless of individual characteristics such as personality traits or the source of ostracism. Cyberball, a simple virtual ball-tossing game has been widely used and shown to be enough to affect individual psychological well-being. Moreover, just seeing or imagining being the ostracized individual has caused similar responses. Despite the large number of studies of the phenomenon, few studies have measured what ostracized individuals think about the ostracizers and how that affects the ostracism experience. As such, the present research adopted the warmth and competence dimensions from the Stereotype Content Model (SCM) to manipulate the source of the ostracism and measure possible more subtle effects of being ostracized. In Study 1, an online experiment, participants were asked to imagine being a character in a scenario describing someone being ostracized or included by Men (a group perceived as having high competence and low warmth) or Women (a group perceived as having low competence and high warmth). Results showed participants who read the ostracized scenario felt worse. No simple differences based on character sex were found, however, character sex and participant sex interacted in their effect on the dependent measures. Study 2 was a similar study performed in the lab using the Cyberball game as a manipulation of ostracism and including a dependent measure of a memory task related to female and male characters. Once again, there were strong effects of ostracism, and interactions between character sex and participant sex on participants' emotions and mood. Implications are discussed.

Resumo

Ostracismo – o acto de excluir e ignorar – tem mostrado ter consequências psicológicas negativas no(s) ostracizado(s) como uma diminuição de sentimentos de pertença, auto-estima, existência significativa e de controlo, assim como diminuição do desempenho cognitivo. Diversas tentativas têm sido realizadas a fim de encontrar variáveis moderadoras, mas os tais efeitos negativos parecem surgir independentemente de características individuais como traços de personalidade ou a origem ostracizante. *Cyberball*, um jogo virtual simples de arremessar uma bola tem sido vastamente usado e provado ser suficiente para afectar o bem-estar psicológico. Mais ainda, ver ou imaginar outrem ser ostracizado tem provocado efeitos similares. Apesar do largo número de estudos sobre o fenómeno, poucos têm medido o que os indivíduos ostracizados pensam sobre os ostracizadores e como isso afecta a experiência do ostracismo. Como tal, a presente investigação adoptou as dimensões de *warmth* and *competence* do *Stereotype Content Model* (SCM) para manipular quem ostraciza e medir possíveis efeitos mais subtis de se ser ostracizado. No Estudo 1, uma experiência realizada *online*, os participantes foram instruídos a imaginarem ser uma personagem num cenário em que a mesma personagem era ostracizada ou incluída por Homens (um grupo percebido como tendo alta *competence* e baixo *warmth*) ou Mulheres (um grupo percebido como tendo baixa *competence* e alta *warmth*). Resultados mostraram que quem leu o cenário ostracizado se sentiu pior. A condição do sexo do grupo não mostrou diferenças, porém, o sexo da personagem e dos participantes interagiram no seu efeito sobre as variáveis dependentes. O Estudo 2 foi parecido ao anterior e consistiu em usar o *Cyberball* em laboratório como manipulador da origem do ostracismo, tendo ainda uma tarefa adicional de memória relacionado com figuras femininas ou masculinas. Uma vez mais, existiram efeitos robustos do ostracismo, e também interacções entre a condição do sexo do grupo ostracizador e sexo dos participantes nas suas emoções e estado de humor. Resultados e implicações são discutidos.

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CHAPTER I – Introduction

Social psychology researchers have been focusing more on ostracism, rejection and social exclusion in the last two decades (Williams, 2007; 2011). One of the main reasons for that is the several psychological consequences widely reported (Williams, 2007). Most, if not all, of such consequences reported are strong negative for ostracized individuals, compared with included ones (e.g. lowered levels of positive mood amongst the ostracized in Lustenberger & Jagacinski, 2010). Therefore, it is no surprise that research started focusing on the subject, its impact and how individuals cope with it (e.g., Williams, Forgas & Hippel, 2005).

In spite of the high number of works being published in the recent years, there is not a norm differentiating the terms ostracism, social exclusion and social rejection in the literature (Williams, 2007). Hence, we will use the words interchangeable and adopt Williams' (2007) definition of ostracism, which is «typically defined as being ignored and excluded, and it often occurs without excessive explanation or explicit negative attention» (p. 429). The author also adds that ostracism «is often operationalized as a process that is characterized as an unfolding sequence of responses endured while being ignored and excluded» (p. 429).

A great contribution for the research on ostracism, rejection and social exclusion is the Cyberball paradigm (Williams et al., 2000) and Williams' model (2001; Williams & Zardo, 2005). Cyberball is a virtual version of the real-life ball-tossing game (Williams, 1997; Williams & Sommer, 1997) developed to be more standardized, efficient and less traumatic than previous paradigms (Williams, 2007). In practice, participants are told by the researchers that the study aims to measure mental visualization on a task and that Cyberball has been found to work well for that purpose. Participants ostensibly play with two or three other players who connect via online and are told that it does not matter who throws or receives the ball, but how they mentally visualize it as a personal experience. However, the other players are actually computer originated and that is how the manipulation is done: ostracized participants receive the ball only two times at the beginning and included participants receive one third of the total throws. The number of throws are the same for both conditions and usually each game ends after 30-50 throws. The cover story intends to assure participants that their performance in the experiment is not affected by catching the ball thrown by other players or not (Williams, 2007).

Williams' (2001; Williams & Zardo, 2005) model has been widely used in past research. This model assumes that ostracism threatens four fundamental needs: self-esteem; belonging; the need for control and the need for a meaningful existence. Additionally, the model proposes

the existence of three different stages of reaction after ostracism. First, there is an instant reflexive and painful response – by having negative effects on mood and threatening the 4 fundamental needs - to any source of ostracism. This happens regardless of different individual or situational factors. Second, as individuals have their needs threatened, they attempt to regain or satisfy the most threatened needs. Therefore they cope and react according to their individual differences and diverse contextual factors. The third stage describes the long-term effects of ostracism. Individuals who face several episodes of ostracism or a single long-term one might not be able to cope with the threatened needs. Looking at each need, the model also states that prosocial behaviors are expected when self-esteem and feelings of belonging, which represent relational needs, are lowered. Whereas, when control and meaningful existence are threatened, individuals tend to react in a more provocative and antisocial manner because those needs are related to feelings of efficacy and recognition. A new model was presented by Williams in 2009 adding a new stage: resignation. This stage is achieved if one suffers long term ostracism and is incapable of fortifying ones needs, leading to alienation, depression, helplessness and unworthiness.

The great majority of the tests of immediate or short term consequences of ostracism, rejection and social exclusion are usually done in laboratory experiments, whereas the long term effects of ostracism are typically studied in the field and with interviews (Williams, 2007). Studies that used Cyberball and Ball-tossing paradigms have two relevant similarities (Pharo, 2012). First, they are consistent with Williams' definition of ostracism because they all include a lasting (although most of the times for few minutes only) period of rejection and exclusion. Second, the dependent variables used to test and measure the effects of ostracism are all based on Williams' (1997, 2001; Williams & Zardo, 2005) model.

Belonging has been found to be a fundamental human motivation (Baumeister & Leary, 1995). The authors also identified two requirements to define when someone feels that they belong. It is necessary that the (1) individual experiences regular and satisfying interactions with other people, and (2) the interactions have to be steady and constant and, in the case of group members, there must be a solid concern for each other's wellbeing. Individuals easily form and develop bonds with other individuals. In fact, there is innate desire to form such bonds (Baumeister & Leary, 1995). Furthermore, there are negative consequences when individuals do not experience feelings of belongingness, such as depression, anxiety and other mental disorders (Baumeister & Leary, 1995; Williams, Cheung & Choi, 2000). Most past research has concluded that social exclusion, rejection or ostracism threaten this fundamental need

(Williams & Zardo, 2005) and that ostracism itself may be the most direct way to influence feelings of belongingness (Williams & Zadro, 2001).

Terror management principles inspired the idea that humans aim to enhance their sense of worth and/or meaningful existence when they are confronted by their mortality or insignificance (Greenberg et al., 1992). The nature of ostracism can threaten feelings of meaningful existence in individuals because ostracism does not allow people to gain meaning by being remembered by others (Williams & Zadro, 2005). Williams (2001) states that ostracism can be metaphorically associated with death because ostracized individuals might feel like they do not have importance. A meaningful existence represents the individual's perceived sense of purpose in life.

Feelings of control can positively influence individual health and social comfort (Fiske & Yamamoto, 2005) and are associated with increased likelihood of success (Williams & Zadro, 2001). Our definition of ostracism includes that ostracism happens when the ostracized target has little or no control over the situation. Therefore, the individual cannot influence the situation and is denied social feedback from the source (Williams & Zadro, 2001). Hence, the ostracized individual perceives a lack of control which is thought to contribute to the negative experiences after being ostracized (Williams & Zadro, 2001).

It is believed that self-esteem has both cognitive and affective components (Leary et al., 1995). These components represent, respectively, personal beliefs about oneself and feeling good or bad about it. Self-esteem has been pointed to as having high importance to individuals' subjective well-being (Williams & Zadro, 2001). In fact, many psychological treatments are made to boost the individual's self-esteem (Leary et al., 1995). Higher self-esteem is also linked to increased goal-seeking behavior, productivity boosts (Leary, et al., 1995) and better academic achievement (Brouillard & Hartlaub, 2005) and lower self-esteem is associated with negative outcomes such as suicide (Wilburn & Smith, 2005). Moreover, individuals with lower self-esteem are more likely to have negative expectations of themselves, with adverse behavioral and cognitive consequences (Williams & Zadro, 2001). It is debated whether ostracism provokes a negative experience in terms of self-esteem because it leads to a perception of inferiority relative to others or because it is related to punishment, which leads to the idea that the ostracized individual did something wrong or undesirable, or both (Williams & Zadro, 2001).

As mentioned earlier, sadness and anger are also affected when experiencing an episode of ostracism. It is believed that emotions can influence behavior and are linked to motivation

(Baumeister et al., (2007) and it is plausible to assume that ostracism would have an impact on the emotions someone feels after being excluded, rejected or ostracized, especially because the fundamental needs are shattered. Decreases in an individual's mood when ostracized, excluded or rejected have been widely reported in the literature (Williams, 2007).

Besides mood and the fundamental needs, ostracism has been found to have other effects on its victims. Social pain has been shown to have similar effects and cures as physical pain (Eisenberg et al., 2003; Dewall et al., 2010); it negatively effects cognitive performance (Lustenberger & Jagacinski, 2010), cognitive performance (Jamieson, Harkings & Williams; 2010), and self-regulation (Oaten et al., 2008). Ostracism experience also lingers and negatively affects cognitive task performance even in the resignation state (Buelow et al.; 2015). In addition, the effects of ostracism have been difficult to reduce, even with monetary rewards when ostracized (Van Beesten & Williams, 2006) and ostracized individuals have been reported to be more susceptible to persuasion attempts (Sowel, Chen & Williams; 2008). It has also been suggested that ostracism leads to different type of reactions and behaviors depending on the context (e.g individual or cultural differences) (Williams, 2007). Ostracized individuals can, for example, try to re-affiliate and socially compensate, withdrawal and isolate from the source or act in aggressive way (see Richman & Leary, 2009 for a model). It has been suggested that ostracism has been linked to decreases in cognitive tasks because ostracized individuals may be using such resources to recover from it (Buelow et al.; 2015). It is also discussed that excluded individuals may use their cognitive resources in a social way - probably to re-affiliate again – because they tend to use stereotypic information less and rely more on individuating information, compared to included ones (Claypool & Bernstein; 2014).

Watching someone else playing Cyberball and being ostracized can decrease fundamental needs and mood in the viewer, compared to watching someone being included in the same game (Wesselmann et al., 2009). The effect is even stronger if participants are asked to imagine being the ostracized individual themselves (compared to those who observed the included conditions). Related findings appear in Lau et. al's (2009) experimental work where how one remembers the ostracism experience affects the emotional impact of the experience. Lower ratings on the fundamental needs were found amongst participants who recounted the experience from their own perspective compared to those who used an observer perspective. In addition, ostracism also increases dehumanization of the self and the ostracizer (Bastian & Haslam, 2010). Lakin, Chartrand and Arkin (2008) conducted two experiments to measure the amount of behavioral mimicry participants performed when placed in a room with a confederate

(who moved his/her own feet on purpose) after playing a Cyberball game. Participants who were excluded used more mimicry than included ones. The authors concluded that non-conscious mimicry may be a way that individuals try to re-affiliate with others after ostracized. They also concluded that this effect happens more if the confederate was a member of the ingroup member rather than an outgroup (same sex as the participants versus opposite sex as the participants; the experiment was only done with female participants). Furthermore, if they were ostracized by an ingroup (females) member they mimicked more compared to those ostracized by an outgroup member (males). Wittenbaum et al. (2010) used a discussion group paradigm with one participant and two confederates. Participants were included or excluded in the discussion because of their knowledge or lack of knowledge about the topic of discussion. They found that the negative effects of ostracism were stronger when participants were placed in a mixed-group gender group (one male and one female) than when they were ostracized by members of the outgroup (both confederates were the opposite sex as the participant). Zadro and Williams (2004) designed two experiments showing there were no differences amongst participants who were ostracized by human individuals or a computer. Participants reported the same negative effects on the four fundamental needs regardless of the source, even when told what or who the source was. Similar findings were found by Gonsalkorale and Williams (2007). The authors found that ostracism affected participants' four fundamental needs despite being ostracized by a favored or a despised group. This was replicated in 2014 by Fayant et. al. As such, the strong, negative and varied effects of being ostracized (compared to being included) seem to happen regardless of who or what is the ostracism source.

Research focusing on individual variables has been scarce (Williams, 2007). However, MacDonald and Donnellan (2012) found no personality variables moderating the effects of being ostracized, at least on the four fundamental needs. Moreover, few studies have found differences between male and female participants. Williams and Sommer (1997) reported that females behaved in a more socially compensated way (worked harder in the task) way compared with males, while Hawes (2012) found that gender moderated the effect of cognitive performance in children (girls were more affected, performing better when included and worse when ostracized). Yet, the findings were always related to how participants behaved or performed after being ostracized and not to effects on the fundamental needs. Usually, individual differences have been related to how the individuals cope with the ostracism rather than the negative feelings felt because of the ostracism experience itself (Williams; 2007).

Taken together, ostracism is related to several negative consequences and it affects the ostracized individual in spite of contextual and/or individual differences, compared to included individuals. However, we found no research analyzing how the social perception the ostracized person has about the ostracizers might influence the response to ostracism. In the recent past, a lot of research have acknowledged warmth and competence as central dimensions of social perception (Fiske et al. 2002) - also known as warm versus cold (Ash; 1946, Kelley; 1950), Communion and Agency (Conway; Pizzamiglio & Mount, 1996), and closely related to Trustworthiness and Dominance (Todorov et al.; 2008). The Stereotype Content Model (SCM; Fiske; 2007; 2008) describes the importance of the warmth and competence dimensions in social perception. According to the SCM, these two dimensions are universal and essential to survive in the social world. Warmth is important to predict how friendly or trustworthy, for example, others may be. Competence, on the other hand, answers the question of how capable others may be at fulfilling their intentions (whether good or bad). Ostracism may be consider an act of coldness (lack of warmth) and affect more if the ostracizer is perceived as having high on warmth. Furthermore, the SCM states that warmth judgments are primary – in the sense that individuals judge warmth before competence – because it matters more whether one perceives the other as having good or bad intentions towards the self first, and only afterward whether the other is capable of achieving such goals. As such, warmth related information is also cognitively more accessible. While SCM presents most social groups (e.g. elderly; middle-class, etc.) as having one dimension rated as high and the other as low, there are a few that are usually perceived as being low on both (e.g. homeless or poor) or high on both (usually ingroups societal prototypes like Whites; most of such stereotypes are from Western cultures). Traditional women, for example, are attributed high scores on warmth but low on competence (Fiske; 2008). This doesn't happen in every subtype (generally non-traditional) of women but usually warmth lowers when competence stereotypes increase (for example, when women become parents, Cuddy et al; 2004). Men, on the other hand, are often perceived as having high competence and less warmth (usually lower than traditional women) (Fiske et al.; 2008).

Aim of the present research

The overall aim of the present research was to examine the relation between ostracism's impact on the individual's well-being and how that individual 'sees' the ostracizer(s) – their cognitions about the ostracizer. Specifically, and in line with the SCM, the relation between the nature of the stereotype (more competent or warm) about the ostracizer and their group and the experience of the ostracizer. Each dimension may carry different weight on the ostracism

psychological effects, considering in particular warmth's primacy. If there is an effect, warmth could affect more because the ostracizer is supposed to be warm and ostracism is, by nature, an act of coldness (opposite from warmth). Competence may eventually play a role too because it might mean that the ostracized individual may not be able to access "important" things if the ostracizer (viewed as competent) is ostracizing him/her. Moreover, because of the nature of each dimension, being ostracized by a certain group may also lead to changes in the judgment about that groups warmth and competence.

For this purpose, two experiments were run. Both studies measured participants' psychological outcomes after being ostracized (or included) by a high warmth and low competence social group (women) or a low warmth and high competence social group (men). Female and male were used as the groups based on Cuddy's et al. (2009) data for Portugal that showed females being rated high on warmth and low on competence, compared to males. In addition, Study 2 measured memory for male and female speakers after the ostracism (or inclusion) experience.

CHAPTER II – Study 1

The objective of Study 1 was to have a first examination of the question using a scenario to manipulate if imagining being ostracized or included – by either male or female characters - individual affects the ostracism experience. Furthermore, we aim to replicate the previous and usual findings from ostracism studies regarding each need and mood.

Hypothesis

We expect to replicate the usual results from ostracism studies cited above, which are the following:

H1: Participants who read one of the ostracized conditions story will have more negative scores on fundamental needs compared with the included conditions.

H2: Participants in the ostracized conditions will also have more negative mood compared with included conditions.

Our novel hypothesis regarding characters sex conditions are the following:

H3: Participants in male characters sex condition will have more negative scores on fundamental needs compared with participants from female characters.

H4: Participants in female characters' sex will have more negative scores on mood compared with men conditions.

Design

This study consisted of a 2 (Ostracism condition: ostracized or included) x 2 (Character sex condition: male versus female) between subjects experimental design. The conditions were manipulated through whether the participants read an ostracized or included scenario and the sex of the characters described in the scenario (men versus women) both as members of the team and the individual being ostracized.

Participants

There were 241 participants who started the study, from which 138 completed all measures. Of the participants who finished the study, 9 participants were excluded from further analyzes because they failed to recall important information about the scenarios in two manipulation check items (e.g. if the main character was invited for lunch – included - or not - ostracized). Three additional participants were excluded because they reported that Portuguese was not their native language. The final sample used in the analyses consisted of 126 participants (73 women,

53 men) who completed the survey online using Qualtrics (2015). The age of participants ranged from 18 to 60 ($M=29.25$, $SD=10.83$). Fifty participants had university degrees, while 42 were undergraduates, 32 had a high school degree and two middle school ones. Participants were randomly distributed between the follow conditions: ostracized by male team ($n=33$), ostracized by female team ($n=32$), included by male team ($n=27$), and included by female team ($n=34$).

Instruments and Materials

Case Scenario. In order to accommodate an online study, a scenario was developed involving an experience of exclusion and rejection over which the main character had little or no control at all, as suggested by Williams (2007). Second, it was episodic, that is, the main character experienced the ostracism in a single group activity (Williams, 2007).

The scenario described the main character participating in an orienteering event. The event was open to the general public. Since the main character registered alone, he/she was assigned to an existing team. Afterwards, it is described that the main character perceived that he/she was either accepted in the team (included) or that the team was putting him/her aside (ostracized). To make it more believable a specific example was given when the main character had a suggestion the route to take at a specific point (while the team was unsure about which way to go) and the team either listened and considered the suggestion (included) or ignore what the main character suggested (ostracized).

The target character was the same sex as the team to avoid participant assumptions of gender bias on the part of the team. The scenario described neutral and inclusion/ostracism information in order to make it something participants could fully imagine occurring. Across conditions, scenarios differed only on whether the target was included or excluded, and the sex of the actors, not on the events. Moreover, the scenario did not include any description of what sort of feelings the main character might have experienced in order to avoid influencing the participants. In addition, the scenario was of similar length in both conditions.

Self-reported level of fundamental needs. Several frequently used items about fundamental psychological needs were adapted and translated from Zadro et al. (2004). These included five items for measuring *belonging* (“I felt I belonged to the team”; “I felt disconnected”; “I felt rejected”; “I felt like an outsider”; “I felt the the other elements from the team interacted with me”); five items measuring *self-esteem* (“I felt good about myself”; “My self-esteem was high”; “I felt liked”; “I felt insecure”; “I felt satisfied”); five items measuring

control (“I felt powerful”; “I felt I had control over the course of the event”; “I felt I had the ability to significantly alter the events”; “I felt I was unable to influence the actions of others”; “I felt the other players decided everything” and five items measuring *meaningful existence* (“I felt invisible”; “I felt meaningless”; “I felt non-existent”; “I felt important”; “I felt useful”). Responses for all items ranged from one (Disagree completely) to five (agree completely). For the statistical analysis, every item with negative valence was reversed (e.g. “I felt rejected”; “I felt invisible”). Thus when we discuss the results in the thesis, higher scores mean more feelings of belonging, higher self esteem, feelings of more control, and feelings of a more meaningful existence. When answering these items, participants were instructed to imagine themselves being the main character in the situation. The items measuring each fundamental need showed high internal consistency: *belonging* ($\alpha = .93$); *self-esteem* ($\alpha = .90$); *meaningful existence* ($\alpha = .93$) and *control* ($\alpha = .90$) and, as such, each of them was averaged to create a composite score for each need. In the survey, presentation order for all fundamental needs items was randomized.

Mood Items Eight items about mood were adapted from Wirth and Williams (2009). The mood adjectives included were: *good*; *bad*; *friendly*; *unfriendly*; *angry*; *pleased*; *happy* and *sad*. Responses for all items ranged from one (disagree completely) to five (agree completely). Participants were instructed to imagine themselves being the main character in the situation. For the statistical analysis, every item with negative valence was reversed (e.g. “angry”). Participants had to answer which number of the scale represented their mood level – on each previous items – while imagining being the character in the scenario. All items were randomly presented and showed a high internal consistency ($\alpha = .95$). As such, a composite variable for mood was generated.

Warmth and Competence Items. Given our interest in how a person’s views of a social group change after being ostracized by members of that group, we included measures of two core dimensions of social judgment taken from the Stereotype Content Model: warmth and competence (Fiske et al.; 2008). The measures were previously used and validated with a Portuguese population by Cuddy et al. (2009) and asked participants to state how they perceived the specified group on six items (*competent*, *capable*, and *determined* for competence and *warm*, *well-intentioned* and *friendly* for warmth). Participants answered these measures three times. First, participants were asked to report how they would rate the team on each of the items. Following this, they were asked to respond in terms of how they thought Portuguese people in general view men and women separately (the questions were presented side by side). The

response scale was one (not at all) to five (very much) on both occasions. Internal consistency was good in all cases ($\alpha > 0,81$) validating the composite scales for each group.

Manipulation Checks. The survey had two manipulation check items to assess the level of self-reported ostracism experienced by the participants adapted from Zadro et al. (2004): “I felt ignored” and “I felt rejected”. Specifically, participants were asked to rate on a one-to-five scale, where one corresponded to the “not at all” and five to “very much”, which number represented best what they felt. Two additional items were added to check participant’s attention to the scenario and, in particular, about the manipulation aspects. One question asked what the main character’s name was. The other asked participants if the main character was invited for lunch by the team or not.

Demographics. Demographic information about the participants was collected concerning their age, gender, education level, country of residence and native language.

Procedure

Upon opening the survey link, participants were presented an introduction saying that the purpose of the survey was to analyze how people process information regarding certain social contexts. Moreover, it explicitly stated that participation was anonymous, participants should be at least 18 years old and they could stop their participation at any time. After this, participants could only continue to the study if they clicked yes on the question of informed consent.

Once informed consent was given, participants were randomly assigned to one of the four conditions and were told they could not go back and change or read previous pages after they clicked the ‘next’ button. Participants read one of the four scenarios, depending on the condition the software randomly assigned them to. Participants were instructed to imagine themselves as the main character. After reading the scenario, participants were asked to complete the scales measuring their fundamental needs, mood and checking the success of the ostracism manipulation. Participants were instructed to complete these items as if they were the main character of the story. Subsequently, participants completed the competence and warmth scales focusing first on team in the scenario, and then on how they thought Portuguese people in general rate men and women (separately) on the same items.

Finally, participants were asked demographics questions, including their age, gender, education level, country of residence and mother language the two attention check questions. Following this participants were debriefed, thanked, and presented with e-mail contact for the researcher if they wished to contact him later.

Results

Because some research has reported differences in the ostracism effect across participants' gender (Hawes, 2012; Williams & Sommer, 1997), we included that variable in the statistical analyses. The variable is presented as "participants' sex". Additionally, another variable was created to compare participants who read the scenarios where the characters had the same gender as theirs (e.g. female participant reading a female version of the scenario; ingroup) and participants who read about people of a different sex (e.g. male participant reading a female version; outgroup). This new variable is presented as "matching sex." Throughout the result section, even though participants read a scenario about someone being ostracized or included, we may refer to them as "ostracized participants" or "included participants" to make the interpretation simpler. Moreover, we also may refer to the ratings that participants made about Men and Women (social groups) as just "participants rated Women", for example, for the same purpose.

Manipulation Checks. The two ostracism manipulation check items were submitted to a MANOVA by ostracism and character sex. The overall model was significant with ostracism condition having a main effect on the two manipulation check items, $F(1, 121) = 225,55, p < 0,001$. Examining the items individually, ostracism condition affected how much participants felt ignored, $F(1, 121) = 368,71, p < 0,001$; partial $\eta^2 = 0,75$ and excluded, $F(1, 121) = 429,40, p < 0,001$; partial $\eta^2 = .78$. Participants from included scenarios felt less ignored ($M=1,41, SE=0,11$) and excluded ($M=1,40, SE=0,10$) compared to the ostracized scenarios responses ($M=4,30, SE=0,10$, for ignored; $M=4,40, SE=0,10$, for excluded). Character sex condition showed no significant results ($F_s < 1,26$).

Self-reported levels of needs. All four needs composite scores (self-esteem, meaningful existence, need to belong, and control; see Table 1 for means and standard deviations) were submitted to a MANOVA by ostracism condition, characters' sex. A statistically significant main effect of ostracism was found on all 4 needs composite scores: need to belong, $F(1, 118) = 365,37, p < 0,001$; partial $\eta^2 = .76$; self-esteem: $F(1, 118) = 150,38, p < 0,001$; partial $\eta^2 = .56$; meaningful existence: $F(1, 118) = 223,51, p < 0,001$; partial $\eta^2 = .65$ and control: $F(1, 115) = 160,23, p < 0,001$; partial $\eta^2 = .58$. Participants who read the ostracized scenarios felt lower levels of belonging ($M=1,85, SE=0,08$), self-esteem ($M=2,24, SE=0,09$), meaningful existence ($M=2,16, SE=0,09$) and control ($M=1,82, SE=0,09$) compared with participants who read the included versions: belonging ($M=4,11, SE=0,09$); self-esteem ($M=3,79, SE=0,09$), meaningful existence ($M=4,15, SE=0,10$) and control ($M=3,52, SE=0,10$).

Ostracism condition also interacted significantly with participant's sex, $F(1, 115) = 4,40$, $p < 0,01$; partial $\eta^2 = .13$, on two fundamental needs: self-esteem, $F(1, 115) = 9,84$, $p < 0,05$; partial $\eta^2 = 0,08$ and meaningful existence $F(1, 118) = 10,37$, $p < 0,01$; partial $\eta^2 = 0,08$. Regarding self-esteem, female participants' responses were more extreme than males. Female participants who read the included scenarios ($M=3,94$, $SE=0,11$) scored higher than males ($M=3,64$, $SE=0,15$) and on ostracized scenarios males scored higher ($M=2,49$, $SE=0,13$) than females ($M=2,00$, $SE=0,12$). A similar effect happened in meaningful existence because female participants reported higher scores ($M=4,30$, $SE=0,12$) than males ($M=3,99$, $SE=0,15$) on included scenarios whereas males reported higher scores ($M=2,43$, $SE=0,13$) than females ($M=1,88$, $SE=0,13$) after reading the ostracized scenarios.

Table 1.1. Means and Standard Deviations for the Needs and Mood dependent measures in Study 1

	Included				Ostracized			
	Male Characters		Female Characters		Male Characters		Female Characters	
	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.
Belonging	4,23 (0,41)	4,13 (0,73)	3,62 (0,90)	4,42 (0,49)	1,85 (0,48)	1,77 (0,72)	1,90 (0,68)	1,87 (0,64)
Self-esteem	3,84 (0,82)	3,89 (0,83)	3,44 (0,69)	4,00 (0,53)	2,49 (0,51)	1,83 (0,75)	2,48 (0,60)	2,17 (0,77)
Meaningful Existence	4,12 (0,64)	4,20 (0,90)	3,86 (0,94)	4,40 (0,46)	2,54 (0,78)	1,88 (0,89)	2,32 (0,64)	1,89 (0,46)
Control	3,36 (0,55)	3,45 (0,77)	3,53 (1,20)	3,72 (0,65)	1,75 (0,41)	1,68 (0,72)	1,87 (0,72)	1,99 (0,69)
Mood	4,20 (0,51)	4,19 (0,96)	3,82 (0,71)	4,44 (0,52)	2,3 (0,61)	2,13 (0,60)	2,51 (0,54)	2,10 (0,35)

Standard deviations in parentheses.

Mood. The composite mood score was submitted to a three-way ANOVA by ostracism, character sex and participant sex. As expected, ostracism had a significant main effect on mood, $F(1,126) = 272,90$, $p < 0,001$; partial $\eta^2 = 0,70$. Participants' mood was more negative when they read the ostracized scenario ($M=2,27$, $SD=0,08$) than when they read the included one ($M=4,16$, $SD=0,08$).

Ostracism also interacted significantly with participants' sex, $F(1,126) = 7,23$, $p < 0,01$; partial $\eta^2 = 0,06$, again showing the same pattern found with self-esteem and meaningful

existence. After reading the ostracism scenario female participants scored lower ($M=2,12$, $SD=0,11$) than males ($M=2,43$, $SD=0,11$). Whereas, females who read the included scenarios reported having a more positive mood ($M=4,31$, $SD=0,10$) than males did ($M=4,01$, $SD=0,13$).

This was qualified by a marginally significant 3-way interaction effect by ostracism, character sex and participant sex, $F(1,126) = 3,37$, $p = 0,07$; partial $\eta^2 = 0,03$. Looking at the table, amongst participants who read the included scenarios, males felt a slightly more positive mood than females after reading the male scenarios, and females felt a more positive mood than males when they read about the female scenarios. Within ostracized scenarios, males reported a more positive mood than females regardless of the character sex of the scenario.

To examine this 3-way interaction in a different way, we ran two 2-way ANOVAs by ostracism condition and participants' sex: one analyzing responses from participants who read the male version scenario and the other responses from participants who read the female version. Regarding responses from those who read about the male version, only ostracism had a significant effect, $F(1,118) = 141,36$, $p < 0,001$. Ostracized participants reported a more negative mood ($M=2,24$, $SD=0,13$) than included ones ($M=4,20$, $SD=0,14$). Looking at the responses from participants who read the scenario with a female team, the same main effect by ostracism was found, $F(1,118) = 131,54$, $p < 0,001$. Again, ostracized participants reported a more negative mood ($M=2,31$, $SD=0,10$) than included participants did ($M=4,13$, $SD=0,10$). However, there was also a significant interaction between ostracism condition and participant sex, $F(1,118) = 10,65$, $p < 0,005$. It is here that we see the effect paralleling self-esteem and belonging: after reading the ostracized scenarios, female participants reported a worse mood ($M=2,10$, $SD=0,14$) than males ($M=2,51$, $SD=0,13$); whereas among participants who read the included versions, females reported a better mood ($M=4,44$, $SD=0,11$) than males did ($M=3,82$, $SD=0,16$).

A different way to examine the three way interaction is to consider the interaction of character sex and participant sex as an issue of whether they match or not (the ingroup/outgroup variable described earlier). Because of the 3-way interaction described above, we performed a different ANOVA examining the effect of ostracism condition and matching sex (ingroup vs outgroup) as independent variables on mood. There was again a main effect of ostracism, $F(1,125) = 288,82$, $p < 0,001$; partial $\eta^2 = 0,70$, such that ostracized participants reported a worse mood ($M=2,27$, $SD=0,08$) than included participants ($M=4,20$, $SD=0,08$). There was also a marginally significant interaction between ostracism and matching sex, $F(1,125) = 3,43$, $p =$

0,07; partial $\eta^2 = 0,03$. Whereas in the included scenarios ingroup participants reported a more positive mood ($M=4,36, SD=0,11$) than outgroup sex participants ($M=4,04, SD=0,12$), outgroup participants responses were very small regarding mood ($M=2,31, SD=0,10$) compared to ingroup participants ($M=2,22, SD=0,12$) in the ostracized condition.

Warmth and Competence of the Team in the Scenario. A mixed ANOVA was conducted in order to test participants' team ratings by ostracism condition, character sex condition, participant sex and dimension (warmth vs competence). There was a significant ostracism main effect, $F(1,118) = 150,18, p < 0,001$ partial $\eta^2 = 0,56$. Ostracized participants rated the team lower across the scale ($M=2,29, SE=0,08$) compared to included participants ($M=3,69, SE=0,08$). Character sex condition had a marginal main effect on team ratings, $F(1,118) = 2,99, p < 0,1$ partial $\eta^2 = 0,03$. Participants who read the male scenarios gave higher scores generally ($M=3,09, SE=0,08$) compared to participants who read the female versions ($M=2,89, SE=0,08$). The dimension showed a main effect, $F(1,118) = 15,91, p < 0,001$ partial $\eta^2 = 0,12$, because scores about competence ($M=3,16, SE=0,07$) were higher than warmth ($M=2,82, SE=0,07$). Moreover, there was a significant interaction between dimension and ostracism condition, $F(1,118) = 47,87, p < 0,001$ partial $\eta^2 = 0,29$. When included, participants rated the team as having more warmth ($M=3,81, SE=0,10$) than competence ($M=3,56, SE=0,11$). However, when ostracized participants gave lower warmth scores ($M=1,82, SE=0,10$) than competence scores ($M=2,75, SE=0,10$).

Table 1.2. Means and Standard Deviations for the Competence and Warmth dependent measures about the scenario team in Study 1.

	Included				Ostracized			
	Male Characters		Female Characters		Male Characters		Female Characters	
	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.
Competence	3,42 (0,73)	3,92 (0,73)	3,15 (0,72)	3,75 (0,79)	2,97 (0,82)	2,75 (0,85)	2,77 (0,93)	2,55 (0,62)
Warmth	3,87 (0,67)	4,04 (0,91)	3,36 (0,81)	3,96 (0,96)	1,97 (0,66)	1,72 (0,49)	1,98 (0,76)	1,62 (0,57)

Standard deviations in parentheses.

Competence of Men and Women in Portugal. A mixed ANOVA was run in order to test whether participants' ratings of competence were influenced by ostracism, character sex,

participant' sex and social group (Men vs Women in Portugal); within subject on the last variable. The main effect on ostracism was significant, $F(1,118) = 9,45, p = 0,03$; partial $\eta^2 = 0,07$. Ostracized participants gave lower competence scores ($M=3,07, SE=0,10$) than included participants did ($M=3,52, SE=0,11$). Another main effect was also found for social group, $F(1,118) = 6,10, p = 0,15$ partial $\eta^2 = 0,05$. As found in previous research, competence scores were higher for Men ($M=3,39, SE=0,08$) than Women ($M=3,10, SE=0,08$). An interaction was found between the character sex condition and participant sex, $F(1,118) = 5,03, p = 0,03$; partial $\eta^2 = 0,04$. Within participants who read the male scenarios, male participants gave lower scores ($M=2,99, SE=0,16$) compared to female participants ($M=3,48, SE=0,13$) while the opposite happened when the female scenario was read because female participants gave lower scores ($M=3,28, SE=0,13$) compared to males ($M=3,44, SE=0,15$). A significant 3-way interaction was found between social group (Men in Portugal vs Women in Portugal), character sex condition and participants' sex, $F(1,118) = 4,07, p = 0,046$; partial $\eta^2 = 0,03$. Female participants who read about male characters, rated Men ($M=3,66, SE =0,15$) and Women ($M=3,29, SE =0,14$) as more competent than male participants did (Men: $M=3,05, SE =0,18$; Women: $M=2,93, SE =0,18$). Additionally, when participants read about the female scenario, male participants rated Men higher ($M=3,58, SE 0,17$) than female participants did ($M=3,25, SE =0,15$); whereas ratings of Women did not differ by participant sex (female participants: $M=3,31, SE =0,15$; male participants: $M=3,30, SE =0,16$).

To better understand the significant 3-way interaction described above, we ran two 3-way mixed ANOVAs examining the effect of ostracism, social group and participant sex on competence ratings (within subjects on social group), looking at character sex separately.

Male characters. Ostracism condition showed a significant main effect amongst participants who read about male characters, $F(1,118) = 3,51, p < 0,05$. Ostracized participants rated gave lower competence ratings (across social group) ($M=3,02, SE=0,14$) than included participants did ($M=3,45, SE=0,16$). Moreover, there was a significant main effect of participants' sex when they read a male scenario, $F(1,118) = 5,42, p < 0,05$. Here, female participants gave higher competence scores ($M=3,48, SE=0,13$) than males did ($M=2,99, SD=0,62$). The social group had a significant main effect on competence ratings, $F(1,118) = 5,54, p = 0,01$. Again replicating past research, competence was higher when participants rated Men ($M=3,36, SE=0,12$) compared to when they rated Women ($M=3,11, SE=0,11$). The main effects were qualified by a marginal interaction between the social group, ostracism condition and participants' sex, $F(1,118) = 3,06, p < .10$. Rating Men, female participants gave higher

competence ratings when included ($M=3,94$, $SE=0,23$) and ostracized ($M=3,38$, $SE=0,20$) compared to males (included: $M=3,18$, $SE=0,27$; ostracized: ($M=2,92$, $SE=0,25$). Same effect happened when rating Women because females also scored higher when included ($M=3,42$, $SE=0,21$) and ostracized ($M=3,12$, $SE=0,19$) compared to males (included: $M=3,27$, $SE=0,25$; ostracized: ($M=2,59$, $SE=0,23$).

Female characters. Regarding participants who read about female scenarios, stracism had a significant effect on competence, $F(1,118) = 4,16$, $p < 0,05$. Ostracized participants rated lower ($M=3,14$, $SD=0,14$) compared to included participants ($M=3,59$, $SE=0,14$). There was also a marginal social group X participants' sex interaction, $F(1,118) = 2,80$, $p < 0,10$. Here, male participants rated Men higher ($M=3,58$, $SE=0,17$) than female participants did ($M=3,25$, $SE=0,15$) but, when rating Women, ratings did not differ (female participants: $M=3,31$, $SE=0,15$; male participants: $M=3,30$, $SE=0,17$).

Competence was also submitted to a mixed model ANOVA by ostracism, matching sex and social group because there was previously an interaction between characters sex condition and participant sex. There was a main effect of ostracism, $F(1,122) = 11,90$, $p < 0,001$; partial $\eta^2 = 0,09$. Ostracized participants scored lower ($M=3,08$, $SE=0,10$) compared to included participants ($M=3,57$, $SE=0,10$). Regarding matching sex, participants who read about ingroup members gave lower competence scores overall ($M=3,17$, $SE=0,10$) compared to participants who read about outgroup members ($M=3,46$, $SE=0,10$), $F(1,122) = 4,32$, $p = 0,04$, partial $\eta^2 = 0,03$. Finally the main effect of social group showed that Men were rated higher about competence ($M=3,41$, $SE=0,08$) than Women ($M=3,23$, $SE=0,07$, $F(1,122) = 6,66$, $p = 0,011$; partial $\eta^2 = 0,05$). The main effects of matching sex and social group were qualified by a significant interaction between them, $F(1,122) = 5,03$, $p = 0,023$, partial $\eta^2 = 0,04$. Ingroup participants rated Men ($M=3,19$, $SE=0,12$) and Women ($M=3,16$, $SE=0,11$) as more or less equally competent, whereas outgroup participants rated Men as more competent ($M=3,64$, $SE=0,11$) than Women ($M=3,29$, $SE=0,11$).

Table 1.3. Means and Standard Deviations for the Competence and Warmth Perceptions of Men and Women in Portuguese dependent measures, Study 1

Social Group	Included				Ostracized			
	Male Characters		Female Characters		Male Characters		Female Characters	
	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.
Men's Competence	3,18 (0,80)	3,94 (0,90)	3,58 (0,58)	3,55 (0,95)	2,92 (0,78)	3,38 (1,01)	3,59 (0,90)	2,95 (0,90)
Women's Competence	3,27 (0,88)	3,42 (0,91)	3,52 (0,78)	3,71 (0,75)	2,59 (0,68)	3,16 (0,82)	3,09 (1,00)	2,90 (0,99)
Men's Warmth	3,55 (0,58)	3,90 (0,80)	3,61 (0,68)	3,57 (0,60)	2,49 (0,63)	2,71 (1,11)	3,13 (1,09)	2,21 (0,82)
Women's Warmth	3,58 (0,76)	3,58 (0,63)	3,30 (1,18)	3,84 (0,89)	2,41 (0,82)	2,32 (0,98)	2,72 (0,95)	2,05 (1,03)

Standard deviations in parentheses.

Warmth of Men and Women in Portugal. A mixed model ANOVA was run in order to test whether participants' ratings of competence were influenced by ostracism, character sex, participant' sex and social group (Men vs Women in Portugal); within subject on the last variable. The overall model was significant and main effect on ostracism was found, $F(1,118) = 9,45, p = 0,03$; partial $\eta^2 = 0,07$. Ostracized participants scores lower ($M=3,07, SE=0,10$) compared to included ones ($M=3,52, SE=0,11$). Another main effect was also found and it was the scale, $F(1,118) = 6,10, p = 0,15$ partial $\eta^2 = 0,05$. Competence scores were higher about Men ($M=3,39, SE=0,08$) than to competence ($M=3,10, SE=0,08$). An interaction was found between the character sex condition and participant sex, $F(1,118) = 5,03, p = 0,03$; partial $\eta^2 = 0,04$. Within participants who read the male scenarios, male participants scored lower ($M=2,99, SE=0,16$) compared to female participants ($M=3,48, SE=0,13$) while the opposite happened when the female scenario was read because females scored lower this time ($M=3,28, SE=0,13$) compared to males ($M=3,44, SE=0,15$). A significant 3-way interaction was found between social group (Men in Portugal vs Women in Portugal), character sex condition and participants' sex, $F(1,118) = 4,07, p = 0,046$; partial $\eta^2 = 0,03$. Female participants who read about male characters, rated Men ($M=3,66, SE =0,15$) and Women ($M=3,29, SE =0,14$) as more competent than male participants did (Men: $M=3,05, SE =0,18$; Women: $M=2,93, SE =0,18$). Additionally, when participants read about the female scenario, male participants rated Men higher ($M=3,58, SE 0,17$) than female participants did ($M=3,25, SE =0,15$); whereas ratings of

Women did not differ by participant sex (female participants: $M=3,31$, $SE =0,15$; male participants: $M=3,30$, $SE =0,16$).

In order to better understand the significant 3-way interaction, two 3-way mixed ANOVAs examining the effect of ostracism, social group and participant sex on warmth ratings (within subjects on social group), splitting the dataset by character sex condition.

Male characters. There was a marginal main effect by social group variable on the ratings, $F(1,118) = 3,23$, $p < 0,01$, on participants who read about male scenarios. Here, warmth scores about Men were higher ($M=3,16$, $SE=0,11$) than Women ones ($M=2,97$, $SE=0,11$). A main effect was found on ostracism as well, $F(1,118) = 29,74$, $p < 0,001$, and ostracized participants rated lower ($M=2,48$, $SE=0,13$) compared to included ones ($M=3,65$, $SE=0,14$).

Female characters. There was a significant main interaction on ostracism condition was found, $F(1,118) = 27,69$, $p < 0,001$. Ostracized participants reported lower ($M=2,53$, $SE=0,15$) compared to included ones ($M=3,58$, $SE=0,15$). An interaction by social group and participants' sex was found, $F(1,118) = 4,03$, $p < 0,05$. When rating about Men, male participants rated higher scores ($M=3,37$, $SE=0,16$) compared to female participants ($M=2,89$, $SE=0,14$). There was almost no difference – although if anything the tendency is the same – when rating about Women since males scored ($M=3,01$, $SE=0,19$) and females ($M=2,94$, $SE=0,17$). Additionally, there was also a significant interaction between ostracism condition and participants' sex, $F(1,118) = 6,83$, $p < 0,05$. When included, female participants reported higher values across social group ($M=3,70$, $SE=0,17$) compared to males ($M=3,46$, $SE=0,25$). However, when ostracized, female participants scored lower ($M=2,13$, $SE=0,22$) compared to males ($M=2,93$, $SE=0,19$).

Because of the significant 3-way interaction including character sex and participant sex, we submitted warmth to a mixed ANOVA by ostracism, matching sex, and social group. The main effect of ostracism condition was significant, $F(1,122) = 65,58$, $p < 0,001$; partial $\eta^2 = 0,35$. Ostracized participants reported less levels of warm ($M=2,50$, $SD=0,10$) compared to the included participants ($M=3,64$, $SD=0,10$). Social group main effect was also significant, $F(1,122) = 5,08$, $p = 0,026$; partial $\eta^2 = 0,04$. Warmth scores about Men were higher ($M=3,15$, $SE=0,08$) than the ones about Women ($M=3,00$, $SD=0,18$). The interaction between social group and matching sex was significant, $F(1,122) = 7,65$, $p < 0,007$; partial $\eta^2 = 0,06$. Ingroup

participants rated Men ($M=2,95$, $SE=0,11$) and Women ($M=2,99$, $SE=0,12$) as more or less equally warm, whereas outgroup participants rated Men as warmer ($M=3,35$, $SE=0,11$) than Women ($M=2,99$, $SE=0,12$).

Discussion

Findings in study one show, as hypothesized, that imagining someone being ostracized is enough to provoke negative psychological consequences (worse levels of belonging; self-esteem; meaningful existence; control and mood) compared to imagining that same someone being included in the same scenario. However, that effect was not influenced by manipulating the ostracism's source to be a social group rated high on competence and low on warmth – Men – versus one rated low on competence and high on warmth – Women, as we thought it might have been. Characters' sex condition did not affect the fundamental needs, rather we found that ostracism has an extremely strong effect regardless of its source (Williams, 2007).

Participants who read and imagined themselves in a scenario about someone being ostracized, rated the team that ostracized the target lower in terms of both competence and warmth compared to those who read a scenario about someone who was included by the team, although the effect was stronger on the warmth dimension. The reason for this may be explained by (1) the strong impact ostracism has on how people perceive their ostracizers, for instance, considering them less human (Bastian and Haslam, 2010). The importance of warmth could stem from the primacy of warmth over competence (Fiske et al., 2008). However, it could also be that ostracism is an act of coldness toward a person, not so closely related to competence.

Interestingly, participants' sex interacted with several other variables, as did whether the participant's sex matched the sex of the characters described in the scenario (matching sex). First, ostracized female participants were more extreme on self-esteem; meaningful existence and mood responses compared to males. In spite of the vast research about ostracism, we find no similar findings in the literature. However, it may explain why Williams and Sommer (1997) reports that female participants were more prosocial after being ostracized. Moreover, Lustenberger and Jagacinski (2010) also found an ostracism X participants' sex interaction in one of their studies such that females performed poorly in a word search task compared to males. However, they did not measure fundamental needs. Second, participants' sex interacted with characters' sex on each of the social dimensions (competence and warmth). There was a tendency for participants to rate Men higher on both dimensions when they were the opposite sex (outgroup) from the characters (main character and team) than when they were the same sex as the characters; whereas there were no differences in ratings of Women depending on

participant sex and character sex (matching sex variable did not influence ratings of Women on either warmth or competence). Third, ingroup participants' reports of their mood were more extreme (higher when included and lower when ostracized) compared to outgroup participants (although this time the difference was lower). This suggests that mood was more affected when one was being ostracized by an ingroup member. Fourth, while ingroup participants perceived Men and Women social groups as equally warm and competent, outgroup members always rated Men as warmer and more competent than Women.

Because we had several effects with participant sex and matching sex variables that surprised us, we suggest a second study with a stronger manipulation of ostracism to see if such findings are replicated. The same principle applies to the manipulation of the source of ostracism as we did here (Men – high on competence and low on warmth - vs Women – low on competence and high on warmth).

CHAPTER III - Study 2

The purpose of Study 2 was to test the same questions addressed in Study 1 – regarding whether character sex can influence responses to ostracism, and furthermore to examine whether participant sex, and the interaction of character sex and participant sex influence these responses when the study is performed in the laboratory with a widely used paradigm in which the participant is actually ostracized: Cyberball. In addition, Study 2 measured memory (Who Said What task) for male and female character (speakers) after the ostracism (or inclusion) experience in order to examine a more subtle possible effect of specific characteristics of the ostracizer.

Cyberball, as said before, differs from the scenarios used in Study 1 not only in terms of the participant being ostracized himself/herself but also that the experience of being ostracized does not have any specific contextual information, as opposed to the scenario. Moreover, in Cyberball, participants are not imagining something that happened in the past to someone (as in Study 1) but will actually experience for a few minutes being left out from an activity without any explanation.

Even though ostracism have been provoking decreases in cognitive functions and performance there is also research reporting that sometimes it enhances sensitivity for social information (Jamieson, Harkings & Williams; 2010) including memorizing better social information when belonging need is threatened (Gardner, Picket & Brewer; 2000). As such, we developed this task to see if there is any relation between the sex of the ostracizers and the sensitivity towards that sex group (male vs female) compared to the opposite sex group in the number of the errors made, and that because WSW allows categorization for both.

We expect to replicate the usual results from ostracism studies cited below and Study 1, which are the following:

H1: Participants who are assigned to one of the ostracized conditions will have more negative scores on fundamental needs compared with the included conditions.

H2: Participants who are assigned to one of the ostracized conditions will also have lower levels of mood compared with included conditions.

Our hypothesis regarding women and men conditions are the same as Study 1:

H3: Participants in women conditions will have more negative scores on fundamental needs compared with men conditions.

H4: Participants in women conditions will have more negative scores on mood compared with men conditions.

We hope to replicate the follow usual finding in the WSW memory task:

H6: Participants will make more within sex errors (mistaking the sentence said by a male for other male, for example) than between sex errors (mistaken a sentence said by male for a female, for example).

We also add our novel hypothesis:

H7: Participants in the ostracized conditions will make fewer errors in the memory task compared to those in the included conditions.

H6a: If the previous hypothesis is corroborated, ostracized participants will make fewer errors about the characters (speakers) in WSW who share the same sex as the ostracizer (an participant ostracized by female characters in Cyberball will make fewer errors about female characters in WSW than male characters).

Design

This study involved a 2 (Ostracism condition: ostracized or included) x 2 (character sex: male or female) between subjects experimental design. The conditions were whether the participants were included or ostracized in a virtual game by either male or female characters.

Participants

Ninety-four participants either volunteered to receive course credit (N=43) or be entered into a lottery to receive 5 vouchers worth 5€ each, totally 25€ (N=43). From the 94 initial participants responses 6 of them were excluded: five because of technical problems and two for guessing the purpose of the study during the debriefing. An additional participant was removed because Portuguese was not his/her native language. Statistical analyses were performed using a final sample of 86 participants (61 females; 25 males) whose ages ranged from 18 to 52 ($M=23,63$; $SD=6,74$). Forty-nine participants were undergraduates, 25 already had a university degree, 11 had a high school degree only and one had a middle school education only. The number of participants per condition was the following: 21 were included by male characters; 22 included by female characters; 22 ostracized by male characters and 21 ostracized by female characters.

Instruments and Materials

Cyberball. We used the Cyberball virtual ball toss game (version 40,0, Williams et al., 2012), adapted to Qualtrics. The game allows participants to ostensibly play a ball toss game virtually with other players on a computer. The other players are, however, generated by the game itself. The game shows three simple line drawings of ball-tossers on a white background. One that is in the middle and lower on the screen represents the participant. The other two appear on each side of the screen half way up with their names below the drawings. One player starts with the ball and an animation of the line drawing shows the figure moving when throwing the ball. Participants can only participate when the ball is thrown to them. In order to toss the ball after receiving it, participants click on the drawing of the player they wish to throw the ball to. Each participant played one game that consisted of thirty throws in total. Ostracism was manipulated by the number of times the ball was thrown to the actual participant by either of the other two players. The ball was thrown to all participants two times at the beginning of the game. Participants in the ostracism condition did not have the ball thrown to them again for the rest of the game. Participants in the inclusion condition received one third of the total throws (10 out of 30). This ostracism manipulation has been used successfully a large number of times (Hartgerink et al., 2015). The gender of the ostensible other players was manipulated (fully crossed with the ostracism manipulation) by the names given to them, either male – *Nuno* and *Rui* - or female – *Ana* and *Sara* – (very typical Portuguese names).

Self-reported levels of needs. The items, instructions and procedures concerning the four fundamental needs - belonging; self-esteem; meaningful existence and control - were the same as those used in Study one, except that the instructions asked participants how they felt during the game. As in Study one, each fundamental need item showed high internal consistency (belonging, $\alpha = .87$; self-esteem, $\alpha = .86$; meaningful existence, $\alpha = .92$ and control, $\alpha = .82$) and composite scores were created for each of them.

Mood. Mood items used were the same as those in Study one and the instructions and procedures were the same as in self-reported level of needs in this Study (Study 2). A composite score was created because all the items had high internal consistency ($\alpha = .93$).

Who Said What. Who Said What task used here was adapted from Taylor et al. (1978). This task consisted on two different stages. First, participants were asked to pay attention and memorize sentences associated with a character (picture of a face and a name). Each trial consisted of one of six different face/name pairs displayed on the screen with a sentence they ostensibly said, for four seconds. There were 24 sentences created by the research team about

a neutral theme (all sentences were related to meals and eating at the university). The picture/name pairs were created randomly for each experimental session. For example, if picture A was associated with the name C, they would be appear together every time (it would never appear picture A with B, for example). There were three male pictures and three female pictures and three common Portuguese names for each (Vasco; Rui and Hugo as male names and Rita; Maria and Carla as female ones). Each character said four different sentences. The appearance of the characters was randomized. In the second part of the task, participants were shown one sentence and asked to choose which of the six characters said it. The order of the 6 characters was randomized for each sentence and the order of the sentences was also randomized. For this task, a variable was created to measure how many within character sex or between character sex errors participants made (attributing a sentence to an incorrect character from the same sex versus the same thing but from the opposite sex) and another to measure male/male and female/female errors.

Warmth and Competence. The warmth and competence items and instructions were similar to those used in Study 1 for the groups (males and females). Items about the characters they played with were presented but an error in the introduction made it unclear for some participants whether it was about task one (Cyberball) characters or from the task two (Who Said What) characters. As such, analyses from this was dropped. Competence items showed good internal consistency about Men ($\alpha = .82$) and Women ($\alpha = .81$). Warmth items exhibited a reasonable internal consistency about Men ($\alpha = .67$) and good internal consistency about Women ($\alpha = .72$).

Manipulation Checks. The manipulation check items used for the ostracism manipulation were the same as those used in Study one. In addition, participants were asked the percentage of throws they believed they received, between one and one hundred a common manipulation check item used with Cyberball (e.g Zadro et al.; 2004).

Procedure

Participants were run in individual sessions in the laboratory. Upon arrival, each participant was seated in front of a computer and given an informed consent form to read and sign before starting the experiment itself. All sessions were conducted with the same computer monitor and in the same room. Participants were told that the study included two different tasks, both related to visualization. As with Study 1, the study was created with Qualtrics (cite). For the first task, participants were told they would participate in an online animated game – Cyberball - and they were asked to mentally visualize and imagine the game as if it were

happening physically. The game proceeded for participants depending on the condition they were randomly assigned to, as described above. When the Cyberball game finished, participants were asked to answer the needs, mood and manipulation check items sequentially to complete Task 1.

Once this happened, the participant was automatically forwarded from the first survey to a second. The first page of the second survey described the second task – a “Who Said What” task. Participants read that they would be shown several instances sequentially, of a picture of a person’s face with a name and a sentence the person said. After four seconds, this screen would automatically change to a different picture/name/sentence. Participants were asked to pay as much attention as possible to the pictures. After seeing all the trials, participants were asked to recall which face/name combination was associated with which statement. The face/name combinations were presented in a randomized order for every recall trial.

Participants then completed three competence and warmth subscales focusing first on the other Cyberball players, and then how they believe the Portuguese population in general views men and women on the same items. This was followed by the demographic questions.

Finally the experimenter asked participants questions about the experiment itself with three goals: (1) to learn of any technical problems with the experiment, (2) to probe for suspicion about the veracity of the Cyberball game and any connection between the tasks, and (3) to assess the participant’s psychological state after the exclusion manipulation, and set up the opportunity to fully debrief participants about that part of the experiment. The experimenter then fully debriefed each participant, guaranteeing they understood the conditions manipulation and its randomization. Later he gave more information about the main topics of the experiment and answered any questions the participants may have had. Participants were then thanked and, if they did not receive course credit for their participation, offered the opportunity to give their name and email address so as to be entered in a drawing for a 25€ prize.

Results

The following analyses and interpretations are by nature the same as in Study 1. However, they are adapted regarding Cyberball instead. Moreover, because we had several interactions with participants sex in Study 1 we will do the same here despite having a rather low number of male participants ($n=25$).

Manipulation Checks. All manipulations checks were submitted to a MANOVA by ostracism and character sex. There was a significant overall main effect of ostracism condition, $F(3, 80) = 41,52, p < 0,001$, partial $\eta^2 = 0,61$. Ostracism individually influenced feeling ignored,

$F(1, 82) = 76,79, p < 0,001$, partial $\eta^2 = .48$; feeling excluded, $F(1, 82) = 79,245, p < 0,001$; partial $\eta^2 = .49$ and the percentage of throws received, $F(1, 82) = 87,73, p < 0,001$; partial $\eta^2 = .52$. Ostracized participants reported being more ignored ($M=1,91, SE=0,17$) than included participants ($M=4,04, SE=0,17$) and more excluded ($M=1,72, SE=0,18$) than included participants ($M=3,95, SE=0,18$). They also reported receiving a smaller percentage of ball throws ($M=9,67, SE=1,34$) compared to included ones ($M=27,36, SE=1,34$). There were no significant effects involving character sex ($F_s < 1,32; p_s > .25$).

Self-reported level of needs. All four fundamental needs were submitted to a MANOVA as dependent variables by ostracism condition, character sex condition and participants' sex. Ostracism had a significant overall main effect, $F(4, 75) = 26,05, p < 0,001$; partial $\eta^2 = 0,58$. Ostracism condition had a significant main effect on every need individually: belonging, $F(1, 78) = 77,05, p < 0,001$; $\eta^2 = 0,50$; self-esteem, $F(1, 78) = 39,30, p < 0,001$; $\eta^2 = 0,34$; meaningful existence, $F(1, 78) = 69,46, p < 0,001$; $\eta^2 = 0,47$; and control, $F(1, 78) = 75,52, p < 0,001$; $\eta^2 = 0,49$. Participants who were ostracized felt lower levels of belonging ($M=2,32, SE=0,14$), self-esteem ($M=2,71, SE=0,12$), meaningful existence ($M=2,21, SE=0,14$) and control ($M=1,78, SE=0,10$) compared with participants who were included: belonging ($M=4,00, SE=0,13$); self-esteem ($M=3,73, SE=0,11$); meaningful existence ($M=3,88, SE=0,14$) and control ($M=3,04, SE=0,10$).

Participants sex also had a significant main effect on the needs, $F(4, 75) = 3,04, p = 0,022$; partial $\eta^2 = 0,14$. It separately affected self-esteem, $F(1, 78) = 4,12, p = 0,046$; $\eta^2 = 0,05$ and control, $F(1, 78) = 8,32, p = 0,005$; $\eta^2 = 0,10$. Male participants reported more self-esteem ($M=3,39, SE=0,14$) than females ($M=3,06, SE=0,9$) and higher levels of control as well ($M=2,62, SE=0,12$) compared to females ($M=2,20, SE=0,08$).

The main effects of participants' sex on self-esteem and control were qualified by a significant interaction between character sex and participants' sex, $F(4, 75) = 3,98, p = 0,006$; partial $\eta^2 = .18$. Here, individually three needs were significantly affected: belonging, $F(1, 78) = 4,60, p = 0,035$; $\eta^2 = 0,06$; self-esteem, $F(1, 76) = 8,93, p = ,004$; $\eta^2 = 0,10$; and control, $F(1, 78) = 11,25, p = ,001$; $\eta^2 = 0,13$. Meaningful existence results were marginally significant, $F(1, 78) = 3,52, p = 0,064$; $\eta^2 = 0,04$. For belonging, among participants who played with male characters, males participants reported higher scores ($M=3,57, SE=0,23$) than females ($M=2,84, SE=0,15$); whereas among participants who played with females, female participants scores were similar on belonging ($M=3,17, SE=0,15$) to males ($M=3,07, SE=0,23$). For self-esteem amongst

participants who played with males, male participants scored higher ($M=3,73$, $SE=0,20$) than females did ($M=2,92$, $SE=0,12$) while amongst participants who played with female players, males reported (slightly) lower scores ($M=3,04$, $SE=0,19$) than females did ($M=3,19$, $SE=0,12$). Results from the control variable showed that males gave higher ratings ($M=2,87$, $SE=0,18$) than females did ($M=1,96$, $SE=0,11$) among those who played with male players, while females scored about the same ($M=2,44$, $SE=0,11$) as male participants ($M=2,37$, $SE=0,17$) amongst those who played with a female player. For the meaningful existence variable, male participants scored higher ($M=3,33$, $SE=0,24$) than females ($M=2,75$, $SE=0,15$) amongst participants who played with males. If participants played with females, male participants' scores were about the same ($M=2,97$, $SE=0,23$) as female participants ($M=3,13$, $SE=0,15$).

Ostracism condition interacted marginally with participants' sex on the needs, $F(4, 75) = 2,02$, $p = .10$; partial $\eta^2 = 0,10$. Testing each variable individually the results were significant for two needs: self-esteem, $F(1, 78) = 4,82$, $p = 0,03$; $\eta^2 = 0,06$ and control, $F(1, 78) = 6,47$, $p = 0,01$; $\eta^2 = 0,08$. A marginal effect was found on meaningful existence variable, $F(1, 78) = 3,31$, $p = 0,07$; $\eta^2 = 0,04$. Male responses were always higher when included on every need: self-esteem ($M=4,07$, $SE=0,19$); control ($M=3,44$, $SE=0,17$) and meaningful existence ($M=4,17$, $SE=0,23$) compared to females: self-esteem ($M=3,39$, $SE=0,12$); control ($M=2,65$, $SE=0,11$) and meaningful existence ($M=3,59$, $SE=0,15$). When ostracized there were no differences between males (self-esteem: $M=2,70$, $SE=0,20$; control: $M=1,80$, $SE=0,18$; and meaningful existence: $M=2,13$, $SE=0,24$) and females (self-esteem: ($M=2,73$, $SE=0,12$); control ($M=1,75$, $SE=0,11$); and meaningful existence ($M=2,29$, $SE=0,15$).

Because of the character sex X participants' sex interaction, we submitted the needs to a MANOVA by ostracism condition and matching sex variable. Ostracism showed to be a main effect, $F(4, 75) = 26,05$, $p < 0,001$; partial $\eta^2 = 0,58$. Testing each variable individually the results were significant for the four fundamental needs: belonging, $F(1, 78) = 77,05$, $p < 0,001$; $\eta^2 = 0,50$; self-esteem, $F(1, 78) = 39,30$, $p < 0,001$; $\eta^2 = 0,34$; meaningful existence, $F(1, 78) = 69,46$, $p < 0,001$; $\eta^2 = 0,47$ and control, $F(1, 78) = 75,52$, $p < 0,001$; $\eta^2 = 0,49$. Participants who were ostracized felt lower levels of belonging ($M=2,32$, $SE=0,14$), self-esteem ($M=2,71$, $SE=0,12$), meaningful existence ($M=2,21$, $SE=0,14$) and control ($M=1,78$, $SE=0,10$) compared with participants who were included: belonging ($M=4,00$, $SE=0,13$); self-esteem ($M=3,73$, $SE=0,11$); meaningful existence ($M=3,88$, $SE=0,14$) and control ($M=3,04$, $SE=0,10$). Here, matching sex showed an overall main effect as well, $F(4, 79) = 3,22$, $p = 0,013$; partial $\eta^2 = 0,14$. The four fundamental needs were influenced significantly: belonging $F(1, 82) = 4,50$, p

< 0,04; $\eta^2 = 0,05$; self-esteem, $F(1, 82) = 6,41, p = 0,013$; $\eta^2 = 0,07$; meaningful existence, $F(1, 82) = 4,15, p = 0,045$; $\eta^2 = 0,05$; and control, $F(1, 82) = 11,38, p = 0,001$; $\eta^2 = 0,12$. Ingroup participants felt higher levels of belonging ($M=3,28, SE=0,13$) than outgroup participants ($M=2,91, SE=0,12$); higher self-esteem ($M=3,35, SE=0,11$) than outgroup participants ($M=2,96, SE=0,11$); higher levels of meaningful existence ($M=3,20, SE=0,13$) than outgroup participants ($M=2,81, SE=0,13$) and more control ($M=2,56, SD=0,10$) than outgroup participants ($M=2,09, SE=0,10$).

Table 2.1 Means and Standard Deviations for the Needs and Mood dependent measures in Study 2

	Included				Ostracized			
	Male Characters		Female Characters		Male Characters		Female Characters	
	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.
Belonging	4,63 (0,51)	3,59 (0,80)	3,94 (0,83)	3,85 (0,77)	2,50 (0,77)	2,08 (0,72)	2,20 (0,91)	2,48 (1,06)
Self-esteem	4,60 (0,38)	3,24 (0,60)	3,54 (0,47)	3,53 (0,52)	2,87 (0,47)	2,60 (0,85)	2,53 (0,59)	2,85 (0,91)
Meaningful Existence	4,53 (0,64)	3,56 (0,79)	3,80 (0,78)	3,63 (0,76)	2,13 (1,15)	1,94 (0,82)	2,13 (0,83)	2,64 (0,96)
Control	3,73 (0,74)	2,43 (0,79)	3,14 (0,19)	2,87 (0,49)	2,00 (0,74)	1,49 (0,43)	1,60 (0,57)	2,01 (0,72)
Mood	4,21 (0,51)	4,19 (0,96)	3,82 (0,71)	4,44 (0,52)	2,35 (0,61)	2,13 (0,60)	2,51 (0,54)	2,10 (0,35)

Standard deviations in parentheses.

Mood. The composite mood variable was submitted to an ANOVA by ostracism condition, characters' sex condition, and participants' sex. A significant main effect was found of ostracism condition, $F(1, 78) = 42,26, p < 0,001$; partial $\eta^2 = .35$. Included participants reported a more positive mood ($M=3,97, SE=0,13$) than ostracized ones ($M=2,78, SE=0,13$). A marginally significant interaction between participants' sex and characters' sex condition was also found, $F(1, 78) = 3,32, p = 0,072$; partial $\eta^2 = 0,04$. After playing with male characters, male participants reported a more positive mood ($M=3,69, SE=0,22$) than females did ($M=3,23, SE=0,14$); whereas, female participants reported more positive mood ($M=3,39, SE=0,14$) than males ($M=3,18, SE=0,21$) after playing with female players.

Competence and Warmth about the Team. Results from this were not analyzed after noticing a mistake in the instructions.

Competence About Men and Women Groups. A mixed model ANOVA was run in order to test whether participants' ratings of competence were influenced by ostracism, character sex, participant' sex and social group (Men vs Women in Portugal). Only a main Ostracism interaction was found, $F(4, 75) = 5,85, p = 0,018$; partial $\eta^2 = 0,07$. Ostracized participants rated lower overall on competence ($M=3,31, SE=0,12$) compared to included participants ($M=3,71, SE=0,12$).

Table 2.2 Means and Standard Deviations for the Competence and Warmth Perceptions of Men and Women in Portuguese dependent measures, Study 2

	Included				Ostracized			
	Male Characters		Female Characters		Male Characters		Female Characters	
	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.	Male P.	Female P.
Men's Competence	3,72 (0,57)	3,80 (0,55)	3,62 (0,52)	3,80 (0,73)	3,39 (0,57)	3,32 (0,98)	3,28 (0,83)	3,47 (0,72)
Women's Competence	3,94 (0,40)	3,56 (0,75)	3,62 (0,56)	3,62 (0,65)	3,33 (0,56)	3,31 (0,91)	3,11 (0,86)	3,27 (0,96)
Men's Warmth	3,72 (0,44)	3,27 (0,42)	3,33 (0,47)	3,49 (0,47)	3,06 (0,74)	2,98 (0,65)	3,06 (0,85)	3,13 (0,69)
Women's Warmth	3,89 (0,40)	3,76 (0,61)	3,67 (0,47)	3,69 (0,62)	3,89 (0,50)	3,25 (0,89)	3,61 (0,61)	3,24 (1,03)

Standard deviations in parentheses

Warmth About Men and Women Groups. Warmth was submitted to a mixed ANOVA by ostracism condition, character sex, participant sex and social group (Men vs Women). The overall model was significant and main effect on ostracism was found, $F(1,118) = 5,68, p = 0,02$; partial $\eta^2 = 0,07$. Ostracized participants scores lower ($M=3,23, SE=0,10$) compared to included ones ($M=3,60, SE=0,95$). Another main effect was also found and it was the scale, $F(1,118) = 20,01, p < 0,001$; partial $\eta^2 = 0,20$. Warmth scores were higher about Women ($M=3,62, SE=0,09$) compared to Men's ($M=3,25, SE=0,07$). These main effects were qualified by a marginally significant interaction between ostracism condition, participant's sex and social group, $F(1, 78) = 3,27, p = 0,075$; partial $\eta^2 = 0,04$. When included, male participants rated Men as being warmer ($M=3,53, SE=0,16$) that female participants rated them ($M=3,38, SE=0,11$) and male participants rated Women about the same ($M=3,78, SE=0,21$) as females

($M=3,72$, $SD=0,14$). In the ostracized condition, the mean warmth ratings given by male participants ($M=3,06$, $SE=0,17$) and female participants ($M=3,06$, $SE=0,11$) regarding Men did not differ; however, male participants rated Women higher on warmth ($M=3,75$, $SE=0,21$) than female participants did ($M=3,25$, $SE=0,13$).

Because there was a (marginally) significant 3-way interaction, we conducted two 3-way mixed ANOVAs examining the effect of ostracism, participant sex, and social group on warmth ratings, splitting the cases by characters' sex.

Male characters. Looking at responses from participants who played with male characters, ostracism displayed a significant main effect, $F(1,78) = 6,31$ $p < 0,05$. Ostracized participants rated both social groups as less warm ($M=3,29$, $SE=0,13$) than included participants did ($M=3,66$, $SE=0,13$). Participants sex showed a main effect, but this time marginal, $F(1,78) = 2,81$ $p < 0,01$. Male participants gave higher warmth ratings overall ($M=3,64$, $SE=0,15$) than female participants did ($M=3,31$, $SE=0,10$). A marginal interaction between the social group, ostracism condition and participants' sex was found, $F(1,78) = 3,50$ $p < .10$. When included, male participants rate Men higher on warmth ($M=3,72$, $SE=0,23$) than female participants did ($M=3,27$, $SE=0,15$) while the scores about Women differed little (males: $M=3,89$, $SE=0,29$; females: $M=3,76$, $SE=0,18$). When ostracized, male and female participants' rating of Men did not differ (males: $M=3,06$, $SE=0,24$; females: $M=2,98$, $SE=0,14$); while when rating Women, male participants gave higher warmth ratings ($M=3,89$, $SE=0,29$) than female participants did ($M=3,25$, $SE=0,18$).

Male characters. When looking at responses from participants who played with female characters, there was only a significant main effect of social group, $F(1,78) = 13,85$ $p < 0,05$. Male participants gave again higher warmth ratings overall ($M=3,26$, $SE=0,10$) than female participants did ($M=3,70$, $SE=0,12$).

Who said what. Speaker/statement error rate was submitted to a mixed ANOVA by ostracism condition, characters' sex, participant sex and error type (intergroup vs intragroup), within subject on the last factor. The overall model was significant and a significant main interaction of error type was found (Intergroup error versus intragroup error), $F(1,78) = 140,55$, $p < 0,001$; partial $\eta^2 = .64$. Participants made more intragroup errors ($M=7,95$, $SE=0,37$) than intergroup errors ($M=2,76$, $SE=0,19$).

Another mixed ANOVA was created examining how the intragroup error rate was influenced by ostracism condition, characters' sex, participant sex and sex of speaker (male or female). The overall model was significant and there was a significant main effect of speaker sex, $F(1,78) = 13,43, p < 0,001$; partial $\eta^2 = .15$. Participants committed more male/male errors ($M=4,53, SE=0,26$) than female/female errors ($M=3,42, SE=0,22$).

Discussion

The findings of Study 2 (except for the Who Said What data) replicated the main hypothesis tested in Study 1. First, as hypothesized, the data shows that being ostracized resulted in lower levels of the four fundamental needs and mood. Second, the source of ostracism, once again, did not influence such outcome.

There was, however, other effects on the needs and mood but always related to participants' sex or matching sex variables. In general, the significant differences happened in the included scenario showing that ostracism nullified them. There was also a tendency of ingroup participants to report higher levels of each need compared with outgroup members, maybe portraying a natural ingroup favoritism (Turner, Brown & Tajfel, 1979). It is likewise important to refer that the rather low numbers of male participants - 25 - may contribute for such findings as a type I error. Participants' sex being a main interaction on the fundamental needs is a good example of that.

Only the warmth dimension (compared to competence) showed some effect, even though it was only marginal. As it is the only dimension with any significant differences, it may be due to the primacy of warmth and having more sensitivity (Fiske et. al, 2008) even though participants were rating Men and Women as social groups and not their ostracizers. There were only differences amongst participants who played with male characters. Once again, participants in the ostracized conditions differed from those included but not in a clear pattern. This also may be due to the number of participants' sex.

WSW data showed only the usual findings that participants made more errors attributing a sentence to the wrong character but with the same sex as the correct one. In spite of this, our hypothesis were not corroborated meaning that the performance of participants wasn't influenced by either ostracism or character sex condition.

CHAPTER V – General Discussion

The findings of both studies show, as expected, that ostracism is powerful and causes negative psychological consequences in individuals who experience it. Moreover, results suggest that the negative consequences of ostracism were only minimally influenced by manipulating the ostracism source, which, in both studies, was either a social group rated high on competence and low on warmth – Men – or low on competence and high on warmth – Women. This is consistent with the literature which finds strong effects of ostracism regardless of manipulations (Hartgerink, 2015; Williams, 2007). In fact, whether it was female or male characters in the scenarios or playing Cyberball did not individually influence of the dependent variables tested. Overall, we replicated most standard findings, but our hypothesis about the new variables were not corroborated which is in line with previous research showing that ostracism effect is hard to alter. Additionally, we did seem to find more effects that go beyond the ostracism effect but the patten was unclear.

Negative psychological consequences are evident if we compare our participants' scores on the fundamental needs items across conditions. Consistent with previous research, participants who read the ostracized scenarios (Study one) or were ostracized during the Cyberball game (Study two) reported lower levels of belonging, self-esteem, meaningful existence, control and mood (Bastian & Haslam, 2010; Boyes & French, 2009; Gonsalkorale & Williams, 2007; Goodwin et al., 2010; Lau et al., 2009; Oaten et al., 2008;; van Beest & Williams, 2006; Williams et al., 2000; Williams et al., 2002; Zadro et al., 2006; Zadro et al., 2004). These findings are consistent with the first two sequential points of Williams' (2001; Williams & Zardo, 2005) temporal response model of ostracism: that in the immediate moment of ostracism, there is a short term reflexive painful response that threatens people's feelings of belonging, self-esteem, control, and having a meaningful existence, as well as decreases positive mood.

We hypothesized that character sex would influence the feelings on fundamental needs and did not find this. However, character sex condition did affect the fundamental needs (Study 2) and mood (Study 1 and 2), but only when interacting with participants' sex. These interactions happened frequently and were not originally anticipated. Moreover, the two interacted alone only in Study 2 for both needs and mood. These character sex X participant sex interactions in Study 2 occurred in ANOVAs related to the fundamental needs and mood (only marginal), suggesting higher ratings when participants played Cyberball with other players of the same sex compared with players of the opposite sex. This appears to be a case of

ingroup favoritism such that participants probably felt more connection to elements of a group they belong to by nature (their own sex) and tend to view their group more positively therefore showing more sensitivity towards their ingroup (Turner, Brown & Tajfel, 1979). Actually, “ingroup” participants – those who read about or played with members of their own group (males with males; females with females – which we refer to as the matching sex variable) - reported higher levels of every need in Study 2, regardless of whether they were in the ostracized or included condition. In contrast, ostracism appears to provoke the opposite regarding mood in Study 1. The interaction is marginal and the difference is small, but ostracized outgroup participants reported slightly better mood than ingroup ostracized ones in. This effect may be an example of the ingroup favoritism as well (Turner, Brown & Tajfel, 1979)

Sex of participant interacted with ostracism condition on fundamental needs (Study 1 and Study 2) and mood (only on Study 1). This is contrary to Hartgerink et al.’s (2015) meta-analysis on studies using Cyberball, which found that gender did not moderate effects of ostracism. Some authors have suggested differences between genders, but always related to behavioral reactions after ostracism (Williams & Sommer; 1997) or cognitive performance (Hawes et al.; 2012), rather than the negative effects of ostracism. Surprisingly, in our studies, participant sex frequently did moderate the effect of ostracism, especially in the Study One. In Study One, females were more extreme in their reports (higher positive self-esteem, meaningful existence, belonging and mood when reading about an included person and lower when reading about an ostracized one, compared to males).

However, one has to keep in mind that Cyberball wasn’t used in Study 1 and that the results changed in Study 2, where the differences happened only when participants were included on self-esteem, control and meaningful existence (marginal). It seems that when playing Cyberball, the ostracism experienced affected male and females equally. Therefore, results in Study 1 may be explained by methodological differences such as (1) imagining being someone ostracized while reading a scenario may not be as strong as the Cyberball experience, that (2) females somehow imagine the situation more intensely or that (3) reading the scenario in Study 1 evoked empathic feelings of ostracism rather than self-directed feelings of ostracism (Batson, Early & Salvarani; 1997) . In study 2, males actually had higher scores on the needs in the included scenario. Here, the sample may have played a role. Both studies had fewer male than female participants (41% in Study 1 and 28% in Study 2) but the discrepancy was larger in Study 2, and the absolute number of males in Study 2 was low, which increases the likelihood of Type 1 errors on analyses including participant sex. In the case of these studies, the

interesting thing about the participant sex differences is that they existed in the included scenarios, and were reduced when the participants were ostracized, suggesting that ostracism has a strong effect that shatters possible moderators, in line with previous research (Hartgerink et al., 2015; Williams, 2007).

Belonging is the need most affected by ostracism - highest F – in each of our studies (in Study 1 differences are huge while in Study 2 the differences are minor) and the participants' sex X ostracism interactions were never significant effect on belonging. Ostracism has also been suggested one of the most direct ways of negatively affect the feelings of belonging (Williams, 2001). As such, ostracism had an overwhelming effect on belonging, which wiped out any small moderation by participant sex. On the other hand, there are 2 fundamental needs for which participant sex moderated the effect of ostracism in both studies: self-esteem and meaningful existence (marginal in study 2). Methodological aspects may explain the differences between Study 1 and 2 as detailed in the paragraph above about ostracism X participant sex interaction. The interaction between ostracism and participant sex has a significant effect on control in Study 2, again with the difference being in the included condition. Once more, this may be explained by the low number of male participants, but it might also indicate an extra boost for women to being included in an activity.

As expected in Study one, participants who read the ostracized scenarios rated the ostracizing team lower in terms of both warmth and competence, when compared to those who read the included scenarios. To be reminded that we did not run the same analyzes in Study 2 due to a methodological mistake. Therefore we can not tell whether it would be replicated or not. The results can be, in part, compared to Bastian & Haslam's (2010) findings that ostracized individuals view the ostracizers as less human. By less human, the authors used two dimensions of humanness - Human Uniqueness and Human Nature – and while the first one is related to moral and high cognition, the second is related to emotionality and warmth. Both dimensions were affected by ostracism. The items used on the latter were, for example, *friendly*, *jealous* and *helpful* and, in spite of using a different scale, it shares common ground with warmth dimension. Competence, on the other hand, has some similarities (but less than warmth) with the Human Uniqueness because the scale had items like: *thorough*, *disorganized* and *conscientious*. Moreover, when comparing warmth and competence dimensions, warmth was the most affected by the ostracism condition in Study 1. This is not surprising if we look to different findings that demonstrate the primacy of warmth (Fiske e. al., 2008). As such, individuals are believed to be more sensitive to warmth information than to competence (Fiske

et al., (2008). In addition, ostracism may be considered more related to an act of coldness (thus is on the warmth dimension) than to competence. It may also happen the case that ostracized participants may have felt a simple negative affect towards the ostracizers and rating low anything related to them.

Another surprising effect is how ostracism condition influenced warmth and competence ratings about Men and Women as social categories in Portuguese society and that both dimensions weren't replicated from Cuddy et al. (2009). However, instead, ostracized participants always gave lower scores than included participants – except on Competence in Study 2 where there were no significant differences. This means that participants viewed the ostracizers as colder and less competent but they also reported that most Portuguese perceived the same about Men and Women (social groups), compared with included participants. Although the social groups were Men and Women, we cannot make the case that participants were thinking about the ostracizers when completing these items because they only were attributed to one character condition and rated both groups. As such, we question if the same results would have happened if other social groups were also rated by the participants.

It probably would have happened (rating everyone lower on both dimensions) because ostracism has shown to have strong consequences – it may be that the general worse mood leads to more negative ratings of all people on all dimensions. However an important thing to note is that the results were stronger in Study 1, appearing on both the warmth and competence dimensions; whereas in Study 2 ostracism condition only affected warmth, and then only marginally (and only when participants played with male characters). We suggest two possible reasons for this. The first possibility is that if it was a general malaise, it was caused by observing a sad scenario (the manipulation in study 1), which colored how they saw the world; whereas in Study 2 the feeling was a more specific self-pity (from being personally ostracized by two people). The second possible explanation is that participants in Study 1 responded to the warmth and competence items immediately after completing the ostracism manipulation check items, less than a minute after reading the scenario; while in Study 2 participants completed the Who Said What task between the ostracism manipulation and completing the warmth and competence items. Therefore, the effects of ostracism may have diminished (Hartgerink et al., 2015). In the second case, because the effect on warmth is stronger, it makes sense that it would be that dimension that would still show some effect despite the intervening activity.

On the “Who Said What?” task in Study 2, participants made more within group errors than between group errors, replicating the usual findings (Klauer, K. C., & Wegener; 1998; Taylor et al., 1978). Our hypotheses were that ostracism might interact with character sex, such that participants would attend more (or possibly less) to speakers who were members of the group who ostracized them. However, the number of errors participants made on WSW task was not influenced by either ostracism or characters’ sex conditions. Even though ostracism usually affects cognitive related tasks performances here ostracized participants did not perform worse than included participants. We present some possible explanations for this. First, the effect of the ostracism may have diminished over the length of the task, particularly because it was challenging: trying to memorizing the sentences about who said what. This is clear from the large number of errors participants made ($M=11,95$, $SD= 3,48$). Second, while research has pointed out that ostracism can have lasting effects, with up to 55 minutes of decreased feeling of the fundamental needs and cognitive tasks (Buelow; 2015), the affected cognitive tasks were of a different nature than ours (measuring executive functions, such as decision making and working memory). Thus, the nature of the task may not be affected by ostracism effects. Third, and related to the nature of the “Who Said What?” task, participants were mostly passive during the task. They knew they were reading and seeing possible people commenting about something and that they would not be interacting with them, thus removing the chance of any sort of affiliation gain by correctly remembering who said what. Additionally, the manipulation of character sex in Study 2 may have been too weak to have an impact on WSW performance (only the name was used as a manipulation). We can speculate that if figurines or pictures showing players faces were used, the manipulation could be stronger and in that case character sex might have had an effect on participants’ performance.

Limitations and Future Directions

As with any research, ours has limitations too that raise questions for further research. First, using Men and Women to manipulate warmth and competence may not be the best choice. As said before, there is a large range of warmth and competence ratings of women, depending on the subgroup of women specified. As such, both Men and Women may not be the best representation of the spectrum (high competence and low warmth versus low competence and high warmth). Even though we based our choice on previous analyses of the Portuguese ratings on social groups used in SCM analyses, it would be pertinent to test with other groups with higher scores. Second, even if we used the high competence and low warmth versus low competence and high warmth, we did not use a manipulation with low or high on both and that

may bring some different results if any. Third, we did not know what were the individual perceptions of participants about Men and Women before the manipulations. Such information could bring new answers for our results by comparing participants' perceptions about the social groups before and after the manipulation. Fourth, we had no control conditions where participants would not get ostracized or included so we don't know what the natural level of participants' scores on any of the dependent measures was. It is possible that females just felt higher levels of self-esteem, meaningful existence and control naturally and the inclusion context didn't change that (only for Study 1). Fifth, and related to what was said already, it would be interesting to see if results about participants' sex in Study 2 would be replicated if the sample were evenly distributed by male and female participants. We hypothesize there would be a tendency for the number of interactions be lowered. Sixth, the choice of the WSW task may not be the best in a way that didn't cover the cognitive variables that are usually measured. However, we hypothesize that there might have been stronger effects if participants believed that a future social interaction would be taking place, maybe even depending on their own performance.

Conclusion

Our research showed, once again, the strong effect of ostracism and how it surpasses eventual moderators, like the ones used here. Because ostracism happens in our daily lives and has such strong effects more studies should address this topic to find eventual subtle effects that the source of ostracism may bring and how that may affect us. If warmth and competence are to be found to have any effect that might explain more about the cognitive and behavior variables of the ostracism' victims.

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ANNEX

ANNEX A – Presentation and Informed Consent for Study 1

Bem vindo(a) ao nosso estudo sobre Psicologia Social!

Mestrando: Daniel Freire

Orientadora: Elizabeth Collins

O objectivo deste questionário¹ consiste em estudar de que modo as pessoas processam a informação em determinados contextos sociais. Assim sendo, a cada participante será apresentado uma história seguida de algumas perguntas relativas à mesma.

O tempo estimado de resposta para cada participante é de **10 minutos**. As respostas permanecerão anónimas e serão agregadas com as respostas dos restantes participantes. Os dados recolhidos serão usados exclusivamente para o projecto de mestrado. Os participantes têm de ter no mínimo 18 anos e a sua participação é voluntária podendo desistir a qualquer momento.

Relembramos que não existem respostas certas ou erradas.

Desde já, muito obrigado pela sua participação.

1) Este questionário está integrado num projecto final para a conclusão de Mestrado em Psicologia Social e das Organizações, sendo da responsabilidade do Departamento de Psicologia Social e das Organizações do ISCTE - Instituto Universitário de Lisboa. Em necessidade de contacto por favor envie um e-mail para dasfe@iscte-iul.pt.

Aceita participar neste estudo?

Sim

Não

>>

ANNEX B – Study 1 Ostracized Male Scenario Case¹

Durante a sua estadia no Algarve, Carlos participou numa prova amadora de orientação* por equipas. Esta prova surge no âmbito de uma iniciativa, por parte da Câmara local, que tem 2 grandes objetivos:

- (1) Promover a prática do desporto;
- (2) Impulsionar o turismo desportivo.

Todos os participantes que se inscreveram sozinhos, como foi o caso do Carlos, foram atribuídos a uma equipa. Apesar das vagas não terem sido preenchidas na sua totalidade, a comissão organizadora ficou satisfeita por existir uma elevada adesão de participantes sem experiência na modalidade. Depois de uma explicação das características da modalidade e da prova em questão, as equipas começaram a sua prestação na mesma. No total participaram 14 equipas.

Carlos depressa se apercebeu que fora atribuído a uma equipa composta na sua totalidade por homens e que aparentavam ser bastante unidos entre si. Porém, apesar de se mostrar motivado para realizar a prova com sucesso, cedo percebeu que a sua própria equipa não se mostrava minimamente interessada nas suas sugestões. Mais concretamente, quando Carlos propôs uma solução específica sobre o percurso a tomar quando a sua equipa, a meio da prova, ficou com dúvidas sobre o mesmo.

No final da prova a equipa do Carlos classificou-se em 5º lugar. Depois de receberem os prémios de presença decidiram ir almoçar a um restaurante perto do local da prova. Carlos não foi convidado.

*Orientação (definição geral) é um desporto que mistura corrida com técnicas de navegação. Os atletas têm de passar por vários pontos de controlo dispersos em determinado terreno com o auxílio de um mapa e bússola.

¹ : What differentiates from the ostracized female version is the name of the main character and that the team is composite from women instead of men.

ANNEX C – Study 1 Included Male Scenario Case¹

Durante a sua estadia no Algarve, Carlos participou numa prova amadora de orientação* por equipas. Esta prova surge no âmbito de uma iniciativa, por parte da Câmara local, que tem 2 grandes objetivos:

- (1) Promover a prática do desporto;
- (2) Impulsionar o turismo desportivo.

Todos os participantes que se inscreveram sozinhos, como foi o caso do Carlos, foram atribuídos a uma equipa. Apesar das vagas não terem sido preenchidas na sua totalidade, a comissão organizadora ficou satisfeita por existir uma elevada adesão de participantes sem experiência na modalidade. Depois de uma explicação das características da modalidade e da prova em questão, as equipas começaram a sua prestação na mesma. No total participaram 14 equipas.

Carlos depressa se apercebeu que fora atribuído a uma equipa composta na sua totalidade por homens e que aparentavam ser bastante unidos entre si. Além de estar motivado para realizar a prova com sucesso, cedo percebeu que a sua equipa se mostrou relativamente interessada nas suas sugestões. Mais concretamente, quando Carlos propôs uma solução específica sobre o percurso a tomar quando a sua equipa, a meio da prova, ficou com dúvidas sobre o mesmo.

No final da prova a equipa do Carlos classificou-se em 5º lugar. Depois de receberem os prémios de presença decidiram ir almoçar a um restaurante perto do local da prova. Carlos foi convidado.

*Orientação (definição geral) é um desporto que mistura corrida com técnicas de navegação. Os atletas têm de passar por vários pontos de controlo dispersos em determinado terreno com o auxílio de um mapa e bússola.

¹: What differentiates from the ostracized female version is the name of the main character and that the team is composite from women instead of men.

ANNEX D – Instructions and Items Used in Study 1

Em cada uma destas questões pedimos-lhe que assinale o número que represente melhor os seus sentimentos/emoções caso estivesse no lugar $\{e://Field/from\%20name\}$ na história apresentada anteriormente.

	1 -De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Senti-me "desconectado/a"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me rejeitado/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me incompatível com a equipa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que percentia à equipa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que os outros elementos de equipa interagiram comigo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em cada uma destas questões pedimos-lhe que assinale o número que represente melhor os seus sentimentos/emoções caso estivesse no lugar $\{e://Field/from\%20name\}$ na história apresentada anteriormente.

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Sinto-me bem comigo mesmo/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A minha auto-estima estava alta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que gostaram de mim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me inseguro/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me satisfeito/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em cada uma destas questões pedimos-lhe que assinale o número que represente melhor os seus sentimentos/emoções caso estivesse no lugar $\{e://Field/from\%20name\}$ na história apresentada anteriormente.

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Senti-me invisível	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me sem importância	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me como se não existisse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me importante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me útil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em cada uma destas questões pedimos-lhe que assinale o número que represente melhor os seus sentimentos/emoções caso estivesse no lugar $\{e://Field/from\%20name\}$ na história apresentada anteriormente.

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Senti-me poderoso/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que tinha controlo durante a prova	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti ter a capacidade para alterar significativamente o decorrer dos eventos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que não tinha influência nas acções dos outros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que os outros elementos decidiram tudo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em cada uma destas questões pedimos-lhe que assinale o número que represente melhor os seus sentimentos/emoções caso estivesse no lugar $\{e://Field/from%20name\}$ na história apresentada anteriormente.

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Bem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amigável	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pouco amigável	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zangado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agradado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alegre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Triste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Em cada uma destas questões pedimos-lhe que assinale o número que represente melhor os seus sentimentos/emoções caso estivesse no lugar $\{e://Field/from%20name\}$ na história apresentada anteriormente.

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Eu fui ignorado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu fui excluído	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Usando a escala abaixo, escreva em cada caixa o número que melhor corresponde à forma como percebe a equipa $\{e://Field/from\%20name\}$. 1 2 3 4 5 Nada De certa forma Muito

	A Equipa
Em que medida vê os elementos da equipa $\{e://Field/from\%20name\}$ como competentes?	
Em que medida vê os elementos da equipa $\{e://Field/from\%20name\}$ como calorosos?	
Em que medida vê os elementos da equipa $\{e://Field/from\%20name\}$ como capazes?	
Em que medida vê os elementos da equipa $\{e://Field/from\%20name\}$ como bem-intencionados?	
Em que medida vê os elementos da equipa $\{e://Field/from\%20name\}$ como amigáveis?	
Em que medida vê os elementos da equipa $\{e://Field/from\%20name\}$ como determinados?	

Usando a escala abaixo, escreva em cada caixa o número que melhor corresponde à forma como estes grupos (Homens e Mulheres) são vistos pela maioria dos portugueses. 1 2 3 4 5 Nada De certa forma Muito

	Homens	Mulheres
Em que medida a maioria dos portugueses vê os membros deste grupo como competentes?		
Em que medida a maioria dos portugueses vê os membros deste grupo como calorosos?		
Em que medida a maioria dos portugueses vê os membros deste grupo como capazes?		
Em que medida a maioria dos portugueses vê os membros deste grupo como bem-intencionados?		
Em que medida a maioria dos portugueses vê os membros deste grupo como amigáveis?		
Em que medida a maioria dos portugueses vê os membros deste grupo como determinados?		

Pedimos agora que preencha os seguintes dados demográficos. Uma vez mais, os dados recolhidos serão inteiramente exclusivos ao estudo e todas as respostas recolhidas (por todos os participantes) serão agregadas.

Idade

Sexo

- Masculino
- Feminino

Quais são as suas habilitações literárias (escolha uma das opções clicando na seta em baixo)?

- Ensino Primário
- Ensino Básico
- Ensino Secundário
- Frequência em Ensino Superior
- Ensino Superior (Licenciatura/Mestrado ou Doutoramento)

O seu país de residência é Portugal?

- Sim
- Não. O meu país de residência é _____

O Português é a sua língua materna?

- Sim
- Não

Qual é o nome da personagem principal na história anteriormente apresentada?

Depois da prova a personagem principal foi convidada para o almoço?

- Sim
- Não

Se durante o questionário detectou algum erro ou tenha alguma coisa de relevância a assinalar sobre o mesmo poderá fazê-lo no espaço em baixo.

Debriefing/Explicação Neste questionário foi aleatoriamente mostrado a cada participante uma de quatro histórias diferentes. Estas diferenças resumem-se a 2 aspectos: o tipo de interação que a equipa tem com a personagem principal e o sexo/género desta e dos elementos da equipa. O tipo de interacção corresponde a (1) integrar ou aceitar a personagem na equipa ou (2) ostracizar/ignorar a mesma. Em relação ao 2º aspecto: enquanto uns participantes imaginaram-se no papel do Carlos no meio de uma equipa de homens a outros foi-lhes pedido para fazer o mesmo mas com a Carla no meio de uma equipa de mulheres. O propósito do questionário é averiguar de que modo estas diferenças afectam a experiência sentida pelas pessoas (mesmo em caso de imaginação). Em necessidade de contacto sobre este questionário poderá fazê-lo enviando um e-mail para dasfe@iscte-iul.pt.

ANNEX E – Informed Consent for Study 2

LAPSO

Laboratório de Psicologia Social e Organizacional

Departamento de Psicologia Social e das Organizações

Instituto Superior de Ciências do Trabalho e da Empresa

Referência Estudo: SPI14_15_1ºs_EC_DF

Nome Estudo: Eu no mundo social

Investigador Responsável: Daniel Freire

TERMO DE CONSENTIMENTO INFORMADO

O objetivo deste estudo consiste em estudar de que modo as pessoas processam a informação em determinados contextos sociais.

Condições do Estudo

O tempo previsto de duração de cada sessão é de cerca de 30m.

Benefícios da Participação

A participação neste estudo, se o participante assim o entender, resultará num sorteio em que dois dos participantes receberão 10 vales de desconto no valor de 5€ cada. Para participar no mesmo basta fornecer ao investigador alguma forma de contacto. Os vales serão dados de forma presencial e sorteados no final.

Voluntariado

Este sistema formativo tem um carácter voluntário. O participante tem a possibilidade, por motivos éticos, de negar a participação ou de se retirar do estudo, a qualquer momento, sempre que assim o entender.

Confidencialidade, Privacidade e Anonimato

De acordo com as normas da Comissão de Protecção de Dados, os dados recolhidos são anónimos e a sua eventual publicação só poderá ter lugar em Revistas da especialidade.

Tendo tomado conhecimento sobre a informação disponível do estudo, declaro aceitar participar.

___/___/2015

Laboratório de Psicologia Social e Organizacional – LAPSO
Tel.: 21 790 39 34
e-mail: lapsos@iscte.pt

ORIGINAL

ANNEX F – Instructions and Items Used in Study 2 (Task 1)

Tarefa 1 Nesta tarefa é pedido a cada participante que pratique a sua “arte” de visualização. Por outras palavras: que participem num jogo simples com outros jogadores procurando visualizar mentalmente toda a experiência. Isto pode consistir em imaginar que está sol ou a chover; se está um local particular ou que tipo de pessoas são os outros. Este jogo consiste no lançamento de uma bola entre 3 jogadores incluindo cada participante. O jogo ocorrerá de forma online. Como irá participar de forma anónima o seu nome deverá aparecer automaticamente como "Tu". Assim que clicar para a página seguinte irá ser direcionado para começar o tal jogo. Lembre-se: procure criar uma imagem mental do jogo como se estivesse a jogar na vida real. Importante: Clicar apenas no botão da página seguinte quando o jogo estiver terminado. Irá aparecer uma mensagem quando tal acontecer.

Se tiver com dificuldades com o Inglês chame o investigador.

Para cada afirmação seguinte, escolha o número que represente melhor os sentimentos que teve durante o jogo..

	1 -De maneira nenhuma	2	3	4	5 - Muitíssimo
Senti-me "desconectado/a"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me rejeitado/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me incompatível (com os outros jogadores)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que percentia ao grupo de jogadores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que os outros interagiram muito comigo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Para cada afirmação seguinte, escolha o número que represente melhor os sentimentos que teve durante o jogo..

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Sinto-me bem comigo mesmo/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A minha auto-estima estava alta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que gostaram de mim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me inseguro/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me satisfeito/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Para cada afirmação seguinte, escolha o número que represente melhor os sentimentos que teve durante o jogo..

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Senti-me invisível	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me sem importância	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me como se não existisse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me importante	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti-me útil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Para cada afirmação seguinte, escolha o número que represente melhor os sentimentos que teve durante o jogo..

	1 - De maneira nenhuma	2	3	4	5 - Muitíssimo
Senti-me poderoso/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que tinha controlo durante a prova	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti ter a capacidade para alterar significativamente o decorrer dos eventos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que não tinha influência nas acções dos outros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senti que os outros decidiram tudo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Para cada afirmação seguinte, escolha o número que represente melhor os sentimentos (como se sentiu) que teve durante o jogo.

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Bem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amigável	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pouco amigável	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zangado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agradado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alegre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Triste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Para cada afirmação seguinte, escolha o número que represente melhor os sentimentos que teve durante o jogo..

	1 - De maneira nenhuma	2	3	4	5 - MUITÍSSIMO
Eu fui ignorado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eu fui excluído	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Assumindo que a bola deveria ter sido atirada igualmente para cada jogador (33% para cada um em caso de serem 3 jogadores; 25% em caso de serem 4) que percentagem de lançamentos recebeu? (Basta escrever um número entre 1 e 100; não é necessário o símbolo de percentagem)

ANNEX G – Instructions and Items Used in Study 2 (Task 2)

Tarefa 2 Esta segunda tarefa tem como objectivo pedir-lhe que memorize determinadas frases ditas por certas pessoas sobre as suas experiências ou opiniões relativas às refeições no ISCTE-IUL. Irá ser apresentada uma fotografia de perfil dessa pessoa com o seu nome e a sua frase proferida por baixo. A frase vai ser apresentada ao mesmo tempo que a fotografia e o nome. É pedido que tenhamáximo de atenção possível na apresentação do que foi referido anteriormente. A passagem de cada fotografia/nome/frase vai ser automática e demorará poucos segundos.

Frases usadas:

Existem opções de almoço baratas no ISCTE-IUL.

É necessário ter atenção à hora de ir comer ou as filas tornam-se gigantes.

O restaurante Chinês ao fundo da avenida é uma boa opção.

Eu habitualmente trago comida feita em casa.

É difícil encontrar comida saudável no campus.

Eu normalmente fico satisfeito com uma sopa e uma sanduiche.

Existem diferenças significativas no preço do café.

Eu gosto de comer ao ar livre quando está bom tempo.

O campus provavelmente poderia suportar outra cantina.

Os micro-ondas oferecem uma forma alternativa de alimentação.

As condições de higiene das cantinas são aceitáveis.

A maioria das pessoas almoçam nos mesmos espaços.

Existe demasiada gente a ter de almoçar no mesmo horário.

Não aprecio muito a comida das máquinas de venda automática.

Há bares onde se pode comer e pouca gente vai lá.

Em geral a qualidade das refeições poderia ser melhor.

Não gosto muito das refeições mais frequentes.

Talvez fosse melhor começar a consumir menos molhos.

Ao contrário dos almoços, lanchar no ISCTE-IUL é caro.

Eu costumo beber café depois de terminar o almoço.

As mesas onde como estão usualmente limpas.

Algumas pessoas não costumam arrumar os seus tabuleiros.

Sabe bem comer sem ter muita pressão dos trabalhos.

Eu nunca jantei em nenhuma cantina do ISCTE-IUL.

Usando a escala abaixo, escreva em cada caixa o número que melhor corresponde à forma como percebe as pessoas que jogaram consigo. 1 2 3 4 5 Nada De certa forma Muito

	A
Em que medida vê essas pessoas como competentes?	
Em que medida vê essas pessoas como calorosas?	
Em que medida vê essas pessoas como capazes?	
Em que medida vê essas pessoas como bem-intencionadas?	
Em que medida vê essas pessoas como amigáveis?	
Em que medida vê essas pessoas como determinadas?	

Usando a escala abaixo, escreva em cada caixa o número que melhor corresponde à forma como estes grupos (Homens e Mulheres) são vistos pela maioria dos portugueses. 1 2 3 4 5

Nada De certa forma Muito

	Homens	Mulheres
Em que medida a maioria dos portugueses vê os membros deste grupo como competentes?		
Em que medida a maioria dos portugueses vê os membros deste grupo como calorosos?		
Em que medida a maioria dos portugueses vê os membros deste grupo como capazes?		
Em que medida a maioria dos portugueses vê os membros deste grupo como bem-intencionados?		
Em que medida a maioria dos portugueses vê os membros deste grupo como amigáveis?		
Em que medida a maioria dos portugueses vê os membros deste grupo como determinados?		

Pedimos agora que preencha os seguintes dados demográficos. Uma vez mais, os dados recolhidos serão inteiramente exclusivos ao estudo e todas as respostas recolhidas (por todos os participantes) serão agregadas.

Idade

Sexo

- Masculino
- Feminino

Quais são as suas habilitações literárias (escolha uma das opções clicando na seta em baixo)?

- Ensino Primário
- Ensino Básico
- Ensino Secundário
- Frequência em Ensino Superior
- Ensino Superior (Licenciatura/Mestrado ou Doutoramento)

O seu país de residência é Portugal?

- Sim
- Não. O meu país de residência é _____

O Português é a sua língua materna?

- Sim
- Não

A sua participação neste estudo tem como recompensa créditos (de Licenciatura/Mestrado)?

- Sim
- Não

