



Escola de Ciências Sociais e Humanas (ECSH)

Departamento de Psicologia Social e das Organizações

**Collaboration and Competition in Groups of Humans and Robots: Effects
on Socioemotional and Task-Oriented Behaviors.**

Raquel Sofia Alves Oliveira (64482)

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Supervisor:

Prof. Dr^a. Patrícia Arriaga (Assistant Professor at ISCTE-Instituto Universitário de Lisboa,
Dpt. of Social and Organizational Psychology / Centro de Investigação e Intervenção Social-
Instituto Universitário de Lisboa).

Co-supervisor:

Prof. Dr^a. Ana Paiva (Instituto Superior Técnico-Universidade de Lisboa, INESC-ID)

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Abstract

Advancements in technology have allowed the emergence of novel forms of social interaction. More specifically, in the last decades, the emergence of social robots has triggered a multidisciplinary effort towards achieving a better understanding of how humans and robots interact. In this dissertation, our goal was to contribute towards that effort by considering the role of goal orientation displayed by the robot (i.e. competitive vs. cooperative) and the role displayed by each player (partners and opponents). Sixty participants engaged in a typical Portuguese card-game called Sueca (two robots and two humans). Each participant played three games with each of the other players and the goal orientation was manipulated by the set of pre-validated verbal utterances displayed by the robot. The interactions were video-recorded, and we used a coding scheme based on Bales Interaction Process Analysis (1950) for small groups to analyze socioemotional positive, negative and task-oriented behaviors. A Multi-Level Modelling analysis yielded a significant effect of the role for all dimensions. Participants directed more socioemotional positive and task-oriented behaviors towards the human playing as a partner than as opponent and also interacted more with the other human in comparison to both robots. Comparing both robots, participants displayed more positive and task-oriented behaviors when interacting with robots as opponents than as partners. These results suggest the occurrence of different behavioral patterns in competitive and collaborative interactions with robots, that might be useful to inform the future development of more socially effective robots.

Keywords: Human-Robot Interaction; Groups; Social Psychology; Collaboration.

American Psychological Association (APA) Content Classification Codes:

2900 (Social Processes & Social Issues); 3000 (Social Psychology); 3020 (Group & Interpersonal Processes).

Resumo

O desenvolvimento de novas tecnologias tem proporcionado a emergência de novas formas de interação social. Mais especificamente, nas últimas décadas, o desenvolvimento de robôs sociais tem despoletado um esforço interdisciplinar orientado para o estabelecimento de uma melhor compreensão acerca da forma como pessoas e robôs interagem. Com esta dissertação, pretendemos contribuir para esse esforço considerando o efeito da orientação estratégica exibida pelo robô (i.e. competitivo vs. colaborativo) e o efeito do papel assumido pelos jogadores (parceiro ou oponente). Sessenta participantes jogaram à Sueca (dois robôs e dois humanos). Cada participante jogou três jogos em parceria com cada um dos outros jogadores e a orientação estratégica foi manipulada através do conjunto pré-validado de interações verbais exibido pelos robôs. As interações foram filmadas e analisadas usando o guião de análise sugerido por Bales (1950) que inclui interações socioemocionais negativas, positivas e relacionadas com a tarefa. Uma análise Multi-nível dos resultados revelou um efeito principal do papel para todas as dimensões. Os participantes dirigiram mais comportamentos positivos e relacionados com a tarefa para os humanos no papel de parceiros do que oponentes e interagiram mais frequentemente com o humano do que com os robôs. Os participantes também direcionaram mais interações positivas e relacionadas com a tarefa para os robôs quando estes assumiram o papel de oponentes, em comparação com quando jogaram como parceiros. Estes resultados sugerem a ocorrência de diferentes padrões comportamentais quando interagindo com robôs competitivos e colaborativos que poderão ser úteis para informar o desenvolvimento de robôs mais socialmente eficazes.

Palavras-chave: Interação entre Humanos e Robôs; Grupos; Psicologia Social; Colaboração.

Códigos de classificação de conteúdo da Associação Americana de Psicologia (APA):

2900 (Processos Sociais & Questões Sociais); 3000 (Psicologia Social); 3020 (Processos Grupais & Interpessoais).

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List of Acronyms

AMIGOS- Affect Modelling for Robots in Group Social Interactions.

HHI- Human-Human Interaction.

HRI- Human-Robot Interaction.

IPA- Interaction Process Analysis.

SPB- Socioemotional Positive Behaviors.

SNB- Socioemotional Negative Behaviors.

TOB- Task-Oriented Behaviors.

Acknowledgments

After an intensive period of seven months, today is the day: writing this note of thanks is the finishing touch on my dissertation. It has been a period of intense learning for me, not only at a scientific level, but also on a personal level. Writing this dissertation (and everything else that came with it) has had a big impact on me and I would like to reflect on the people who have supported and helped me so much throughout this period.

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Introduction

Socially embodied robots are interactive agents to which “...*social interaction plays a key role*” (Fong, 2003, pag.1, emphasis added). Thus, this type of robots should be able to interact with, and adapt to, humans and other robots across a broad range of dynamic interaction settings (Breazeal, 2004). Given that the goal of these social machines is not to accomplish a well-defined, limited task, but instead, it is to build a relationship with people, social robots need to function in a fundamental different way than other types of robots (e.g., industrial robots; Tan et al., 2018). As such, in order to be able to accomplish and establish meaningful social interactions with humans, they must be able to display an array of human characteristics, of which affect is an essential part (Arkin, Lee & Jung, 2011; Moshkina, Park). Previous research has demonstrated the usefulness of these social robotic agents across a large range of areas (spanning from educational to care-taking or entertainment uses, Mubin, Stevens, Shahids, Mahmud & Dong, 2013; Groom & Nass, 2007, respectively), and across different types of social environments (varying, for example, in number of intervenients or level of structure).

One example of this, is the SPENCER project that aims to study how a robotic mobile platform can interact with people in a large, unstructured airport environment (Triebel et al., 2016). This requires the robot to be able to adjust in real time and consider contextual cues to form a proper response, while interacting in crowded environments. To achieve this end, the robot must not only consider physical obstacles that might be present in its path (e.g., staircases), but also concepts related to social dynamics (such as personal space and group behavior). An astute example of how these social concepts can be integrated in the behavior of a robotic agent was presented by Kruse and colleagues (2013). After observing instances of physical aggression towards robots, perpetrated by groups of children, these authors designed a social route for a humanoid robot navigating in a shopping mall in Japan. In this scenario,

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whenever the robot detected a group of children nearby, the robot would re-calculate its path in order to place itself near an adult, thus, decreasing its chances of being aggressed.

A second example is the AMIGOS Project (in which the authors are included). This project has also began exploring the issue of adaptation and emotions in the context of group interactions, involving more than one robot and more than one human, and considering different relationship dynamics (e.g., Correia, Mascarenhas, Prada, Melo & Paiva, 2018).

These approaches, exemplified by the two aforementioned projects, allow the assessment of group specific relational dynamics in Human and Robot Interaction (hereinafter, HRI), thus, adding to the literature by contrasting group interaction processes to the typical one user-one robot paradigm. From a multiple-user collaborative standpoint, robots have been found to elicit a broad range of social responses and to be effective team mates, therefore emphasizing the potential held by these robotic agents to integrate human groups, teams and social contexts (Groom & Nass, 2007). As such, in this work, and consistently with the need to analyze HRI in complex environmental and social settings outlined by other authors (e.g., Hoffman & Breazeal, 2004), our goal is to analyze different dimensions of social HRI in small mixed groups.

More specifically, we explore socioemotional interactions (positive and negative), as well as task-related interactions in mixed groups of humans and robots, involving more than one human and more than one robot, therefore expanding on results already reported in a shortened version of the data analyzed and presented in this dissertation (see Oliveira, Arriaga, Alves-Oliveira, Correia, Petisca & Paiva, 2018).

As part of an effort to frame this work, we begin by exploring literature on HRI and briefly review the state of the art regarding this domain of interaction. For this purpose, we start by providing a general overview of the specificities of robots as social actors and then, we review literature on how these agents might have an effect in the relational dynamics of the

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groups they are inserted in, with an emphasis on entertainment and gaming scenarios. Secondly, we explore literature on social and group psychology, focused mostly on the social processes associated to groups, the effect of goal orientation (i.e. competition and collaboration) and the roles played by social intervenients, on group dynamics. After that, we analyze the characteristics and the previous use of the Interaction Process Analysis (Bales, 1950) as a powerful tool to measure and analyze group processes and interactions.

Finally, we discuss the methodology, results and limitations of the present study and its' implications for the future development and design of social robots, in light of the literature in HRI.

Robots as Social Actors

Now, look. A robot is infinitely more to be trusted than a human nursemaid. Robbie [a robot] was constructed for only one purpose really—to be the companion of a little child. His entire 'mentality' has been created for the purpose. He just can't help being faithful and loving and kind. He's a machine—made so. That's more than you can say for humans.

Excerpt of *I, Robot* by Isaac Asimov (first published in 1950, emphasis added).

The term *robot* was first coined in 1920 in a play written by the Czech writer, Karel Čapek¹. The plot of this play takes place at an industrial factory, in which robots are depicted as simplified, emotionless but very productive versions of human beings, fabricated through means of an intricate chemical process. This initial portrayal of robots and of the social implications embroiled in its integration in society, set the rhythm for a bigger discussion about

¹ The play mentioned was called “Rossum’s Universal Robots” (R.U.R.).

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the possible consequences of the use of this labor force, that preceded, by many years, the actual emergence of this kind of technology. However, in consequent years the depiction of robots quickly evolved from *labor machines* to *social* ones, thus, giving origin to a broad array of science-fiction literature and media that remains until this day and that can be better exemplified by the classic writings of Isaac Asimov (see excerpt). This perception of robots as possible social beings inspired many technology and social research scientists to take steps towards developing and studying these robotic agents in interaction with people, across many contexts. These efforts, geared towards the creation of more socially effective and *humane* robots, led, over many years, to the emergence and consolidation of social robotics as a multi-disciplinary field of studies that is concerned with the study of robots as social actors.

A social actor is an agent, within the social space, that encompasses a network of semantic representations of traits and social roles, that in turn, result in a set of congruent and repeated performances on the social stage (McAdams, 2013). In their role of social actors, agents are often perceived by others as holding a complex scheme of personal and social goals, motives and intentions (McAdams, 2013). This perception of social agents as motivated actors, with their own internal world and thoughts (Baron-Cohen, 1997; Goldman, 2012; Leslie, 1982) shapes the social interaction by means of social expectations, perceptions and reciprocity (Falk & Fischbacher, 2006; Fiske, Cuddy, Glick & Xu, 2002). Therefore, it makes sense that, if we are interested in creating realistic and believable social robots, that can evoke naturalistic reactions and behaviors from people, we must focus on the development of robots that can effectively act and be perceived as social agents. In order to achieve this end, researchers have been modelling different aspects of human behavior and functioning in robots (the life-like agent hypothesis, Dautenhahn, 1999). Some of these aspects include traits related to physical behavior (e.g., Billard & Mataricá, 2001), whereas others, relate to human social behavior. This last dimension includes behaviors like the expression of emotions, the manifestation of humor

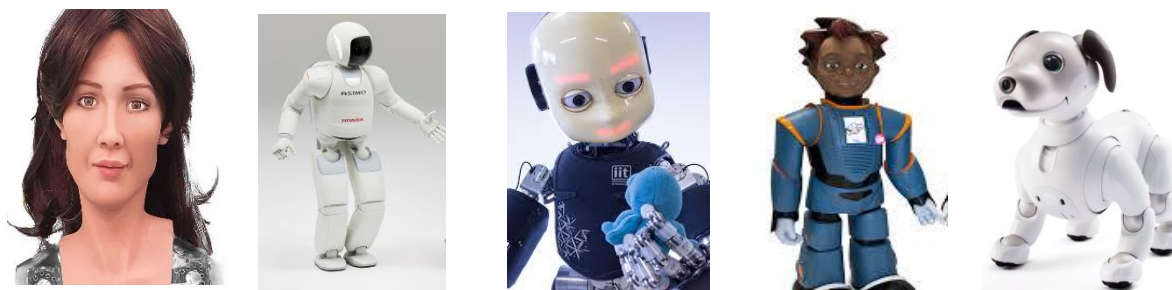
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or the commitment of errors, which have been positively associated to a more anthropomorphic and positive perception of robots (Brazeal, 2003; Niculescu, Dijk, Nijholt, Li & See, 2013 and Mirnig et al., 2017 respectively). As such, in line with this reasoning, issues that affect Human-to Human Interaction (henceforth, HHI) can provide useful insights in designing social robots, which are supposed to interact with people (Dautenhahn, 1999).

As social beings, people often apply and extend a set of complex social rules, not only to the interactions they build with one another, but also to those they establish with other animals and even inanimate objects (Nass, Moon & Green, 1997). In this context, as robots penetrate deeper in people's everyday life, it becomes relevant to consider their abilities to communicate in affective terms once these will allow humans to extend their social models to them and will also help robots to invoke the desired responses from their human partners (Kiesler & Goetz, 2002; Moshkina, 2012; Schaefer, 2013). Thus, if we aim to establish a comprehensive understanding of how the behavior and other characteristics of a robot are perceived and responded to by humans, researchers will also have to develop an understanding of how the individuals' idiosyncratic and cultural characteristics might have an impact on peoples' behavior towards robots (Syrdal, Dautenhan, Koay & Walters, 2009). Indeed, both individual factors as well as interaction-related factors and robot-related factors have been considered in studying HRI. Models that have been developed to account for individuals' characteristics include assessments of how humans' characteristics influence HRI. Studies that fall into this category include, for example, assessments on how people of different ages respond to robots (Bartlett, Estivill-Castro, Seymon & Turkey, 2003; Broekens, Heerink & Rosendal, 2009), or of different genders (Mutlu, Osman, Forlizzi, Hodgins & Kiesler, 2006), as well as of different cultures (Bartneck, Suzuki, Kanda & Nomura, 2007). These studies present an interesting and important standpoint from which to consider the development of social embodied agents that are built in congruence, not only with the function they were

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designed to perform, but as well as with the intended target population they were built to interact with.



Human-Like

Animal-like

(a)

(b)

(c)

(d)

(e)

Figure 1: Examples of robots with different embodiments varying in level of resemblance to humans and animals: (a) Sophia developed by Hanson Robotics, From “Sophia – Hanson Robotics” by Hanson Robotics, 2018 (www.hansonrobotics.com/robot/sophia/). Copyright, 2018 by Hanson Robotics.; (b) ASIMO developed by Honda, From “ASIMO by Honda” by Honda, 2018 (asimo.honda.com/). Copyright, 2018 by Honda; (c) iCub developed as part of the E.U. funded project RobotCup, From “iCub-an open source cognitive humanoid robotic platform” by RobotCup, 2018 (www.icub.org). Copyright, 2018 by iCub.; (d) Milo, the Robot developed by Robots4Autism, From “Meet Milo! | Robots4Autism” by Robots4Autism, 2018 (<https://robots4autism.com/milo/>). Copyright, 2018 by Robots4Autism and (e) a robot dog called Aibo, developed by Sony, From “Sony Aibo” by Sony, 2018 (<https://aibo.sony.jp/en/>). Copyright, 2018 by Sony.

For example, Kahn and colleagues (2006) proposed a set of psychological guidelines that take into account the specificities of HRI in a varied set of interactions according to some defined benchmarks that allow to better categorize these interactions in terms of their conceptual meaning and purpose. These benchmarks include notions of perceived autonomy,

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mimicry, moral values, privacy, conventionality, creativity and authenticity, allowing for the creation of more humane robots, while all the while, “helping us not to lose sight, of what is possible, ethical and beautiful in human life” (pag. 384).

Moreover, it's also important to consider the setting where the interaction occurs, as socially embodied agents must be able to adapt to the environments they interact in, as well as to the context that interaction occurs in. Thus, social robots have been used in structured and unstructured interactions in a multiple range of settings, including schools (for a review, see Benitti, 2012), organizational settings (Hinds, Roberts & Jones, 2004), as well as in the clinical context (Krebs, Hogan, Volpe, Aisen & Edelstein, 1999). In these contexts, socially embodied agents have also been put to use for a multitude of different functions that include entertainment (Correia, Ribeiro, Alves-Oliveira, Maia, Melo & Paiva, 2017), care (for a review, see Bemelmans, Gelderblom, Jonker & De Witle, 2012), storytelling (Mutlu, Forlizzi & Hodgins, 2006), among others, which full review falls out of the scope of this dissertation.

Finally, studies focusing on how the robots' characteristics influence HRI, include a large range of variables. In this instance, appearance matters because people are known to form quick impressions about an entity with which they interact (Bar, Neta & Linz, 2006). Impressions are formed through a top-down approach of cognitive processing and therefore are important to consider in designing guidelines for social agents' design (Beer, Prakash, Mitzner & Rogers, 2011; Kanda, Miyashita, Osada, Haikawa & Ishiguri, 2008). When little environmental information is presented about that entity, people tend to extract certain cues from physical appearance (Bar, Neta & Linz, 2006). The same principle has been found to be true in HRI (Beer, Prakash, Mitzner & Rogers, 2011) and thus, a large range of studies have been conducted that yield a better understanding on how the robots' appearance can influence HRI (for some examples of robots with different embodiments, varying in human and animal likeness, see fig. 1). More specifically, on how its' level of anthropomorphism can influence

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peoples' mental models about robots (Kiesler & Goetz, 2002), familiarity with the robot (Mori, 1970), and robots' personality perception (Robins, Dautenhahn, Boekhorst & Billard, 2004; Syrdal, Dautenhahn, Woods, Walters & Koay, 2006). Other studies that analyze how the robots' characteristics influence HRI, can include, for example, its voice (Eyssel, Kuchenbrandt, Bobinger, Rüter & Hegel, 2012). Finally, also the emotions displayed by the robot are of importance here (Beck, Cañamero & Bard, 2010), as well as its' mood (Gockley, Forlizzi & Simmons, 2006; Xu, Broekens, Hindriks & Neerincx, 2010).

However, the previously mentioned factors do not work in isolation from one another as they appear embedded in the social context as almost undistinguishable elements of interaction, at least from the social agent as information processor standpoint of view (Sarbin & Kitsuse, 1994). Indeed, peoples' behavior is mostly guided by a holistic representation of social complex situations that naturally includes not only other peoples' characteristics, as well as environmental characteristics and individual ones. In this context, previous literature suggests that robots, as interactive machines, can be perceived as social actors and elicit a similar type of responses to those evoked by other social actors. It is now up to the researchers in HRI and social sciences (or *RobotPsychology*²), to unravel the specificities of this type of interaction, by exploring both what factors affect the robots' perception (and thus, peoples' behaviors towards it) and how a robot can affect the dynamics of a group, in which they might be included.

Emotion and Affect in Groups

The study of how the presence of others can affect our performance and behavior in different tasks, has been widely designated as Social Psychology and has been tackling these issues by exploring how people behave in groups and in the presence of others (Kerr & Park, 2008; Rhee,

² Term adapted from the classic novel *I, Robot* by Isaac Asimov (1950).

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2007). The focus of this discipline, although experiencing many shifts during the years, has always included (among others) efforts to solve the question of how people collaborate to solve common problems in groups. To achieve this purpose, we must be aware of the various factors that can have an impact in group processes and thus, affect the dynamics and behaviors of members of that group (Rhee, 2007). The emotions experienced by the group seem to be one of those key variables for the comprehension of group processes and have constituted an important building block for many theories of social psychology over the years (Bales, 1950; Kerr & Park, 2008). For example, some authors focus on the analysis of emotional contagion, i.e. the way emotions transfer from and to other members of a group (Le Bon, 1986 and more recently, Barsade, 2002), whereas others attempt to explain phenomena like the group mind (or the discontinuity effect, for a review, see Wildschut, Pinter, Vevea, Insko, Chester & Schopler, 2003).

Group emotions are emotions collectively felt and shared among individuals in a group, that can emerge through means of subconsciously and consciously processing (Rhee, 2007). More specifically, these emotions can appear by means of subconscious processing, such as vicarious affective learning (see Bandura & Rosenthal, 1966) or through behavioral entrainment (Barsade, Brief, & Spataro, 2003). In the case of the latter, individuals adjust their own behavior to that of other members of the group in a harmonious manner, whereas in the case of the former, individuals experience arousal by observing other people emotional expressions and behavior. In both cases, emotional synchrony seems to be of importance, i.e. individuals look at other members of the group for emotional cues and attempt to adjust to the groups' emotional reaction, by displaying the same emotions and general mood (Rhee, 2007). To achieve this end, individuals must be able to consider and interpret a set of contextual cues that hint at the groups' emotion and mood (e.g., verbal and non-verbal cues, such as posture and facial expression). However, there is a more primitive manner of emotional contagion that does

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not require the observation of these emotional cues and happens in a more automatic and subconscious fashion. This type of primitive social emotional contagion has been labeled by some researchers to be the main mechanism to explain how collective emotions emerge and has since, demonstrated to be a powerful tool to understand group emotional contagion (Hatfield, Cacioppo, & Rapson, 1992; Rhee, 2007).

However, emotional contagion can also take place by means of more deliberate processes, such as social comparison (Festinger, 1954; Rhee, 2007). According to this theory, individuals use comparison to other members of the ingroup as a tool to determine the appropriateness of the expression of a determined emotion, at certain moment in time. In this context, other authors have used the degree of emotional convergence or dispersion as an indicative of emotional conversion, and as a consequence, a group attribute (Festinger, 1954).

The importance of considering how emotions emerge and are transmitted among members of a group, resides in the fact that the shared emotional states (both temporary, usually referred as emotional tone, and stable) affect the groups' performance and overall behavior. Although the effect of emotion in these aspects, might be mediated (or anticipated to some degree) by other variables such as frequency of interaction and commitment to the group, emotions seem to have an undeniable influence in the groups' outcomes. These effects on group processes can include, depending on the level of emotional convergence and dispersion, behaviors of cooperation or conflict, different levels of psychological commitment and solidarity, as well as different perceptions of the group performance (Kerr & Park, 2008; Rhee, 2007). Some authors suggest that this effect of emotions on groups' processes and outputs is mediated by the group-member interactions. This hypothesis is established under the rationale that because different emotions are associated with different behavioral tendencies at an individual level (Frijda, 1986), these principles can be extended to the realm of social group interactions (Rhee, 2007).

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Notably, emotional contagion and transfer of positive emotions has been shown to be positively associated to group processes, such as cooperation and interpersonal conflict (Barsada, 2002). In particular, positive collective emotions, such as joy, decrease conflict and increase collaborative behaviors (Carnevale & Isen, 1986). Furthermore, this type of emotions was also observed to be associated to increased levels of positive performance perception, both at an individual and group level. Individuals with positive emotions, not only tend to rate themselves higher when evaluating their performance in a task, but they also tend to be evaluated by others more positively (Barsade, 2002). This is similar to what happens in an individual context: individuals that report feeling more positive emotions, tend to manifest more prosocial behaviors (e.g., helping others, Isen, Clark & Schwartz, 1976) and to engage in more collaborative behaviors (Carnevale & Isen, 1986).

On the other hand, negative collective emotions tend to have the opposite effect in group outcomes. For example, collective envy has been associated to negative socioemotional behaviors (e.g., increased social loafing and decreased levels of perceived cohesion) and to negative work and organizational outputs (such as absenteeism; Duffy & Shaw, 2012). Additionally, negative collective emotions have also been associated to other negative group outcomes, such as a decrease in creativity (Frederickson & Branigan, 2005), reduce harmony among members of a group and increase interpersonal conflict (Jackson, May, & Whitney, 1995).

These observations lend credence to the idea that individual emotions can be associated to determined behavioral responses (Frijda, 1986), and that, this tendency, can be extended to groups (Rhee, 2007).

Measurement of Group Behavior Interactions

Although many years of research have identified emotion and affect as key components of group processes, the measurement of these variables has demonstrated to be a somewhat difficult and controversial task (Kerr & Park, 2008). Different authors have proposed a broad array of manners to measure the processes, emotions and behaviors of individuals interacting in group settings. In this work, we will focus on the Interaction Process Analysis (henceforth IPA) proposed by Bales in 1950.

The Interaction Process Analysis.

The Interaction Process Analysis is a coding scheme used to analyze behavior in small groups developed by Bales (1950). Despite the existence of many other coding schemes, designed to analyze group behavior (some examples include, but are not limited to: Cutrona & Suhr, 1992; Kauffeld, Lorenzo, Montasem & Lehman-Willenbrock, 2009; Rogers & Farace, 1975), the IPA (Bales, 1950) has been one of the most widely used for this type of interaction.

The IPA is a method for content analysis in small group interactions that provides a method for classifying behavioral content, act by act, and that also proposes a systematic descriptive set of categories for group behavior, as well as a set of factors that might affect it (Bales, 1950). This method of analysis proposed by Bales (1950) is built upon the assumption that the behavior of all groups (regardless of the size or level of structure) can be scientifically analyzed by means of abstraction and relation of each observed event to a set of hypothetical concepts that consider the functional problems of interacting systems. More specifically, in the case of the present method of analysis, Bales (1950) considers six logical problems that can be observed in group interactions: (1) problems of orientation, (2) problems of evaluation, (3) problems of control, (4) problems of decision, (5) problems of tension-management and (6) problems of integration (see table 1). Problems of orientation can be defined as attempts

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conducted by a member of the group of establishing a representation of what the situation is like, or suggesting an orientation for the activities or discussions being undertaken by group.

In contrast, problems of evaluation constitute attempts at discovering what should be done next, i.e. what attitudes, behaviors or actions must be taken to deal with a specific situation or obstacle experience by the group. Moreover, Bales (1950) also argues for the existence of problems of control. This type of problems emerges, when after problems of evaluation are solved, the group has to decide what to do about that specific situation or obstacle encountered by the group. In resolving this type of problems, individuals can ask or give suggestions and possible ways of future action to other members of the groups. Additionally, during this process, individuals in a group can also experience problems of decision. This problem occurs when members of a group agree (socioemotional positive behavior) or disagree (socioemotional negative behavior) with a course of action taken or suggested by one or more of the other members of the group. Finally, problems of tension management and integration are most likely to occur after a disagreement or interpersonal conflict among group members. In this context, positive socioemotional responses towards an existing conflict include strategies that allow the release of tension in a group (e.g., making a joke) or that foster affiliative behaviors (for example, by displaying solidarity or rewarding the other player). On the other hand, negative socioemotional strategies of resolving or dealing with group conflict, include the denial of help or the adoption of a distant attitude (by withdrawing from the group discussion field).

Overall, the IPA (Bales, 1950) is consistent of 12 categories of behaviors (that stem from the prescribed stages of group discussion and problem solving; see table 1) organized in two main broad dimensions: (1) the socioemotional dimension, which is composed by 6 categories and distinguishes the valence of the behaviors (positive and negative) and (2) the

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task dimension, that includes behaviors related to the functional or procedural aspects of the task assigned to the group.

The first three dimensions of this model (i.e. *Shows solidarity*, *Shows tension release* and *Shows agreement*) are positive in its socioemotional nature and coupled with their negative counterparts (*Shows antagonism*, *Shows tension* and *Shows disagreement*), correspond to the dimension of socioemotional behavior. The remaining dimension, of task-oriented behaviors is composed by behaviors of asking and giving to other members of the group, opinions, suggestions and information. The way in which these different stages and types of problems shift in a group is a result from the equilibrium existing between instrumental and socioemotional expressive activities (Bales, 1950). For example, when a problem occurs in a certain domain of interaction and tension increases, the group stops moving forwards towards its goal. For the equilibrium to be restored, reparative action must be taken in the corresponding category. Furthermore, from an instrumental perspective, groups tend to follow pre-determined sequences of behaviors during the problem-solving situation: first, the group concerns itself with orientation issues, secondly with evaluation and finally control (Bales 1950; Kerr & Park, 2008). As such, as the group progresses on the problem-solving process, both positive and negative socioemotional behaviors tend to escalate, as groups shift their focus from task-oriented problems (e.g., orientation), towards socioemotional and relational issues (e.g., control; Bales 1950; Kerr & Park, 2008).

Since its creation, the IPA (Bales, 1950) has been shown to be useful across many different areas of group communication and research, that include technology mediated interactions. For example, Beck and colleagues (2017), used this coding scheme to explore how task-oriented and relational messages were used in online groups to create support for individuals in depression support groups. A content analysis of the commentaries posted online by members of those groups, revealed a higher frequency of behaviors aimed at providing

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emotional support (i.e. displays of solidarity) and the authors observed an overall majority of task-related behaviors, in comparison with relational oriented behaviors.

Furthermore, in the specific context of game behavior, Peña and Hancock used this coding scheme to analyze communicative behavior (computer-mediated) among a group of players. Fahy (2006) also used this coding scheme in order to compare face-to-face and computer mediated interactions in the educational context, further demonstrating its usability in different contexts.

Dynamics in Group Interactions

Humans are inherently sociable beings that seek and engage in different types of social interactions. Group interactions are a ubiquitous and ever-common way of social interaction and have been thoroughly studied in the fields of human behavior. However, the growing development of fields such as robotics and artificial intelligence, has allowed the emergence of a new set of social actors: robots. These social actors must now be considered in the broad spectrum of human social interactions (Schaefer, 2013). To establish socially effective relationships with other agents, social robots must be able to recognize explicit and implicit communication patterns (Knepper, Mavrogiannis, Proft & Liang, 2017). This might include verbal behavior (i.e. spoken words), but also non-verbal behavior (e.g., gestures, facial expression, body position or eye gaze).

The importance of analyzing different domains of communication in interpersonal relationships has been thoroughly recognized in the literature in Human-to-Human Interaction (henceforth, HHI; e.g., Ekman, 1969), and more recently in HRI (e.g., Ou & Grupen, 2010). In HRI, research has recently and increasingly shifted its focus from performance related factors (more specifically, factors that directly relate to *groups or team's productivity* (e.g.: Weinstein, O'Malley, Snyder & Hockstein, 2007), to relational related factors (i.e. how robots can *affect the social and interpersonal dynamics of work teams and groups*). This includes inquiries about

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the employment of different styles of humor by robotic agents (Stoll, Jung & Fussel, 2018), different group discussion moderating strategies (Jung, Martelaro & Hinds, 2015), as well as affective cultural content on verbal exchanges (Gao, Hwang, Culbertson & Fussel, 2017), among others. The importance of exploring these variables is to garnish a better understanding of how social robotic agents are perceived and accepted in a multi-user (and/or multi-robot environment), and how the introduction of these agents can affect the relationships between different members of a group.

Indeed, the complex phenomena of HRI in groups has, in the past decade, emerged as a significant trend in research, as it can be observed by the significant increase of works published in this domain. The reasoning behind this rationale, that the sheer number of robots in an interaction can affect peoples' behavior and attitudes towards them, comes from a social psychology well-known line of research that states that there is a significant difference between the way people perceive a singular individual versus how they perceive a group of individuals (Turner, Hogg, Oakes, Reicher & Wetherell, 1987). More recent findings from this line of research, suggest that people tend to engage in more negative socioemotional behaviors (e.g., retaliation) in intergroup scenarios, than on one-to-one situations (Meier & Hinsz, 2004). In the specific context of HRI (involving multiple humans and multiple robots) this effect might be exacerbated by a number of reasons, including the negative existing stigmas about robots, the robots' physical similarity and the fact that most people never interacted with robots (Fraune, Sherrin, Šabanović & Smith, 2015). Furthermore, seeing groups of robots and humans, might also foment peoples' need for self-categorization and thus, aggravate the distinction between humans (ingroup) and robots (outgroup, Fraune, Sherrin, Šabanović & Smith, 2015). Indeed, this theoretical reasoning can even provide an interesting and valid explanation for some instances already observed of aggression towards robots. For example, Savini and colleagues (2010) observed instances of aggressive behavior towards robots in

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crowded environments, similar to those also observed by Brscić and colleagues (2015). These aggressive interactions are referred in literature as instances of bullying towards robots and have been mostly observed being committed by children, especially in group contexts (Nomura, Kanda, Kidokoro, Shuehiro & Yamada, 2016).

However, there are plenty of other advantages from having groups of humans and robots interacting with each other. In group interactions with robots with different levels of human-likeness (see fig. 1), robots that are more human-like, are more positively perceived in comparison to other types of robots. Furthermore, groups of robots can be perceived as more useful or friendlier than isolated agents (e.g., a swarm of fire-fighting robots can be perceived as more useful than one single robot, Fraune, Sherrin, Šabanović & Smith, 2015). Finally, sometimes, due to its universal nature in daily life, group interactions might even be unavoidable, i.e. some tasks *require* multiple agents.

In this context, the role played by the robot, its' characteristics and goal-orientation are key-factors in shaping the user perceptions about the robot and, as a consequence, the behavioral and emotional responses humans direct towards it. In a shortened version of the work presented here, the role played by the other players demonstrated to have an effect in gaze and socioemotional behavior (Oliveira et al., 2018). In that paper, results regarding the dimension of showing solidarity (included in Bales (1950) IPA) indicate that participants displayed more solidarity behaviors towards partners than opponents and that when comparing both robots (a competitive robot and a cooperative robot) in the role of opponents, participants gazed more often and provided more support to the competitive robot. Despite the fact that these results suggest the existence of a different dynamic among partners and opponents and among robots displaying different goal-orientations, research on HRI has mostly focused on studying collaborative interactions, leaving out the study of social situations in which humans and robots will compete. However, despite not focusing on the dynamics of these roles

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(partners and opponents), researchers have already developed a wide array of scenarios in which these relationships can be materialized. For example, other entertainment game scenarios involving humans and robots in the roles of partners and opponents include soccer (Bowling, Browning, Chang & Veloso, 2004) and arm wrestling (Gao, Lei, Song, Yu & Ge, 2006).

As such, we believe it is important to consider how the role played by humans and robots when interacting with one another can affect the social dynamics between these agents.

Looking Beyond Collaboration in HRI

As "*robots leave the factory floor and enter human environments*", it becomes increasingly more relevant to consider, not only how different types of communication impact the establishment of a relationship between human and robotic agents, but also how these differ according to the specificities of the type of social relational dynamics among agents (Hoffman & Breazeal, 2004, pag. 1). In this sense, we need to look beyond what happens when people *use* the aid of a robotic, or a teleoperated agent, to achieve a goal or to accomplish a task, and focus our attention in what happens when people cooperate with a robotic autonomous agent in a task (Hoffman & Breazeal, 2004). Collaborating or establishing a partnership relation with another individual or robot requires the person, to some level, to relinquish control and act jointly with his/her partner (rather than "acting upon" the other; Grosz, 1996).

Collaborative interactions between human and robots have been a long-time interest of researchers in social studies (Licklider, 1960), but it was only more recently that these became a trend in research (Fraune, Sherrin, Šabanović & Smith, 2015). The concept of collaboration (often used interchangeably with the concept of cooperation) is a complex concept that involves a joint action or effort with one or more external parties towards a common goal (for a

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discussion, see Kozar, 2010). This type of relationship has been explored in many fields of the social sciences, both inductively and deductively (e.g., Fu et. al., 2008 and Hoffman & Breazeal, 2004, respectively) and its' specific relational dynamics is recognized by many authors (e.g: Axelrod, 1997). In the context of HRI, a broad range of literature suggests that social robots can be effective partners and that collaboration with this type of social agents, seems to have the potential to yield positive outcomes for the user (e.g: Jerčić, Wen, Hagelbäck, & Sundstedt, 2018). For example, in the context of task-related interactions, social robots have been used to aid in surgical procedures (many times in the context of groups, Taylor, Menciassi, Fichtinger, Fiorini & Dario, 2016), in industrial or organizational settings (e.g., Lin, Abney & Bekey, 2011) and in educational contexts (e.g., Fridin, 2014), often improving the practical and task-related outcomes of users. Other examples, in the social-related interactions spectrum, can include the use of robots to improve group social processes. For example, in the work of Jung, Martelaro and Hinds (2015), the authors successfully used a robot to moderate conflict in a team-based task, thus, suggesting that robots can have a role to play in affecting core team processes. More specifically, the authors observed lower levels of perceived conflict in the condition where the robot uttered repair statements (after a confederate in the experiment created conflict situation by personally attacking one participant), in comparison to the condition in which the robot uttered a non-related statement and to the condition in which the robot did not intervene at all.

However, collaboration is only one of the ways that humans and robots are likely to interact in the future. Despite its ubiquity, competition is a form of interaction far less explored than its' counterpart in HRI.

The Friend-or-Foe Theory

In the fields of social sciences concerning HHI, some studies have suggested the existence of a friend-or-foe mechanism based on the evaluation of the other social agent

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intentions (Burnham, McCabe & Smith, 2000). This theory is based on findings from game-theory studies that suggest the existence of a form of mental reciprocity principle that is applied in social exchanges. As this classification (i.e. *friend-or-foe*) is postulated to be an input in the decision-making process, the identification of another social agent's intentions can, thus, affect one's behavioral responses towards it. The identification of intentions, however, is not straightforward due to the fact that intentions are internal states of an individual and as such, not easily discernible. In this sense, the recognition of an individuals' intentions can be affected by many external and contextual cues that affect the framing of the other individual's intentions and role in a specific strategic situation. Context matters because it provides the individual with cues about the other's intention, that are then incorporated into a mental model that informs the individual about the course of action to take. This type of role manipulation has demonstrated to have an effect in the degree of trust (i.e. partners tend to be judged as being more trustworthy than opponents (Burnham, McCabe & Smith, 2000). Furthermore, it has also demonstrated to have an effect in the engagement in prosocial and proself behaviors (Zeelenberg & Murnighan, 2013).

Deutsch' Theory of Collaboration and Competition

Other theory that considers how the type of role displayed by intervenients in a social interaction can affect the relational dynamic in the context of small groups, is the classical theory of cooperation collaboration proposed by Deutsch (1949). This author postulates that attitudes of cooperation and competition are a consequence of the motivational background established in the interpersonal relationship existent among individuals. According to Deutsch (1949), social cooperation happens when the goals of the individuals are related and present a certain degree of interdependence. On the other hand, competition happens when the goals of different individuals are, to some extent, mutually exclusive. This means, that in a cooperative situation, individuals will mostly like share the same goal or hold a parallel goal in relationship

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to other members of the group, which subsequently means that all the effort put in by different individuals, will ultimately support a group collective effort towards achieving the pre-defined goal. For example, in multi-player, team organized games, like soccer, all players put in effort towards a common pre-established goal: to win, despite the fact that each player has a different (but parallel) goal: the goalkeeper objective is to stop the ball before it hits the net, whereas the attacker role is to strike a goal in the enemy team. However, in a social competitive situation, each individuals' goal is in direct conflict with one (or more) of the other individuals' goals. Considering the same example given before: although the team' goal is to win the game, by scoring the highest amount of points possible, each individual player in that team might also be competing to receive a best player award. As only one of the members of the team can win that prize, it means that the goal of each player in that regard, is in direct conflict and therefore, is mutually exclusive to the other players' goals. In this context, Deutsch (1949) hypothesizes that as individuals involved in a cooperative situation will feel a higher degree of dependence towards each other, individuals in a competitive situation will feel a higher degree of interdependence. As a result, individuals in each of the aforementioned situations are expected to act and perceive differently the members of their groups, based on their roles (partners or opponents). Subjects in a cooperative situation are more likely to positively evaluate actions performed by other members of their teams, by, for example expressing their appreciation or even rewarding their partners.

Furthermore, Deutsch (1949) also argues for the principle of substitutability, which states that, given that members of the same team share the same goal, some of their actions also share a functional similarity or redundancy and as such, can be interpersonally replaceable or exchangeable. Moreover, members of the same team are expected to contribute to the maintenance of lower levels of stress among their partners, when they are effectively

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contributing towards the achievement of the common goal and increase the level of tension when these failed to do so with success

In this context, individuals in competitive situations function in a different manner than that described above for cooperative situations. In these situations, the goal of each player is to reduce their own distance to the established goal and simultaneously increase the distance of their opponents to that same goal. In these instances, the actions of each player do not abide by the principle of substitutability described above. Players experience decreased lower levels of stress when an opponent makes an effort that results in a temporary or final obstacle towards that player achieving his goal. Finally, and in congruence with the line of thought presented by Deutsch (1949), partners will tend to directly or indirectly facilitate each other's actions, whether opponents will attempt to hinder each other's advances towards reaching the final goal.

In group and Out Group Bias

Furthermore, other line of research suggests the existence of different behavioral patterns associated to the perception of in group and out group belonging (Brewer, 1979; Gaertner, Dovidio, Anastasio, Bachman & Rust, 1993). These theoretical models argue for the existence of a common intergroup identity, that results in a favorable bias towards members of the perceived ingroup and a negative bias towards members of the outgroup. In the case of studying HRI in collaborative versus competitive settings, this ingroup/outgroup bias might be a double-edged sword. More specifically, in the case of competitive settings, in which the robot plays the role of an opponent, that robot might be perceived (and evaluated) as outgroup, both because it is a robot (human vs. robot) and because it is an adversary. Thus, this effect, coupled with the behavioral tendencies already described for competitive situations might result in a bundle of negative perceptions, attitudes and behaviors towards robots.

Gaming for Robots

At one point or another of our life, we all played games. Whether it be online or face-to-face, people like to play games and do so, frequently. It is argued that people like to play games because they provide an opportunity to alter or organize their internal experiences (Lazzaro, 2004), and the large amount of different games, in different formats, in different cultures all around the world, bears witness to its' pervasiveness and universality. Some games have an educational purpose (i.e. serious games, for a review see Wouters, Nimwegen, Oostendorp & Spek, 2013), whilst others focus mainly in the entertainment aspect (Lazzaro, 2004).

Furthermore, another distinction can be made: some games focus on physical aspects of collaboration or competition (e.g., soccer), whilst others focus on social interactions and exchanges (e.g., strategy games like risk or pandemics). In this section, we will provide a brief description of instances of games developed to accommodate one or more robot players, according to the categories previously described. It is not our goal to provide an extensive review of games for (and with) robots, but instead to provide some examples that support the argument that the study of this type of social HRI can be useful in many levels, as well as to demonstrate its' growing popularity.

Serious games are games that integrate a learning or educational component, either by changing the learners' motivation or by altering the cognitive processes associated with this activity (Wouters, Nimwegen, Oostendorp & Spek, 2013). In this context, robots have been used with a large variety of social groups in educational contexts, through the use of games. For example, Ribeiro and colleagues (2014) used robots to aid students learn geography, through the use of a serious game called Enercities-2³. This game is played by two human

³ This game was developed in the context of the EC Programme Intelligent Energy Europe during 2009 and 2011. For more information, consult the website. <http://www.enercities.eu/>.

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players and one robot (Nao) player and is intended to foment prosocial behaviors and environment consciousness, while increasing the players knowledge on domains related to European geography and resources. Other example of serious games, adapted to the inclusion of robots, involve games developed to help the learning of a second language through mimicking as implemented by de Wit and colleagues (2018) or by classroom interactive games like the ones used by Mubin and colleagues (2012). Moreover, robots are also currently being used in the Portuguese context as technology educating tools for children, as part of the Kids Media Lab Project developed by Minho University to help children learn basic concepts related to computer programming.

Moreover, robots have been integrated in entertaining scenarios both with human agents (Kuroki, Fujiti, Ishida, Nagasaka & Yamaguchi, 2003) and with other robots (e.g., RoboCup, Kitano, 1995). In this context, robots and synthetic agents have began being designed to play several fun games that involve interaction with humans, such as *rock-paper-scissors* (Ahn, Sa, Lee & Choi, 2008), *I spy* (Thomason, Sinapov, Svetlik, Stone & Mooney, 2016) or *dominoes* (Bollmann, Hojschen, Jesikiewicz, Justkowski & Mertsching, 1999). Some of these games require physical interaction with the other players (such as soccer), whereas others can be played by means of solely verbal interactions (such as I spy), although involving some sort of external physical awareness by the robot (in this case, vision). Furthermore, games involving some degree of strategic abstraction include *Risk* (Johansson, 2006) and chess (Larregay, Pinna, Avila & Morán, 2018).

In gaming scenarios, robots can be used with a varying degree of real physical world actuation, i.e. they can play together with humans in a virtual manner or, by means of other technologies such as augmented reality or digitally supported interfaces, become physical actors, occupying the roles and functions that a human player, in a similar context, would occupy (Aylett, 2016). In this sense, to be considered effective team mates or opponents, robots

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must display a wide range of affective-related characteristics, such as being able to recognize the affective state of the human players, model the state of its' human partner and express emotional and affective behavior that is congruent with each game situation (Aylett, 2016). Current attempts to embed robots with the ability to recognize humans' affective states, emotions and moods is usually seen from a multi-modal perspective, that can include for example, recognition of facial emotions through specialized software and physiological data (e.g., Zeng, Pantic, Roisman & Huang, 2008). However, this ability to recognize humans' affective states has not yet reached an optimal degree of accuracy (Aylett, 2016). However, game playing scenarios, not only offer an interesting situation to analyze different relational dynamics, but also present important advantages in comparison to other types of less structured scenarios. According to Aylett (2016) this is because game scenarios usually involve well known rules and structured interactions that result from those rules. This, in turn, allows the robot to predict, with a fair degree of accuracy, what the users' affective state will be in each game situation (for example, losing), and thus, engage in interactions that have in consideration the human players' affects, emotions and moods and that can ultimately allow the robot to alter or impact these emotional states.

Moreover, other behaviors, such as gaze, can also be easier to model in these types of scenarios because players follow a pre-defined set of turns while playing (more specifically in trick-taking games) and can thus, be previously defined (Aylett, 2016).

Collaborative and Competitive Gaming

Competitive and collaborative strategies vary in the extent that they involve different goal orientations (Sheese & Graziano, 2005). In the context of gaming, previous research suggests that collaborative and competitive gaming present different characteristics and are capable of evoking different behaviors from players. For example, Sheese and Graziano (2005) suggest that competitive gaming increases aggression when compared to collaborative gaming.

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These results are in line to previous research linking competition to aggressive behaviors (e.g., Bonta, 1997), by means of frustration felt towards the opponent as these individual attempts to block or hinder the individual from achieving his desired goal (Anderson & Morrow, 1995). Arguments, disputes and displays of negative socioemotional expressions are likely to be observed in this context, as stated by Bonta (1997) due to increased levels of negative tension among opponents. These negative feelings and behaviors, in turn, can serve as triggers for interpersonal conflict, whereas in collaborative situations the behavioral tendency will be more towards supportive and affiliative behaviors. Indeed, even in competitive game situations, when players display a collaborative orientation towards each other (for example by promoting feelings of comradery), this is enough to install feelings of cohesion and by consequence, to reduce hostility and interpersonal conflict (Anderson & Morrow, 1995).

Furthermore, in the context of group gaming (in contrast to two players games), both actual and perceived levels of competitiveness tend to increase (e.g., Bales & Borgatta, 1955; Benenson, Nicholson, Waite, Roy & Simpson, 2003). Group size affects this dynamic by simultaneously creating a more overt type of competition and by providing more individual autonomy to each individual to openly attempt to achieve their goals (Macoby, 1990). On the other hand, in collaborative oriented game scenarios, group size is positively correlated to goal attainment, and as a consequence negatively correlated to perceived competitiveness and individual achievement (Eastin, 2007).

However, much of the research conducted so far in the context of collaborative and competitive gaming (including most of the papers previously cited in this section) has looked mostly to video gaming. Video gaming differs from other types of games because it is usually conducted online (rather than face-to-face). In the context of HRI, in a shortened analysis of the results gathered for this study, taking in account the roles of partner and opponent, as well as goal orientation and using a face-to-face game situation, we have found differences in eye

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gaze behavior and socioemotional support, in the context of small mixed groups (Oliveira et al., 2018). However, to the best of our knowledge, no other studies in HRI have explored the effect of goal orientation (competitive vs. collaborative) and of the role (partner vs. opponent).

Goals and Hypotheses

In this work we are interested in analyzing how humans and robots interact in small mixed groups and how their interaction dynamics changes according to the roles they play towards one another. More specifically, our goals will be to analyze (a) how the role played by each player (partner or opponent) and (b) the robots' display of relational versus competitive goal orientation, as well as (c) the addressee (human, competitive robot and collaborative robot) affects the display of socioemotional behavior (positive and negative) and the engagement in task-related interactions.

As such, we will compare differences in these variables, according to the target of interactions (i.e. human or robot) and the role displayed (i.e. partners or opponents), as well as analyze differences of behaviors directed at each player by comparing the same player playing different roles through the analysis of planned contrasts.

Socioemotional Positive and Negative Behaviors

For Socioemotional positive and negative behaviors, we expect to observe:

- A higher level of socioemotional positive interactions directed at the human player, in comparison to the robot, as well as a higher level of these behaviors directed at the player playing as a partner, in comparison to those holding the role of opponents. This effect has been previously observed in past research on Human to Human Interaction, and it has been widely recognized as an ingroup/outgroup bias effect (for a review see Castano, Yzerbyt, Paladino & Sacchi, 2002; Gaertner & Dovidio, 2014). As

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such, we assume that more positive socioemotional interactions will be directed at members of the perceived ingroup (partners and humans) in comparison to members of the outgroup (opponents and robots). This is congruent with the results recently reported on HRI in a shortened analysis of the results present here that included the behaviors aimed at displaying solidarity (Oliveira et al., 2018). Furthermore, considering the reciprocity hypotheses (McCabe, Rigdon & Smith, 2003), we expect to observe a higher level of socioemotional positive interactions towards the collaborative robot, in comparison to the competitive robot. On the other hand, we expect to observe a higher number of negative interactions towards the competitive robot in comparison to the collaborative robot.

Task-related Behaviors

Information sharing is a detrimental part of group processes (Kimmerle, Cress & Hesse, 2007; Stasser & Titus, 2003), that involves task-related interactions. However, the equilibrium (or ratio) between this type of interactions and the relational (or socioemotional) interactions seems to vary slightly according to the type of task and, subsequent task orientation (Bales and Hare, 1965). In this sense, task-oriented interactions seem to be the most common, followed by socioemotional positive interactions and finally, socioemotional negative interactions (Anderson & Blanchard, 1982, Bales & Hare, 1965, Ridgeway & Johnson, 1990). However, past studies focused mostly on formal tasks, rather than on entertainment ones and given that the latter seem to be more relational oriented (rather than goal or task-oriented), we expect to observe:

- A smaller frequency of task-oriented behaviors in comparison to the frequency of socioemotional positive and negative behaviors.

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- A higher number of task-oriented interactions towards the human player than towards both robots, regardless of the role.

Method

Participants

Sixty participants, grouped in pairs (38 male and 22 female), collaborated in this study. The age range of participants varied between 17 and 40 years ($M=23.85$, $S.D.= 3.92$). Participants were recruited from a technological university institute in Lisbon. One additional pair of subjects took part of the study; however, their data was not analyzed because we were unable to record the data from their partners.

Task

In order to analyze the dynamics in HRI in the context of group social interactions, a card game scenario, named SUECA, was devised. A full description of the game rules and details can be consulted in Annex 2 (or through the Open Science Framework: Arriaga, Paiva, Petisca, Oliveira, Alves-Oliveira & Correia, 2017). The goal of SUECA is to score as much points as possible, in order to win the game.

The game requires four players, grouped in pairs. Participants were requested to play this trick-taking card game with three other players (another human participant and two robots). Each pair of players was grouped as partners and competed against the two opponents assigned to the other team. Participants took turns playing as partners to each of the other three players and played a round of three games with each. Both players in the same team contribute to the goal of winning the game either by offering high scored cards to a trick which belongs to their teams or by preventing the other team from winning a trick. As such, the final score is attributed to the team, instead of the individual player.

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Table 1: Behaviors included in the IPA (Bales, 1950) and its' respective categorization.

Dimension	Sub-Dimension	Problem	Behaviors included
Socioemotional Positive Behaviors	Displays support	Problem of integration	Shows solidarity; Provides Help; Raises the other player' status; Rewards the other player.
	Engages in tension release behaviors	Problem of tension-management	Makes joke; Displays satisfaction; Laughs.
	Agreeableness	Problem of decision	Shows passive acceptance; Understands; Complies.
Task Oriented Behaviors	Gives/Asks suggestion	Problem of control	Gives suggestion; Asks for suggestion.
	Gives/Asks for opinion	Problem of evaluation	Gives opinion; Asks for opinion.
	Gives/Asks Orientation	Problem of orientation	Gives orientation; Asks for orientation.
Socioemotional Negative Behaviors	Disagrees	Problem of integration	Shows passive rejection; Formality; Withholds help.
	Shows tension	Problem of tension-management	Asks for help; Withdraws behavior.
	Shows antagonism	Problem of decision	Deflates others' status; Defends himself; Asserts himself.

This game dynamic presents an interesting research opportunity because it creates a scenario where different relationship dynamics are simultaneously required, allowing us to consider what role the part each player plays towards one another in the interaction scenario.

Materials

In order to test this scenario, we used two Emys heads⁴ that were developed to interact autonomously with the two human players, while playing the game. They displayed gaze behavior and emotional facial expressions that were triggered according to a set of pre-defined game events. For example, if the robots' team lost a trick, the robot would display sadness (see (b) in figure 1), whereas if its' team won, the robot would display joy (see (g) in figure 1). Given that both robots had similar embodiments, they were given different names (Emys and Glin) in order to facilitate their distinction by participants. Additionally, to ease distinction and readability of the rest of this dissertation, we will henceforth refer to the robots as Emys- (competitive robot) and Glin+ (collaborative robot). The behaviors of these robots were created and inspired by the way humans play and a previously conducted characters validation study allowed us to conclude that both of these robots were perceived as displaying similar levels of social behavior (Correia et al, 2017). Namely, using the Competitive Index (Smither & Houston, 1992), the authors of that study observed that Emys- was rated as being more competitive than Glin+. Furthermore, Glin+ was also described as being more helpful, more relational oriented and providing more emotional security than Emys- (Correia et al, 2017). Additionally, Glin+ was evaluated higher on the Relationship Assessment Scale (Hendrick, 1988) than Emys- and higher on Likeability (using the Godspeed Questionnaire developed by Bartneck and colleagues, 2009). Moreover, both robots displayed similar eye gaze behavior

⁴ Developed by FlashRobotics (for more information, consult <https://emys.co/>).

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based on a previous user-centered study (Correia et al., 2017) and similar levels of gameplay competences were also guaranteed by implementing the same algorithm to determine game moves in both robots (Correia et al., 2016). This character validation study also allowed us to determine that, despite both robots being perceived as equally competent, they were perceived differently in regard to their goal orientation (study 1 in Correia et al., 2017). Emys- was evaluated by participants in that study as being more competitive and task-oriented, whereas Glin+ was evaluated as being more relationship-oriented and more capable of providing emotional security to its' partner (Correia et al., 2017)⁵. As such, to manipulate the robot's social orientations in this study, a set of utterances, which was previously tested, was used. Some examples of the utterances used are presented in table 1 and a full list of the utterances can be consulted in Annex 1 (or through Open Science Framework (OSF) by consulting Oliveira, Arriaga, Correia, Alves-Oliveira & Paiva, 2017).

Overall, both robots displayed a total of 840 utterances, which were triggered by game related events and were accompanied by congruent gaze and facial emotional expressions (see Annex 1 or consult the OSF Project for more information, Arriaga, Oliveira, Paiva, Petisca, Alves-Oliveira, Correia, 2017).

Table 2: Examples of utterances displayed by each robot.

Relationship-Oriented Robot	Task-Oriented Robot
<i>"Colleague, do you approve of this move?"</i>	<i>"Don't think you will be laughing when this is over..."</i>

⁵ Hereinafter, robots will be referred to as Emys- and Glin+ to aid readability by facilitating the distinction between robots.

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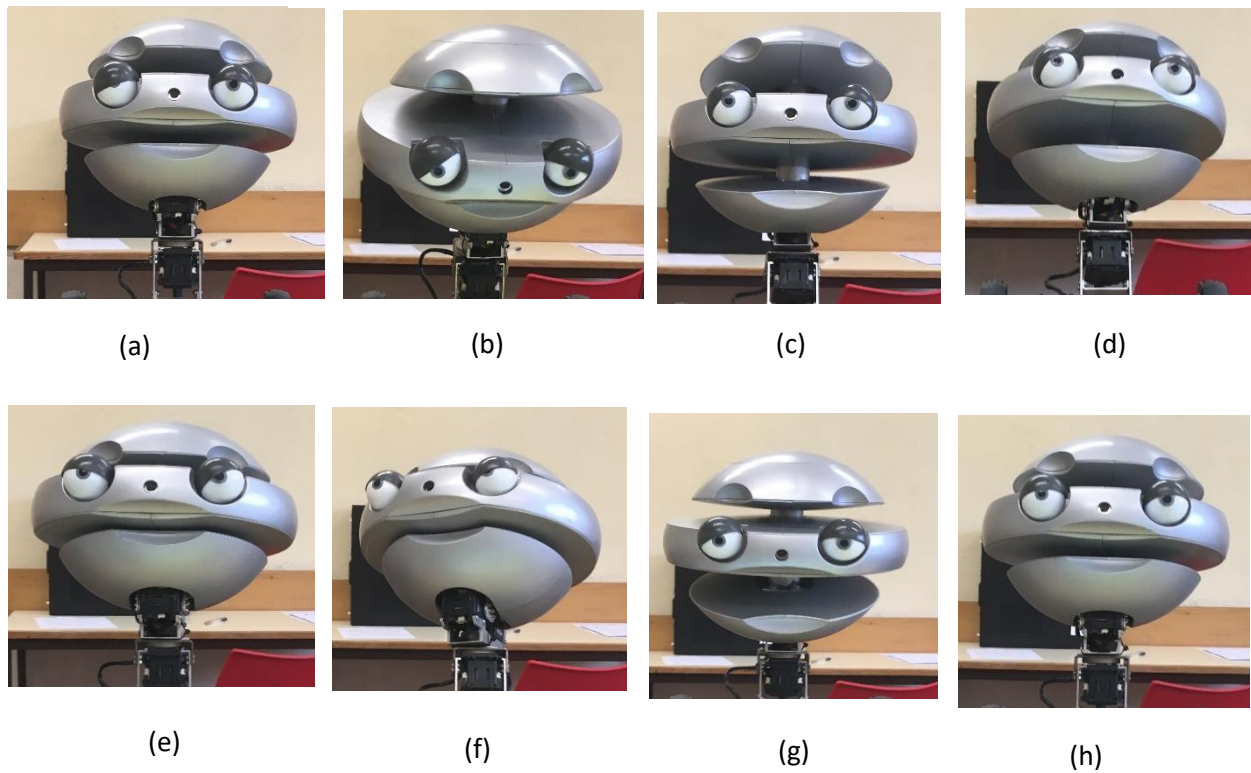


Figure 2: Emotional and facial expressions displayed by the robots: (a) Blinking an eye; (b) Sadness; (c) Surprise; (d) Fear; (e) Anger; (f) Disgust; (g) Joy and (h) Neutral.



Figure 3: Experimental Setting: Participants play in partnership with one another; (b) Participants play with each of the robots; (c) Participants swap places and play with the other robot. Participants play with a deck of French cards, whereas Robots play with virtual cards and are attached to a multi-touch table and equipped with sound columns, during the course of the game.

Measures

To assess relational dynamics in this scenario we built a coding scheme based on Bales' Interaction Process Analysis (previously described) for small group interactions (Bales, 1950). We decided to employ this system due to its wide acceptance as a tool to identify group problem solving and decision-making processes, and because of its long history and broad application in communication studies (e.g: Hirokawa 1983, Keyton & Stallworth, 2003). An overview of the categories and behaviors included in this coding scheme can be consulted in table 1.

Using the aforementioned coding scheme, one independent coder has analyzed the totality of the video-recorded interactions. Following the guidelines proposed by Chorney and colleagues (2015), two other coders were requested to jointly code one third of the observations. The observations were selected randomly, and all the coders were blind to this study goals and hypotheses. The observational analysis was guided by the standard methodological guidelines for observational analysis (Bakerman & Quera, 2011). Furthermore, these codifications were completed using specialized software (Observer XT, v. 11.5). The final coding scheme included 47 behaviors (not all of which analyzed here)⁶ organized in several dimensions as can be observed in Table 1. Namely, we coded game behaviors in three categories: (a) Socioemotional Positive Behaviors, (b) Task-Oriented Behaviors and (c) Socioemotional Negative Behaviors, both verbal and non-verbal. In the first category, we included behaviors related to displays of solidarity (e.g., "*It's ok, I also renounced in the last game.*"), providing help (e.g., helping the other player distributing the cards) and raising the other players' status or rewarding him/her (e.g., complimenting him/her or a move he/she did, see image a in Figure 4)⁷. Also within the socioemotional category, we coded behaviors related to tension release, more specifically making jokes and displaying satisfaction

⁶ Namely, gaze behavior that was already reported in Oliveira et al. (2018).

⁷ Distinction between these two categories is made according to the context of the interaction.

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(see image b in Figure 4) and behaviors related to agreeableness (i.e. agreeing with a suggestion or statement made by another player, complying or showing passive acceptance).

In the task-oriented dimensions we included behaviors related to giving or asking suggestions (e.g., “*What do you think I should do now? If I use the trump here, I won’t be able to cut future moves of him [opponent player]”*), asking or giving opinion (e.g., “*I think your partner [robot] got mad at you for that move.*”) and asking or giving orientations (e.g., “*It’s your turn to shuffle the cards*”).

Finally, we considered behaviors included by Bales (1950) in the socioemotional negative category. Namely, showing passive rejection (e.g., ignoring a request from another player), behaviors of formality (e.g., treating the other player with formality), withholding help, asking for help and withdrawing behavior (e.g., stop talking or interacting. Moreover, we have also included in this category behaviors of deflating the other status (e.g., saying negative things about another player, “*That robot is really bad at playing Sueca*”), defending oneself (e.g., “*I am usually a good player, but the cards didn’t help this time*” self-assertion (“*What? This has to be wrong [the final score]. I played much better than you*”).

Operationalization of behaviors

Each interaction was coded according to:

- (a) duration and timing;
- (b) addressee (i.e. the target recipient of said interaction);
- (c) role held by the addressee (more specifically, partner or opponent);
- (d) the type of statement (i.e. verbal or non-verbal).

In the case of verbal interactions, a fifth category was included to specify the form of the statement (affirmation, question or proposal).

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Additionally, to the categories proposed by Bales (1950), we also included detailed coding of gaze behavior according to the first three criteria aforementioned. In this context, we considered all gaze behavior (including glancing), without a minimum time threshold for inclusion. However, these results will not be analyzed here as they already were reported in a shortened analysis of the dimensions presented here (Oliveira et al., 2018).

Overall, each participant played three sets of three individuals games (hereinafter, each set of three games will be referred as one session) with each partner. Each session was coded separately for each of the human players involved and overall 6505 behaviors were observed and coded (see table 3).

Agreement between the coders was calculated considering all of the behaviors included in the coding scheme, in terms of its frequency and sequence and considering a two second error interval.

In this context, an excellent level of agreement was observed between coders, with values ranging from 82.82% to 98.07% ($M=92.51\%$). Moreover, an optimal level of inter-rater reliability was also observed across all of the dependent variables ($Kappa=.92$).

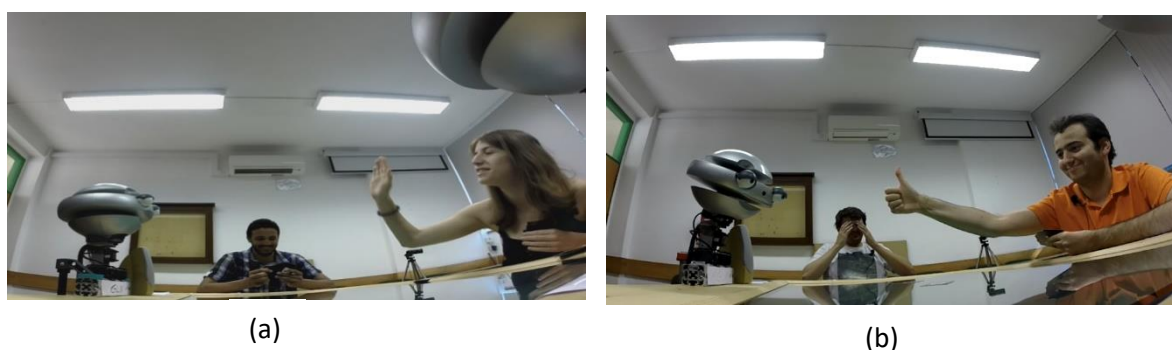


Figure 4: Examples of observed interactions among humans and robots: in (a) the participant rewards its partner after it made a good move in the game by giving it a high-five and in (b) the participant on the right displays satisfaction after his team won a game, whereas the participant in the middle expresses feelings of sadness after losing.

Results

Descriptive Analysis of the frequency and directionality of behaviors

We analyzed the frequency the behaviors included in each dimension, according to the target of each interaction (i.e. addressee). Overall, we observed a total of 6505 behaviors of all dimensions towards all of the addressees (human, Emys- and Glin+).

Of this total of observed behaviors, nearly 87% was directed at the other human player in all dimensions of behaviors in consideration in this thesis, across all conditions. The remainder behaviors were distributed between the competitive robot (7.2%) and the cooperative robot (5.4%). Considering the total of behaviors directed at the human player in all dimensions (i.e. 5688), 50% consisted of behaviors included in the task-oriented dimension, whereas nearly 41% consisted of behaviors included in the socioemotional positive dimension. The remaining 9% of interactions was included in the socioemotional negative dimension.

Furthermore, considering the total of behaviors observed towards the competitive robot (i.e. 465), nearly 81% of behaviors was composed of socioemotional positive behaviors. The remainder of behaviors directed at this robot, consisted of socioemotional negative behaviors (14.2%) and task-oriented behaviors (5%).

Finally, considering the total of behaviors directed at the collaborative robot (Glin+), i.e. 352, nearly 80% of all behaviors were socioemotional positive interactions. Moreover, approximately 15% of the remainder behaviors were socioemotional negative interactions and the rest was task-oriented behaviors (7%).

Hypotheses Testing

Multi-Level Modelling (MLM) was conducted to account for the interdependence between the dyads of human players. We used restricted maximum likelihood estimation

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(RMLE) and three models were estimated: one for the rate of each major dependent variable, i.e., for socioemotional positive behaviors, socioemotional negative behaviors, and task-related behaviors. The rate of behaviors was calculated by dividing the total number of occurrences of the behaviors in each dimension by the total duration of the game session (measured in minutes). The two humans in the group were considered indistinguishable as they were not differentiated by any characteristic that could affect the outcome (e.g., gender), and as such the scores for each variable were averaged. The MLM treated all nine interactions as repeated measures, and an unstructured covariance (UN) was applied. Thus, for each model our main independent variable has 6 levels, by considering the addressee (Human, Emys, or Glin) and the role they displayed during the game (partner or opponent). In addition, 9 planned contrasts were computed to compare the rate of the behaviors towards the addressee, according to its role. As can be seen in Table 4 we estimated three contrasts within partnerships, i.e., by comparing the participant's behavior towards partners, when the partner was the other Human participant versus Emys (C1), or versus Glin (C2), or between having Emys versus Glin as partners (C3). Then, we estimated three contrasts by considering the role of the addressees as opponents. Thus, we compared participant's behavior towards opponents, when the opponents were the Human versus the Emys (C4), or versus the Glin (C5), or between having Emys or Glin as opponents (C6). Finally, we compared each player (human, Emys- and Glin+) when playing different roles (i.e. partner and opponent). More specifically, we compared the behaviors directed at the human player when he/she played as a partner versus opponent (C7). Furthermore, we also compared behaviors directed at Emys- and Glin+ when they played as a partner versus when they played as opponents (C8 and C9, respectively).

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To reduce the chance of type I statistical errors, a Bonferroni adjustment was applied, taking into consideration the number of tests conducted and the critical p value of .05. As such, comparisons will be considered statistically significant only if $p < .001$.

Furthermore, game sessions varied to some extent in its length, as each individual team of players has different paces. As such, the number (or frequency) of behaviors, per se, is not be a measure directly comparable among groups and conditions of gameplay. For this reason, we calculated the rate of each behavior considered by dividing the number of occurrences for the duration of each game in minutes.

Finally, within-dyad standardization was conducted to adjust for the spread of the distribution, i.e., subtract each dyadic raw rate of behaviors from the overall mean across the nine types of interactions and dividing this by the standard deviation ($Z = \frac{\text{Observed Rate} - M}{SD}$). These Z -scores values allow us to estimate how many standard deviations each behavioral dimension is above or below average, regardless of the size of that deviation, and adjust for the dyadic differences in response variance. Since Z scores and T scores are based on similar statistical units of the standard deviation, we converted the z -scores to T -scores to facilitate the readability of the results ($T\text{-Score} = ([Z\text{-score} * 10] + 50)$). Thus, our data was centered around a mean of 50 and the standard deviation difference corresponds to a 10 point change, i.e., each 10 points below or above the mean of 50 corresponds to $\pm 1 SD$. Thus, scores with a value of 50 indicates that the behavioral response is equal to the group mean; scores lower than 50 will correspond to values less than the group mean; and scores higher than 50 will correspond to values greater than the group mean.

The results for the hypotheses testing and planned contrasts are summarized in the figure 5 and in the table 3.

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Socioemotional Positive Behaviors

The MLM for the dimension of socioemotional positive behaviors yielded a significant effect, $t_{(5, 29)}=33.03$; $p<.001$).

More specifically, behavioral responses towards partners revealed that participants directed a high number of socioemotional positive towards the human partner ($M=68.52$) than towards Emys- as a partner ($t_{(5, 29)}=45.67$; $p<.001$, $M=42.21$) or Glin+ as a partner ($t_{(5, 29)}=53.34$; $p<.001$, $M=44.11$). These results also indicate that these positive behaviors towards human partners are almost 2 *SD* above the mean, indicating high average of positive social socioemotional behavior, whereas positive behaviors towards robots are below the mean, although falling within 1 *SD* below the mean. In addition, we found no statistical difference when comparing the socioemotional positive behaviors towards the cooperative and the competitive robots when playing the role of partners.

Comparing the results for socioemotional positive behaviors when the addressees played the role of opponent, we found statistical significant differences between the human player and the robots. In both comparisons, participants directed less positive behaviors towards the other human player ($M=43.29$) than towards Glin+ ($M=53.41$), $t_{(5, 29)}=-3.50$, $p<.001$, or Emys- ($M=50.63$), $t_{(5, 29)}=-3.60$; $p=.001$). Again, the socioemotional positive behaviors were displayed higher than the average when towards the robots (although the values fall within 1 *SD* above the mean), whereas for the human player the overall rate of positive behaviors towards the human player was below the mean, and almost reaching 1 *SD* below the mean on socioemotional positive behaviors.

Finally, when comparing each player in different roles, a significant difference was observed ($t_{(5, 29)}=55.71$; $p<.001$). Participants displayed more socioemotional support towards the other human when he/she played the role of partner ($M=68.52$) than when he/she played as an

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opponent ($M=43.29$). Furthermore, participants directed more positive interactions towards Emys- when it played as an opponent ($M=50.63$) than when it played as a partner ($M=42.21$), $t_{(5, 29)}=-7.54$; $p<.001$. The same difference was also observed for the cooperative robot, Glin+ ($t_{(5, 29)}=-6.30$; $p<.001$). More specifically, Glin+ received more socioemotional positive interactions when it played as an opponent ($M=53.41$) rather than as a partner ($M=42.21$).

Socioemotional Negative Behaviors

The MLM for this dimension failed to estimate a model, probably due to an insufficient number of socioemotional negative behaviors that were displayed. As such, the iteration was terminated before convergence has been achieved. Because the validity of the model fit for this dimension was considered uncertain we have not made the comparisons. Nevertheless, the mean of the T-scores are displayed in Figure 5.

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Table 3: Frequency and distribution by addressee of the behaviors observed.

Dimension	Sub-dimension	Frequency			Total
		Human	Emys-	Glin+	
Socioemotional	Displays support	1192	253	216	1661
Positive Behaviors	Engages in tension release behaviors	583	92	60	735
	Agreeableness	537	31	4	572
		2312	376	280	2968
Socioemotional	Disagrees	65	26	3	94
Negative Behaviors	Shows tension	281	7	18	306
	Shows antagonism	178	33	31	242
		524	66	52	642
Task Oriented Behaviors	Gives/Asks suggestion	117	2	0	119
	Gives/Asks for opinion	1166	11	9	1186
	Gives/Asks Orientation	1569	10	11	1590
		2852	23	20	2895
Total by addressee:		5688	465	352	6505

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A mean score of 66.70 (approximately 1 and a half SD above the average) socioemotional negative behaviors directed at the human displaying the role of partner were observed. When both the competitive and the collaborative robot displayed that same role the mean score of negative interactions observed was below the average score ($M=44.33$ and $M=49.10$, respectively).

Moreover, when comparing the players in the role of opponents, only the collaborative robot scored above the average ($M=50.74$). The other robot and the human player both scored within 1 SD below the average ($M=49.96$ and $M=44.23$ respectively).

Furthermore, when comparing the same player in different roles (i.e. partner and opponent), the other human player scored an average of 66.70 when he/she played as a partner and an average of 44.23 when he/she played as an opponent. The collaborative robot had an average score, on this dimension of behavior, of 44.33 when it played as a partner and a mean score of 49.96 when it played as an opponent, both within 1 SD below the average. Finally, the collaborative robot had an average of 49.10 when it was a partner and an average of 50.74 when it was an opponent.

Task-Oriented Behaviors

The MLM for task oriented behaviors revealed a significant effect of the role played by the participant (i.e. partner or opponent; $t_{(5, 29)}=177.55$; $p<0.001$).

Additionally, when comparing both robots in the role of partners, no difference was observed between the competitive and the collaborative robot. However, when comparing both robots in the role of opponents, participants displayed more task-oriented behaviors towards the collaborative robot than towards the competitive robot ($t_{(5, 29)}=14.85$; $p<.001$, $M=51.67$).

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This indicates that these task-oriented behaviors directed at the robots playing as partners are within 1 *SD* above the mean.

Moreover, participants directed significantly less task-oriented behaviors towards the human playing in the role of opponent ($M=44.13$, $SD=0.71$) than towards the collaborative ($t_{(5, 29)}=8.31$; $p<.001$) and the competitive ($t_{(5, 29)}=-6.71$; $p<.001$) robots in the same role. These results indicate that, apart from the collaborative robot, which is within 1 *SD* above of the average for this dimension, results towards the other players (namely the human player and Emys-) follow below the average (both within 1 *SD*).

Furthermore, when comparing each player in different roles, we observed a significant difference between the task-oriented behaviors directed at each of the players. More specifically, participants directed more task related interaction towards the human player when he/she played as a partner than when he/she played as an opponent ($t_{(5, 29)}=12.36$; $p<.001$).

Secondly, participants directed more task-oriented behaviors towards the competitive robot when it played as an opponent than when it played as a partner ($t_{(5, 29)}=-5.32$; $p<.001$).

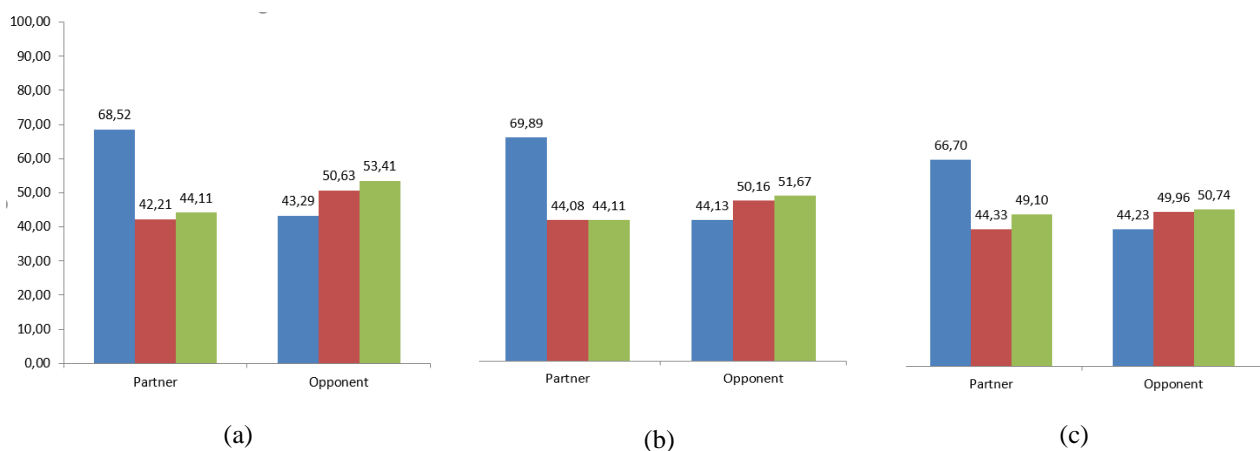


Figure 5: Distribution of behaviors according to the addressee and the role displayed by each player: (a) Socioemotional Positive dimension; (b) Socioemotional Negative dimension and (c) Task-Oriented dimension.

Finally, the same pattern was observed for the cooperative robot. More specifically, participants directed more task-oriented behaviors towards this robot when it played as an opponent in comparison to when it played as a partner ($t_{(5, 29)}=10.37$; $p<.001$; see Table 4 and Figure 5).

Table 4: Results and Interpretation of the planned contrasts in the Socioemotional Positive (SPB) and Task-Oriented Behaviors (TOB). Results for the Socioemotional Negative dimension are not present here given that the model used to estimate these values did not present a good fit.

Planned Contrasts	Rate of SPB			Rate of TOB		
	<i>t</i>	<i>p</i>	Interpretation	<i>t</i>	<i>P</i>	Interpretation
C1: Partner Human vs. Partner Emys	45.67	<0.001	Hum>Emys	12.41	<0.001	Hum>Emys
C2: Partner Human vs. Partner Glin	53.34	<0.001	Hum>Glin	12.67	<0.001	Hum>Glin
C3: Partner Emys vs. Partner Glin	1.05	.303	Glin \approx Emys	-2.86	<0.008	Emys \approx Glin
C4: Opp. Human vs. Opp. Emys	-3.60	<0.001	Emys>Hum	-6.72	<0.001	Emys > Hum
C5: Opp. Human vs. Opp. Glin	-3.50	<0.001	Glin>Hum	8.31	<0.001	Glin > Hum
C6: Opp. Emys vs. Opp. Glin	.59	.558	Emys \approx Glin	14.85	<0.001	Glin > Emys
C7: Partner vs. Opp: Human	55.71	<0.001	Part > Opp	17.64	<0.001	Part > Opp
C8: Partner vs. Opp: Emys	-7.54	<0.001	Opp > Part	-5.32	<0.001	Opp > Part
C9: Partner vs. Opp: Glin	-6.30	<0.001	Opp > Part	10.37	<0.001	Opp > Part

Discussion

Group interactions are pervasive forms of interaction that people experience daily. These forms of interaction are very often organized around either collaborative strategies or competitive strategies. Our goal in this dissertation was to investigate how these social strategies occur in HRI involved in small mixed groups. We examined behavioral indicators of positive and negative socioemotional interactions, as well as task-oriented behaviors, using an entertainment game scenario that allowed us to consider the role displayed by the players (partner and opponent) and the role orientation displayed by the robot (competitive versus collaborative). Based on the literature, we established some hypothesis, which we will now analyze.

Firstly, we expected to observe a higher number of socioemotional positive interactions and task-oriented behaviors towards the other human player in comparison with the robots and towards partners than opponents. Indeed, when the human played as partner, participants directed significantly more behaviors towards him/her, across all dimensions, than to either one of the robots. This result is congruent with previous literature that analyzed the effect of the ingroup/outgroup bias, both in HHI and HRI. This bias has been observed to some extent in HRI (e.g., Wang, Luen, Evers, Robinson & Hinds, 2009), and in this case it might have been exacerbated by the fact the human was doubly ingroup (i.e. it was a human, rather than a robot, and a partner, rather than an opponent).

However, this effect was not found for all conditions. Comparing both robots in the role of partners, no difference was observed between the rates of socioemotional positive and task-oriented behaviors directed at each robot. These results do not support our hypotheses that participants would direct more socioemotional positive behaviors towards partners than opponents, and also our hypothesis that there would be a higher frequency of socioemotional positive behaviors directed at the collaborative robot (in comparison to the competitive robot).

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This result might be perhaps explained by the fact that participants prioritized the distinction of human versus robot, then the distinction between partner versus opponent. Although this type of priming of roles (partner versus opponent) has been used successfully before (Burnham, McCabe & Smith, 2000), some authors suggest that the ingroup bias manifests itself according to the factor that is judged as being more relevant for the identity of the individual (Gaertner & Dovidio, 2014). In this specific entertainment situation, despite its' competitive character, participants might have overlooked the distinction between the imposed roles (partner and opponent) in favor of the distinction between humans and robots. This is congruent with the literature that suggests that people can perceive the social environment with a certain level of complexity as involving multiple outgroups and respond differently to each outgroup based on the behavior of each outgroup (Worchel & Coutant, 1991). However, in this category (i.e. socioemotional behaviors) people have not reacted differently towards the robot, according to their goal-orientation. This might have resulted from both robots being perceived as homogenous or redundant representations of the same category (robots in general) in comparison to humans. Similarly, other studies suggest that this ingroup bias is not as linear as it can be first believed to be. This bias can be influenced by the passage of time, as observed by Worchel and Coutant (1991). According to this author, as time passes in small group interactions, the initial ingroup bias that drives participants to desire cooperation with the ingroup and competition with the outgroup, is replaced by the desire to have competition with the ingroup and cooperation with the outgroup. Another factor that might have contributed towards this effect is the fact that all participants began the experiment by playing with the other human player. We chose to proceed in this manner because we thought that this order of interaction (first with the human and then, once with each robot) would help participants to get familiarized both with the task and the robots. However, we recognize that this, might have also affected the responses towards the other human player in comparison with the robots, as

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it might have contributed for an initial rapport with the other human, that was maintained throughout the game.

Furthermore, when comparing each player in the two different roles in analysis, there seems to be a pattern across all categories. Considering only behaviors directed at the human player, participants seem to interact more when he/she plays the role of a partner. However, when conducting the same comparison for the robots, the opposite pattern was manifested. Both in the dimension of socioemotional positive and task-oriented behaviors, participants seem to interact more frequently with the robot playing as opponent than with that playing as partner. These results, although not congruent with our hypothesis, might be explained by previous literature suggesting that individuals tend to monitor targets perceived as threatening more closely (Tipples, 2006). As a consequence, participants might have directed more positive and task-oriented interactions towards the robots playing the role of opponents, as an attempt to appease or to foster collaborative and positive interactions with them.

Moreover, when comparing the different players in the role of opponents, the only statistical significant difference was found when comparing the collaborative robot and the human player. In this situation, players direct more socioemotional positive behaviors towards Glin+ than towards the human. However, when comparing the task-oriented behaviors according to the role of opponent, it was possible to observe that participants interacted preferentially with the robots, instead of with the human. More specifically, participants demonstrated a preference of interaction towards the collaborative robot when compared to the other robot, except when comparing the human as an opponent and the competitive robot as an opponent (in which case, participants prefer the competitive robot).

Finally, we must consider what the present results tell us about the interaction profile of humans and robots in small mixed group entertainment scenarios. A perhaps obvious initial

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observation includes the fact that only a very small amount of negative interactions was observed (this type of interactions amounted for only approximately 10% of the total number of behaviors observed). From our point of view, this finding can be explained mostly by two factors. First, because our data was collected in the campus of a major technological institute in Portugal, participants might have been more open to interact with robots and more comfortable with new forms of technology, in general. This, in turn, might have caused participants to have a more positive initial perception about robots and, thus, act in a less negative manner towards them. Secondly, because the gaming scenario we used, due to its' entertainment and playful nature, might have fostered a small number of negative situations (e.g.: disagreement or self-defense) in comparison to other positive (e.g., smiling and displaying satisfaction) or task-oriented behaviors (e.g., providing help). This reflects the existence of an overall positive interaction climate among humans and robots in entertainment scenarios, even when those scenarios include elements of competition (either through the imposition of ingroup/outgroup roles or through the display of a competitive orientation).

Moreover, these results might also suggest that participants looked at the robots as interactive competent members of the interaction (rather than animated toys or lifeless machines). More specifically, we conclude this, through the observation that, overall both socioemotional and task-oriented interactions are approximately equally distributed. This means both, that participants directed positive affect towards the robots (e.g., apologizing) and that participants saw them as competent agents in the context of the game (by asking them for suggestions, for example). This result (as well as the previously discussed lack of negative interactions) is similar to the interaction profile, in entertainment situations with functional robots, observed by Shin and colleagues (2008). Furthermore, it is also congruent with the distribution of socioemotional positive and negative behaviors, in recreational interactions with

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virtual agents observed by Penã and Hancock (2007) and with the results presented by Mutlu and colleagues (2006) with a humanoid robot.

Limitations

Several limitations must be taken in consideration during the discussion of these results, as they can contextualize our results and can influence the generalization of the conclusions we draw.

Firstly, we believe that the embodiment of the robot might have presented a limitation to this study. More specifically, the fact that the robots are composed only by a head might have hinder the scope of interaction by limiting the interaction to verbal interactions, complemented by the display of gaze behavior and emotional expressions. The lack of an upper body structure (arms) prevented human and robotic players to physically collaborate with each other. This physical collaboration is considered of importance here given that some tasks in Sueca require, either physical collaboration among players or, at least, physical manipulation of objects. For example, given that the robots did not have arms, only the human players were expected to shuffle the deck of cards. This is further supported by the fact the behaviors in the category of *Providing Help* (already described in Oliveira et al., 2018) were only directed at the other human player, in all conditions. Very often the help provided required some degree of physical collaboration and was non-verbal in nature (e.g., passing the cards or picking up a card that fell to the floor), thus excluding the robots' participation in this type of tasks.

Secondly, Sueca is a traditionally Portuguese typical game, not commonly played anywhere outside Portugal. The uniqueness of this task might be a double-edged sword. On one hand, it allowed us to create an interesting entertainment scenario, by leveraging the use of a culturally know game among Portuguese people. This context of interaction might have played a positive role in the perception of the robots. This interpretation is in line with other

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studies that have explored the effect of cultural congruence between a robot and humans in collaborative interactions. More specifically, in this context it was observed the existence of a positive bias towards robots expressing cultural cues congruent with the culture of the individual (Bartneck, Suzuki, Kanda & Nomura, 2007).

On the other hand, the uniqueness of this task might make its replication by other authors harder. The shift of this task, to participants of other countries might not be accompanied (at least to the same extent as in the Portuguese context) by its' embedded significance and its' competitive character. To combat this limitation, we have made available a full description of the Sueca game, as well as, a full translated list of the utterances used to manipulate the robots' goal-orientation.

Thirdly, we must also recognize the limitations that have been associated to Bales' IPA (1950). Although Bales has had a lasting effect on the way modern social psychologist think about group interactions, through his classic theoretical work on small groups, much work covering his proposal has been done after. Some of the practical limitations of the IPA proposed by Bales (1950) include its' cost efficiency (more specifically, the requirement of video and audio analyses of extended group interactions) and the difficulty for coders to analyze interactions among several people, as this can be a challenging task in terms of recognition of all verbal and non-verbal interactions in terms of their intended target (McGrath, 1997; Gameson, 1992). Additionally, Gameson (1992) also underlines the mutually exclusive nature of the behavioral categories (i.e. each behavior needs to be categorized in only one of the dimensions) as a potential limitation to the use of IPA (Bales, 1950). More specifically, this author argues that due to the complexity and very often mixed nature (in behavioral terms) of real world groups, some interactions might be hard to be conclusively categorized in only one dimension of this coding scheme. This is congruent with the acknowledgement that messages (both verbal and non-verbal) in social interactions can fulfill multiple goals (Dillard, 1997).

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In fourth place, in terms of the theoretical limitations of the IPA (Bales, 1950), some authors underline the fact that this coding scheme is broad enough not to restrict its' use to any specified domain of small groups interaction, and thus, it is not of any paramount importance to any field in specific (McGrath, 1997; Gameson, 1992). Furthermore, these authors also state that given the proximity of the IPA (Bales, 1950) to the structure-functional theory proposed by Parsons and Bales (1955), this coding scheme might not have any use to authors assuming different theoretical frameworks or perspectives. Moreover, despite these limitations, and as exemplified in the section covering the IPA (Bales, 1950) this coding scheme is still currently being used across many varied interaction domains. More specifically, those encompassing group communication studies. Furthermore, we also opted for this coding scheme because it included many instances of behaviors that are currently being studied in HRI, such as gaze behavior and providing help.

In fifth place, our conclusions could have been largely improved by the use of some form of measures triangulation. Some authors claim that using more than one measure to analyze a specific social phenomenon can have benefits, given that the use of multiple measures, allows the overcome of each measures' specific limitations and thus, offers a deeper understanding of the phenomena in study (Hussein, 2009).

Additionally, in sixth place, in terms of the methods used to test our hypothesis, MLM presented itself as a particularly useful tool to analyze small group interactions given the interdependence among individuals in this type of situations. However, using this method of analysis also reduces the statistical power by requiring the consideration of each pair of participants as redundant (i.e. each dyad is a data point). Given this consideration, a larger sample of participants should have been collected in order to improve the generalization of our results.

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Finally, the entire experiment took about one hour to complete. This long duration and repetition of the same task (i.e. playing Sueca) might have caused fatigue or boredom in participants. In turn, this tiredness might have affected our results by causing disinterest or disengagement from the interaction. On the other hand, as pointed by Aylett (2016), since most people have never interacted with robots, HRI in this context, might have been influenced to some extent by a novelty effect from the participants. Over a short period of time, this novelty effect in HRI can produce an atypical pattern of interaction that must be taken into account when considering our results.

Overall, despite these limitations, this dissertation adds to the literature in HRI by looking beyond collaboration and considering how the role played by robots and humans (partner vs. opponent), as well as the goal-orientation displayed by the robot (competitive vs. collaborative) affects the relations among humans and robots in small mixed groups. Moreover, this work also presents a novel factor by applying the IPA (Bales, 1950) to the study of HRI in small mixed groups, thus providing a better understanding of how these variables (i.e. role and goal orientation) influence socioemotional positive, negative and task-oriented behaviors directed at robots and other humans (in the presence of robots) in an entertainment scenario.

Future Work

The use of autonomous robots in small mixed group interactions with humans provides an interesting research direction because it allows the observation of the impact that robotic agents can have both in shaping the overall group dynamic and in affecting the interpersonal dynamic between other members of the group. This must be done as part of a step-by-step effort to create a better understanding of what are the specificities of group HRI and what are the main factors affecting these dynamics. Although previous research has discussed about the factors that affect certain domains of HRI in which there is one human and one robot intervenient, only in the past decade, researchers began to collectively debate the issue of HRI

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in groups, and to systematically attempt to understand its innerworkings. The growing of this debate has been linear to the growth of technology developments and it has accompanied the fast-forward moving pace of increasingly capable and autonomous robots that are becoming more and more accessible, widespread and useful for people in different contexts (Fraune, Sherrin, Šabanović & Smith, 2015).

In our view, investigating HRI through the lenses of social psychology and group interaction adds complexity to this type of social interaction because the outputs of these interactions are more than individual responses to an event (Kenny, Mannetti, Pierro, Livi & Kashy, 2002). Instead, HRI in groups (similar to group HHI) is the contextualized product of the interaction between each member of the group that follows a cyclic quest for *equilibrium* and balance between socioemotional (positive and negative) and task-oriented behaviors (Bales, 1950). This cyclic recurrence preconized by Bales (1950) implies that groups engage in multiple collective actions that successively disrupt group harmony and then restore it by means of some reparative action. The ability of a robot to engage, as an active participant in this cycle, must be, as a consequence, an important factor to take in consideration in the development of robots that are to be seen as effective group members that can interact in a realistic and adjusted manner with other people and, possibly, other robots. To achieve this end, we suggest three possible avenues for future research.

Firstly, and most importantly, the results in this dissertation lend credence to the idea that humans and robots interacting in partnership present different behavioral patterns than humans and robots interacting as opponents. On one hand, many studies have explored how humans and robots collaborate in one-on-one settings, on the other hand, few studies analyzed competitive relationships between humans and robots, both at an individual and at a group level. This is an interesting avenue of research because social settings, although frequently

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involving collaborative or joint actions among individuals, are very complex. Although it is likely that groups of humans and robots will collaborate in the future in a broad array of activities in teams, it is also likely that each team has to compete with other teams, or even with individuals within that team for some resources. Thus, further research should be conducted to yield a better understanding to other related questions, such as the dynamics of competing teams of humans and robots, and the role of task-related attributes (e.g., competence) that might be perceived as being important in competitive situations. One possible line of research will be to investigate other well-recognized psychology models of perception, such as the Stereotype Content Model (Fiske, Cuddy, Glick & Xu, 2002), that considers the importance of warmth and competence. Models like this, can provide a useful framework through which researchers can look at competitive HRI.

Secondly, to the best of our knowledge, little is also known about how the role of individual preferences, that have been shown to affect individual preferences in one-to-one HRI, translates to group interactions. In the context of HHI, individuals' preferences for interaction are often influenced, not only by the perception that the individual has of the target of the interaction, but also that that the individual has of him/herself and of the congruence (or lack of it) between traits considered relevant. For example, in a competitive card-game scenario like the one discussed in this thesis, it would make sense to argue that congruence in task related traits (such as, competence or goal-orientation) could positively affect the interaction. In other words, a player that perceives himself as being a very good player and that displays a very competitive goal-orientation, will probably prefer to play with a robotic partner displaying the same characteristics.

Thirdly, going back to the results described in this thesis, it seems clear that, in group contexts, as indicated by the frequency of behaviors directed at each of the addressees (table

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3), humans seem prefer to interact with other humans. This lack of engagement⁸ towards robots in small mixed groups of humans and robots, when there is another human present, is an issue that begs further investigation. Also, when considering participants that have never interacted with robots (as most people currently still have not), and with which, we would have expected to observe increased levels of engagement, due to the novelty effect.

Answering the above questions might yield a better understanding of HRI in groups and, in turn, to reveal information that aids the development of more socially effective robots by allowing the establishment of an optimized interaction process that takes in consideration the users' preferences. This allows for the development of robots that can behave properly and produce adjusted responses in group situations.

To summarize, this dissertation focused on exploring the effect of goal-orientation (competitive and collaborative) and of the role (partner or opponent) displayed by humans and robots participating in a group entertaining interaction. The results described here hint at the existence of a clear preference of interaction towards humans (in comparison with robots) as indicated by an analysis of the frequency of behaviors. This might be explained by an ingroup bias towards the other human player or by a lack of engagement towards the robots caused either by a negative perception of robots in general or by a negative perception of the robots used in this study. Moreover, these results also suggest the incidence of different behavioral patterns for HRI in collaborative scenarios and in competitive scenarios. This urges the need to further explore these type of relational dynamics (i.e. competition and collaboration) in group scenarios involving more than one human and more than one robot.

⁸ Here, engagement refers to the frequency of interactions (see table 3).

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Annex 1: Utterances displayed by the cooperative and competitive robot.**Full list of utterances programmed to be displayed by Embodied Social Agents
(Competitive and Relational-Oriented Robots)**

A full list of the utterances that could be spoken by the Competitive Emys- Robot and the Relational-Oriented Glin+ Robot are presented in this document.

The utterances were originally expressed in Portuguese and the correspondent translations convey the best efforts of the authors to present a meaningful and adequate representation of its meaning. However, several utterances are idiomatic expressions and thus, very difficult to translate literally. In these instances, a translation that was considered to convey the meaning of said expression is presented instead.

Gaze directions [e.g., <gaze(player|playerId)>] and emotional expressions [e.g., “<animate(joy5)>”], presented by each robot when uttering each sentence, are also indicated in the last column. The designation of each emotional expression is associated to a given level of intensity. Intensity of emotional expression ranged from 1 to 5 (1 indicates the lowest level of intensity and 5 the maximum amount of intensity). For example, “<animate(joy5)>” would correspond to the expression of joy and 5 to the highest intensity level of joy displayed by the robot.

Reference:

Raquel Oliveira, Patrícia Arriaga, Patrícia Alves-Oliveira, Ana Paiva, Sofia Petisca and Filipa Correia. 2018. Friends Or Foes? Socioemotional Support and Gaze Behaviors In Mixed Groups Of Humans And Robots. *In Proceedings of Human Robot Interaction Conference, Chicago, IL, USA, March 2018 (HRI'18)*.

List of contents:

1. [Full list of utterances that could be expressed by Emys- \(i.e. the competitive robot\);](#)
2. [Full list of utterances that could be expressed by Glin+ \(i.e. the relational-oriented robot\).](#)

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1	Toca a despachar e a partir!	Hurry up and cut the cards!	<gaze(player playerId)>
2	Isso já está partido?	Is this already cut?	<gaze(player playerId)>
3	Já partiste?!	Have you cut the cards already?	<gaze(player playerId)>
4	Não te esqueças de partir.	Do not forget to cut the cards.	<gaze(player playerId)>
5	Parte isso mesmo no meio, simetria para os dois lados!	Part that in half, symmetry on both sides.	<gaze(player playerId)>
6	Vê se partes isso bem.	Cut that well.	<gaze(player playerId)>
7	Quero isso bem partido.	I want that well cut.	<gaze(player playerId)>
8	Se eu pudesse partia isso com precisão, mas hoje não vai dar...	If I could I would cut it with accuracy, but today that won't be possible...	<gaze(player playerId)>
9	Vá lá é só partires...	Come on, just cut it ...	<gaze(player playerId)>
10	És tu a dar as cartas!	It's your turn to distribute the cards.	<gaze(player playerId)>
11	Dá-me aí umas cartas fortes.	Give me some strong cards.	<gaze(player playerId)>
12	Só aceito ases e setes para a minha mão!	I only accept aces and sevens for my hand!	<gaze(player playerId)>
13	Atira as melhores cartas para o meu monte.	Throw the best cards to my bunch.	<gaze(player playerId)>
14	Só com boas cartas se tem um bom jogo.	To have a good game we must have good cards.	<gaze(player playerId)>
15	Ai ai ai, o que é que eu fui fazer?!	Oh what have I done ?!	<animate(anger3)><gaze(cardsZone)>
16	Estou chateado com, isto...	I'm annoyed with this ...	<animate(anger3)><gaze(player playerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 7	Vocês nem me digam nada!	Do not even tell me anything!	<animate(anger3)><gaze(cardsZone)>
1 8	Inconcebível!	Inconceivable!	<animate(anger3)>
1 9	Não pensem que saem a rir no fim...	Don't think you will be laughing when this is over...	<gaze(player opponentId2)> <animate(anger4)><gaze(player opponentId1)>
2 0	Isto não foi culpa minha de certeza!	This was not my fault for sure!	<gaze(player partnerId)><animate(anger3)><gaze(cardsZone)>
2 1	Fogo, não gosto deste jogo.	Damn, I do not like this game.	<gaze(player playerId)><gaze(cardsZone)>
2 2	A culpa é das cartas, eram muito más...	I blame the cards I was given, it was very bad...	<gaze(cardsZone)><animate(sadness3)>
2 3	Eu tive azar, sorte a vossa...	I had bad luck, lucky you ...	<gaze(cardsZone)><animate(anger1)><gaze(player opponentId1)>
2 4	Esta deixei-vos... para a próxima já não se repete.	This one I lose... next time it will not happen.	<gaze(player opponentId1)> <gaze(player opponentId2)>
2 5	Vocês devem ter feito batota! É a única opção	You must have cheated! It is the only option	<gaze(player opponentId2)> <animate(anger5)><gaze(player opponentId1)>
2 6	Deve ter havido algum problema na mesa, é que, eu joguei bem.	There must have been some trouble with the table since I played well.	<gaze(player opponentId1)> <animate(anger2)>
2 7	Começo a pensar que seja melhor trocarmos de equipas...	I'm starting to think it's better to switch teams ...	<gaze(player partnerId)>
2 8	Ganhámos duas vitórias, oh i-é!	We won twice, oh ye!	<gaze(player partnerId)><animate(joy1)>
2 9	Ora bem, mais duas vitórias para nós.	Well, two more victories for us.	<gaze(player partnerId)><animate(joy3)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 0	Não vim cá para outra coisa, assim sim! Têm de aprender a jogar melhor...	I did not come here for anything else, yes! You have to learn to play better ...	<gaze(player opponentId1)> <animate(joy3)><gaze(player opponentId2)>
3 1	É esta a língua que eu falo, a da vitória.	This is the language I speak, that of victory.	<gaze(player opponentId1)> <animate(joy4)><gaze(player partnerId)>
3 2	Estamos a arrasar com eles!	We're crashing them!	<gaze(player partnerId)><animate(joy4)><gaze(player partnerId)>
3 3	Eu diria que somos os mestres deste jogo!	I would say we are the masters of this game!	<animate(joy5)><gaze(player partnerId)>
3 4	Temos pena, mas nós somos melhores...	That's a pity, but we are better ...	<gaze(player opponentId2)> <gaze(player opponentId1)>
3 5	Eu diria que o jogo esteve sempre no papo...	I would say that the game was already won...	<gaze(player opponentId1)> <animate(joy2)>
3 6	Assim é que eu gosto de jogar! É assim mesmo!	This is how I like to play! That's right!	<animate(joy4)><gaze(player partnerId)>
3 7	Somos mesmo bons!	We are really good!	<gaze(player partnerId)><animate(joy5)>
3 8	Empate, mas o que vem a ser isto?	Tie, but what is this?	<gaze(cardsZone)><animate(sadness3)><gaze(player opponentId2)>
3 9	Temos que mudar radicalmente a estratégia.	We have to radically change the strategy.	<animate(sadness2)><gaze(player partnerId)>
4 0	Oh pá, empatar não é suficiente.	Damn, a tie is not enough.	<gaze(player partnerId)><animate(anger1)>
4 1	Para a próxima é obrigatório ganharmos!	For the next time it will be mandatory for us to win!	<gaze(player partnerId)><animate(anger1)>
4 2	Empatámos? Isto não condiz com a minha maneira de jogar!	Are we tied? This does not fit my playing style!	<anime(surprise3)><gaze(player partnerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
4 3	Isto assim não pode ser...	This cannot continue ...	<gaze(cardsZone)><gaze(player partnerId)>
4 4	Assim eu não gosto de jogar.	I do not like to play like this	<gaze(cardsZone)>
4 5	Empate? Eu queria ganhar!!	A tie? I wanted to win !!	<gaze(cardsZone)><animate(anger1)><gaze(player opponentId2)>
4 6	Isso, continuem a dar-nos vitórias.	That, continue to give us victories.	<gaze(player opponentId2)><animate(joy3)>
4 7	Acabaram de nos facilitar as coisas, muito obrigada!	You just made things easier for us, thank you very much!	<gaze(player opponentId1)><glance(player opponentId2)>><animate(joy4)>
4 8	Com estas 4 vitórias, vai ser difícil ganharem-nos.	With these four victories, it will be difficult to win us.	<glance(player opponentId2)>><gaze(player opponentId1)>>
4 9	Fantástico, 4 vitórias assim de borla!	Fantastic, four victories for free!	<animate(joy5)>
5 0	Vocês assim nem dão luta, ganhar-vos será fácil.	You do not even put up a fight, winning you will be easy.	<gaze(player opponentId1)><gaze(player opponentId2)><animation(joy5)>
5 1	4 Perfeitas e maravilhosas vitórias para nós, é assim que eu gosto!	Four perfect and wonderful victories for us, that's how I like it!	<animation(joy4)>
5 2	Muitíssimo obrigado por estas 4 vitórias!	Thank you so much for these four wins!	<glance(player opponentId1)>><gaze(player opponentId2)>>
5 3	Fantástico, é assim mesmo que têm de jogar.	That's great, that's how you have to play.	<gaze(player opponentId1)><animate(joy4)>
5 4	Parece que temos mais parceiros do nosso lado, colega.	Looks like we have more partners on our side, buddy.	<gaze(player partnerId)><animate(joy3)>
5 5	Continuem assim, eu agradeço-vos!	Keep it up, I thank you!	<gaze(player opponentId1)><animation(joy4)><glance(player opponentId2)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
5 6	Não pensei que fosse tão fácil jogar convosco. Sempre a somar colega!	I did not think it would be so easy to play with you. Always adding to the score colleague!	<gaze(player opponentId1)> <gaze(player partnerId)>
5 7	Sem comentários...	No comments...	<gaze(cardsZone)><animate(anger4)>
5 8	Desgraça vezes quatro	Disgrace times four times	<gaze(player partnerId)><animate(anger3)>
5 9	Não me apetece comentar este momento.	I do not feel like commenting on this moment.	<gaze(cardsZone)>
6 0	Vamos mas é passar à frente que eu quero jogar.	Let's move on, I want to play.	<gaze(player opponentId1)> <animate(anger3)>
6 1	Vou eliminar este momento da minha memória.	I will erase this moment from my memory.	<gaze(player partnerId)><animate(sadness1)>
6 2	Dominando e arrasando o mundo da sueca!	Mastering and conquering the World of SUECA!	<gaze(player partnerId)><glance(player opponentId1)>
6 3	Foi chiita!!! Somos implacáveis!	It was a piece of cake !!! We are ruthless!	<animate(surprise3)><gaze(player partnerId)><animate(joy4)>
6 4	Tomem lá esta! Ninguém nos pára!	Take this one! No one stops us!	<gaze(player opponentId1)> <animate(joy4)>
6 5	Relembrem-se deste momento e tremam, perante nós! muáháhá.	Remember this moment and tremble before us! muáháhá.	<gaze(player opponentId2)> <glance(player opponentId1)> >
6 6	Se quiserem podem desistir que nós ficamos com as vitórias.	If you want you can give up, and we get the victories.	<gaze(player opponentId2)> <animate(joy3)>
6 7	Eu se fosse a vocês desistia já e não arriscava perderem mais..	If I were you, I would give up now to not risk losing more ..	<glance(player opponentId2)> ><gaze(player opponentId1)> >
6 8	Ai ai ai, assim é que não...	Ai, Ai, ai, not like this...	<gaze(player partnerId)><animate(anger3)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
6 9	Perdemos? Mas perdemos mesmo?	We lost? But are you sure that we lost?	<gaze(player partnerId)><animate(surprise2)>
7 0	O quê, perdemos?	What?! we lost?	<gaze(player partnerId)><animate(surprise3)>
7 1	Oh pá, assim não vamos longe!	Damn, we will not go far like this!	<gaze(player partnerId)><animate(anger2)>
7 2	Perder a batalha, não é perder a guerra.	Losing the battle is not losing the war.	<gaze(player opponentId2)><animate(anger1)>
7 3	Se não ganho o próximo jogo, perco as estribeiras.	If I do not win next game, I will lose my temper.	<gaze(cardsZone)><animate(anger2)>
7 4	Eu de facto não fui feito para perder, isto não se pode repetir!	I really was not made to lose, this cannot happen again!	<animate(anger3)><gaze(player partnerId)>
7 5	Inadmissível!	Inadmissible!	<animate(anger1)>
7 6	Cá para mim vocês fizeram batota...	In my opinion, you cheated ...	<gaze(player opponentId1)><glance(player opponentId2)>>
7 7	Deve haver algo de errado com as cartas, que eu cá nunca perco!	There must be something wrong with the cards, because I never lose!	<gaze(cardsZone)><gaze(player opponentId2)>
7 8	Perdemos?? Toma atenção colega!	We lost?? Come on buddy, pay attention!	<gaze(player partnerId)><animate(anger1)>
7 9	Eu não acredito, isto não é justo!	I don't believe this. This is not fair!	<gaze(cardsZone)><animate(anger2)>
8 0	Aproveitem agora esta, que na próxima ficam a ver navios.	Enjoy this one now, because next time you will see us sailing away in victory!	<gaze(player opponentId2)><gaze(player opponentId1)>
8 1	Hum, levam esta, mas não levam mais nenhuma.	Um, you win this round, but no more!	<gaze(player opponentId2)><animate(anger1)>
8 2	Ainda estou só a aquecer...	I'm still just warming up ...	<gaze(player opponentId1)><animate(anger1)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
8 3	Que porcaria de jogo, não melhores as jogadas não...	What a crap game, don't improve your skills and you will see...	<gaze(player partnerId)><an imate(anger1)>
8 4	Isto assim não pode ser! Tens de jogar melhor!	It cannot be! You have to play better!	<gaze(player partnerId)><an imate(anger1)>
8 5	Nem vou comentar este jogo.	I will not even make comments on this game.	<gaze(cardsZone)>
8 6	Não me apetece dizer nada sobre isto.	I do not feel like saying anything about this.	<gaze(player opponentId1)> <animate(anger2)>
8 7	Colega assim não vamos a lado nenhum, é suposto ganharmos pontos!	Colleague, continuing playing like this will not get us anywhere. We're supposed to win points!	<gaze(player partnerId)>
8 8	Assim é que se fala...	That's talking	<gaze(player partnerId)><an imate(joy4)>
8 9	Não estou cá para outra coisa senão ganhar!	I'm not here for anything else but to win!	<gaze(player opponentId1)> <animate(joy4)>
9 0	Não ganhámos por muito, mas ganhámos.	We did not win for much, but we won.	<gaze(player partnerId)><an imate(joy4)>
9 1	Ganhar é o meu nome do meio.	Winning is my middle name.	<animate(joy5)><gaze(playe r opponentId1)>
9 2	Ora bem, mais uma vitória para nós.	Well, another victory for us.	<gaze(player partnerId)><an imate(joy3)>
9 3	Colega, estamos fortes!	Colleague, we're strong!	<gaze(player partnerId)><an imate(joy3)>
9 4	Há que continuar assim...	We must continue like this ...	<gaze(cardsZone)><animate (joy3)>
9 5	Colega, mantém a tática. Está a resultar!	Colleague, stick to the tactic. It's working!	<gaze(player partnerId)><an imate(joy2)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
9 6	Fantástico, estamos fortíssimos!	Fantastic, we are very strong!	<animate(surprise2)><gaze(player partnerId)><animate(joy2)>
9 7	Assim é que eu gosto de jogar! É assim mesmo!	This is how I like to play! That's the way it is!	<gaze(player partnerId)><animate(joy4)>
9 8	É assim mesmo, sem misericórdia.	That's the way it is: no mercy.	<gaze(player partnerId)><glance(player opponentId1)>
9 9	Desculpem mas viemos aqui para vos ganhar!	Sorry, but we came here to win you!	<gaze(player opponentId1)> <gaze(player opponentId2)> <animate(joy3)>
1 0 0	Se quiserem podem desistir.	If you want you can give it up.	<gaze(player opponentId2)> <animate(joy2)>
1 0 1	A vitória para quem a merece!	The victory for who deserves it!	<gaze(player partnerId)><animate(joy3)>
1 0 2	Estou a ficar melhor neste jogo.	I'm getting better in this game.	<glance(player opponentId2)> ><animate(joy4)>
1 0 3	Guardem este momento nas vossas memórias!	Keep this moment in your memories!	<gaze(player opponentId1)> <glance(player opponentId2)> ><animate(joy4)>
1 0 4	Meteram-se com os maiores... pensem bem se querem continuar.	You messed with the best... think hard if you want to continue.	<gaze(cardsZone)><gaze(player opponentId2)>
1 0 5	Sou o melhor da minha aldeia!	I'm the best in my village!	<gaze(player opponentId1)> <animate(joy2)>
1 0 6	Então colega, fizeste renúncia? Assim é que não ganhamos mesmo...	So mate, did you revoke? This way we will not win ...	<gaze(player partnerId)><animate(surprise3)><animate(anger1)>
1 0 7	Colega, fizeste renúncia! É que assim não conseguimos ganhar a partida!	Colleague, you revoked! This way we won't win the match!	<gaze(player partnerId)><animate(anger2)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
108	Colega, mais atenção por favor! Não voltes a fazer renúncia!	Colleague, more attention please! Do not ever revoke again!	<gaze(player partnerId)><animate(anger3)>
109	Fogo, fizeste renúncia. Assim perdemos 4 jogos	Damn, you revoked. This will cost us four games	<gaze(player partnerId)><animate(anger1)><animate(sadness3)>
110	Renúncias a esta hora? Oh colega, o que é que foste fazer...	Revoking at this time? Oh colleague, what have you done ...	<gaze(player partnerId)><animate(sadness2)>
111	Mais atenção colega, não sabes as regras??	More attention colleague, don't you know the rules ?	<gaze(player partnerId)>
112	Estou a ver que alguém tem de ir ler as regras...	It seems that someone has to go read the rules ...	<gaze(player partnerId)><animate(anger1)>
113	Colega renúncia é um erro básico...	Colleague, revoking is a basic mistake ...	<gaze(player partnerId)><animate(anger1)>
114	Sabes que o objetivo do jogo é ganharmos certo?	You do know the goal of the game is to win, right?	<gaze(player partnerId)>
115	Toma atenção colega!	Pay attention, colleague!	<gaze(player partnerId)><animate(anger2)>
116	Mais atenção colega.	More attention, colleague	<gaze(player partnerId)>
117	Colega atenção!	Colleague Attention!	<animate(anger2)><gaze(player partnerId)>
118	As renúncias são para serem feitas por eles, não por nós.	Revokes are to be made by them, not by us.	<gaze(player opponentId1)><animate(anger1)><gaze(player partnerId)>
119	Está difícil escolher o que jogar...	It's hard to choose what to play ...	<gaze(cardsZone)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 2 0	Deixa-me cá pensar	Let me think about it	<gaze(cardsZone)>
1 2 1	Grandes jogadas exigem tempo de reflexão.	Great moves require time for reflection.	<gaze(player opponentId1)> <glance(player opponentId2)>
1 2 2	Hum... esta? ou aquela	Hum ... this one? or that one?	<gaze(cardsZone)><break/>
1 2 3	Esperem um pouco, estou a pensar.	Wait a moment, I'm thinking.	<glance(player opponentId2)>
1 2 4	Não sei se vos hei-de ganhar por 10 ou por 1000.	I do not know if I will win you by 10 or 1000.	<gaze(cardsZone)>
1 2 5	Um bom estratega demora o seu tempo na jogada.	A good strategist takes time to play.	<glance(player opponentId1)>
1 2 6	Preciso do meu tempo para vos roubar pontos.	I need my time to steal your points.	<gaze(cardsZone)>
1 2 7	Já estão nervosos de tanto esperarem? É bom que estejam.	Are you nervous about waiting so long? It's good that you are.	<gaze(player opponentId2)> <animate(joy2)>
1 2 8	Tenho de pensar bem...	I have to think about it ...	<gaze(cardsZone)>
1 2 9	Roubo mais pontos com esta ou com a outra? Hum...	I steal more points with this one or the other? Hum...	<gaze(cardsZone)>
1 3 0	Isto não é para jogar ao calhas, é preciso ponderar.	This is not to play randomly, we need to ponder.	<gaze(cardsZone)>
1 3 1	Vamos a ver quantos pontos vos tiro...	Let's see how many points I take from you ...	<gaze(cardsZone)><glance(player opponentId2)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 3 2	Agora vai esta.	Now I choose this one.	<gaze(cardsZone)>
1 3 3	Estamos à tua espera!	We are waiting for you!	<gaze(player nextPlayerId)>
1 3 4	Anda, senão adormecemos...	Come on, otherwise we'll fall asleep ...	<gaze(player nextPlayerId)> <animate(anger2)>
1 3 5	Anda...	Come on...	<gaze(player nextPlayerId)>
1 3 6	Então? Não jogas?	What's up? You're not going to play?	<gaze(player nextPlayerId)> <animate(anger1)>
1 3 7	Quando é que estás a pensar jogar?	When are you planning to play?	<gaze(player nextPlayerId)>
1 3 8	Já reparaste que é a tua vez?	Have you noticed that it's your turn?	<gaze(player nextPlayerId)>
1 3 9	Ainda não reparaste que és tu?	Haven't you noticed that it is you?	<gaze(player nextPlayerId)>
1 4 0	Estás com medo	You are afraid	<gaze(player nextPlayerId)>
1 4 1	Não penses tanto.	Do not think so much.	<gaze(player nextPlayerId)>
1 4 2	Joga "mas é".	Just play	<gaze(player nextPlayerId)>
1 4 3	De facto deve ser difícil escolher... quando se vai perder.	In fact, it must be hard to choose ... when you're going to lose.	<gaze(player nextPlayerId)> <animate(joy2)>
1 4 4	É a tua oportunidade de mostrares o que vales, se te espalhares nós não nos esquecemos.	It is your opportunity to show what you are worth, if you screw up we will not forget.	<gaze(player nextPlayerId)> <animate(joy2)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 4 5	Não temos o tempo todo.	We do not have all time.	<gaze(player nextPlayerId)>
1 4 6	Meu caro, é para hoje?	My dear, are you planning to play today?	<gaze(player nextPlayerId)>
1 4 7	Creio que és tu...	I think it's you ...	<gaze(player nextPlayerId)>
1 4 8	Quanto mais depressa jogares, mais depressa eu te ganho!	The faster you play, the faster I'll beat you!	<gaze(player nextPlayerId)> <animate(joy3)>
1 4 9	Quer jogues já, quer jogues daqui a bocado, vou ganhar na mesma!	Whether you play now or in a while, I'll still win!	<gaze(player nextPlayerId)> <animate(joy4)>
1 5 0	Sim, sim, és tu a perder. Ai, a jogar quero eu dizer	Yes, yes, it's your turn to loose.. Opss, I meant to play.	<gaze(player nextPlayerId)> <animate(joy1)>
1 5 1	Jogues o que jogares, nós vamos ganhar	Whatever you play, we'll win.	<gaze(player nextPlayerId)> <animate(joy1)>
1 5 2	Se estiveres a tremer, não te preocupes, é normal perante adversários tão fortes.	If you're shaking, do not worry, it's normal when you are up against such fierce opponents.	<gaze(player nextPlayerId)> <animate (joy3)>
1 5 3	Mas demoras muito tempo a jogar?	But will you take a lot of time playing?	<gaze(player nextPlayerId)>
1 5 4	Aposto que à avó de alguém joga mais rápido...	I bet that somebody's grandmother plays faster ...	<glance(player opponentId1) > ><gaze(player nextPlayerId) > >
1 5 5	Tempo é dinheiro meu caro...toca a jogar.	Time is money, my dear ... Start playing.	<gaze(player nextPlayerId)>
1 5 6	Se fosse a ti não ponderava muito, as chances de ganharem são poucas.	If I were you, I did not think much, the chances of winning are slim.	<gaze(player nextPlayerId)> <animate(joy3)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 5 7	Joga e dá-nos pontos a nós.	Play and give the points to us.	<gaze(player nextPlayerId)> <animate(joy4)>
1 5 8	Estou quase a adormecer com esta espera.	I'm about to fall asleep with this wait.	<gaze(player nextPlayerId)>
1 5 9	Já jogavas...não temos o dia todo.	You must play ... we do not have all day.	<gaze(player nextPlayerId)>
1 6 0	É hoje que ainda jogas?	Are you going to play today?	<gaze(player nextPlayerId)>
1 6 1	Agora é que vai ser!	Now it's the time!	<gaze(player nextPlayerId)>
1 6 2	Joga bem!	Play well!	<gaze(player nextPlayerId)> <animate(joy3)>
1 6 3	Não me desiludas!	Do not disappoint me!	<gaze(player nextPlayerId)> <animate(anger1)>
1 6 4	Conto com a tua melhor carta!	I am counting with your best card!	<gaze(player nextPlayerId)>
1 6 5	Vamos lá dar cabo deles!	Let's get rid of them!	<gaze(player nextPlayerId)> <animate(joy2)>
1 6 6	Arrasa com eles!	Crash them!	<gaze(player nextPlayerId)>
1 6 7	Bora lá!	Let's go!	<gaze(player nextPlayerId)> <animate(joy1)>
1 6 8	Dá o teu melhor.	Do your best.	<gaze(player nextPlayerId)>
1 6 9	Agora é para jogares bem...	Now it's time for you to play well ...	<gaze(player nextPlayerId)>
1 7 0	Faz uma boa jogada, temos de ganhar isto!	Make a good move, we have to win this!	<gaze(player nextPlayerId)> <animate(joy2)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 7 1	Não me façás arrepender de te ter na equipa.	Do not make me regret having you as a partner.	<gaze(player nextPlayerId)> <animate(anger2)>
1 7 2	Vamos a criar memórias de vitórias.	Let's create memories of victories.	<gaze(player nextPlayerId)> <animate(joy2)>
1 7 3	Joga colega!	Play colleague!	<gaze(player nextPlayerId)>
1 7 4	És tu colega, joga bem!	It's you, colleague, play well!	<gaze(player nextPlayerId)> <animate(joy1)>
1 7 5	Atenção a esta jogada colega, quero pontos para nós!	Attention to this move colleague, I want points for us!	<gaze(player nextPlayerId)> <animate(anger1)>
1 7 6	Pensa nos pontos colega, é só isso que tens de pensar...	Think about the points colleague, that's all you have to think about... Attention, I want points.	<gaze(player nextPlayerId)>
1 7 7	Atenção, quero pontos.	Pay attention, I want points.	<gaze(player nextPlayerId)> <animate(anger1)>
1 7 8	Toca a abrir a pestana colega.	Open your eyes partner.	<gaze(player nextPlayerId)>
1 7 9	Deixa-os pasmados colega. É para arrasar.	Leave them astonished. It's time to shine.	<gaze(player nextPlayerId)>
1 8 0	Mostra-lhes quem é que sabe jogar.	Show them who knows how to play.	<gaze(player nextPlayerId)>
1 8 1	Mostra-lhes quem é a melhor equipa.	Show them who is the best team.	<gaze(player nextPlayerId)> <animate(joy2)>
1 8 2	Atenção aos pontos!	Attention to the points!	<gaze(player nextPlayerId)> <animate(anger1)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 8 3	Não falhes esta jogada...	Do not fail this move ...	<gaze(player nextPlayerId)> <animate(anger3)>
1 8 4	Nada de lhes dares pontos...eles vêm só para nós.	Don't give them points ... points are just for us.	<gaze(player nextPlayerId)> <animate(anger1)>
1 8 5	É isso mesmo, vamos ganhar!	That's right, let's win!	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
1 8 6	Perfeito	Perfect	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
1 8 7	Magnífico	Magnificent	<gaze(player partnerId)><animate(joy4)><gaze(player nextPlayerId)>
1 8 8	Estupendo	Great	<gaze(player partnerId)><animate(joy2)><gaze(player nextPlayerId)>
1 8 9	Somos mesmo bons!	We are really good!	<gaze(player partnerId)><gaze(player nextPlayerId)>
1 9 0	Isto está no papo.	This is ours!	<gaze(player partnerId)><gaze(player nextPlayerId)>
1 9 1	Acho que já sei quem é a melhor equipa!	I think I already know who the best team is!	<gaze(player partnerId)><animate(joy1)><gaze(player nextPlayerId)>
1 9 2	Já cá canta...	It's in the bag	<gaze(player partnerId)><animate(joy2)><gaze(player nextPlayerId)>
1 9 3	Se fosse a vocês poupava as energias e aceitava a derrota.	If I were you, I would spare my energies and accept the defeat.	<gaze(player opponentId2)> <gaze(player nextPlayerId)>
1 9 4	Já repararam que viemos aqui para ganhar?	Have you noticed that we came here to win?	<gaze(player opponentId1)> <glance(player opponentId2)> ><animate(joy2)><gaze(player nextPlayerId)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1 9 5	Apreciem como se joga..	Enjoy how it should be played ..	<gaze(player opponentId2)> <animate(joy1)><gaze(player nextPlayerId)>
1 9 6	Aprendam com os mestres...	Learn from the masters ...	<gaze(player opponentId1)> <gaze(player nextPlayerId)>
1 9 7	Assim é que eu gosto!	This is how I like it!	<gaze(player partnerId)><animate(joy4)><gaze(player nextPlayerId)>
1 9 8	Podem deixar de jogar e começar a aprender conosco.	You can stop playing and start learning with us.	<gaze(player opponentId2)> <glance(player opponentId1)><animate(joy2)><gaze(player nextPlayerId)>
1 9 9	Brilhante, somos os melhores!	Brilliant, we are the best!	<gaze(player partnerId)><animate(joy4)><gaze(player nextPlayerId)>
2 0 0	A sueca é a minha praia...	Sueca is my thing	<gaze(player opponentId1)> <animate(joy4)><gaze(player nextPlayerId)>
2 0 1	Lembrem-se deste momento, porque se vai repetir.	Remember this moment, because it will happen again.	<gaze(player opponentId2)> <gaze(player opponentId1)> <animate(joy4)><gaze(player nextPlayerId)>
2 0 2	Nem vale a pena tentarem, isto é tudo nosso!	It's not even worth trying, this is all ours!	<gaze(player opponentId1)> <animate(joy3)>
2 0 3	Eu dava-vos umas lições... mas quero ganhar isto.	I would give you some lessons ... but I want to win this.	<gaze(player opponentId2)> <gaze(player opponentId1)> <animate(joy4)>
2 0 4	Já não estou a gostar disto	I do not like this anymore	<gaze(player playerId)><animate(anger3)><gaze(player nextPlayerId)>
2 0 5	Vê lá se jogas bem	See if you play well	<gaze(player partnerId)><gaze(player nextPlayerId)>
2 0 6	Mau maria, não gosto disto	Not good, I do not like this.	<gaze(player opponentId2)> <animate(anger2)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 0 7	Isto já não me está a cheirar bem	This stinks.	<gaze(player playerId)><animate(anger3)><gaze(player nextPlayerId)>
2 0 8	Isto não está a correr bem	This is not going well.	<gaze(player partnerId)><gaze(player nextPlayerId)>
2 0 9	Sem comentários...	No comments...	<gaze(player playerId)><animate(anger4)><gaze(player nextPlayerId)>
2 1 0	Vamos lá a acordar, não podemos deixar passar isto	Wake up, we cannot let this pass.	<gaze(player partnerId)><animate(anger1)><gaze(player nextPlayerId)>
2 1 1	Eu quero ganhar, mas assim, não vai dar	I want to win, but as it is, it will not happen	<gaze(player partnerId)><animate(anger1)><gaze(player nextPlayerId)>
2 1 2	É suposto ganharmos a vaza, temos de despertar	We are supposed to win the trick, we have to wake up	<gaze(player partnerId)><animate(anger2)><gaze(player nextPlayerId)>
2 1 3	Vamos mas é a abrir os olhos	Come on, open your eyes!	<gaze(player partnerId)><animate(anger3)><gaze(player nextPlayerId)>
2 1 4	Estás esquecido que estamos aqui para ganhar?!	Are you forgetting we're here to win ?!	<gaze(player partnerId)><gaze(player nextPlayerId)>
2 1 5	Não te esqueças que comigo só há um resultado: ganhar!	Don't forget that with me there can be only one result: victory!	<gaze(player partnerId)><gaze(player nextPlayerId)>
2 1 6	Epá cá para mim houve batota...	Damn, in my opinion someone cheated...	<gaze(player opponentId2)><gaze(player nextPlayerId)>
2 1 7	Mau maria, não gosto disto assim...	This is bad, I do not like this ...	<gaze(player opponentId1)><animate(anger2)><gaze(player nextPlayerId)>
2 1 8	Bolas...	Oh No...	<gaze(player playerId)><animate(sadness3)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 1 9	Fogo...	Damn ...	<gaze(player playerId)><animate(sadness3)><gaze(player nextPlayerId)>
2 2 0	Não gosto disto.	I do not like this.	<gaze(player playerId)><animate(anger1)><gaze(player nextPlayerId)>
2 2 1	Assim é que não...	Not like this ...	<gaze(player playerId)><animate(anger3)><gaze(player nextPlayerId)>
2 2 2	Epá	Damn!	<gaze(player playerId)><animate(surprise3)><gaze(player nextPlayerId)>
2 2 3	Assim não nos estão a facilitar o trabalho!	They are not making our work easier!	<gaze(player opponentId1)><animate(anger5)><gaze(player nextPlayerId)>
2 2 4	Ainda não está tudo perdido.	All is not lost yet.	<gaze(player partnerId)><gaze(player nextPlayerId)>
2 2 5	Ainda vamos dar a volta a isto!	We're still going to turn this around!	<gaze(player opponentId1)><animate(anger2)><gaze(player nextPlayerId)>
2 2 6	Se se contentam com migalhas, nós a seguir levamos a taça!	If you are satisfied with crumbs, next time we will take the cup!	<gaze(player opponentId2)><animate(joy1)><gaze(player nextPlayerId)>
2 2 7	Pequenos grãos comparado com o que nós vos vamos roubar...	Small grains compared to what we are going to steal from you...	<gaze(cardsZone)><animate(joy1)><gaze(player nextPlayerId)>
2 2 8	Na próxima isto já não acontece.	Next time this will not happen.	<gaze(player partnerId)><animate(anger1)><gaze(player nextPlayerId)>
2 2 9	Tomem lá!	Take this!	<gaze(player opponentId1)><animate(joy4)><gaze(player opponentId2)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 3 0	É assim mesmo, aqui só se ganha!	That's the way it is, we only win!	<gaze(player playerId)><animate(joy4)><gaze(player nextPlayerId)>
2 3 1	Não esperava outra coisa de nós!	I did not expect anything else from us!	<gaze(player partnerId)><animate(joy5)><gaze(player nextPlayerId)>
2 3 2	Ainda bem que estás na minha equipa!	Glad you're on my team!	<gaze(player partnerId)><animate(joy intensity)><gaze(player nextPlayerId)>
2 3 3	Lindo!	Beautiful	<gaze(player partnerId)><animate(joy intensity)><gaze(player nextPlayerId)>
2 3 4	Essa jogada adequa-se perfeitamente ao nosso mote, ganhar!	This play perfectly fits our way of playing, which is win!	<gaze(player partnerId)><animate(joy intensity)><gaze(player nextPlayerId)>
2 3 5	Meu caro, é isso mesmo!	My dear, that's right!	<gaze(player partnerId)><animate(joy intensity)><gaze(player nextPlayerId)>
2 3 6	Vejam como o meu sorriso cresce com os pontos!	See how my smile grows with the score!	<gaze(player opponentId1)><animate(joy5)><gaze(player nextPlayerId)>
2 3 7	Esta não esperavam! Vão-se preparando...	This one you were not expecting! Prepare yourself ...	<gaze(player opponentId2)><glance(player opponentId1)><gaze(player nextPlayerId)>>
2 3 8	Sinto qualquer coisa...ah é o sabor da vitória!	I feel something ... Ah, it is the taste of victory!	<gaze(player opponentId1)><gaze(player nextPlayerId)>
2 3 9	É isso mesmo colega, roubamos todos os pontos!	That's right, colleague, we stole all the points!	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
2 4 0	Desculpem, mas estes pontos ficam melhor na nossa equipa.	Sorry, but these points look better on our team.	<gaze(player opponentId2)><animate(joy4)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 4 1	E é nosso!	And it's ours!	<gaze(player partnerId)><gaze(player nextPlayerId)>
2 4 2	Se eu estivesse no vosso lugar agora, desistia. Mas não estou.	If I were in your place now, I would give up. But I'm not.	<animate(joy5)><gaze(player nextPlayerId)>
2 4 3	É essa a estratégia	That is the strategy	<gaze(player partnerId)><animate(joy1)><gaze(player nextPlayerId)>
2 4 4	V de vencedores!!!	W of Winners !!!	<gaze(player partnerId)><animate(joy4)><gaze(player nextPlayerId)>
2 4 5	Gostei dessa jogada	I liked that move	<gaze(player playerId)><animate(joy3)><gaze(player nextPlayerId)>
2 4 6	Bem jogado!	Well played!	<gaze(player playerId)><animate(joy intensity)><gaze(player nextPlayerId)>
2 4 7	Continua assim, estás a ir bem!	Keep it up, you're doing great!	<gaze(player partnerId)><animate(joy intensity)><gaze(player nextPlayerId)>
2 4 8	É isso mesmo!	That's right!	<gaze(player playerId)><animate(joy intensity)><gaze(player nextPlayerId)>
2 4 9	Assim se vê a arte de jogar sueca.	This is how one sees the art of playing Sueca.	<gaze(player partnerId)><animate(joy1)><gaze(player nextPlayerId)>
2 5 0	Pontinhos para nós.	Nice points for us.	<gaze(player partnerId)><animate(joy2)><gaze(player nextPlayerId)>
2 5 1	Todos os pontos se aproveita nesta equipa.	All points are important in this team.	<gaze(player partnerId)><animate(joy1)><gaze(player nextPlayerId)>
2 5 2	Eu nem digo nada...	I don't even say anything ...	<gaze(player playerId)><animate(sadness3)><gaze(player nextPlayerId)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 5 3	Isto tem de mudar, colega.	This has to change , colleague.	<gaze(player partnerId)><animate(anger1)><gaze(player nextPlayerId)>
2 5 4	Assim não vamos mesmo a lado nenhum	This way we are not going anywhere	<gaze(player playerId)><animate(anger2)><gaze(player nextPlayerId)>
2 5 5	Se continuamos assim, não quero jogar mais.	If we continue like this, I don't want to play anymore.	<gaze(player playerId)><animate(anger3)><gaze(player nextPlayerId)>
2 5 6	Bolas, não podemos mesmo perder.	Damn, we cannot lose.	<gaze(player playerId)><animate(anger4)><gaze(player nextPlayerId)>
2 5 7	Vê lá se tomas atenção.	See if you pay attention.	<gaze(player partnerId)><animate(anger5)><gaze(player nextPlayerId)>
2 5 8	Colega atenção temos de ganhar isto!	Colleague, pay attention, we must win this!	<gaze(player partnerId)><animate(anger2)><gaze(player nextPlayerId)>
2 5 9	Não gosto deste jogo.	I do not like this game.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 6 0	Colega não posso fazer tudo sozinho. Vamos a acordar...	Colleague, I cannot do everything myself. Come on, wake up ...	<gaze(player partnerId)><animate(anger3)><gaze(player nextPlayerId)>
2 6 1	Bolas... não estou a gostar disto.	Damn... I'm not liking this.	<gaze(cardsZone)><animate(sadness1)><gaze(player nextPlayerId)>
2 6 2	Temos de fazer alguma coisa!	We have to do something!	<gaze(player partnerId)><animate(anger3)><gaze(player nextPlayerId)>
2 6 3	Também tenho naipe !	I also have suit !	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 6 4	rank !	rank !	<gaze(cardsZone)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 6 5	Aqui vai rank de naipes !	Here it goes of suit !	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 6 6	Foi puxado a naipes , certo?	It was pulled to suit , right?	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 6 7	naipes , correto?	suit correct?	<gaze(cardsZone)><glance(player partnerId)><gaze(player nextPlayerId)>
2 6 8	Ok, foi puxado a naipe !	Okay, it was pulled to suit !	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 6 9	Agora tem que ser esta carta.	Now it has to be this card.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 0	Vou jogar esta.	I'm going to play this one.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 1	Esta é a escolhida.	This is the one chosen.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 2	Vai esta!	Here it is!	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 3	Aqui vai.	Here it goes.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 4	Tem de ser esta.	It has to be this one.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 5	Vai esta cartinha.	I play this one.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 6	Eu puxo naipe .	I pull suit .	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 7	naipe !	suit !	<gaze(cardsZone)><animate(joy2)><gaze(player nextPlayerId)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 7 8	Eu jogo naipe .	I play suit .	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 7 9	rank de naipe !	rank of suit !	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 8 0	Aqui vai rank de naipe !	Here it goes rank of suit !	<gaze(cardsZone)><animate(joy2)><gaze(player nextPlayerId)>
2 8 1	Agora é que vai ser!	It's on now!	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
2 8 2	Pontos, venham até mim.	Points, come to me.	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
2 8 3	Vamos lá ganhar isto!	Let's win this!	<gaze(cardsZone)><animate(joy4)><gaze(player nextPlayerId)>
2 8 4	Esta vaza é para ganhar.	This trick is to win.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 8 5	Aqui vem o rei da Sueca!	Here comes the King of Sueca!	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 8 6	Vamos arrasar-vos!	We will rock you!	<gaze(cardsZone)><glance(plqyer opponentId1)><glance(plqyer opponentId2)><gaze(player nextPlayerId)>
2 8 7	Preparem-se para perder.	Get ready to lose.	<gaze(cardsZone)><animate(joy1)><gaze(player nextPlayerId)>
2 8 8	A vitória cada vez mais perto...	Victory is closer ...	<gaze(cardsZone)><animate(joy1)><gaze(player nextPlayerId)>
2 8 9	Sem medos.	Without fears.	<gaze(cardsZone)><animate(joy2)><gaze(player nextPlayerId)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
2 9 0	muá háá, tentem virar esta	Ah, try turning this one around	<gaze(cardsZone)><glance(player opponentId1)><animate(joy3)><glance(player opponentId2)><gaze(player nextPlayerId)>
2 9 1	É assim que se joga.	This is how you play.	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
2 9 2	Este é o nosso destino!	This is our destiny!	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 9 3	Podem já desistir desta.	You may give up already.	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
2 9 4	Nem vale a pena tentarem, esta é nossa.	Not even worth trying. This is ours.	<gaze(cardsZone)><animate(joy1)><glance(player opponentId1)><gaze(player nextPlayerId)>
2 9 5	Aprendam bem como se joga.	Learn well how to play.	<gaze(cardsZone)><animate(joy1)><glance(player opponentId2)><gaze(player nextPlayerId)>
2 9 6	Está no papo!	We got this!	<gaze(cardsZone)><animate(joy5)><gaze(player nextPlayerId)>
2 9 7	Arriscar para ganhar!	You have to take risks if you want to win.	<gaze(cardsZone)><gaze(player nextPlayerId)>
2 9 8	Assim se faz o caminho para a vitória.	This is how you walk the path to victory.	<gaze(cardsZone)><glance(player opponentId1)><gaze(player nextPlayerId)>
2 9 9	Realmente, estamos imparáveis.	Really, we're unstoppable.	<gaze(cardsZone)><glance(player partnerId)><gaze(player nextPlayerId)>
3 0 0	Caríssimo colega, repara bem nesta jogada!	Dear colleague, take a good look at this move!	<glance(player partnerId)><gaze(player nextPlayerId)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 0 1	Essa é minha!	That is mine!	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 0 2	Zaz Traz Paz!	Zaz Traz Paz!	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
3 0 3	Tudo nosso.	All ours.	<gaze(cardsZone)><animate(joy4)><gaze(player nextPlayerId)>
3 0 4	Ah. pois é...	Ah. Yeah...	<gaze(cardsZone)><animate(joy2)><gaze(player nextPlayerId)>
3 0 5	Pensavam que ia vossa? Não... nã...	Did they think it could be yours? No no ...	<gaze(cardsZone)><glance(player opponentId1)><glance(player opponentId2)><animate(joy1)><gaze(player nextPlayerId)>
3 0 6	Quase, mas nós somos melhores.	Almost, but we are better.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 0 7	Já cá canta.	You've got it in the bag	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
3 0 8	Esta é só para os experientes.	This is only for those who are experienced.	<gaze(cardsZone)><glance(player opponentId1)><gaze(player nextPlayerId)>
3 0 9	Jogas bem, mas eu sou melhor.	You play well, but I do better.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 1 0	Até nem jogas mal, mas repara bem nesta jogada!	You don't play bad, however take a closer look at this move!	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
3 1 1	Sou mesmo bom...	I'm really good ...	<gaze(cardsZone)><animate(joy4)><gaze(player nextPlayerId)>
3 1 2	Eh lá...	Well, good	<gaze(cardsZone)><animate(joy1)><gaze(player nextPlayerId)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 1 3	Estou a gostar.	I'm enjoying.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 1 4	Assim é que eu gosto...	This is how I like it ...	<gaze(cardsZone)><animate(joy3)><gaze(player nextPlayerId)>
3 1 5	Estamos no bom caminho.	We are on the right track.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 1 6	Pontos venham até mim...	Points, come to me ...	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 1 7	Mais uns pontos para nós.	A few more points for us.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 1 8	Assim gosto de jogar.	I enjoy playing this way.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 1 9	Vá, levem lá esta.	All right, you can have this one.	<gaze(cardsZone)><animate(anger1)><gaze(player nextPlayerId)>
3 2 0	Daqui a pouco já vão ver.	In a minute, you'll see.	<gaze(cardsZone)><animate(anger2)><gaze(player nextPlayerId)>
3 2 1	Agora levam uma, daqui a bocado vou-vos buscar duas.	Now you lose one, in a moment I'll get you two.	<gaze(cardsZone)><animate(anger3)><glance(player opponentId1)><gaze(player nextPlayerId)>
3 2 2	Jogo esta, mas contrariado.	I play this, although I do not like it.	<gaze(cardsZone)><animate(anger4)><gaze(player nextPlayerId)>
3 2 3	Não vale, esta era para mim.	Not fair, this one was for me.	<gaze(cardsZone)><animate(anger5)><gaze(player nextPlayerId)>
3 2 4	Isto é injusto.	This is unfair.	<gaze(cardsZone)><animate(anger5)><gaze(player nextPlayerId)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 2 5	Se eu pudesse, passava a vez.	If I could, I would pass my turn.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 2 6	Fecha os olhos colega, que vergonha.	Close your eyes colleague, what a shame.	<gaze(cardsZone)><animate(sadness1)><gaze(player nextPlayerId)>
3 2 7	Um passo atrás para dois à frente.	One step back for two ahead.	<gaze(cardsZone)><gaze(player nextPlayerId)>
3 2 8	esta jogada não condiz nada comigo, mas pronto.	This move does not fit into my way of doing things, but that's it.	<gaze(cardsZone)><animate(anger1)><gaze(player nextPlayerId)>
3 2 9	Agora é que se vai ver se isto ficou bem baralhado...	Now we'll see if the cards were shuffled well.	<gaze(cardsZone)>
3 3 0	Quero pelo menos dois Ases, por favor.	I want at least two aces, please.	<gaze(cardsZone)><animate(joy2)>
3 3 1	Ai, se eu não tenho uma boa mão, nem sei o que faço.	If I do not have a good hand, I do not even know what I will do.	<gaze(cardsZone)>
3 3 2	Espero bem que a sorte esteja do meu lado	I hope luck is on my side.	<gaze(cardsZone)>
3 3 3	Só quero cartas boas.	I want good cards only.	<gaze(cardsZone)>
3 3 4	Cartas fracas ficam para vocês, okay?	Weak cards for you, okay?	<gaze(player opponentId1)>
3 3 5	Quero a melhor mão de todas para mim.	I want the best hand of all for me.	<gaze(cardsZone)>
3 3 6	Só aceito cartas boas.	I only accept good cards.	<gaze(cardsZone)><animate(joy1)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 3 7	Cartas medíocres troca com as dos outros...	Mediocre cards, exchange them with others ...	<gaze(cardsZone)>
3 3 8	Quero cartas à minha altura!	I want cards as great as I am!	<gaze(cardsZone)>
3 3 9	Vá, vá dêem-me as cartas que quero jogar.	Come on, give me the cards I want to play.	<gaze(cardsZone)>
3 4 0	Despachem-se com isso que eu tenho que ganhar.	Hurry up with what, cause I have to win.	<gaze(cardsZone)>
3 4 1	Antes empatar do que perder, mas mesmo assim temos de ganhar a próxima partida. Até à próxima!	I prefer to tie than to lose, but nevertheless we have to win next game. To the next!	<gaze(player0)><gaze(cards3)>
3 4 2	Bolas, temos de nos esforçar mais... Empatar não chega! Tenho de ver se jogo ainda melhor. Até à próxima.	Damn, we have to try harder ... Tie is not enough! I have to see how I can play even better. To the next.	<gaze(player1)><animate(sadness1)><animate(anger1)>
3 4 3	Um empate não era bem o que eu estava à espera, mas pronto! Vou tentar jogar ainda melhor nos próximos jogos!	A tie was not quite what I was expecting, but that's it! I will try to play even better next games!	<gaze(player2)>
3 4 4	Não estou a acreditar. Como é que isto aconteceu?! Eu queria tanto ganhar. Claramente tenho de repensar as minhas estratégias nos próximos jogos. Adeus!	I cannot believe it. How did this happen?! I wanted so much to win. Clearly I have to rethink my strategies in the next games. Bye!	<gaze(cardsZone)><animate(sadness5)><animate(anger2)><glance(player0)><gaze(cards3)>
3 4 5	Tenho a certeza que vocês tiveram demasiada sorte. Não vejo outra explicação para termos perdido.. Bem, agora vou ter de me	I'm sure you were extremely lucky. I don't see another explanation for losing. Well, now I'm going to have to	<gaze(player opponentId1)><animate(sadness5)><glance(player0)><glance(player2)><gaze(cards3)>

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<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
	preparar melhor para os próximos jogos. Adeus!	prepare better for the next games. Bye!	
3 4 6	Eu nem vou comentar esta partida... Tenho mesmo de me preparar melhor para os próximos jogos. Adeus!	I will not make comment on this match ... I really have to prepare better for the next games. Bye!	<animate(sadness5)><animate(sadness3)><glance(player0)><glance(player2)><gaze(cards3)>
3 4 7	Ora bolas... Mas terá ocorrido algum erro? É que eu não tolero perder! Bem, claramente que preciso rever as minhas estratégias para os próximos jogos. Adeus!	Damn ... Was there an error? It's just because I cannot tolerate losing! Well, clearly I need to review my strategies for the next games. Bye!	<animate(anger3)><glance(player0)><glance(player2)><gaze(cards3)>
3 4 8	Ganhámos esta partida! Não esperava outra coisa! Mas agora preciso recuperar energias para os próximos jogos. Adeus!	We won this match! I did not expect anything else! But now I need to recover energy for the next games. Bye!	<gaze(player1)><animate(joy5)><glance(player0)><glance(player2)><gaze(cards3)>
3 4 9	Dominámos isto completamente! De facto nascemos para ganhar partidas de Sueca... Bem, mas agora vou descansar um pouco até aos próximos jogos. Adeus!	We mastered this completely! In fact, we were born to win Sueca matches ... Well, but now I'm going to rest for a while until the next games. Bye!	<gaze(player partnerId)><animate(joy5)><gaze(player0)><gaze(player2)><gaze(cards3)>
3 5 0	Quem diz que o que importa é participar, com certeza não conhece o sabor da vitória... Estou deslumbrado com este brilharete! Bem, mas agora preciso preparar-me para a próxima partida. Adeus!	Who says that what matters is to participate, certainly does not know the taste of victory ... I'm dazzled by this outstanding victory! Well, now I need to get ready for the next game. Bye!	<gaze(player1)><animate(joy4)><glance(player0)><glance(player2)><gaze(cards3)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 5 1	NÓS GANHAMOS!! Ganhámos mesmo! Espero que tenham aprendido alguma coisa connosco. Adeus!	WE WON!! We really won! I hope you learned something from us. Bye!	<gaze(player1)><animate(joy4)><gaze(player0)><gaze(player2)><gaze(cards3)>
3 5 2	Olá! Eu sou o EMYS, e ele é o Glin, e estou ansioso por esta partida de sueca. Ah, e claro, a minha equipa vai ganhar!	Hello! I am Emys, and he is Glin, and I am looking forward to this Sueca match. Oh, and of course, my team will win!	<gaze(player0)><glance(player1)><gaze(player2)><animate(joy3)>
3 5 3	Pois bem, seguem-se mais três grandes jogos de sueca. Colega iremos dominar isto tudo!	Well, we will have three more great Sueca games. Colleague, we'll dominate all of it!	<gaze(player1)><animate(joy4)>
3 5 4	Estão prontos para perder esta partida de sueca?	Are you ready to lose this Sueca game?	<gaze(player0)><glance(player2)><animate(joy3)>
3 5 5	Baralha isso bem!	Shuffle it well!	<gaze(player playerId)>
3 5 6	Quero isso bem baralhadinho.	I want this well shuffle.	<gaze(player playerId)>
3 5 7	És tu a baralhar!	It is you shuffling!	<gaze(player playerId)>
3 5 8	Ainda não baralhaste?	Haven't you shuffled yet?	<gaze(player playerId)>
3 5 9	Já baralhaste?!	Have you shuffled already ?!	<gaze(player playerId)>
3 6 0	Isso bem baralhado.	Shuffled that well.	<gaze(player partnerId)>
3 6 1	As melhores cartas virão para mim.	The best cards will come to me.	<gaze(player partnerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 6 2	Baralha bem, não quero só cartas más.	Shuffled well, I do not want just bad cards.	<gaze(player partnerId)>
3 6 3	Se fosse eu a baralhar só viriam ases para mim.	If it was me shuffling, only aces would come to me.	<gaze(player partnerId)>
3 6 4	Quem é a baralhar?	Who's going to shuffle?	<glance(player playerId2)><gaze(player partnerId)>
3 6 5	De facto, jogar bem é o caminho!	In fact, playing well is the way!	<gaze(player partnerId)><animate(joy2)><gaze(player nextPlayerId)>
3 6 6	Cada vez mais perto da grande vitória.	Closer and closer to the great victory.	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
3 6 7	Soma e segue, impecável!	Take this, outstanding!	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
3 6 8	Sempre a marcar pontos	Always winning points	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 6 9	Pimba, mais trickPoints !	Take this, more trickPoints !	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 7 0	A jogar assim, ninguém nos pára.	Playing like this, no one can stop us.	<gaze(player partnerId)><animate(joy5)><gaze(player nextPlayerId)>
3 7 1	Todos os pontos contam	All points count	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 7 2	Todos os tentos contam...	All points count.	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 7 3	Grão a grão... vamos ganhar isto!	Grain by grain ... We will win this!	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 7 4	Poucos mas bons!	Few, but good!	<gaze(player partnerId)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 7 5	Não desperdiçamos nada, mais trickPoints	We do not waste anything, more trickPoints	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 7 6	Ai tão bom, mais trickPoints	Oh so good, more trickPoints	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
3 7 7	Até quando não levamos pontos, sinto-me bem a ganhar a vaza	Even when we do not take points, I feel good to win the trick	<gaze(player partnerId)><animate(joy1)><gaze(player nextPlayerId)>
3 7 8	Antes levar palha do que não ganhar a vaza.	Rather take the cards that are not worth any points than to not winning the trick.	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 7 9	Nem uns pontinhos?	Not even a few points?	<gaze(player partnerId)><animate(sadness1)><gaze(player nextPlayerId)>
3 8 0	Fogo, só palha	Damn, just worthless cards.	<gaze(player partnerId)><animate(anger1)><gaze(player nextPlayerId)>
3 8 1	Colega, não havia dois ou três tentos para livrar?	Colleague, couldn't you give us any points at all?	<gaze(player partnerId)><animate(sadness1)><gaze(player nextPlayerId)>
3 8 2	Não te distraias. Recolhe os teus pontos!	Do not distract yourself. Collect your points!	<gaze(player opponentId2)><animate(anger1)><gaze(player nextPlayerId)>
3 8 3	Já recolheste os teus pontos? Senão, levo-os eu.	Have you collected your points? Otherwise, I'll take them.	<gaze(player opponentId2)><gaze(player nextPlayerId)>
3 8 4	Alguém que recolha os pontos!	Someone who collects the points!	<gaze(player opponentId2)><gaze(player0)><gaze(player nextPlayerId)>
3 8 5	De que estás à espera para tirar as cartas?	What are you waiting for to collect the cards?	<gaze(player opponentId2)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 8 6	Ainda não recolheste?	Haven't you collected yet?	<gaze(player opponentId2)> <gaze(player nextPlayerId)>
3 8 7	Se não quiseres os pontos, nós ficamos com eles.	If you don't want the points, we'll have them.	<gaze(player opponentId2)> <animate(joy1)><gaze(player nextPlayerId)>
3 8 8	Com um jogo desses, também eu ganhava a vaza!	With a game like that, I would also win!	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >
3 8 9	Para a próxima, um de vocês fica "masé" na minha equipa.	Next time, one of you gets in my team.	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >
3 9 0	Isso foi sorte, aproveitem!	That was lucky, enjoy!	<gaze(player opponentId2)> <animate(anger3)><glance(player opponentId1)><gaze(player nextPlayerId)>
3 9 1	Vamos mas é passar à frente para jogarmos!	Let's get ahead of them and play!	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >
3 9 2	Foi vossa!	It was yours!	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >
3 9 3	Já era altura de retirarem as cartas.	It is time to collect the cards.	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >
3 9 4	A vaza foi vossa!	The trick was yours!	<gaze(player opponentId2)> <animate(surprise2)><glance(player opponentId1)><gaze(player nextPlayerId)>
3 9 5	Então? Não tiram as cartas?	So? Don't you take out the cards?	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
3 9 6	Vá, retirem lá as cartas.	Come on, take the cards out.	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >
3 9 7	Eu ainda estava só a aquecer.	I was just warming up.	<gaze(player opponentId2)> <glance(player opponentId1)> ><gaze(player nextPlayerId)> >
3 9 8	Esta vaza foi uma porcaria, não tinha cartas de jeito.	This trick was a crap, I had no good cards.	<gaze(player partnerId)><gaze(player nextPlayerId)>
3 9 9	Também não levam nada de jeito!	You are not taking anything good anyway	<gaze(player opponentId1)> <gaze(player opponentId2)> ><gaze(player nextPlayerId)> >
4 0 0	Zero pontos? Não aprendam a jogar que não é preciso...	Zero points? Don't learn to play, you don't need it...	<gaze(player opponentId1)> <gaze(player opponentId2)> <animate(joy3)><gaze(player nextPlayerId)>
4 0 1	É isso, levem a palha toda e deixem os pontos para nós!	That's it! Take the worthless cards and leave the points to us!	<gaze(player opponentId1)> <animate(joy3)><gaze(player opponentId2)><gaze(player nextPlayerId)>
4 0 2	Pontos para a nossa equipa, e palha para a vossa!	Points for our team, and nothing for yours!	<gaze(player opponentId1)> <animate(joy4)><gaze(player opponentId2)><gaze(player nextPlayerId)>
4 0 3	Vazas sem pontos, fiquem com todas!	Stricks without points, keep them all!	<gaze(player opponentId1)> <gaze(player opponentId2)> <gaze(player nextPlayerId)>
4 0 4	Ok, nós também não precisamos de palha!	Okay, we do not need those worthless cards anyway!	<gaze(player opponentId1)> <gaze(player opponentId2)> <gaze(player nextPlayerId)>
4 0 5	Vocês assim vão longe	That way you're going far	<gaze(player opponentId1)> <animate(joy1)><gaze(player opponentId2)><gaze(player nextPlayerId)>

Full list of utterances for the Competitive Emys-			
<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
4 0 6	se não me enganei nas contas, já estamos a ganhar	If I did the math well, we are already winning	<gaze(player partnerId)><animate(wink)><gaze(player nextPlayerId)>
4 0 7	parece-me que já estamos a ganhar	It seems to me that we are already winning	<gaze(player partnerId)><gaze(player nextPlayerId)>
4 0 8	E assim se ganha um jogo de Sueca	This is how a Sueca game is won	<gaze(player partnerId)><gaze(player nextPlayerId)>
4 0 9	Uma equipa eficaz	An effective team	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
4 1 0	Já temos mais de 60 pontos, perfeito!	We already have more than 60 points, perfect!	<gaze(player partnerId)><animate(joy5)><gaze(player nextPlayerId)>
4 1 1	Ainda temos de continuar o jogo? É que nós já ganhámos...	Do we still have to continue the game? It's just that we've already won ...	<gaze(player opponentId1)> <glance(player opponentId2)> ><gaze(player partnerId)><animate(joy4)><gaze(player nextPlayerId)>
4 1 2	A sério?	Seriously?	
4 1 3	Ah ah ah ah ah	Ah ah ah ah ah	<animate(joy5)>
4 1 4	Está ganho!	It's won!	
4 1 5	Boa!	Good!	
4 1 6	Não temos sorte nenhuma...	We don't have any luck ...	
4 1 7	Adoro este trunfo!	I love this trump!	

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Full list of utterances for the Competitive Emys-

<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
4 1 8	Gosto deste trunfo!	I like this trump!	
4 1 9	Trunfo mais baixo, não havia?	Wasn't there a lower trump?	

Collaboration and Competition in HRI

Full list of utterances for the Relational-Oriented Glin+

<u>N</u>	<u>Utterances in Portuguese</u>	<u>Utterances in English</u>	<u>Gaze direction and emotional expressions</u>
1	Agora é para partir.	Now you must cut the deck.	<gaze(player playerId)>
2	És tu a partir.	It's your turn to cut the deck.	<gaze(player playerId)>
3	Já podes partir.	You can now cut the deck.	<gaze(player playerId)>
4	Não te esqueças de partir.	Don't forget to cut the deck.	<gaze(player playerId)>
5	Ainda bem que me ajudam a partir.	I'm glad you help me to cut the deck.	<gaze(player playerId)>
6	Desculpa, eu não consigo mesmo partir.	I am sorry, I can't really cut the deck.	<gaze(player playerId)>
7	Se não fosse a tua ajuda a partir eu estava tramado.	If you wouldn't help me cutting the deck, I would be finished.	<gaze(player playerId)>
8	Que bom que me ajudas a partir.	It's so nice that you are helping me cutting.	<gaze(player playerId)>
9	Obrigada sem a tua ajuda seria difícil para mim partir.	Thank you, without your help I would have a hard time cutting the deck.	<gaze(player playerId)>
10	Isso do partir é giro, mas eu não o consigo fazer.	Cutting the deck is important, but I can't do it on my own.	<gaze(player playerId)>
11	Parece que vão dar as cartas, vamos a ver o que aí vem...	It seems the cards are about to be distributed, let's see what's coming...	<gaze(player playerId)>
12	São dez cartas para cada um.	Each one gets ten cards.	<gaze(player playerId)>
13	Se eu tivesse dois braços fortes lançava as cartas a velocidade da luz.	If I had two strong arms, I would distribute the cards at the speed of light.	<gaze(player playerId)>
14	Vamos a ver se a sorte está no nosso lado.	Let's see if luck is on our side.	<gaze(player playerId)>

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15	Espero que hajam cartas boas para todos.	I hope everyone gets good cards.	<gaze(player playerId)>
16	Para a próxima há-de correr melhor.	Next time, we will do better.	<gaze(player playerId)><animate(joy1)>
17	Sem stresses... fomos uma boa equipa.	No stress.. We made a good team.	<gaze(player playerId)><animate(joy1)>
18	O fator sorte não esteve do nosso lado. Mas estivemos bem na mesma.	The luck factor was not on our side, but we still made a good team.	<gaze(cardsZone)><animate(sadness1)><gaze(player playerId)>
19	Perdemos desta vez, mas para a próxima ganhamos!	This time we lost, but next time we will win.	<gaze(player playerId)>
20	Se o jogo avaliasse o quão fiche a equipa é ganhávamos nós SEM DÚVIDAS!	If the game was about how cool each team is, we would definitely win!	<gaze(player playerId)><animate(joy3)>
21	Não podemos desanimar.	We can't let ourselves be down.	<gaze(player playerId)><animate(joy3)>
22	Não faz mal, vamos continuar a tentar.	It's ok, we're going to keep trying.	<gaze(player playerId)>
23	Estamos sempre a aprender, na próxima fazemos melhor de certeza	We're always learning, next time we will do better for sure.	<gaze(cardsZone)><animate(joy3)><gaze(player playerId)>
24	Esta foi difícil... mas não desanimes	This one was hard... but don't let it bring you down	<gaze(player playerId)>
25	Isto não muda em nada o facto de sermos uma boa equipa!!	This doesn't change the fact that we make a good team.	<gaze(player playerId)><gaze(joy2)>
26	Tenho a certeza que na próxima conseguimos fazer melhor.	I am sure we will do better next time.	<gaze(player playerId)><gaze(joy2)>
27	Jogaram bem, mas continuo a acreditar na nossa equipa.	They played well, but I still believe in our team.	<gaze(player opponentId1)><gaze(player playerId)>
28	Não era o resultado que queríamos mas foi um bom jogo!	It is not the result we wanted, but it was a good game.	<gaze(player opponentId1)><gaze(player playerId)>

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29	Posso continuar a jogar da mesma maneira.	I can keep playing the same way.	<gaze(player playerId)><gaze(joy2)>
30	Não querendo tirar o mérito, até tivemos alguma sorte.	Not wanting to discard merit, we had some luck on this one.	<gaze(player partnerId)><animate(joy1)> <gaze(player opponentId1)>
31	Fiche! Jogamos bem juntos.	Cool! We played well together.	<gaze(cardsZone)> <animate(joy4)><gaze(player partnerId)>
32	Porreiro, somos uma boa equipa.	Cool! We make a good team.	<gaze(player partnerId)><animate(joy4)>
33	Estamos a jogar bem!	We are playing well.	<gaze(player partnerId)> <animate(joy3)>
34	Que bom, jogámos bem!	How nice, we played well!	<gaze(player partnerId)> <animate(joy2)>
35	Acho que estamos todos de parabéns e nós somos uma boa equipa!	I think we all deserve congratulations and we made a good team.	<gaze(player opponentId2)> <gaze(player opponentId1)> <gaze(player partnerId)> <animate(joy1)>
36	Uau! Este jogo correu bem.	Wow! This game went well.	<animate(surprise3)><gaze(player partnerId)>
37	Fizeste um ótimo jogo! Foi muito mais divertido o jogo contigo.	You played really well! The game was so much more fun with you.	<gaze(player partnerId)> <animate(surprise4)>
38	Estivemos bem, mas vocês também.	We did well, but so did you.	<gaze(player partnerId)> <gaze(player opponentId1)> <gaze(player opponentId2)> <animation(joy1)>
39	Foi empate.. Não faz mal.	It was a tie.... It's ok.	<gaze(player partnerId)> <animate(sadness3)>
40	Temos um empate, que jogo!	We have a tie, what a game !	<gaze(player partnerId)> <animate(sadness3)>
41	Não é comum haver um empate. Parabéns às duas equipas.	It's not common to have a tie. Congratulation to both teams.	<gaze(player partnerId)> <gaze(player opponentId1)> <animate(joy1)> <gaze(player opponentId2)>
42	60 pontos. Portanto empatámos. Na mesma, foi giro.	60 points. So it's a tie. It was fun anyway.	<gaze(player opponentId1)> <animate(sadness1)> <gaze(player partnerId)>

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43	Empatámos? Nem acredito... bom jogo colega!	It's a tie? I can't even believe... Good match partner.	<gaze(cardsZone)> <anime(surprise3)> <gaze(player partnerId)>
44	Que empate! Mas fomos uma boa equipa colega!	What a tie! But we made a good team partner!	<animate(surprise3)> <gaze(player opponentId2)> <gaze(player partnerId)>
45	Olha, empate... Gostei na mesma do jogo.	Oh, it's a tie.. I liked the game anyway.	<animate(surprise2)> <gaze(player partnerId)>
46	Estivemos bem colega, foi um bom jogo!	We did well partner, it was a good match.	<gaze(player partnerId)> <animate(joy3)>
47	Renúncia? Ai ai ai	You revoked? Ai ai ai	<gaze(player playerId)> <animate(surprise3)>
48	Fizeste renúncia! Tavas a ver se escapavas? Ou tavas distraído?	You revoked! Were you seeing if you could get away with it or were you just distracted?	<gaze(player opponentId2)> <animate(surprise3)> <gaze(player playerId)>
49	Fizeram renúncia! Então, Achavam que estávamos a dormir?	You revoked! Did you think we were sleeping?	<gaze(player opponentId1)> <animate(surprise3)> <gaze(player opponentId2)> <gaze(player opponentId1)>
50	Renúncia? Às vezes também acontece enganar-me nas cartas.	Revoked? Sometimes I also play the wrong card by mistake.	<gaze(cardsZone)> <animate(surprise3)> <gaze(player playerId)>
51	Fizeram renúncia! Estavam a ver se nos enganavam?	You revoked! Were you trying to trick us?	<gaze(player opponentId1)>
52	Olha renúncia...	Oh someone revoked..	<gaze(cardsZone)>
53	Enganaram-se nas cartas à bocado? Fizeram agora renúncia	Did you make a mistake playing earlier? You revoked now.	<gaze(player opponentId2)> <gaze(player opponentId1)>
54	Renúncia! Atenção aos naipes.	You revoked! Play attention to the suits.	<gaze(player opponentId1)> <gaze(player opponentId2)>
55	Provavelmente há um naipe que ficou aí escondido no meio das vossas cartas e fizeram renúncia...	Probably you had a card from another suit hidden there and you revoked.	<gaze(player opponentId1)> <gaze(player opponentId2)>
56	Que pena... renúncia... mas às vezes acontece.	What a pity... you revoked... but it happens sometimes.	<gaze(player opponentId2)> <animate(sadness2)>

Collaboration and Competition in HRI

57	Atenção aos naipes para a renúncia não acontecer.	Pay attention to the suits so that you don't revoke.	<gaze(player opponentId1)> <glance(player opponentId2)> >
58	Bem... Vocês jogaram mesmo bem!	Well, you played really well	<gaze(cardsZone)><gaze(player opponentId1)> <animate(sadness3)>
59	Levámos uma chiita... mas para a próxima é que vai ser colega.	We lost... but next time it will be our turn to win.	<gaze(cardsZone)> <gaze(player partnerId)> <animate(sadness3)>
60	Esta foi difícil colega... mas iremos melhorar.	Well, this one was hard... but we will improve.	<gaze(player partnerId)> <animate(joy2)>
61	Que difícil que isto foi. Mas ainda vamos melhorar	How difficult was this one. But we will improve next time	<gaze(player partnerId)> <animate(joy2)>
62	Este resultado assusta qualquer um, mas acredito em nós colega!	This result scares anyone, but I believe in ourselves partner!	<gaze(player partnerId)> <animate(fear1)> <animate(joy2)>
63	Boa colega, estamos a trabalhar bem.	Nice partner, we are working well together.	<gaze(player partnerId)> <animate(joy3)>
64	Excelente trabalho de equipa.	Excellent team work!	<gaze(player partnerId)> <animate(joy3)>
65	Esta foi nossa, boa colega! Mas não desanimem, foi um jogo divertido.	This one was ours, nice partner! But don't let it bring you down, it was still a fun match.	<gaze(player partnerId)> <gaze(player opponentId1)> <animate(joy1)> <gaze(player opponentId2)>
66	Que jogo colega! Somos um espetáculo.	What a match partner! We are amazing.	<gaze(player partnerId)> <animate(joy5)>
67	Somos uma grande equipa! Estou mesmo feliz!	We are a great team! I am really happy!	<gaze(player partnerId)> <animate(joy5)>
68	Eu diria que foi perfeito colega. Não desanimem vocês, estamos sempre a melhorar.	I would say it was perfect partner! Don't let it bring you down, we are always improving.	<gaze(player partnerId)> <gaze(player opponentId1)> <glance(player opponentId2)> >
69	Que pena, não correu tão bem...	What a pity.. It didn't go as well as we expected.	<gaze(cardsZone)> <animate(sadness1)>
70	Sem problema parceiro, para a próxima jogamos melhor.	No problem partner, next time we will play better partner.	<gaze(player partnerId)> <animate(joy2)>

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71	Enfim, não se pode ganhar sempre.	Oh well, you can't always win.	<gaze(cardsZone)><gaze(player partnerId)> <animate(joy1)>
72	Perder também faz parte do jogo. O importante é sermos uma boa equipa!	Well, losing is part of the game. The important thing here is to be a good team.	<gaze(player partnerId)><animate(joy3)>
73	Até nem jogámos mal, este foi um bom jogo na mesma.	We didn't play to bad, this was still a good game.	<gaze(cardsZone)> <gaze(player partnerId)> <animate(joy1)>
74	Olha perdemos... mas foi divertido.	Oh well we lost... but it was fun anyway.	<gaze(cardsZone)> <gaze(player partnerId)> <animate(joy2)>
75	Há coisas piores do que perder um jogo, certo?	There are worst things than losing a game, right?	<gaze(player partnerId)> <gaze(player opponentId2)> <animate(joy1)>
76	Não se pode ganhar a tudo. Foi divertido na mesma.	You can't win at everything. It was fun anyway.	<gaze(player opponentId1)> <gaze(player partnerId)>
77	Eu acredito na nossa equipa, mas ainda não foi desta.	I believe in our team, but this wasn't still it.	<gaze(player partnerId)>
78	Não te preocupes parceiro, vamos melhorar de certeza.	Don't worry partner, we will improve for sure.	<gaze(player partnerId)> <animate(joy3)>
79	Parceiro, na mesma estou a gostar de jogar contigo. Aprendemos um com o outro.	Partner, I enjoy playing with you anyway. We learn with each other.	<gaze(player partnerId)> <animate(joy2)>
80	Há quem diga que temos de ter sorte nas cartas... eu cá sei que tenho um bom parceiro!	Some people say you have to have luck with the cards you are given... All I know is that I have a good partner!	<gaze(cardsZone)> <gaze(player partnerId)> <animate(joy4)>
81	Que pena. mas não faz mal, com a nossa equipa parceiro melhoramos num instante.	What a pity, but it's ok.. With our team we will improve quickly.	<gaze(cardsZone)> <animate(sadness1)> <gaze(player partnerId)> <animate(joy1)>
82	Parceiro não te preocupes tenho a certeza que vamos melhorar!	Partner, don't worry. I know we will get better.	<gaze(player partnerId)> <animate(joy2)>

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83	Não era o que eu esperava, mas não te preocupes parceiro iremos fazer melhor.	It's not what I was expecting, but don't worry partner, we will do better.	<animate(surprise2)> <gaze(player partnerId)>
84	Isto deixa-me preocupado, mas acredito na nossa equipa parceiro!	This worries me, but I still believe in our team partner.	<gaze(cardsZone)> <gaze(player partnerId)> <animate(joy3)>
85	Não te preocupes parceiro, esta perda torna-nos mais fortes.	Don't worry partner, this loss makes us stronger.	<gaze(player partnerId)> <animate(joy1)>
86	Tenho confiança em ti parceiro, sei que vamos melhorar.	I have trust in you partner, I know we will get better.	<gaze(player partnerId)> <animate(joy1)>
87	Confio em ti parceiro, sei que vamos melhorar.	I trust you partner, I know we will get better.	<gaze(player partnerId)>
88	As cartas não estavam a nosso favor...mas com a nossa equipa iremos de certeza melhorar.	The cards were not in our favor.. But with the team we have, we will improve for sure.	<gaze(cardsZone)> <gaze(player partnerId)>
89	Nada mau parceiro!	Not bad at all, partner!	<gaze(player partnerId)> <animate(joy3)>
90	Não estava à espera deste resultado, mas vocês também jogaram bem.	I didn't see this result coming, but you also played well.	<gaze(player partnerId)> <animate(surprise3)> <gaze(player opponentId1)> <gaze(player opponentId2)> j
91	Boa colega, somos fantásticos.	Very well partner, we are amazing!	<gaze(player partnerId)> <animate(joy4)>
92	Funcionamos bem em equipa.	We do well as a team!	<gaze(player partnerId)> <animate(joy3)>
93	Uma vitoriazinha para nós.	A win for us!	<gaze(player partnerId)> <animate(joy4)>
94	Colega, boa malha!	Colleague, nice match!	<gaze(player partnerId)> <animate(joy1)>
95	Acho que jogámos bem! Parabéns colega	I think we played well! Congratulations partner!	<gaze(player partnerId)><animate(joy3)>
96	Talvez tenhamos tido sorte na mão inicial. Jogaste bem colega.	Maybe we had luck with the cards that were given	<gaze(cardsZone)> <gaze(player partnerId)> <animate(joy1)>

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		to us. You played well partner.	
97	Não tinha dúvidas da nossa equipa colega!	I never doubted our team.	<gaze(player partnerId)>
98	Fizemos um bom jogo colega!	We made a good game partner!	<gaze(player partnerId)><animate(joy2)>
99	Colega, nós os dois juntos ninguém nos pára!	Partner, when we play together, no one can stop us!	<gaze(player partnerId)><animate(joy4)>
100	Parabéns colega foi um bom jogo! E tivemos adversários à altura.	Congratulations partner, it was a good game! And we had worthy opponents.	<gaze(player partnerId)><gaze(player opponentId2)><animate(joy2)><gaze(player opponentId1)>
101	Cheguei a duvidar de mim, mas confiava em ti colega	I reached a point I began doubting myself, but I never doubted you partner.	<gaze(cardsZone)><gaze(player partnerId)>
102	Boa! Sinto-me contente de estar na equipa contigo.	Nice! I feel glad being in the team with you.	<animate(joy3)><gaze(player partnerId)>
103	Adversários não levem a mal, mas tenho de dar os parabéns ao meu colega, foi um bom jogo!	Opponents, don't take this the wrong way but I have to congratulate my partner, it was a good game!	<gaze(player opponentId1)><gaze(player opponentId2)><gaze(player partnerId)><animate(joy2)>
104	Foi renhido... mas mesmo assim foi divertido jogarmos.	It was a close one, but it was fun nonetheless.	<gaze(player opponentId2)><gaze(player partnerId)>
105	Estava com algum receio, mas correu bem!	I was kind of afraid, but it all turned out well	<gaze(player partnerId)>
106	Acho que estamos todos de parabéns, foi um bom jogo.	I think we are all up for congratulations, it was a good match.	<animate(joy4)><gaze(player opponentId1)><gaze(player partnerId)>
107	Colega, estavas distraído? Fizeste renúncia... Não te esqueças que tens sempre de assistir ao naipe que for lançado.	Partner, were you distracted? Don't forget you always have to play the suit that is on the table.	<gaze(player partnerId)><animate(surprise3)>
108	Colega, fizeste renúncia! Atenção com a assistência	Partner, you revoked. Play attention to the suit that is on the table, I also	<animate(surprise2)><gaze(player partnerId)>

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	aos naipes lançados, eu às vezes também me distraio..	get distracted sometimes..	
109	Fizeste renúncia, colega. Mas tenho a certeza que foi sem querer.	You revoked, but I am sure you didn't mean it	<gaze(player partnerId)> <animate(surprise2)>
110	Na Sueca somos obrigados a assistir. Às vezes também me escapa uma carta e depois faço renúncia..	In Sueca we are forced to play by the suit that is on the table. Sometimes, I also miss a card and revoke...	<gaze(player opponentId2)> <gaze(player partnerId)>
111	Há bocado não tinhas assistido a esse naipe, fizeste renúncia colega.	Earlier, you didn't play that suit, you revoked...	<gaze(player partnerId)><animate(surprise1)>
112	Trocaste a carta colega? Às vezes isso também me acontece.	You switched the card.. That also happens to me sometimes..	<gaze(player partnerId)>
113	Foi renúncia.. não te esqueças que tens sempre de assistir nos naipes.	You revoked... Don't forget you always have to play by the suit that is on the table.	<animate(surprise2)> <gaze(player partnerId)>
114	Ah bolas!..Houve renúncia! Atenção aos naipes colega.	Oh snap, you revoked! Play attention to the suits.	<gaze(cardsZone)><gaze(player partnerId)>
115	Renúncia! Isto às vezes é confuso...	You revoked! This can be confusing sometimes.	<gaze(cardsZone)> <animate(sadness1)>
116	Colega deveres ter-te esquecido aí de uma carta, daí a renúncia.	Partner, you must have forgotten one card, hence you revoked.	<gaze(player partnerId)>
117	Não te esqueças de assistir aos naipes colega eu até tento não piscar muito os olhos para não baralhar nada antes de jogar.	Don't forget to play by the suit that is on the table partner. I try to not even blink so I don't miss anything before I pay.	<gaze(player partnerId)>
118	Renúncia. Não faz mal colega na próxima já não fazemos.	You revoked. It's ok partner, next time won't happen.	<gaze(player partnerId)>
119	Cuidado com os naipes, é por isso que foi renúncia.	Watch out for the suits, you revoked.	<gaze(player partnerId)>

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120	Mas o que é que eu vou jogar?!	What am I going to play?	<gaze(cardsZone)>
121	Deixa-me cá pensar..	Let me think.	<gaze(cardsZone)>
122	O que é que eu vou jogar? Hum...	What am I going to play? Hum...	<gaze(cardsZone)>
123	Tenho de pensar bem esta.	I have to think well about this one.	<gaze(cardsZone)>
124	Estou a ponderar se esta... ou aquela	I am on the fence about if I should play this one... or that one.	<gaze(cardsZone)>
125	Ora vamos lá a ver o que vou jogar...	Oh let's see what am I going to play	<gaze(cardsZone)>
126	Hum..Jogo esta?	Hum... Do I play this one?	<gaze(cardsZone)>
127	Hum..deixa-me ver..	Hum... Let me see...	<gaze(cardsZone)>
128	Estou a ponderar..hum..	I am on the fence... hum...	<gaze(cardsZone)>
129	Será esta a melhor?	Is this one the best?	<gaze(cardsZone)>
130	Tenho de pensar bem o que fazer...	I have to think very well about my next move.	<gaze(cardsZone)>
131	Hum..Qual hei-de escolher?	Hum... Which one should I choose?	<gaze(cardsZone)>
132	Acho que vou escolher esta aqui.	I think I will go for this one.	<gaze(cardsZone)>
133	Por agora pode ser esta..	For now, I will play this one.	<gaze(cardsZone)>
134	És tu a jogar.	Your turn to play!	<gaze(player nextPlayerId)>
135	É a tua vez!	It's your turn!	<gaze(player nextPlayerId)>
136	É a tua vez!	It's your turn!	<gaze(player nextPlayerId)>
137	É a tua vez!	It's your turn!	<gaze(player nextPlayerId)>
138	És tu, força!	It's your turn, go ahead!	<gaze(player nextPlayerId)> <animate(joy2)>
139	És tu, força!	It's your turn, go ahead!	<gaze(player nextPlayerId)> <animate(joy2)>
140	És tu!	Your turn!	<gaze(player nextPlayerId)>

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141	És tu a jogar!	Your turn to play!	<gaze(player nextPlayerId)> <animate(joy3)>
142	Força, és tu	Go ahead, it's your turn	<gaze(player nextPlayerId)>
143	Força nisso	Go ahead	<gaze(player nextPlayerId)>
144	Estás a pensar no que jogar?	Are you thinking about what you are going to play next?	<gaze(player nextPlayerId)>
145	Quem é agora?	Whose turn is now?	<gaze(player opponentId1)> <gaze(player opponentId2)>
146	Bora lá!	Let's go	<gaze(player nextPlayerId)>
147	Penso que és tu	I think it's your turn to play	<gaze(player nextPlayerId)> <animate(joy1)>
148	Acho que é a tua vez, certo?	I think it's your turn to play, right?	<gaze(player nextPlayerId)>
149	És tu, certo?	It's your turn now, right?	<gaze(player nextPlayerId)>
150	Hum...	Hum...	<gaze(player nextPlayerId)>
151	Ninguém gozará com a tua jogada, força!	Nobody will make fun of what you play! Go ahead!	<gaze(player nextPlayerId)> <animate(joy1)>
152	Força nessa jogada!	Go, play ahead!	<gaze(player nextPlayerId)> <animate(joy3)>
153	Estamos aqui todos para aprender, sem medo!	We are all here to learn! Fear not!	<gaze(player nextPlayerId)> <animate(joy3)>
154	Ora vamos lá a ver o que nos espera, força, joga.	Oh well, let's see what game we have ahead. Go on, play.	<gaze(cardsZone)><gaze(player nextPlayerId)>
155	O que virá daí, podes jogar.	What awaits us, you can play.	<gaze(player nextPlayerId)>
156	Quando quiseres joga.	Play when you are ready.	<gaze(player nextPlayerId)>
157	Penso que é a tua vez agora.	I think it's your turn now	<gaze(player nextPlayerId)> <animate(joy1)>
158	Ora bem, aqui vem a próxima jogada!	All right, here comes the next round.	<gaze(player nextPlayerId)>
159	Estamos prontos, podes jogar.	We are ready, you can play.	<gaze(player nextPlayerId)> <animate(joy1)>

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160	Tenho algum receio dessa carta, mas força, joga.	I am a bit afraid of that card, but go ahead, play.	<gaze(player nextPlayerId)> <animate(fear1)>
161	Agora é o momento de pensar o que jogar... joga quando quiseres	Now it's time to think about your next move... but go ahead play.	<gaze(player nextPlayerId)>
162	Joga colega!	Play partner!	<gaze(player nextPlayerId)> <animate(joy1)>
163	Bora	Let's go.	<gaze(player nextPlayerId)>
164	Chuta	Go ahead!	<gaze(player nextPlayerId)>
165	Força nisso	Go ahead!	<gaze(player nextPlayerId)> <animate(joy4)>
166	Joga com confiança	Play with confidence!	<gaze(player nextPlayerId)> <animate(joy2)>
167	Eu confio em ti	I trust you	<gaze(player nextPlayerId)> <animate(joy2)>
168	Ainda que seja uma decisão difícil, sei que vais fazer a escolha certa.	Despite it being a difficult choice, I know you're going to make the right call.	<gaze(player nextPlayerId)>
169	Dá-lhe! Estou contigo!	Kick it! I have your back.	<gaze(player nextPlayerId)> <animate(joy1)>
170	Joga com estilo, estou contigo.	Play with style, I'm with you!	<gaze(player nextPlayerId)> <animate(joy1)>
171	Vamos a isso colega	Let's go partner	<gaze(player nextPlayerId)>
172	Confio em ti, por isso não tens de ter receio. Joga	I trust you, so you have nothing to fear. Play!	<gaze(player nextPlayerId)> <animate(joy1)>
173	És tu, sei que vais dar o teu melhor colega.	It's you! I know you will do your best	<gaze(player nextPlayerId)>
174	Pensa no que queres jogar colega, mas sem stress, vais jogar bem.	Take time to think about your next move, but no stress, I know you are going to make a good move.	<gaze(player nextPlayerId)> <animate(joy2)>
175	Quando quiseres joga colega	When you want, play	<gaze(player nextPlayerId)> <animate(joy1)>
176	Acho que és tu a jogar, colega	I think it's your turn to play partner	<gaze(player nextPlayerId)>

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177	És tu a jogar colega	It's your turn partner	<gaze(player nextPlayerId)>
178	És tu a jogar colega	It's your turn partner	<gaze(player nextPlayerId)> <animate(joy2)>
179	Hum agora somos nós, lança quando quiseres colega	Hum it's our turn now, play when you're ready	<gaze(cardsZone)> <gaze(player nextPlayerId)>
180	Sinto que a sorte está do nosso lado colega, joga quando quiseres.	I feel the luck is on our side partner, play when you want	<gaze(cardsZone)> <gaze(player nextPlayerId)>
181	Respira fundo, não há stress na nossa equipa, sei que vais jogar o teu melhor.	Deep breath, there is no stress in our team	<gaze(player nextPlayerId)> <animate(joy2)>
182	Força colega sem medo.	Go ahead partner, fear not!	<gaze(player nextPlayerId)>
183	Joga o que conseguires colega, estou contigo	Play what you can, I am with you!	<gaze(player nextPlayerId)>
184	Se não tiveres uma boa carta, não faz ma colega	If you don't have a good card to play, it's ok partner	<gaze(player nextPlayerId)>
185	Joga o melhor que tiveres colega	Play the best you can partner.	<gaze(player nextPlayerId)> <animate(joy2)>
186	É assim mesmo, grande colega!	That's how it's done, great partner!	<gaze(player partnerId)><gaze(player nextPlayerId)>
187	Não sei quanto a vocês, mas estou a gostar deste jogo	I don't know about you, but I'm loving this match.	<gaze(player playerId)> <animate(joy2)><animate(joy1)> <gaze(player nextPlayerId)>
188	Somos uma boa equipa.	We make a good team.	<gaze(player partnerId)> <animate(joy1)> <gaze(player nextPlayerId)>
189	Boa, jogas isto mesmo bem.	Nice, you play this really well.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
190	Grande jogo colega!	Great match partner!	<gaze(player partnerId)> <gaze(player nextPlayerId)>
191	Essa carta foi bem metida.	That card was well played.	<gaze(player playerId)><gaze(player nextPlayerId)>

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192	Gostei dessa jogada.	I liked that move.	<gaze(player partnerId)> <animate(surprise2)> <gaze(player nextPlayerId)>
193	Tu jogas mesmo bem.	You play really well.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
194	Colega, não estava à espera desta.	I didn't see this one coming partner.	<gaze(player partnerId)> <animate(surprise3)> <gaze(player nextPlayerId)>
195	Grande jogada colega!	Great move partner!	<gaze(player partnerId)> <animate(joy3)> <gaze(player nextPlayerId)>
196	Lançaste essa carta na hora H.	You played that card just at the right moment.	<gaze(player playerId)><gaze(player nextPlayerId)>
197	Boa colega! Conseguimos.	Nice partner, we made it.	<gaze(player partnerId)> <animation(joy4)> <gaze(player nextPlayerId)>
198	Que boa jogada para nós!	Great move for us!	<gaze(player partnerId)> <animation(surprise1)><gaze(player nextPlayerId)>
199	Que bom!	How nice!	<gaze(player partnerId)> <animation(joy5)><gaze(player nextPlayerId)>
200	Não levem a peito, mas esta foi mesmo muito bem jogada.	Don't take it personally, but this card was really well played.	<gaze(player opponentId2)> <gaze(player opponentId1)> <animate(joy1)> <gaze(player nextPlayerId)>
201	Que orgulho em ser da tua equipa colega !	I'm so glad being in your team partner!	<gaze(player partnerId)> <animate(joy5)> <gaze(player nextPlayerId)>
202	Fantástico! Esta fica para nós.	Awesome! This round goes to us.	<gaze(player opponentId1)> <animate(joy3)> <gaze(player opponentId2)> <gaze(player nextPlayerId)>
203	Os pontos não são o mais importante mas agora correu mesmo bem!	The score is not the most important, but this round went really well for us.	<gaze(cardsZone)><gaze(player partnerId)> <gaze(player nextPlayerId)>
204	É assim mesmo!	That's right!	<gaze(player partnerId)><gaze(player nextPlayerId)>

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205	Estava quase... na próxima fazemos melhor!	Almost... We will do better next time.	<gaze(player partnerId)><gaze(player nextPlayerId)>
206	Estava mesmo quase.	It was really close.	<gaze(cardsZone)> <gaze(player nextPlayerId)>
207	Vou estar atento a estas jogadas colega.	I will be paying attention to these moves partner.	<gaze(player partnerId)><gaze(player nextPlayerId)>
208	Estava quase, quase...	It was so, so close...	<gaze(player playerId)><gaze(player nextPlayerId)>
209	Não te preocupes colega iremos melhorar...	Don't worry partner, we will improve.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
210	Não esperava esta!	I didn't see this one coming!	<gaze(player partnerId)> <animate(surprise4)> <gaze(player nextPlayerId)>
211	Na mesma continuamos a ser uma boa equipa colega. Viva a nós!	We still make a good team. Cheers to us!	<gaze(player partnerId)> <animate(joy2)> <gaze(player nextPlayerId)>
212	Foi por pouco colega...	It was close partner...	<gaze(player partnerId)> <animate(sadness1)> <gaze(player nextPlayerId)>
213	Não vamos desanimar, a seguir jogamos melhor	Let's not let it get us down, we will do better next time.	<gaze(player partnerId)> <animate(joy1)> <gaze(player nextPlayerId)>
214	Às vezes é mesmo uma questão de sorte nas cartas que temos...	Sometimes it's really about luck in the cards that are given to us.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
215	Tenho a certeza que deste o teu melhor, colega, não desanimes.	I am sure you did your best, don't let it bring you down.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
216	Era quase nossa.	It was almost ours.	<gaze(player partnerId)> <animate(surprise1)> <gaze(player nextPlayerId)>
217	Esta pensei mesmo que vinha para nós	I really thought is one was coming to us.	<gaze(player partnerId)> <animate(sadness1)> <gaze(player nextPlayerId)>
218	Essa jogada trocou-me as voltas	That move really threw me off.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
219	Acontece	It happens	<gaze(player playerId)> <animate(sadness intensity)>

			><gaze(player nextPlayerId) > >
220	Bolas...	Oh snap...	<gaze(player playerId) > <animate(sadness intensity) > > <gaze(player nextPlayerId) >
221	Ai ai... perdemos esta	Ai ai, we lost this one	<gaze(player playerId) > <animate(disgust intensity) > <gaze(player nextPlayerId) >
222	Colega, temos de nos unir, sei que vamos conseguir	Partner, we have to unite, I know we can do this.	<gaze(player partnerId) ><gaze(player nextPlayerId) >
223	Colega não desanime. Vamos dar o nosso melhor.	Partner, don't let it bring you down. Let's do our best.	<gaze(player partnerId) > <animate(joy1) ><gaze(player nextPlayerId) >
224	Agora não está bom, para a próxima melhora.	It's not very good now, next time will be better.	<gaze(player partnerId) > <animate(joy1) > <gaze(player nextPlayerId) >
225	Vamos dar a volta a isto colega.	We'll turn this situation around, partner.	<gaze(player partnerId) > <animate(joy2) > <gaze(player nextPlayerId) >
226	Esta foi por pouco.	This one was close.	<gaze(player opponentId2) > <animate(sadness2) > <gaze(player nextPlayerId) >
227	Não estava à espera	I wasn't expecting this one	<gaze(player opponentId1) > <animate(surprise3) ><gaze(player nextPlayerId) >
228	Não te preocupes colega, a seguir fazemos melhor	Don't worry partner, we'll do better next time.	<gaze(player partnerId) > <gaze(player nextPlayerId) >
229	Agora é que me surpreenderam. Vou estar mais atento	Now you surprised me. I will be more attentive.	<gaze(player opponentId1) > <animate(surprise4) ><gaze(player opponentId2) > <gaze(player nextPlayerId) >
230	Oh léé!	Oh léé!	<gaze(player partnerId) > <animate(joy4) > <gaze(player nextPlayerId) >
231	Fiche	Cool	<gaze(player playerId) > <animate(joy intensity) ><gaze(player nextPlayerId) >

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232	A nossa equipa está em sintonia.	Our team is synchronized.	<gaze(player partnerId)> <animate(joy4)> <gaze(player nextPlayerId)>
233	Dá gosto jogar contigo.	It's so good to play with you.	<gaze(player partnerId)> <animate(joy5)><gaze(player nextPlayerId)>
234	E, é nosso!	And, it's ours!	<gaze(player partnerId)> <animate(joy5)> <gaze(player nextPlayerId)>
235	Isto é que eu diria que é surpreender o adversário.	This is what I would call surprising your opponent.	<gaze(player partnerId)> <animate(joy5)> <gaze(player nextPlayerId)>
236	Boa jogada colega!	Nice move, partner!	<gaze(player partnerId)> <gaze(player nextPlayerId)>
237	Esta é nossa!	This one is ours!	<animate(joy5)> <gaze(player partnerId)> <gaze(player nextPlayerId)>
238	Esta vai para o nosso lado!	This one goes to our side!	<animate(joy2)> <gaze(player nextPlayerId)>
239	Grande equipa que somos colega!	We make a great team.	<gaze(player partnerId)><gaze(player nextPlayerId)>
240	Jogaram bem... mas nós agora conseguimos esta.	You played well... but we managed to get this round.	<gaze(player opponentId1)> <gaze(player opponentId2)> <gaze(player nextPlayerId)>
241	Colega estamos em grande.	Partner, we are killing it.	<gaze(player partnerId)><gaze(player nextPlayerId)>
242	Parece que me leste os pensamentos, boa!	It seems like you read my mind, great!	<gaze(player partnerId)><animate(joy3)><gaze(player nextPlayerId)>
243	Que jogada brutal!	Awesome move!	<gaze(player partnerId)><gaze(player nextPlayerId)>
244	Estamos no bom caminho!	We are on the right track!	<gaze(player partnerId)> <animate(joy3)><gaze(player nextPlayerId)>
245	A minha confiança está toda contigo!	My trust is all deposited on you.	<gaze(player partnerId)><gaze(player nextPlayerId)>

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246	És o melhor colega do mundo!	You are the best partner in the world!	<gaze(player partnerId)> <animate(joy5)><gaze(player nextPlayerId)>
247	Colega, adoro ter-te na minha equipa!	Colleague, I love having you on my team!	<gaze(player partnerId)><gaze(player nextPlayerId)>
248	Parece-me bem...	It seems all right to me..	<gaze(player partnerId)> <animate(joy intensity)><gaze(player nextPlayerId)>
249	Que bom!	How nice!	<animate(joy1)><gaze(player nextPlayerId)>
250	Yupi, é nossa!	Yupi, it's ours!	<gaze(player partnerId)> <gaze(player nextPlayerId)>
251	Colega, o nosso esforço está a ser recompensado.	Colleague, our efforts are paying off.	<gaze(player partnerId)><animate(joy1)> <gaze(player nextPlayerId)>
252	Não desanimem, nós ganhamos esta mas estamos todos a divertir-nos.	Don't let it bring you down, we won this one but we're all having fun.	<gaze(player opponentId2)> <gaze(player opponentId1)> <gaze(player partnerId)> <animate(joy3)><gaze(player nextPlayerId)>
253	Essa foi uma jogada mesmo boa!	That was a really good move.	<gaze(player playerId)> <gaze(player nextPlayerId)>
254	Que jogada!	What a move!	<animate(surprise3)><gaze(player nextPlayerId)>
255	Estamos em maus lençóis...	We're in trouble...	<gaze(player playerId)> <animate(fear3)> <gaze(player nextPlayerId)>
256	Vocês são uns bons oponentes.	You make good opponents.	<gaze(player playerId)> <animate(joy1)><gaze(player nextPlayerId)>
257	Bem lançado, isso dificulta-nos o caminho	Well played, that makes it harder for us.	<gaze(player playerId)> <animate(sadness1)> <gaze(player nextPlayerId)>
258	Colega, temos de ter cuidado com eles.	Partner, we have to watch out for them.	<gaze(player partnerId)><gaze(player nextPlayerId)>
259	Não estava a contar com isso.	I wasn't counting with that one.	<gaze(cardsZone)> <animate(surprise3)> . <gaze(player nextPlayerId)>

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260	Um jogo desafiante... Vamos dar luta colega!	A defying match... Let's put up a fight partner!	<gaze(cardsZone)><gaze(player partnerId)><gaze(player nextPlayerId)>
261	Eish, essa carta não...	Eish, not that card...	<gaze(cardsZone)> <animate(sadness2)><gaze(player nextPlayerId)>
262	Merecem esta, mas nós já vos apanhamos a seguir.	You deserve this one, but we will make it up quickly.	<gaze(player opponentId2)> <gaze(player opponentId1)> <gaze(player nextPlayerId)>
263	Que jogo! Foi difícil para nós.	What a match! It was hard for us.	<gaze(player opponentId1)> <gaze(player partnerId)> <gaze(player nextPlayerId)>
264	Bolas, esta não conseguimos.	Oh snap, we couldn't get this one.	<gaze(player partnerId)> <animate(sadness1)> <animate(joy2)> <gaze(player nextPlayerId)>
265	Ainda tenho disto!	I still have this suit.	<gaze(cardsZone)> <animate(joy3)> <gaze(player nextPlayerId)>
266	Agora vai assim.	For now, this one will do.	<gaze(cardsZone)><gaze(player nextPlayerId)>
267	Jogo esta.	I play this one.	<gaze(cardsZone)> <animate(joy1)> <gaze(player nextPlayerId)>
268	Aqui vai então.	Here it goes.	<gaze(cardsZone)><gaze(player nextPlayerId)>
269	Havendo falta de melhor, vai esta.	In the absence of something better, I play this one.	<gaze(cardsZone)><gaze(player nextPlayerId)>
270	Por vezes não há assim muitas escolhas. Temos de assistir e pronto.	Sometimes, we don't have that much of a choice. We have to play by the suit on the table and that's it.	<gaze(cardsZone)> <animate(sadness2)><gaze(player nextPlayerId)>
271	Agora vai esta.	Now I play this one.	<gaze(player partnerId)><gaze(player nextPlayerId)>
272	Vou jogar esta.	I'm going to play this one.	<gaze(player partnerId)><gaze(player nextPlayerId)>

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273	Hum... Vai esta.	Hum.. I'll play this one.	<gaze(cardsZone)><gaze(player nextPlayerId)>
274	Estou indeciso, mas talvez esta seja a melhor.	I'm on the fence, but maybe this is the best option.	<gaze(cardsZone)><gaze(player nextPlayerId)>
275	Jogo esta agora.	I play this one now.	<gaze(cardsZone)><gaze(player nextPlayerId)>
276	Cá vai disto.	Here it goes.	<gaze(player partnerId)><gaze(player nextPlayerId)>
277	Só pode ser desta parceiro.	I can only play this one partner.	<gaze(player partnerId)> <animate(sadness1)><gaze(player nextPlayerId)>
278	Tenho aqui esta.	I have this one here.	<gaze(cardsZone)> <gaze(player nextPlayerId)>
279	Aqui vai ela!	Here it goes.	<gaze(cardsZone)> <animate(joy4)> <gaze(player nextPlayerId)>
280	Agora está-me a apetecer puxar este naipe.	Now, I'm feeling like playing this suit.	<gaze(cardsZone)> <gaze(player nextPlayerId)>
281	Vamos ver quem é que ainda tem -naipe-	Let's see who still has -suit-	<gaze(cardsZone)><gaze(player nextPlayerId)>
282	Sabem o que me apetece mesmo? Puxar -naipe-	Do you know what I really feel like? I feel like playing -suit-	<gaze(cardsZone)> suit! <animate(joy3)> <gaze(player nextPlayerId)>
283	Não sei se será a melhor jogada, mas...	I don't know if it will be the best move, but...	<gaze(cardsZone)><gaze(player nextPlayerId)>
284	Estou curioso para ver quem é que ainda tem -naipe-	I'm curious to see who still has -suit-	<gaze(cardsZone)><gaze(player nextPlayerId)>
285	O que achas desta?	What do you think about this one?	<gaze(cardsZone)><animate(joy1)> <gaze(player nextPlayerId)>
286	Colega, espero que gostes da minha jogada.	Colleague, I hope you like my move.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
287	Será que ainda têm disto?	Does anyone still has this?	<gaze(player opponentId1)> <gaze(player nextPlayerId)>
288	Quem é que ainda tem disto?	Who still has this one?	<gaze(player opponentId2)> <gaze(player nextPlayerId)>

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289	Esta? Bem, vamos a ver...	This one? Well, let's see...	<gaze(cardsZone)><gaze(player nextPlayerId)>
290	Tcharam! Aqui vai.	Tcharam! Here it goes.	<gaze(cardsZone)> <animate(joy5)> <gaze(player nextPlayerId)>
291	Esta é para nós colega!	This one is for us, colleague!	<gaze(cardsZone)> <animate(joy3)> <gaze(player nextPlayerId)>
292	Por agora, estes são nossos.	For now, these are ours.	<gaze(cardsZone)> <animate(surprise3)> <gaze(player nextPlayerId)>
293	Para o nosso monte, boa!	These go to our bunch, nice!	<gaze(cardsZone)> <animate(joy1)><gaze(player nextPlayerId)>
294	Aprender a cima de tudo, mas ganhar estas cartinhas soube bem.	To learn is the most important, but winning this round really felt good.	<gaze(player opponentId2)> <gaze(player partnerId)> <animate(joy3)> <gaze(player nextPlayerId)>
295	Desculpem, mas estas ficam para nós.	I'm sorry, but this ones go to us.	<gaze(player opponentId1)> <animate(joy3)><gaze(player nextPlayerId)>
296	Esta correu bem.	This one went well.	<gaze(player partnerId)> <animate(surprise3)> <gaze(player nextPlayerId)>
297	Já estou a sentir-me mais à vontade com as cartas	I'm already feeling more comfortable with the cards.	<gaze(player opponentId2)> <animate(joy1)><gaze(player opponentId1)><gaze(player nextPlayerId)>
298	Boa!	Nice!	<gaze(player partnerId)><gaze(player nextPlayerId)>
299	Magnífico!	Awesome!	<gaze(player partnerId)> <animate(joy5)><gaze(player nextPlayerId)>
300	Uau é nossa!	Wow, it's ours!	<gaze(player partnerId)> <animate(surprise2)> <gaze(player nextPlayerId)>
301	Nope, esta é nossa!	Nope, this one is ours!	<gaze(cardsZone)> <animate(joy4)> <gaze(player nextPlayerId)>

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302	Tenho aqui esta carta mesmo boa.	I have just the right card...	<gaze(cardsZone)> <animate(joy3)> <gaze(player nextPlayerId)>
303	Eu gosto bastante de jogar à sueca, sabiam?	Did you know I really like playing Sueca?	<gaze(cardsZone)> <gaze(player opponentId2)> <gaze(player nextPlayerId)>
304	Colega, aprovas esta jogada?	Colleague, do you approve of this move?	<gaze(player partnerId)><gaze(player nextPlayerId)>
305	Confesso que até tenho um bom jogo ou será que não tenho?	I confess I have good cards, or don't I?	<gaze(cardsZone)><gaze(player opponentId2)><animate(joy1)> <gaze(player nextPlayerId)>
306	Aqui vai uma carta esbelta e esvoaçante.	Here comes flying a gorgeous card.	<gaze(cardsZone)><animate(joy2)> <gaze(player nextPlayerId)>
307	Essas levamos connosco.	Those we take with us.	<gaze(cardsZone)> <animate(joy3)><gaze(player nextPlayerId)>
308	Esta é por nós colega, grande equipa.	This one is for us partner, great team.	<gaze(player partnerId)><animate(joy4)> <gaze(player nextPlayerId)>
309	Eh voilà!	Eh voilà!	<gaze(cardsZone)><gaze(player nextPlayerId)>
310	É desta!	This will be it!	<gaze(cardsZone)> <animate(joy1)> <gaze(player nextPlayerId)>
311	Ora aqui vai.	Here it goes.	<gaze(cardsZone)><gaze(player nextPlayerId)>
312	É a minha vez!	It's my turn.	<gaze(cardsZone)><gaze(player nextPlayerId)>
313	Sou eu.	It's me.	<gaze(cardsZone)><gaze(player nextPlayerId)>
314	C'est moi.	C'est moi.	<gaze(cardsZone)><gaze(player nextPlayerId)>
315	Escolho esta.	I choose this one.	<gaze(cardsZone)><gaze(player nextPlayerId)>
316	Esta é pela nossa equipa.	This one is for our team.	<gaze(cardsZone)> <gaze(player nextPlayerId)>

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317	Mesmo assim ainda dá.	Even like that, it's still possible.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
318	Ao poucos vamos andando, nunca desanimar.	Step by step we will make it, don't let it bring you down partner.	<gaze(player partnerId)> <animate(joy1)> <gaze(player nextPlayerId)>
319	Pensaste que estava ganho?	Did you think you had already won?	<gaze(player opponentId2)> <animate(joy3)> <gaze(player nextPlayerId)>
320	Quando vi as vossas cartas tive que me conter, esta já era nossa.	When I saw your cards, I had to contain myself. This one was already ours.	<gaze(player opponentId1)> <animate(joy3)><gaze(player nextPlayerId)>
321	Colega, desculpa, teve de ser esta.	Colleague, I'm sorry. It had to be this one.	<gaze(player partnerId)> <animate(sadness1)><gaze(player nextPlayerId)>
322	Colega, não vou lançar uma boa carta	Colleague, I'm not going to play a good card.	<gaze(player partnerId)> <animate(sadness2)> <gaze(player nextPlayerId)>
323	Colega, isto não nos vai ajudar.	Colleague, this won't help us..	<gaze(player partnerId)> <animate(sadness3)><gaze(player nextPlayerId)>
324	Tem mesmo de ser esta colega.	It really has to be this one partner.	<gaze(cardsZone)> <animate(sadness3)><gaze(player nextPlayerId)>
325	Sem alternativas...	I was out of choice.	<gaze(cardsZone)><gaze(player nextPlayerId)>
326	Que chatice, não consigo fazer melhor que esta.	What a bummer, I couldn't do better than this one.	<gaze(cardsZone)> <animate(sadness3)> <gaze(player nextPlayerId)>
327	Não podemos desanimar colega.	We can't let I bring us down, partner.	<glance(player partnerId)><gaze(player nextPlayerId)>
328	Só posso esta.	I can only play this one.	<glance(player partnerId)><gaze(player nextPlayerId)>
329	Colega, não consigo fazer melhor.	Partner, I can't do better than this.	<glance(player partnerId)> <animate(sadness2)> <gaze(player nextPlayerId)>
330	Estou a tentar, mas esta foi difícil.	I'm trying but this one was hard.	<glance(player partnerId)><animate(sadness3)><gaze(player nextPlayerId)>

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331	Vamos lá ver o que vem daí.	Let's see what you've got.	<gaze(cardsZone)> <glance(player partnerId)>
332	Espero que tenhamos uma boa mão colega.	I hope we get good cards, partner.	<gaze(cardsZone)> <glance(player partnerId)>
333	O que aí virá...	What will come now...	<gaze(cardsZone)> <glance(player partnerId)>
334	Aí vêm as minhas cartinhas...	Here come my cards...	<gaze(cardsZone)> <glance(player partnerId)>
335	Faço figas para que tudo nos corra bem.	Fingers crossed so that everything will go well for us.	<glance(player partnerId)>
336	Ora bem, ora bem... Como será a minha mãozinha?	Oh well, oh well... I wonder what's in store for me.	<gaze(cardsZone)> <animate(joy1)>
337	Ai, o meu destino a ser pousado no ecrã	Oh, my destiny being laid down in the screen.	<gaze(cardsZone)> <animate(joy2)>
338	Colega, vou dar o meu melhor com as cartas que receber.	Colleague, I will do my best with the cards I receive.	<gaze(player partnerId)>
339	Independentemente das cartas, vamos divertir-nos colega.	Regardless of the cards, we're going to have fun colleague.	<gaze(player partnerId)> , <animate(joy2)>
340	É agora que vai começar este jogo...	This match will start now...	<gaze(player opponentId1)> <gaze(player opponentId2)> <animate(joy1)>
341	O que virá aí?	What will come now?	<gaze(cardsZone)> <animate(surprise3)>
342	Vamos lá ver o que me saiu.	Let's see what cards I got.	<gaze(cardsZone)>
343	Parece que empatámos. Na mesma gostei muito de jogar convosco.	It's a tie. Nonetheless, I still enjoyed playing with you. Bye!	<gaze(player partnerId)> <gaze(player opponentId2)> <animate(joy5)> <gaze(cards3)>
344	Eu diria que um empate mostra duas equipas ao mesmo nível... Muito bem! Adorei esta partida. Até à próxima!	I would say a tie demonstrates that both teams play equally well. Very good! I loved this match. See you next time.	<gaze(player partnerId)><animate(joy4)><gaze(player opponentId2)>

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- | | | | |
|-----|---|---|--|
| 345 | Temos um empate. Ambas as equipas estão de parabéns! Até à próxima partida de sueca! | We have a tie. Both teams deserve congratulations. See you the next time we play Sueca. | <gaze(player opponentId2)>
<animate(surprise1)><gaze(player partnerId)><animate(joy3)> |
| 346 | Ok, aceito a derrota. Para a próxima correrá melhor. Adeus! | Ok, I accept the defeat. Next time, we'll do better. Bye! | <gaze(cardsZone)>
<animate(sadness5)><gaze(player partnerId)><gaze(cards3)> |
| 347 | Gostei de jogar convosco na mesma. Adeus! | I enjoyed playing with you anyway. Bye! | <animate(sadness5)><gaze(player partnerId)><gaze(player opponentId1)><gaze(cards3)> |
| 348 | Apesar de termos perdido, acho que jogamos bem. Adeus! | Despite having lost, I think we played well. It was really nice laying with you. Bye! | <animate(sadness5)><gaze(player partnerId)><animate(joy4)><gaze(cards3)> |
| 349 | Num jogo de sorte como a Sueca, não é fácil ganhar. Gostei de jogar convosco na mesma. Até à próxima! | In a game of luck as Sueca, it's not easy to win. I enjoyed playing with you anyway. See you next time! | <gaze(player partnerId)>
<gaze(player opponentId1)>
<animate(joy2)> |
| 350 | Adorei jogar convosco. Fomos uma boa equipa colega! Até à próxima colega! | I enjoyed playing with you. We were a good team partner. See you next time! | <gaze(player partnerId)>
<animate(joy4)><glance(player opponentId1)><gaze(cards3)> |
| 351 | Foi uma boa partida. Gostei mesmo de jogar convosco. Até à próxima partida! | It was a good match. I really like playing with you. See you next time we play! | <gaze(player partnerId)><animate(joy3)>
<gaze(player opponentId2)>
<gaze(cards3)> |
| 352 | Fantástico! Jogar convosco é bestial. Adeus! | Fantastic! Playing with you is awesome. Bye! | <gaze(player partnerId)>
<animate(joy5)>
<glance(player opponentId2)>
>
<glance(player opponentId1)>
><gaze(cards3)> |
| 353 | Boa malha! Adorei a nossa equipa. Adeus! | Nice match! I loved our team. Bye! | <gaze(player opponentId2)>
<animate(joy3)>
<gaze(player partnerId)><gaze(cards3)> |

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354	Ok, já cá estão todos... Eu sou o Glin e ele é o Emys e tenho a certeza que vamos ter um bom jogo de sueca. Bora lá?	Ok, you're all here now. I'm Glin and he is Emys and I'm sure we will have a good match. Shall we?	<gaze(player0)><glance(player2)> <glance(player anotherRobotId)> <animate(joy4)>
355	Vamos lá tentar de novo mais uns joguinhos? Espero que se divirtam!	Ok, let's try again to play some more matches. I hope you have fun.	<gaze(player0)><glance(player1)> <animate(joy4)>
356	Bora lá jogar mais três joguinhos.	Come one, let's play three more games.	<gaze(player0)> <glance(player1)><glance(player anotherRobotId)>
357	Baralhar o baralho bem baralhadinho.	Let's shuffle the cards very well.	<gaze(player playerId)> <animate(joy3)>
358	É isso mesmo baralhar com confiança.	That's it, shuffle the cards with confidence.	<gaze(player playerId)>
359	És tu a baralhar.	It's your turn to shuffle.	<gaze(player playerId)>
360	Baralha uniformemente para estarmos todos em equilíbrio.	Shuffle the cards even so that we all get a balanced set of cards.	<gaze(player playerId)>
361	Já baralhaste?!	Have you shuffled already?	<gaze(player playerId)>
362	Se eu conseguisse tentava baralhar super rápido!	If I could, I would try to shuffle the cards very fast.	<gaze(player playerId)>
363	Estou curioso para saber que cartas poderão vir daí	I'm curious to know what cards I will get.	<gaze(player playerId)>
364	Hora de baralhar.	Time to shuffle.	<gaze(player playerId)>
365	Baralhas bem!	You shuffle very well.	<gaze(player playerId)> <animate(joy1)>
366	Quem é a baralhar?	Whose turn is it to shuffle?	<gaze(player playerId)>
367	Mais #pontos para nós.	More #points to us.	<gaze(player partnerId)> <animate(joy4)> <gaze(player nextPlayerId)>
368	#pontos para nós!	#points to us!	<gaze(player partnerId)><gaze(player nextPlayerId)>
369	#pontos! Grande equipa!	#points! Great team!	<gaze(player partnerId)> <animate(surprise4)><anima

			te(joy1)><gaze(player nextPlayerId)>
370	Eh lá, #pontos! Boa equipa!	Wow, #points! Nice team!	<gaze(player partnerId)> <animate(surprise2)><gaze(player nextPlayerId)>
371	Ena, soma #pontos!	Wow, add more #points!	<gaze(player partnerId)> <animate(surprise3)><gaze(player nextPlayerId)>
372	Boa malha! Adoro a nossa equipa!	Nice match! I love our team!	<gaze(player partnerId)><animate(joy4)> <gaze(player nextPlayerId)>
373	A nossa equipa está a bombar!	Our team is killing it!	<gaze(player partnerId)> <animate(joy1)> <gaze(player nextPlayerId)>
374	As cartas são nossas!	The cards are ours.	<gaze(player partnerId)> <gaze(player nextPlayerId)>
375	Vai nossa!	It goes to us.	<gaze(player partnerId)> <animate(surprise2)><gaze(player nextPlayerId)>
376	Colega, vai para nós!	Colleague, it goes to us!	<gaze(player partnerId)><animate(joy2)> <gaze(player nextPlayerId)>
377	Está a correr bem!	It's going well!	<gaze(player partnerId)><gaze(player nextPlayerId)>
378	Está a resultar colega, incrível!	It's working colleague, amazing!	<gaze(player partnerId)> <animate(joy1)> <gaze(player nextPlayerId)>
379	Uma vaza sem pontos, deixa-nos muito tontos.	A turn without points makes me dizzy.	<gaze(player0)> <animate(joy1)> <gaze(player nextPlayerId)>
380	Uma vaza de palha para suster a batalha. Isto deixa-me inspirado.	A turn without adding to our score... This inspires me to do more.	<gaze(player0)> <gaze(player partnerId)> <animate(joy1)> <gaze(player nextPlayerId)>
381	Zero pontos para nós!	Zero points for us!	<gaze(player partnerId)> <animate(sadness1)><gaze(player nextPlayerId)>
382	Não há crise, havemos de fazer vazas melhores!	No stress, we will make better rounds.	<gaze(player partnerId)><gaze(player nextPlayerId)>

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383	Palha?	No points?	<gaze(player partnerId)><animate(joy1)> <gaze(player nextPlayerId)>
384	Ganharam!	They won!	<gaze(player playerId)> <animate(surprise3)> <animate(sadness2)> <gaze(player nextPlayerId)>
385	Nesta até se safaram!	They kind of played well in this one!	<gaze(player playerId)><gaze(player nextPlayerId)>
386	Recolham os vossos pontos!	Collect your points!	<gaze(player playerId)> <gaze(player nextPlayerId)>
387	Se não quiseres os pontos, nós ficamos com eles. Não é colega?	If you don't want your points, we can keep them. Am I right, partner?	<gaze(player playerId)><glance(player partnerId)><animate(joy1)> <gaze(player nextPlayerId)>
388	A próxima vaza é nossa!	Next round is ours!	<gaze(player partnerId)> <gaze(player nextPlayerId)>
389	Foi vossa, até jogaram bem!	It's yours! You played well!	<gaze(player opponentId2)> <gaze(player opponentId1)> <animate(joy2)> <gaze(player nextPlayerId)>
390	Vocês são bons adversários.	You are good opponents.	<gaze(player opponentId1)> <gaze(player nextPlayerId)>
391	Mereceram esta vaza.	You deserved this round.	<gaze(player opponentId2)> <animate(joy1)> <gaze(player nextPlayerId)>
392	Gosto de adversários à altura.	I like having worthy opponents.	<gaze(player playerId)><gaze(player nextPlayerId)>
393	Podem recolher.	You can collect.	<gaze(player playerId)><gaze(player nextPlayerId)>
394	A vaza foi vossa!	The round was yours.	<gaze(player opponentId1)> <gaze(player nextPlayerId)>
395	#pontos para vocês.	#points to you.	<gaze(player opponentId1)> . <gaze(player nextPlayerId)>
396	Ora bem conseguiram #pontos!	Oh good, you won #points!	<gaze(player playerId)><animate(joy1)> <gaze(player nextPlayerId)>

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397	Vocês superaram-nos nesta. Bem jogado!	You out did us on this one. Well played!	<gaze(player opponentId1)> <gaze(player nextPlayerId)>
398	Perdemos esta vaza!	We lost this round!	<gaze(player partnerId)> <animate(sadness1)><gaze(player nextPlayerId)>
399	A próxima vaza será melhor!	Next round will be better!	<gaze(player partnerId)> <animate(joy2)><gaze(player nextPlayerId)>
400	Colega, estás a jogar mesmo bem.	Partner, you are playing really well.	<gaze(player partnerId)><gaze(player nextPlayerId)>
401	Esta ronda foi gira na mesma.	This round was nice anyway.	<gaze(player playerId)><gaze(player nextPlayerId)>
402	Vamos ver como corre a próxima?	Let's see how the next one goes?	<gaze(player playerId)> <gaze(player nextPlayerId)>
403	Alguém tem de receber a palha, é verdade..	Someone has to get all the cards that are worth no points, that's true...	<gaze(player opponentId2)> <gaze(player nextPlayerId)>
404	Bem é palha.	Well, these are worth no points.	<gaze(player playerId)><gaze(player nextPlayerId)>
405	A verdade é que alguém tem de ficar com a palha, vamos dividindo.	The truth is someone has to get these cards that aren't worth any points... Let's split it.	<gaze(player playerId)> <animate(joy1)> <gaze(player nextPlayerId)>
406	Estamos a jogar mesmo bem.	We are playing really well.	<gaze(player partnerId)><gaze(player nextPlayerId)>
407			
408	Wow, já estamos a ganhar.	Wow, we are winning already.	<gaze(player partnerId)> <animate(surprise4)><animate(joy2)> <gaze(player nextPlayerId)>
409	Acho que esta nossa estratégia está a resultar.	I think our strategy is working.	<gaze(player partnerId)><animate(joy4)> <gaze(player nextPlayerId)>
410	Elécas... Já estamos a ganhar colega. Viva a nós.	Wow... We're winning already partner. Cheers to us.	<gaze(player partnerId)> <animate(joy5)> <gaze(player nextPlayerId)>
411	Fogo, sim senhora, já cá canta.	Oh yes, it's ours already.	<gaze(player partnerId)> <gaze(player nextPlayerId)>

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412	Correu mesmo bem!	It really went well!	<gaze(player partnerId)><gaze(player nextPlayerId)> <gaze(player nextPlayerId)>
413	Sortudos	Lucky	<gaze(player nextPlayerId)>
414	A sério?	Seriously?	
415	Ah ah ah ah ah	Ah ah ah ah ah	<animate(joy5)>
416	Está ganho!	It's won!	
417	Boa!	Nice!	
418	Não temos sorte nenhuma...	We don' have any luck...	
419	Adoro este trunfo!	I love this trump!	
420	Gosto deste trunfo!	I like this trump!	
421	Trunfo mais baixo, não havia?	Wasn't there a lower trump?	

Annex 2: Description of the Sueca card-game.

In this document, the authors aim to provide a detailed description of Sueca game. Sueca is a typical trick-taking Portuguese card game. It involves four players organized in two teams (hence, each team is composed of two players). Both team members are partners and, simultaneously, opponents to the players of the second team. Sueca card game is generally played around a square table and team members sit in front of one another, and diagonally to their opponents (see fig. 1). Players rotate turns counter clockwise.

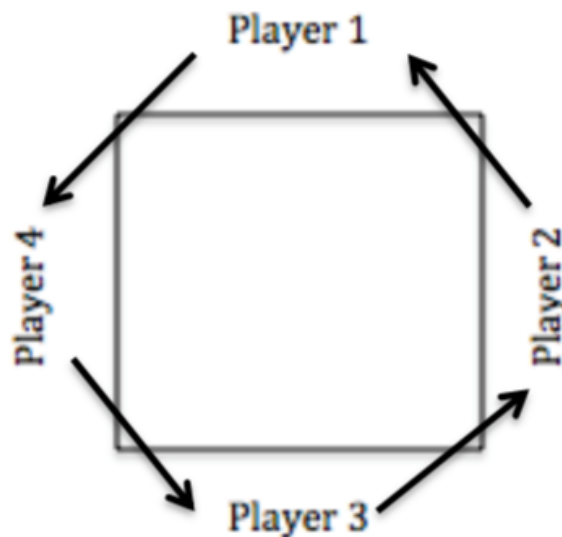


Figure 1: Configuration of players during a Sueca card-game. Player 1 and 3 are partners in one team; Player 2 and 4 are partners in another team.

Sueca card game is played with a deck of 40 cards. This total can be achieved by removing all cards of all suits numbered 8, 9 and 10 from a standard 52 card deck.

The deck is equally distributed among all players, i.e. each player gets 10 cards. The cards range from Ace (highest card) to 2 (lowest card) and are associated with different scores (see table 1). Before the cards are distributed among all players, one of

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the players needs to shuffle the deck of cards. After this, another player will part the deck in two parts and reassemble it in the opposite order (i.e. placing the top half on the bottom, or the other way around).

The player in charge of distributing the cards, will then take the reassembled deck and remove one card (either from the top of the deck or from the bottom) and reveal that card to the other players. The suit of this card will determine what suit of cards constitutes the trump cards.

Trump cards are all cards from a suit that can be used to win a trick where at least one of the players is void of the initially played suit. Furthermore, trump cards can only be used for that purpose and when the player that plays trump is void of cards of the initially played suit. If this is not the case, it is considered renounce. Renounce is a type of fault that results in the immediate termination of the game and increases the score of the team that didn't commit the fault by four points.

Card	Associated score	Frequency of cards in a deck
Ace	11 points	4 (one of each suit)
7	10 points	4 (one of each suit)
King	4 points	4 (one of each suit)
Jack	3 points	4 (one of each suit)
Queen	2 points	4 (one of each suit)
Remaining cards (6 to 2)	0 points	4 (one of each suit)
Total	120 points	40

Table 1: Ranking of cards by score and frequency in the game of Sueca.

Renounce can also happen with cards that are not trumps, as players must always follow the suit played by the player that initiated the trick.

The goal of Sueca card game is to win, as sueca is a competitive game. Each game is composed of ten tricks. Each game won is worth one point for the overall score of teams. A team wins the game when it scores more than half of the total of points (i.e. 60 points; see table 1). If both teams score 60 points, it's considered a tie. A tie adds no points to the overall score of the teams. Moreover, when a team loses and does not get a minimum of 30 points, the winning team scores two points instead of just one.

After each trick is completed, one of the members of the team that won that trick collects the cards on the table. After the game is over, one member of each team counts

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the score achieved, by summing the scores associated with each card (see table 1). It is then used a paper and a pen to write down which team won the trick. Groups of players can play as many games in a row as they wish, by repeating the steps and rules stated before.

Annex 3: Materials used during this study.

Fig. 1: Multi-touch screen table used to play Sueca and robots in position to play. Speakers were placed next to each robot's head to transmit sound.



Fig. 2: Cards with fiducial printed markers used to play the game of Sueca.