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COOPERATIVE GAME PLAY

A Conceptual Analysis

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ABSTRACT

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Cooperative game play has emerged as an intriguing topic for academic and commercial research in the last decade or so, with actors from various fields investigating its impact on social interaction, player experience, and gamified serious contexts. So far, however, the notion has lacked dedicated analyses elaborating on the concept itself. While consistently described as an activity involving a common goal between the players, the entailed subtleties are rarely specified much further, making one ill-equipped to make substantial claims about the assumed effects, either.

To fill this gap, this study proposes an intentional explanation for what cooperative game play is, how the players' goals, goal-relations, and the related attitudes distinguish it from other types of cooperative affairs and social play forms, what kind of collectively stronger and weaker versions can be identified by mixing these elements, and to what extent multiplayer game play presupposes cooperation in general. These questions were approached by the method of conceptual analysis, with the aim of providing the necessary and sufficient conditions for the external and internal readings of cooperative game play ("game play as cooperation," "cooperation as game play") and the relevant subcategories, viewed as species of planned, playful, and prosocial activities. The theoretical framework consists of philosophical studies on collective intentionality, definitions of games and play, as well as psychological accounts on goals, frames, and social interdependence.

The findings suggest that cooperative game play is defined not only by the goal-contents at different levels of abstraction, but also the conative and epistemic modes (intentions, acceptances) directed at them. It is also argued that this structure involves a paradoxical double perspective, with the meaning of the plan changing when switching from one psychological frame to another. Depending on the specific attributes and relations of these components among the agents, the activity is then further classified by the corresponding interaction relationships, agential modes, and framing alignments—the combinations of which amount to several possible forms of cooperative game play (externally and internally), varying in the prevalence of the entailed individualistic and collective interests.

Compared to the previous descriptions and classifications of the notion, the theory presented in this thesis expands on the intricacies related to the participants' goals, illustrating the complex ways that self-oriented and group-oriented aims may intertwine during the activity. It therefore offers a more detailed and flexible framework for conceptualizing cooperative game play in design and research, while also contributing to the debates about the role of the self and the group in multiplayer game play generally.

Keywords: *cooperation*, *game play*, *collective intentionality*, *goals*, *conceptual analysis*

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1 INTRODUCTION

Cooperation and games have long appeared interrelated in academic literature. While the latter has traditionally been employed as an example of the former (see, e.g., Mead, 1925; Parten, 1932), the evolution of digital gaming and the popularity of online multiplayer games have also attracted attention to the reverse case. Indeed, industry actors and scholars from a wide variety of fields have shown growing interest in the design and analysis of cooperative game play, in contexts such as learning environments, interaction, and in-gameplay experience (Sedano et al., 2013).

The reasons for this are manifold. In educational research, for instance, collaborative serious games have been viewed as a potential tool for supporting learning through visualization, as well as improving knowledge creation, decision-making processes, teamwork, motivation and attitudes (Oksanen, 2014, p. 22). Some experimental studies have compared the effects of cooperative and competitive games on people's contributions in gamified systems, such as crowdsourcing platforms (Morschheuser et al., 2019), while others have been interested in their impact on aggressive and toxic behavior—which remains a continuous issue in many online games (McLean et al., 2020). Commercially, the design of cooperative gaming experiences is obviously tempting due to the opportunity of reaching audiences whose major motivation for play are its social aspects.

Yet despite the multidisciplinary knowledge interest, the concept and ontology of cooperative game play have rarely been elaborated, even within the field of game studies itself. While constantly occurring in the design, play and cultures of games, the term has lacked systematic definitions and taxonomies acknowledging the complex characteristics of the phenomenon (Sedano et al., 2013; Witkowski, 2014, p. 160). However, to say something conclusive about the effects of cooperative games—and to tackle the related design problems—it is crucial to understand the intricacies of the notion.

The aim of my study is to counter the aforesaid conceptual vagueness by scrutinizing the quintessential components of cooperative game play and its subspecies from the standpoint of planned (i.e., goal-directed) activities and collective intentionality. Theoretically, the analysis is positioned at the intersection of game studies (ludology), the philosophy

of collective actions, and (social) psychology. My research questions are: What is cooperative game play? What kinds of conative and epistemic attitudes distinguish it from other types of social play forms—or ordinary group work? What types of collectively weaker and stronger varieties does it have, and how do these play forms differ from each other? I will also discuss the implications for the debates about the extent that cooperation can be said to characterize multiplayer game play in general.

The structure of the thesis is as follows: Section 1.1 first offers a concise review of the previous descriptions of cooperative game play, whereas Section 1.2 explains my methodological approach and the related choices. Chapter 3 then introduces the reader to the theoretical background of goals and intentionality, providing a generic framework for planned activities. This structure is further specified in Chapters 3 and 4, which elaborate on the goal-components of game play and cooperation, respectively. Finally, Chapter 5 integrates both notions into a goal-based classification of cooperative game play (illustrated in Appendix 1), while Chapter 6 concludes the analysis by summarizing the main points and considering potential application areas, criticisms, and future guidelines.

1.1 Previous Literature

Although studies devoted solely to the concept of cooperative game play are surprisingly sparse, literature dealing with the subject is nevertheless rather extensive. We will therefore start with a brief overview of the earlier texts: How has cooperative game play been previously conceptualized? What aspects have been emphasized in different times? What kind of connections exist between game studies and studies on cooperation at large? And what potential shortcomings do these descriptions and definitions have?

The notion of cooperation appears, roughly speaking, in two different guises with relation to game play. The first takes the external angle, focusing on games as joint activities in general; in other words, it describes what I will call in this study *game play as cooperation* (GPaC). From this perspective, practically any type of multiplayer activity can be cooperative, regardless of how the roles within the game are arranged. The other adopts the internal perspective—*cooperation as game play* (CaGP)—which in turn refers to the interactions internal to the game. The former is the topic of Section 1.1.1 and the latter of Section 1.1.2, with Section 1.1.3 providing a summary of the main points.

1.1.1 Game Play as Cooperation (GPaC)

The external aspect, GPaC, has been acknowledged for a long time. The founder of symbolic interactionism, philosopher George Herbert Mead (1922, 1925), for example, already regarded games as a species of cooperative social acts. By his definition, such actions have a shared objective with parts for multiple individuals but irreducible to any goal separate from that group. In games, then, players must assume the common objective and the enclosed roles of each participant to be able to conduct their part-actions and react correspondingly (e.g., the catcher throws the ball to the one playing the first base). This is made possible through the exchange of *significant symbols* (e.g., the rules and standards of the game), which—unlike mere symbols and concepts—are addressed simultaneously to both oneself and others. By referencing not only the instance but also the expected response, the players thus come to accept the attitudes of the whole group; they assume the "self" of the *generalized other* that controls their actions.[1]

In another early study, sociologist Mildred B. Parten (1932) proposes *cooperative or organized supplementary play* as one of the behavioral categories for children's social participation.[2] Based on her observations of nursery school children, she defines it as "the type in which the efforts of one child are supplemented by those of another for the attainment of a final goal." According to Parten, this goal presupposes organization of actions, division of labor and role-taking by the participants, for purposes such as material production, dramatizations of various situations, pursuit of competitive goals, or playing formal games. The activity is also defined by a sense of belonging to the group, as well as regulations and feedback on how to play the roles properly.

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[1] Mead's concept of generalized other greatly resembles the notion of group identification, which is a key component in the formation of collective attitudes (see Ch. 4).

[2] In the same study, Parten also describes five other types of social participation: *Associative play* involves personal goals with similar interests, shared locations and materials, and conversations about the common activity, but no division of labor or organization of actions among the group members. *Parallel play* occurs instead independently beside (rather than with) the others; the space and resources are shared but used for private purposes and interests, with hardly any conversation. *Solitary independent play* is in turn performed alone, and it entails no shared resources or references to the others, even when in relative proximity. Finally, *onlooker* and *unoccupied behavior* refer to more and less involved spectator roles, respectively.

Prosocial and cooperative underpinnings of games—even those with competitive internal organization—have been frequently identified in the subsequent literature as well (Henricks, 2009; Juul, 2005, p. 19; McGonigal, 2011, p. 269; Nguyen, 2017; Suits, 1978/2005, p. 78). Typically, this amounts to the agreement to respect the game rules, which is required regardless of whether the participants are attempting to support or defeat each other during the actual play. For Salen and Zimmerman (2004, p. 256), the GPaC perspective is apparent in their notion of *systemic cooperation*, referring to the shared discourse that derives from the game mechanisms. Playing basketball, for example, is possible because the participants speak the "language" of that system (viz., the rules of basketball) and are thus able to interpret and communicate those special meanings through their actions. In this sense, systemic cooperation operates on the background of all games; there is a common understanding between the players on what is appropriate in the situation.

While few reject cooperation as a necessary condition of playing games, there has been some disagreement regarding its scope and relationship with competition. Occasionally, cooperation has been considered the most essential or ideal feature of game play. In the 1970s and 1980s, for example, certain pacifist groups—such as the New Games Foundation—designed and promoted cooperative games as a more relaxed and communal replacement for competitions in the United States (Fluegelman, 1976). In these versions the primary objective was to work together toward a "well-played game," with the emphasis on maximizing everybody's enjoyment instead of distinguishing winners from losers (DeKoven, 1978/2013, p. 129). Similar rhetoric of cooperation and co-creation of positive experiences as the most central or ideal aspects of playing games has occasionally surfaced later as well (see, e.g., McGonigal, 2011, pp. 271–273).

Views like these have been consistently criticized, however. Crawford (1984, p. 11), for example, has seen them as failed attempts to eliminate conflict from games, simply resulting in inferior versions of competitive interaction. Myers (2010, pp. 117–131), in turn, regards the idealization of cooperation as a means of social control. In his eyes, it restricts and ultimately devalues the pleasures and diversities of individualistic or oppositional play—while also ignores the frequency with which these occur in the contexts of social play. In addition, he (2012, 2017, pp. 1–16) argues that the mimetic properties of games refute the alleged master-slave relationship between cooperation and competition: just as

players may cooperate in order to achieve quasi-victories, they can also quasi-cooperate in order to achieve genuine victories (cf. Suits, 1978/2005, pp. 77–84). Accordingly, competition is not inescapably subordinate to cooperation but rather in a dialectic relationship with it, enabled by the paradoxical representation structure of the activity.[3] We will return to this topic later in Section 3.1.1 and Section 5.3.2.

A related discussion concerns agential perspective: whose viewpoint are the actions performed from? Some authors have emphasized group identification as a fundamental part of playing a game proper: DeKoven (1978/2013, pp. 11–15), for one, speaks of play community as a constituent of the well-played game, involving "common intention and mutual respect for the willingness to play." By the same token, McGonigal (2011, pp. 270–271) considers shared intentionality and the entailed group identity an inherent feature of agreeing to play a game together (see also Mead, 1925). Others have endorsed the self-centric view: Myers (2010, p. 128), for example, argues that "human play, regardless of context or group, can be best explained and understood as originating within individual players—in and according to *self*"—the stand for which he seeks support from the reductive analyses of cooperation in the field of economics. As we will see in Chapter 4, this tension is a central issue in the discussions about collective intentionality as well.

1.1.2 Cooperation as Game Play (CaGP)

For a long time, the external aspect was the primary perspective when discussing cooperation in relation to games. This was mainly because most games lacked mechanics designed for that type of interaction—and when they did not (such as in team sports), they still included two opposing sides of players. Indeed, the internal aspect, CaGP, started to draw more attention only later, following the emergence of digital games and computer-controlled opponents, which allowed players to team up and challenge the system instead of each other (Elias et al., 2012, p. 68).[4]

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[3] Comparably, Salen and Zimmerman (2004, pp. 255–256) maintain that all games—while inarguably cooperative in the aforesaid systemic sense—are also necessarily competitive: the contest is either between the players or with the game system itself (or both).

[4] Reportedly, the first cooperative video game was *PONG Doubles* (1973) for Atari, although most digital games of those earlier decades were still considered competitive by default (Skelly, 2012).

In the subsequent literature, CaGP has been referenced by a variety of terms, including *cooperative play*, *cooperative gameplay*, *cooperative game*, and *player cooperation*, for example. Additionally, the word *collaboration* is sometimes used interchangeably with cooperation. Despite the terminological inconsistency, however, the descriptions are relatively similar. By far the most common requirement is a mutual goal, which the players are to achieve as a group, succeeding or failing against the game system together (see, e.g., Burgun, 2013, p. 142; Elias et al., 2012, p. 62; El-Nasr et al., 2010; Fullerton, 2019, pp. 63–64; Leandro, 2009; McGonigal, 2011, p. 272; Reuter, 2016, p. 34; Salen & Zimmerman, 2004, p. 256; Sedano et al., 2013; Skelly, 2012; Thomas et al., 2007, p. 21). While this is often the only condition specified, some have mentioned further components, such as coordination or harmonization of actions (Leandro, 2009; Reuter, 2016, p. 34), or mutual anticipation of each other's moves and play styles, and willingness to sacrifice for the benefit of the group (Skelly, 2012).

A few authors have also offered more nuanced classifications of CaGP, typically based on the scope and dominance of the mutual goal. Applying game theory from economics, Smith (2006, pp. 96–97) makes a distinction between a *cooperative* and *semi-cooperative game*. The former only rewards players for coordinating their strategies toward the same end, whereas the latter—albeit similarly a non-zero-sum game with teamwork being rewarded over non-cooperation—entails additional temptations for selfish actions, such as striving for a better individual score, or hoarding resources for one's own benefit. By the same token, Zagal (2006) separates between a *collaborative* and *cooperative game*, with collaborative players having only one aim with shared rewards, while cooperative players may also pursue personal objectives with separate payoffs.

For others, the difference is essentially temporal, related to means and ends. Stenros et al. (2011), for instance, describe *collaborative* play as an activity involving a long-term mutual goal, in contrast to *co-operative* play which they characterize as an interim alliance for achieving some short-term objective (when strategically favorable). This could happen even when the players' end-goals are in conflict, such as in a pickup game with competitors being temporarily placed on the same team.

Peng (2015) offers a somewhat similar distinction. Drawing on the social interdependence theory from social psychology, she proposes two cooperative goal-structures for multiplayer gaming, one with *positive outcome interdependence*, and the other with *positive means interdependence*. In the first case, the players cannot achieve their goals unless everyone else in the group achieves theirs; in the latter, they are facing a task that requires mutual coordination of efforts or sharing of resources. Both relations can also exist separately. In online games, for example, two players may be randomly selected as team members with a shared purpose (winning the game), yet they need not engage in any communication or coordination with each other during the play.[5]

Most of the above typologies are based on goal-relations and the associated interaction relationships. Another, less common way of classifying player cooperation has been to examine the agents' commitments to those goals. One such study is Vesa's (2013, pp. 109–132) virtual ethnography of PvE[6] raid guilds in *World of Warcraft*. Employing a framework from the theories of sociality, he identified three modes of collective commitment instructing the management of actions and organizational boundaries among the players: Groups with *we mode commitment* were the most stable, including expectations of full reciprocity (e.g., sharing of valuable resources) on both intragroup and intergroup level. Consequently, personal goals were subordinate to the organizational ethos, with little managerial agency left for challenging the boundaries. *Progroup commitment*, on the other hand, assumed only intragroup reciprocity, leaving room for opportunism within the organization—but also resulting in lower intergroup cohesion. Finally, *I-mode commitment* involved no reciprocity even on intragroup level. Instead, players could act opportunistically (e.g., by collecting the best items they can) both as a group and as an individual group member, further adding to the unpredictability.

[5] This largely corresponds to what Henricks (2009) describes as *indirectly cooperative* play events. In such cases the participants work separately in the same organization, without being expected to directly respond to or support the others. *Directly cooperative* play events, on the other hand, represent more orderly versions of interactions, presupposing integration of both goals and actions.
[6] Player versus environment

It is worth noting that Vesa's descriptions of the aforesaid cases cover goals pertaining to both GPaC and CaGP contexts. Indeed, as I will argue later in Section 5.3.2, it is possible for game play to exhibit different modes of commitment externally and internally, so that the collective mode of GPaC may simultaneously be combined with the individualistic mode of CaGP, for example. Further, even though Vesa focuses mostly on intra-organizational and intergroup aspects, we will see in Chapter 4 that similar agential modes can be applied to interpersonal cooperation as well.

1.1.3 Summary

In summary, previous descriptions of cooperative game play generally reflect one of two perspectives: external (GPaC) or internal (CaGP). The former emphasizes the cooperative foundations of game playing in general, due to the rules that must be mutually accepted and followed, even if the players are competing against each other. While this condition is almost universally approved of, not everyone agrees on the significance of cooperative relationship and group identification over the importance of conflict and selfish aspirations as defining features of game play in social contexts.

As for CaGP, most of the definitions include the idea of a common goal, usually implying players winning or losing together. Some authors offer further classifications, separating collaborative and (semi-)cooperative interaction relationships with long-term and short-term mutual objectives (viz., outcomes and means), whereas others have investigated the modes of commitment to those goals, identified by the scope and binding of the expected reciprocity among the participants. Overall, the use of terminology is mixed.

Due to the lack of studies on the concept of cooperative game play itself, one is still left with several questions, however. Most importantly, what exactly is meant by "goals"? Do they refer to the objectives afforded by a game or do they also presuppose players' commitment to pursue them? The former approach could easily lead to an unnecessarily formalistic analysis, ignoring the interrelatedness of the collective and selfish efforts in play. After all, empirical studies indicate that neither cooperative nor competitive practices are strictly exclusive to games designed for such interaction; instead, both aspects typically alternate and overlap dynamically (Rogerson et al., 2018; Voida et al., 2010).

The existing classifications are also open to additional refinement. Should cooperation be considered an umbrella term, under which collaboration, for instance, falls? What kind of cooperatively weaker and stronger versions could be identified by examining the various combinations of interaction relationships and agential modes, including both external and internal perspectives? Can we pinpoint further cooperative relationships based on the potential mixing of short-term and long-term interdependence (positive, negative, neutral)? How about the cases of only one player helping another, while the other one merely monitors the situation? Is reciprocity sufficient in distinguishing the three modes of commitment? Is it not required in individualistic and opportunistic cooperation as well (e.g., trading in-game items)? How does cooperative game play differ from ordinary group work?[7] And lastly, could we find a common explanatory approach that is suitable for defining both interaction relationships and agential modes of cooperative game play?

1.2 Method

Since the research questions listed at the beginning concerned the essence of cooperative game play and its subspecies, an appropriate method for answering them was a conceptual analysis. Generally, this type of process includes three basic steps (see Beaney, 2018; Daly, 2010, pp. 41–50): 1) the selection of the concepts (*analysandum*) to be investigated, 2) the identification of the necessary and sufficient conditions (*analysans*) of those concepts, and 3) testing for the validity of the analysis with various hypothetical cases. Each stage presupposed some important decisions, which call for justification here.

The two core concepts chosen were the aforesaid *game play as cooperation* (GPaC) and *cooperation as game play* (CaGP), which represent the external and internal reading of *cooperative game play*, respectively. The reasoning behind this double perspective will be explained later in Section 3.1.1, with Section 5.3 considering its implications for collectivity. For now, however, I will concentrate on defending "cooperation" and "game play" as the basic components of the above notions.

[7] This is a particularly relevant question for those interested in bringing playful elements to mundane, everyday contexts, such gamification designers, and educational researchers.

As for the latter term, we saw earlier that other alternatives, such as "games," "gaming," "gameplay," or "play," were available as well. Why opt for "game play," specifically? The head term "play" was included for two reasons. First, while games may refer to either activities or artefacts (Stenros, 2015, pp. 128–130), play (or playing) typically points to the former genus, which is the premise of my analysis. In other words, I analyze the act of playing a game cooperatively, not the systems designed for such interaction (although the two are obviously interrelated). Second—and more importantly—I want to emphasize that I only aim to define a specific *subset* of cooperative game activities, those reflecting a *playful* mindset, understood roughly along the following lines:

> "The term *playfulness* (or paratelic) is used to describe a metamotivational state, or an attitude, in the Apterian sense. It is innate to the player, and characterised as being voluntary, spontaneous, and wherein the activity itself is its primary goal. It is present in the moment and can be sparked in an instant, change drastically at any time, and can disappear without warning. Although it is possible to foster and harness playfulness, it cannot be fully tamed. Playfulness is often visible and its tone is usually (meta)communicated to others present in a situation—and this communication can even carry from one species to another. Playfulness does not have a moral dimension; it is neither good nor bad in itself—it simply is." (Stenros, 2015, p. 77.)

Within the diverse—and rather disconnected—field of game sciences (see, e.g., Klabbers, 2009, pp. 12–20, 2018a), the terms "game" and "gaming" regularly extend beyond such playful instances.[8] In mathematical game theory, for example, practically any social decision-making situation can be described as a game between some agents, which is too broad an interpretation for our purposes. Moreover—as Stenros (2015, pp. 92–96) concludes—not all descriptions of play include the features quoted above, either. By limiting my focus to cases of playful cooperative game play, I thus tried to avoid setting up an unnecessarily enormous task for my analysis.

The modifier term "game" conversely excludes those play species that do not follow a game-like structure. By itself, play covers a far wider spectrum of activities, from performances to joking and daydreaming (Sutton-Smith, 1997, pp. 1–7), so without knowing

[8] Of course, the term "player" still appears in most of these settings, so the distinction is far from flawless. Other, perhaps more accurate formulations could be "cooperative playful gaming," or "cooperative game-like play," but such expressions are not commonly used among researchers, designers, or players.

the context, "cooperative play" could describe two people singing a duet, or a symphony orchestra performing music, for instance. My angle is much narrower than that. The reason for choosing "game play" over "gameplay," on the other hand, was that the latter usually refers to the dynamics between the player and the mechanics—the way or "feeling" of the interaction (Egenfeldt-Nielsen et al., 2013, p. 121; Juul, 2005, p. 56), while I use the former in a general sense of participating in a game-like (playful) play, or, in Salen and Zimmerman's (2004, pp. 303–304) words, "formalized ludic activity."

"Cooperation," is in turn treated as an umbrella term for a variety of subordinate concepts. These include cooperation in three different interaction relationships (*collaborative*, *symbiotic*, *coopetitive*)—each of which can be further divided to *unilateral* and *multilateral*—as well as cooperation in three agential modes (*private individual*, *pro-group individual*, *group agent*). All these categories will be explained in Chapter 4. In my analysis, none of these terms is interchangeable with "cooperation," contrary to some other studies where "collaboration" has been used as a replacement or parallel notion (see Section 1.1). These decisions were based on the observation that the analysans of cooperation are also necessary (though not sufficient) conditions of the other concepts.

As a further delimitation, my analysis assumes cooperation—and, consequently, cooperative game play—as a species of *prosocial* activities, for reasons discussed in relevant parts of the study. Basically, this means that the behavior of the agents aims at benefitting others (at least to some degree)—albeit the divide between antisocial and prosocial acts is not always as straightforward as one might think (Hinde & Groebel, 1991). For example, short-term antagonistic actions toward someone could still serve some long-term purposes intended to benefit that same person—and vice versa. What my definitions exclude are purely oppositional interactions that entail zero intention of furthering the other players' objectives. While such antisocial joint actions undoubtedly exist, most of the analysis—as well as the term "cooperation"—is reserved for cases involving at least minimum amounts of helpfulness toward the others. Throughout the study, I will also assume that these agents are individual persons (i.e., my focus is on *interpersonal* or *intragroup* cooperation), although—if one treats each participant as a group agent instead—the results are applicable to *intergroup* contexts as well.

Regarding the identification of the analysans, it is important to specify the type of explanation I am attempting. As a subset of play, cooperative game play could be approached, for example, by its structural, processual, experiential, functional, evolutionary, ideological, or framing-related aspects (Schechner & Brady, 2013, p. 93). My analysis is primarily concerned with this last perspective: the mental states that explain the external (GPaC) and internal (CaGP) interpretations of the phenomenon in their respective frames of reference.[9] The selected type of explanation is thus *intentional* in general. More specifically, I will focus on the agents' *goals*—partly due to goals being a crucial piece in understanding both games (see, e.g., Juul, 2005, pp. 29–36; Salen & Zimmerman, 2004, p. 258) and cooperation (see Ch. 4), partly because the conception of goals themselves is rarely elaborated in the previous definitions of cooperative game play. Accordingly, the activity is assumed not only as playful and prosocial, but also as *goal-directed* (i.e., planned). This leaves games involving "cooperation" with non-intentional actors—such as animals and non-player characters (NPCs)—out of the scope of the analysis.

Consistent with the above choices, the selected literature mostly comprised texts from the philosophy of collective actions (viz., collective intentionality), game studies, and (social) psychology. Taking the position that concepts are fundamentally social constructions, a large part of my study focuses on juxtaposing and integrating different conceptualizations of game play and cooperation within these fields, insofar as they help to identify the necessary and sufficient conditions of cooperative game play from the viewpoint of the participants' goals. To explicate the related arguments, I will offer biconditional statements at the end of the chapters, with the full synthesis illustrated in Appendix 1. The reasoning behind the results will be tested with hypothetical cases throughout the text. Overall, then, the underlying research paradigm can be characterized as rationalist–constructivist.

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[9] Let me emphasize that I am not attempting a full-blown *frame analysis* on Goffman's (1974/1986) terms here—nor am I trying to define the *frame* of cooperative game play. As Deterding (2013, p. 127) remarks, such framings are mixtures of many different things, involving bodies, materials, language, behaviors, phenomenal experiences, and cognitive processes. I am merely examining the last one of these (viz., goals). Moreover, although "frame" (roughly in the Goffmanian sense) is certainly one of the concepts employed in this study, it is used for defining the associated activities (GPaC and CaGP), not vice versa.

2 GOALS AND INTENTIONALITY

Since goals and intentionality are central to my study of cooperative game play, I begin the analysis by elaborating on the connections between these two aspects. This is a crucial step, as the later chapters will build on the theoretical framework constructed here, and the intentional components of goals constitute the analysans of my final categories. Additionally, the chapter serves as a general overview to those readers who may not be familiar with the philosophical concept of intentionality.

Briefly put, intentionality refers to the "directedness" or "aboutness" of mind with regards to some object or state of the world. Intentional mental states have two basic elements: First, they include a *psychological mode*—such as desire, belief, intention, fear, or love—which reveal the quality of the directedness. Second, the mode has *intentional content*, which represents the aspect of the world the mind is aiming at. In case of propositional content, it also specifies the satisfaction-conditions for the mode. (Jacob, 2019; Searle, 1983, pp. 1–13, 2001, pp. 34–36.) For example, "I believe that Martians will attack" and "I desire that we play darts together" are expressions of intentional states with the modes of belief and desire and with contents indicated by that-clauses. The former mode is satisfied (i.e., "matched") if Martians do attack (or by changing one's belief); the latter is satisfied if we realize our desire to play darts.[10]

To say that "I have a goal that (such-and-such)" implies one of the many ways that intentionality can manifest in one's mind. And obviously the focal point of my study are those specific cases of "having a goal" that explain and initiate cooperative game play: what are the intentional elements involved in such instances, and what are their features? Accordingly, by "goal" I mean not only the intentional content (e.g., "throw the dart towards the center of the board") but the attached psychological modes as well. After all, the contents alone are merely goal-*affordances*; they become proper targets only when an agent directs their mind at them in a suitable way.

[10] If the content can simply be true or false (as with beliefs) its satisfaction implies a mind-to-world direction of fit, and if not (as with intentions), it has a world-to-mind direction of fit (Searle, 1983, pp. 7–8).

To construct an intentional explanation for cooperative game play and its subcategories, then, we must first expound on those "suitable" elements. Throughout the following sections and chapters, I mainly focus on three intentional components of goal-directed activities: 1) the mode of *acceptance*, 2) the mode of *intention*, and 3) the *propositional content* of that intention, covered in Sections 2.1, 2.2, and 2.3, respectively.[11] Using the notation of propositional attitude logic, we can express the general relations between these elements by the following, simple formula:

$$\mathrm{A}_x\, \mathrm{I}_x\, P \quad = \quad \text{“}x \text{ accepts that } x \text{ intends that } P\text{”}$$

In the above report, *x*'s acceptance (a higher-order attitude) is directed at *x*'s intention (a lower-order attitude), which is further directed at the goal-affordance *P*. Conversely, the subordinate clause $\mathrm{I}_x\, P$ represents the content (i.e., the satisfaction conditions) of the acceptance mode, whereas the second subordinate clause *P* points to the content of the intention mode. *P* may designate basically any proposition about the world it references, although some additional conditions must be met (see Section 2.3).

Before I begin analyzing these components, it should be noted that propositional attitude reports are technical constructions, not to be viewed as literal descriptions of the agents' actual mental states. In natural language, these thoughts may obviously appear in a variety of syntactic guises. For example, no one uses a cumbersome and rigid statement such as "I accept that I intend that you and I play darts." Instead, one might say, meaning the exact same thing, "I agree to play darts with you", or simply "Let's play darts!" Moreover, one need not report or constantly think his objectives at all, since mental representations are essentially *access-conscious* states (Block, 1995); that is to say, they can lay dormant on the background until one's mind actively brings them to the front.

[11] Overall, it may be helpful to think goal-carrying as a "network," linking together various types of mental states and contents (see Searle, 1983, pp. 19–21). It is also worth pointing out that this network can—and strictly speaking must—include also other psychological modes than just acceptance and intention. For instance, we will see later that desires and mutual reliance are involved as well.

2.1 Acceptance

We will start investigating the elements of goal-directed activities with the higher-order attitude: acceptance. Although intentions and their contents alone could in some cases be enough for analyzing actions, in terms of cooperation and game play they do not yet contain all necessary pieces of the puzzle. Besides examining who aims (via intending) to do what (the content), we also need to pay attention to the various ways the agents are committed (via acceptance) to those intentions and their meanings.

In philosophy, acceptance has indeed been commonly affiliated with goals. It is generally understood as someone voluntarily holding a conception as true for some practical purpose—in contrast to belief, which is instead characterized as an involuntary attitude and less dependent on the perception of utility (Wallace, 2020). The following description by Hakli provides a useful review of the notion:

> "Acceptance that p, on the other hand, is typically taken to be a kind of a mental act, a decision to treat p as true in one's utterances and actions, or an act of adopting a policy to use p as a premiss in one's theoretical and practical reasoning. This is usually taken to include assuming p for the sake of some practical purpose, pretending that p is true or acting as if p were true, because it is usually allowed that one can simultaneously accept that p and believe that not p. Sometimes a distinction is made between an act of acceptance and a state resulting from such an act; usually the intended meaning is clear from the context." (Hakli, 2006, p. 288.)

Some theorists argue that voluntariness and the dependence on practical contexts are not necessary for all forms of acceptance. Tuomela (2000b), for example, distinguishes between *acceptance-as-true* and *pragmatic acceptance*—the former of which can, more akin to belief, also be involuntary and point to truth instead of utility. Since I am focusing on cooperative game play as a goal-directed activity, however, I will treat acceptance in this latter, pragmatic sense, which corresponds to Hakli's summary above.

As we can see from the quoted description, (pragmatic) acceptance is closely related to decision-making. Indeed, if we look at the generic propositional attitude formula for goals given earlier, the content of the acceptance ($I_x P$) implies resolution to the question: What (P) will be intended (by x)? And since intentions examined here are, more specifically, directed at plans with a multi-level hierarchy of goals-contents (see Sections 2.2 and 2.3), P can be divided into multiple questions: What will be done? How? Why?

Accepting decisions to the above questions implies *practical reasoning*, which in our case "locks" the intention (and its content) as the content of the acceptance mode. And if those were the only issues relevant to my analysis, we could simply focus on intentions. However, cooperative game play is also explained by *theoretical reasoning*. Unlike practical reasoning concerning desirability and value of actions, theoretical reasoning involves deliberation about what one should believe in the current situation (Wallace, 2020) (notice that we are still speaking of pragmatic acceptance). Thus, where intentions can be viewed as conative commitments to act, the theoretical aspects decided by acceptance bring along epistemic commitments to the meanings of those actions as well.

In the later chapters, I will deal with several important questions of theoretical reasoning regarding cooperative game playing: What happens if I will *not* intend to act? How should the action be interpreted in the context at hand? Who is the authority of the action (individual or group)? Correspondingly, I will investigate the following species of acceptance: *pretend-acceptance* (Section 3.1.1), *voluntary acceptance* (Section 3.1.2), *I-acceptance* (Section 4.1.1) and *we-acceptance* (Section 4.1.2).

2.2 Intention

Our next stop is intention, which is the lower-order attitude that the acceptance is directed at in the generic goal-structure introduced earlier. One might ask here, why does the mode have to be intention, specifically? Does one not carry a goal by simply wishing, hoping, or desiring that something is true, for instance? After all, each of these mental states are—similar to intention—*pro*-attitudes: the agents possessing them are in favor of the content becoming (or remaining) fulfilled, contrary to attitudes such as fear.

There is no denying that simply desiring or wanting something can be described as having a goal, albeit in a sense of "state-view" (of wanting to obtain some state of affairs) rather than "action-view" (of wanting to pursue something) (Tuomela, 1990). However, since we are interested in goal-carrying that commences and preserves the very *action* of cooperative game play, wants and wishes alone would be too weak for a necessary condition. For example, I could have a vague desire to play darts with you tomorrow but have neither plans nor commitment to pursue that objective.

That dedication is brought in by the mode of intention. Michael Bratman (1987/1999, pp. 15–17, 107–109)—who has famously emphasized intentions as future-directed plans—argues that commitment in intending has two dimensions: volitional and reasoning-centered. *Volitional commitment* stems from the (conceptually distinct) "endeavoring" that exerts control over action: it creates "inertia" resisting diversion from one's decisions, so that if the plan persists until the time of execution, the attempt is made with the present-directed intention in mind. *Reasoning-centered commitment* refers in turn to the way future intentions guide and constrain the agent in her deliberations of means and preparations so that they are consistent with the plan and believes of what is possible to achieve. Regular desires, Bratman maintains, are simply potential *influencers* of action. And because they lack the demands of consistency with regards to one's reasoning as a rational agent, desires can also be directed at opposite things, in contrast to intending (Bratman, 1984; see also Tuomela, 2013, pp. 64–66).

This is not to say that desires play no part in intentions or cooperative game play. On the contrary, it is generally accepted that intentions presuppose desire as a motivational element—though necessarily only in the broader sense of "willing," and not necessarily in the narrower sense of "appetite" (Setiya, 2018). In fact, desire is also implied in Bratman's notion of "endeavoring" mentioned above.[12] Such wants—and, consequently, the entailed intentions—can be either intrinsic or extrinsic, depending on whether the actions are pursued out of personal preference or sense of obligation (Tuomela, 1990). This distinction is particularly relevant regarding the intentions of game play (see Section 3.2).

In this study, I will largely adopt Bratman's view of intentions as plans, as it fits well with the strategic element characteristic of game playing (see Section 3.1). The narrower focus also allows us to bypass some ongoing disputes on the nature of intentions in general,

[12] For Bratman (1987/1999, pp. 128–138), "endeavoring" is somewhat akin to willing or trying. He describes it as a "guiding desire" that is stronger than a mere desire but weaker than intending in the sense that it does not require similar demands for rational intention agglomeration and means-end coherence. In addition, one can endeavor without intending, such as in the case of alternative goals where only one of the objectives (and not both) can be fulfilled—yet both can be attempted (i.e., endeavored).

which are out of the scope of this study in any case.[13] This delimitation does not, of course, suggest that all player behavior must be rational and deliberately planned; as Salen and Zimmerman (2004, p. 237) note, perfectly rational players rarely exist in the real world. That said, while spontaneous strategy adjustments and (seemingly) irrational actions are possible—and even likely—during play, the overarching argument here is that such acts are subordinate to a broader, more consciously planned goal-structure defining cooperative game play as an intentional activity.

Treating intentions as plans does, however, warrant a caveat here. The issue is that plans can always change—even when they are controlled by the prospect of present-directed intentions (Bratman, 1987/1999, pp. 3–5). For example, if you and I intend to play darts tomorrow evening, but then in the morning some force majeure happens (e.g., one of us gets sick), it would be irrational for us to be committed to that future intention anymore. A rational agent would instead abandon the plan.

Technically, then, to be able to lay out both necessary and sufficient conditions for *playing* a game cooperatively (and not just planning such activity) we also need to identify at least some part (viz., the means) of those future-directed intentions as *actually* present-directed. In other words, there must be an aspect of the intending that involves commitment to act instantly, albeit with an eye to the future. I will include this adjustment in the biconditional statement presented in the summary (Section 2.4).

In the upcoming chapters, I will also explore other subcategories of intentions, based on the underlying reasonings. Besides the general questions about the results, execution, and reasons of the contained plan (What will be done? How? Why?), we will need to consider the guiding desires and the carriers of the intentions (What kind of satisfaction is sought? Who seeks satisfaction from the plan?). Accordingly, I will later deal with *autotelic intentions* (Section 3.2.1) and *allotelic intentions* (Section 3.2.2), as well as *I-mode intentions* (Section 4.2.1) and *we-mode intentions* (4.2.2).

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[13] These debates mainly concern how to unify the trilemma of different intention-appearances: intention for the future, intention-with-which, and intentional action (Setiya, 2018).

2.3 Contents

So far, we have learned that acceptance and intention are ways of "aiming" one's mind at some goal-affordance (*P*), thus forming a proper objective. In other words, one thinks of a state of affairs that one wants to become (or remain) fulfilled and then commits to that idea both conatively and epistemically. This can be expressed in the form of a statement, which reveals the satisfaction-conditions for the attached modes. As explained earlier, that object is called intentional content—and in this case also propositional content.

Since intending is an attitude that controls and guides one's actions, its content must also be something that allows that. As Setiya (2018) notes, "it must be the sort of thing that can be in progress and move towards completion, something that can be done, not a mere proposition or state of affairs." Similar to the modes, the content has to include a predicate and an agent (typically the subject) representing an intentional entity, at least implicitly—for example: "*I* intend to *paint the house*," or "I intend that *someone paints the house*." In this study, I focus on cases in which the intention carrier equals or belongs to the agent of its content (see the "own-action principle" in Section 4.3.2).

Both the agents and the predicates are relevant for our analysis of cooperative game play. For now, though, we will concentrate on the latter. Predicates—particularly the ones referring to the completion of some mission—are perhaps what most often comes to mind when speaking about goals in games. In Monopoly, for instance, the goal of the game is to "collect all the properties on the board." In Tetris, it is to "get as high a score as possible." And on many occasions, there is no need to complicate the term beyond this.

However, such cases typify just one level of abstraction in a broader goal-hierarchy regulating one's actions. Philosophers endorsing "calculative" views of action have exposed this complex by applying "Why?" questions at each level of reasoning (Millgram, 2020). For example, "I intend to buy a yellow property from you." "Why?" "Because I intend to collect the whole color group." "Why?" "Because I intend to build houses and hotels." "Why?" "Because I intend to bankrupt other players." "Why?" "Because I intend to win the game." And so on, until the chain eventually stops. Accordingly, if one carries a goal to which the "Why?" question applies, one must also have a further calculative reason for one's actions within that nested hierarchy.

The view of intentions as plans fits the calculative perspective well. As Bratman (1990, p. 19) notes, the structure of plans is usually hierarchical, where "[p]lans concerning ends embed plans concerning means and preliminary steps; and more general intentions embed more specific ones." In the same vein, Searle (1983, p. 99, 2001, pp. 51–52) speaks about complex intentions and actions, consisting of "by-means-of" or "by-way-of" elements. More importantly, he points out that the relations of those components are reported within the *content*. Thus, even when there are such multiple nested parts, they all belong to the same intention and constitute only one action plan.

Hierarchical goal systems have also been acknowledged—as well as empirically tested—in psychology (Moskowitz, 2012, pp. 21–22). Drawing on the earlier work by William T. Powers, Carver and Scheier (2000, pp. 46–49) propose a classification that is particularly helpful for the purposes of my analysis. In their model, the top-level consists of *be-goals*, referring to one's desired ways of being (e.g., "be thoughtful"). These derive from underlying *system concepts*, reflecting intrinsic "ideal self" or extrinsic "ought self" (e.g., group identity). At the next level of abstraction, the be-goals drive one's *do-goals*: activity-programs (e.g., "prepare dinner") that require decisions at certain points of their completion. Naturally, when one finishes a do-goal, the related higher-order be-goals are also fulfilled. Finally, the most concrete level comprises *motor control goals* (I use the term *motor-goal* for short): individual action-sequences (e.g., "slice broccoli") contributing to the completion of the program. The sequences can also divide into further sub-sequences.

The benefit of the above model is that it provides us general predicate categories defining the goal-contents of cooperative game play: completing (or engaging in) an activity, generating physical (or mental) movement, and being a certain way. In terms of the agents' reasoning, these imply the following questions: What is attempted? How is it attempted? Why is it attempted (the way it is)? Accordingly, the intended motor-goals are accepted as *contributing* to the completion of the do-goal, which in turn *satisfies* the be-goals. Using symbols Σ, Δ, and Ω (respectively) for these content-classes, we can now elaborate *P* in our intentional structure of goals, as follows:

$$A_x\ I_x\ \mathit{Con}((\Sigma_1, \ldots, \Sigma_n), \mathit{Sat}(\Delta, (\Omega_1, \ldots, \Omega_n)))$$

Note that I have incorporated just one do-goal (Δ) above. This is because I am only analyzing a single planned activity (cooperative game play). Although Carver and Scheier's (2000, p. 49) illustration indicates that the satisfaction of a be-goal can depend on multiple separate do-goals, in this study the analysans of cooperative game play can be explicated without resorting to planned activities in plural. As for the relations between Δ and Σ_1, …, Σ_n, and Δ and Ω_1, …, Ω_n, the former notation allows for cases of *equifinality* and the latter for *multifinality* (see Shah & Kruglanski, 2000, pp. 86–90): namely, there can exist multiple lower-level goals contributing to the same higher-level goal, the same way there can exist multiple higher-level goals satisfied by the same lower-level goal.[14]

As a final remark, we may already identify one be-goal predicate required of all planned activities (cooperative game play included): *being fulfilled*. Indeed, if one intends something, one is inarguably seeking satisfaction of some sort—whether intrinsic or extrinsic. This has some important implications. First, "being fulfilled" is understood here as superordinate to any other goals, at any level of abstraction. Quite simply, if one has a goal, one also has something left to satisfy as well. Second, I use the term "fulfillment" in the full, ideal sense. Obviously, it is possible for one to be partially satisfied, such as when a do-goal program gets completed but not the way one originally intended (see the hockey examples in Section 4.2, for instance). Here, however, I refer to satisfaction derived from achieving the best possible results, as accepted desirable under the perceived conditions: *being (optimally) fulfilled (given the circumstances)*. This may also indicate compromises during the planning. Third—and in tune with the theories of intentionality and goal-hierarchies—I consider one to be fulfilled *if and only if* the entire plan is successful. Clearly, if the agents were fulfilled after failing, we would question whether those goals factored in their plans to begin with. These observations will prove important later regarding game play (Ch. 3), as well as collective intentionality and cooperation (Ch. 4).

[14] Naturally, there may also exist motor-goal outcomes that alone satisfy some be-goal, without the do-goal having to be completed. However, the completion of the whole program automatically satisfies *all* the be-goals—so long as they do not depend on the completion of multiple separate programs.

2.4 Summary

This chapter has introduced a generic skeleton of goal elements—modes and contents—for the defining features of cooperative game play to be wrapped around. The relevant intentional components were delimited to the psychological modes of acceptance and intention, as well as propositional contents at three levels of abstraction: be-goals, do-goals, and motor-goals. Taken together, this goal-complex was viewed as a system of planning, with decisions pertaining to both practical and theoretical reasoning. Consequently, cooperative game play will be examined here as a *planned activity*. As a recap and explication of the main arguments, I offer the following biconditional statement:

(PLAN) Agent x (individual or group) is *pursuing a planned activity* P if and only if
- (1) P consists of goal-contents Ω_1, …, Ω_n, Δ and Σ_1, …, Σ_n such that
  - (a) Ω_1, …, Ω_n refer to x being a certain (ideal or obliged) way;
  - (b) Ω_1 refers to x being fulfilled, and $\Omega_{(i \neq 1)}$ are subordinate to Ω_1;
  - (c) Δ refers to x completing an activity program that satisfies Ω_1, …, Ω_n;
  - (d) Σ_1, …, Σ_n each refer to x (or someone else) performing an action sequence that contributes to the realization of Δ;
- (2) x intends that P, with present-directedly intending at least one Σ_i;
- (3) x accepts that (1)–(2), with genuinely accepting at least Ω_1 and (2).

Above, (1a), (1c) and (1d) express the hierarchical structure of goals, while (1b) recognizes fulfillment as the superordinate be-goal. Clauses (2) and (3) bring in the psychological modes. As discussed in Section 2.2, at least some means must be intended present-directedly; otherwise, the activity could get stuck in the planning phase and we would not have sufficient conditions for the phenomenon. This modification is added to Clause (2). Lastly, the reason why (3) includes the condition of *genuinely* accepting at least Ω_1 and (2) is related to the fact that one can consciously accept false things as true (recall Section 2.1). While game play necessarily involves pretend acceptance regarding certain parts of the contents (see Section 3.1.2), the intending itself (along with the be-goal of fulfillment) must still be accepted genuinely for there to be any activity in the first place.

As a species of planned activities, all the aforesaid conditions are also inherited by cooperative game play. The next step is to further specify the properties of these intentional goal components (acceptances, intentions, contents) in game play and cooperation. This will be the task for Chapters 3 and 4, respectively.

3 GOALS AND GAME PLAY

Now that we have a basic conception of intentionality and the structure of goals, we can start applying the framework of planned activities to the analysis of GPaC and CaGP. I will first focus on game play: what kind of acceptances, intending and contents are characteristic to it? This is an important step, for without understanding the characteristics of games and play we would have little idea of how cooperative game play deviates, at least analytically, from other forms of cooperation, such as ordinary group work.

Historically, defining games has proved to be a tall order. Wittgenstein (1953/2009, pp. 36–41), for instance, famously rejected any precise boundaries for the concept; rather, games would share certain *family resemblances*. In his view, when enough attributes belonging to this "family" combine, one intuitively identifies the overlap as a game, even though one cannot specify which features are universal to all games. Wittgenstein compared this to a blurry photograph from which one can still recognize its object in spite of—but also *because* of—the perceived fuzziness. Reducing the concept to a rigorous, essentialist definition would therefore, curiously, make it less clear.

Are we facing an impossible task, then? Perhaps not. First of all, many of Wittgenstein's examples (e.g., a child throwing a ball at the wall and catching it) represent fairly primitive play—or games with *paidia* element, which Roger Caillois (1961/2001, pp. 27–28) has defined as "spontaneous manifestations of the play instinct." Such a broad and inclusive reading of the concept is indeed notoriously ambiguous and elusive, due to the vast diversity of play forms, experiences, scenarios, players, agencies, and scholarships related to it (Sutton-Smith, 1997, pp. 1–7). Yet my focus is notably narrower, directed at the more sophisticated cases at the intersection of cooperation, gaming, and (playful) play.

Second, the non-essentialist stance has also been forcefully challenged, most directly by Bernard Suits (1977, 1988, 1978/2005, pp. 48–55), who has proposed necessary and sufficient conditions for both games and play—much to the displeasure of those he (1977) (playfully) describes as "terminal Wittgenstanians," or persons "with a severe definition-phobia." More recently, some widely used definitions have emerged in game studies as well. As a primer for this chapter, then, below is a look at three popular conceptualizations of games as an activity or a system of interaction.

> "To play a game is to attempt to achieve a specific state of affairs [prelusory goal], using only means permitted by rules [lusory means], where the rules prohibit use of more efficient in favour of less efficient means [constitutive rules], and where the rules are accepted just because they make possible such activity [lusory attitude]" (Suits, 1978/2005, pp. 54–55).

> "A *game* is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome" (Salen & Zimmerman, 2004, p. 80).

> "A game is a rule-based system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels emotionally attached to the outcome, and the consequences of the activity are negotiable" (Juul, 2005, p. 36).

Although one can easily detect many similarities here, the three descriptions also differ in certain ways, each having their own strengths and weaknesses. In the following sections, we will find out what these differences are, and how the definitions—as well as other conceptions of games and play—fit into our framework of goals and planned activities—with cooperation prospectively in mind. The structure of this chapter follows that of the previous one: Section 3.1 examines game play from the perspective of acceptance, whereas Sections 3.2 and 3.3 deal with intentions and goal-contents, respectively. Section 3.4 closes the chapter by summarizing the main points.

3.1 Acceptance

Looking at the definitions above, it becomes evident why acceptance is needed as one of the intentional components of game play. This is because of *rules*, which typically distinguish an individual game from other games and directs and restricts the do- and motor-goals of the activity. Using Caillois' (1961/2001, pp. 27–35) terminology, they bring in the element of *ludus*, which refines and disciplines the aforesaid paidia.

Obviously, any regulations presume calculations about what one can and cannot do, and thereby no (ludus) game is played by pure accident, without some sort of decision-making and acceptance involved. When the rule-restrained objectives are not accepted as one's intended goal-contents, the game exists—at most—as an affordance, or as an activity to spectate from the outside. Participating as a player, on the other hand, demands conscious commitment to one's intentions within the given constraints.

However, acceptance in game play is not only a result of practical reasoning about what one ought to do. As noted earlier, certain aspects of players' deliberations are also more theoretical by nature: How should one construct and interpret the goal-contents within and outside of play? What are the consequences of refusing to play? These questions point to two further types of acceptances: *pretend acceptance* and *voluntary acceptance*. The former is the focus of Section 3.1.1 and the latter of Section 3.1.2.

3.1.1 Pretend Acceptance

Chapter 1 established that the concept of cooperative game play can be approached from external (GPaC) or internal (CaGP) angles. But why exactly do we need both perspectives here? After all, theories of cooperation do not generally make such distinction, and neither do all the disciplines within game sciences. As Klabbers (2009, p. xii) remarks, classifications of games "generally tend to disregard the duality of views: the outsider/spectator and insider/participant perspective, and the related multiple reality."

The key here is the head term "play." Unlike cooperative work—and certain contexts of gaming—play is typically affiliated with some degree of divergence from the real world, altering the way participants interpret the meanings of their actions. This separation has been referenced with notions such as *magic circle*, (Huizinga, 1949/2009, p. 11; Salen & Zimmerman, 2004, pp. 93–99) *play world*, (Fink, 1957/1968) *imaginary situation*, (Vygotsky, 1967), and *anti-form* (Myers, 2010, pp. 32–34), to name but a few.

Insofar as game play is understood as an intersection between games and play, it should, logically, also inherit the above quality. Comparing the three definitions from earlier certainly seems to support this conclusion. For Salen and Zimmerman (2004, pp. 80, 94–97), the idea is evident in the notion of artificiality, which they see as maintaining the boundary—"the magic circle"—from reality both temporally and spatially, as well as creating special meanings for objects and actions. While Juul's definition does not contain a similar condition, he (2005, p. 164) nonetheless agrees that rules produce some distance from reality in games. In the same vein, Suits' (1978/2005, pp. 52–53) explanation of the lusory attitude suggests that it has its own rationale, fundamentally distinct from that of the ordinary life: what outside of game playing seems "decidedly irrational" is within the play itself considered "absolutely essential."

However, the separation between play and non-play does not alone justify the argument for the double perspective (GPaC and CaGP) in defining cooperative game play; if anything, it would seem to undermine it. Yet this is only one side of the coin. Insisting on the dual position suggests that the two realities are not only detached but also, paradoxically, linked. In the light of the previous literature, the claim is hardly contentious. As Stenros (2014) has pointed out, basically all scholars in the field of game and play studies accept the two spheres being more or less connected, even if straw man arguments accusing someone of endorsing the opposite are occasionally thrown around.

What some authors do disagree on, though, is whether the connectedness implies games being defined by that paradox. If it was, as for example Myers (2012) thinks, then some element of make-believe would have to be inherent in all games, not just games of mimicry. Curiously, however, neither Suits (1978/2005, p. 120), Salen and Zimmerman (2004, p. 76) nor Juul (2005, pp. 13, 34) regard it as a necessary condition, although the descriptions of artificiality and lusory attitude seem to indicate so.[15]

Suits (1978/2005, pp. 77–84), in particular, has emphatically rejected a paradox as a basic component of games: While not denying that contradicting intentions might emerge during play (in fact, he lists several of them), he considers all of them resolved by the lusory attitude, so that carrying conflicting attitudinal contents means that one is not playing the game proper. For example, games often seem simultaneously both cooperative (the agents accept the game rules to be able to play together) and competitive (the players are trying to defeat each other and win the game), yet, as Suits (p. 78) continues, there is no genuine paradox, since "the cooperative and antagonistic aims of the players are directed to different ends rather than to the same end." The latter type of cases—such as cooperating with a novice opponent to make one's own victory less easy (in pursuit of greater satisfaction)—are rather a sign of a poorly constructed game, leading the players to deviate from their lusory attitudes. To Suits, then, game playing is not defined by some paradoxical dual perspective; instead, it is susceptible to and endangered by it.

[15] The reason for this appears to be their association of make-believe with impersonation or fiction instead of the implied representational structure that is not necessarily limited to such cases.

Myers (2012), however, has quite convincingly rebutted Suits' arguments on the issue. According to him, games are characterized by three semiotic features: they are 1) *representational*, 2) *self-referencing*, and 3) *self-denying*. The first condition simply means that games involve an "elemental attitude of distinction," allowing them to represent, imitate and oppose things, for instance. The other conditions are extensions to this feature: Self-referencing establishes a recursive representational structure which points not only to the aforesaid distinction but, paradoxically, to the original meaning as well (e.g., "This sentence is false."). Self-denying, on the other hand, specifies the distinction as a negation; games are in some sense both real and *not* real. In Myers' eyes, Suits accepts the first and third condition but ignores the full implications of the self-referentiality inevitably built into his notion of the lusory attitude, alluding to both more and less efficient means (the latter being imitative of the former). He writes:

> "But Suits has eliminated one paradox (that caused by simultaneous collaboration and competition during game play) with another: one based in self-reference. For the game player's lusory attitude is now both source and, simultaneously, resolution of paradox. It is as though Suits might claim that the liar's paradox—'This sentence is false'—is no longer a paradox once it has been written down and read aloud. Certainly, Suits's lusory attitude can be used to resolve paradox within game play; but that lusory attitude must reference itself in order to do so, and this resolution is then just as fragile as that which it purports to resolve." (Myers, 2012, p. 165.)

One way of demonstrating the construction of paradoxical representation structures is the concept of *psychological frame*, as proposed by Gregory Bateson. In his famous essay, *Theory of Play and Fantasy*, Bateson (1955/2006) defines the message "This is play," which explicitly or implicitly describes the currently performed (playful) action as some other action that, conversely, does not denote the former; thereby a "playful nip" means a "bite" without being a bite. This constitutes a self-referential (and self-denying) "frame" that guides one to focus on certain meanings enclosed by it and to ignore certain readings outside of it—analogously to the mechanisms between figure and ground in Gestalt psychology. Shortly put, the psychological frame *meta-communicates* how to relate to itself by recursively referencing both intrinsic and extrinsic interpretations.

In terms of playful planned activities, then, the metamessages (e.g., patently ridiculous rules, mood-signs, etc.) attached to the afforded goal-contents prompt theoretical reasoning about their meanings from a dual point of view. Correspondingly, to enter the play is

to genuinely accept some intentional content *P* in one context, and to pretend accept[16] a direct opposite of that—not-*P*—in another. And following Myers' (2012) thinking, either one may be real or quasi-real. Thereby we have at least two possible make-believe structures maintaining the double perspective of game playing. This is explicated by the following schema, in which the outer brackets denote the frame of the genuinely accepted goal, while the inner brackets designate the frame of the pretend accepted content:

$$[P\ [\text{not-}P]] \quad \leftrightarrows \quad [[P]\ \text{not-}P]$$

The idea of game play as representational, self-referential, and self-denying helps to explain how players can often so readily switch between conflicting dispositions (indicated by the arrows in the above schema), such as playfulness and seriousness (see, e.g., Apter, 1989/2006, pp. 34–53). Indeed, where Suits seems to describe some pure or ideal type of game play—which arguably seldom occurs in practice—Myers' theory is more flexible, allowing for cases that better reflect the actual events. After all, it is not rare to express serious frustration in a losing effort, yet soon after be thinking that it is "just a game." In other words, players may in one moment be almost completely absorbed by the internal reality of the game—perhaps even to a point of inverting the referential recursion—while in another instant their focus shifts outside of the play frame, from the foreground to the background. In any event, both interpretations co-exist simultaneously.

More importantly, the double perspective approach also provides a new angle on the analysis of cooperative game play. Instead of simply classifying the forms of cooperation that may occur in separate frames, it allows us to identify more nuanced combinations of collectivity by investigating the goals of both contexts. In this study, I refer to the two realms as the *participant frame* and *player frame* (both of which can be exclusively either real or pretended), with GPaC defined by the goals of the former and CaGP by the goals of the latter. The pretend accepted content types will be covered in Section 3.3, and the collective implications of the framing relations will be elaborated later in Section 5.3.

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[16] I adopt the term "pretend acceptance" from Tuomela (2000b), who describes it as a species of pragmatic acceptance with reasoning and acting *as if* the proposition was true.

3.1.2 Voluntary Acceptance

Imagine an agent A playing poker with a group of strangers. After a few hours, and being firmly at a profit, A decides to call it a night. On leaving the table, however, one of the other participants, player B, pulls a gun on A, commanding him to continue. Fearing for his life, A's only rational choice is to obey. Is A still playing? Is this GPaC?

Consider another, more mundane example: Two children are bullying a third one in the school yard. When a teacher notices this and intervenes, both bullies claim that the activity was "just a game." Yet everyone realizes that the third child had accepted the rules only in fear of even more harmful consequences than the intended humiliation. Did the victim participate in cooperative game play?

Cases such as these beg the question of whether our framework requires a more consensual version of acceptance, one that reflects theoretical reasoning about personal freedom and consequences. What happens if I do not accept the afforded goals as my intentions? Can I refuse? Am I participating *voluntarily*?

Voluntariness has indeed been frequently linked to games and play. Huizinga (1949/2009, p. 7), for example, argues that play to order is not play to begin with, but rather "a forcible imitation of it." Comparably, Caillois (1961/2001, p. 6), sees that "the player devotes himself spontaneously to the game, of his free will and for his pleasure", and that players must be free to leave whenever they feel so. Numerous others have echoed this aspect as well (see, e.g., DeKoven, 1978/2013, p. 27; Eberle, 2014; Goffman, 1974/1986, p. 42; Klabbers, 2009, p. 24; McGonigal, 2011, p. 21; Vygotsky, 1967).

However, views like these have also been objected. Sutton-Smith (1997, pp. 52–53) notes that the idea of play as "an exercise of freedom" reflects mainly the modern rhetoric, which tends to exclude the less civilized and negative treats of play (e.g., addiction, coercion, or violence), whereas the older rhetoric has instead emphasized extrinsic powers and obligations. Indeed, as Stenros (2015, p. 93) concludes, the general understanding of the core of play—the *playful play*—as a voluntary and positive activity is also surrounded by a myriad of conceptualizations that contradict these traits to some extent; in *play to order*, for example, the play activity is established by command, such as when children are forced to participate in playing in school.

We could, of course, insist that anyone who is compelled to participate under a threat and without true consent—such as the bullied kid in the example—is not a player but a pawn in the play of others. In any case, this kind of *one-sided social play* is hardly playful for the victim (Stenros, 2015, p. 93), and we may further question whether it is cooperative, either. As Bratman (1992, 2014, pp. 37–39, 101–102) maintains in his analysis of shared cooperative activities, forcing someone to act jointly—by kidnapping or threatening with a gun, for instance—results instead in the *use* of that person (in some cases even bypassing his agency), effectively blocking any shared intentionality, or at least tainting it from a moral point of view with attitudes that are clearly uncooperative in spirit. Thus, if we were to treat cooperation as prosocial behavior, counting the aforesaid instances as cooperative game play would be logically and ethically questionable. Even though the stronger versions of cooperation obliges the agents to surrender some of their will to the group (see Ch. 4)—and they may be pressured to do so (see, e.g., Gilbert, 1989, p. 410)—we want to exclude cases with the players being deprived of their will completely.

But even when narrowing our analysis to playful play and prosocial cooperation, we must still face the related conceptual complications. What does voluntariness mean here? Suits (1978/2005, p. 37)—who explicitly counts voluntary acceptance as a constituent of playing games—simply affiliates it with doing something intentionally. From this perspective, the concept would be redundant in our theory, which assumes intentional agency by default. However, while equating voluntary and intentional action has been popular in philosophy, it also ignores the subtleties regarding external threats, and the fact that voluntariness—unlike intentions—is fundamentally an *ethical* notion (Hyman, 2013).

Juul (2005, pp. 31–32) and Salen and Zimmerman (2004, p. 76), on the other hand, seem to relate the concept (at least partially) to the absence of social pressures. And not willing to exclude games played under such forces, they also do not include voluntariness in their definitions. But again, this is missing the details, as surely not all outside compulsions are equal. Begging someone to play is clearly different from threatening one's wellbeing if one does not participate, for instance. In the former case, the reluctant player might feel relatively safe to refuse, whereas in the latter one could easily lack this kind of trust. The problem is, of course, who draws the line and where? As Juul (2005, p. 31) himself admits, it is not clear what the term "voluntary" actually means.

According to Hyman (2013), the notion gets muddled by several factors when considering the nuances of the related threats and obligations. The first one is *subjectivity*: the agent may be willing to perform the action regardless of the external forces, simply for personal reasons. Second, what is viewed as voluntary in one context may not be that in another, depending on the *evaluation* of the surrounding pressures. The third and final aspect concerns *modality*: being able to avoid the coercion does not guarantee voluntary action, and vice versa, since one may not be aware of one's ability or inability to refuse.

To illustrate these ambiguities, let me return to the poker example at the beginning of the section. We might argue that A was forced to participate all along, since B was not going to let him leave—thereby A's play was never optional. Subjectively, however, A was clearly acting of his own will *until* he became aware of the threat.[17] On the other hand, perhaps A knew about the gun all along but voluntarily ignored it because he wanted to participate anyway. Lastly, if A had specifically promised to play for a few hours longer, and if B did not have a gun and only angrily commanded A to continue, one might make a value-based judgment that A was not coerced but rather held responsible. Yet in some other scenario (e.g., A had to leave because of an emergency), it is also possible that the subsequent cooperation would be deemed compelled and not voluntary.

Obviously, we cannot fully solve all these dilemmas here. Still, in the light of the above discussion—and since playful game play and prosocial cooperation are the focal point of my study—it seems justified to include the condition of voluntariness in the analysis. My compromise is to highlight the subjective evaluation of one's right and possibility to refrain from the situation, based on one's own judgment of the perceived threats and obligations. Thus, to exclude the types of cases presented at the beginning of this section—yet trying not to be too restrictive regarding darker play forms and external pressures—I give voluntary acceptance the following stipulative definition:

[17] Granted, we could claim that the act remained voluntary even then, as A still had the possibility to refuse (although it would have cost him his life). Then again, A did not really have any *rational* choice left, other than to obey and cooperate with B, again implying involuntariness.

> *Voluntary acceptance* is an intentional state directed toward a proposition *P* by an agent *x* so that *x* consciously holds *P* true, and *x* can at any time seize holding *P* true without that resulting in any substantial harm to *x*, based on *x*'s subjective evaluation.

The definition has three core elements. First, and most obviously, voluntarily acceptance is characterized by the *lack of surprise*; it is deliberately formed and, in that sense, hardly differs from pragmatic acceptance in general. Second, the agent is afforded the *possibility of refusal*, so that the acceptance can be given up at any time, without facing any serious consequences. Third, this depends on the agent's *subjective evaluation* of the situation. Accordingly, the modality of refusal and the criteria for "substantial harm" come down to one's personal experience and preferences, thereby also allowing for riskier and darker forms of game play in certain contexts.[18]

3.2 Intention

In Section 2.2 we learned that intentions—while not synonymous with desires—entail an urge to do something. Basically, intending is guided by motivational forces that give the required push (viz., commitment) to pursue satisfaction in the way specified by the contents. Regarding games, intending essentially separates players from spectators, the latter of which could be voluntarily engaged in the same psychological frames, and thus carry the same intentional contents, yet lack the aforesaid guiding desire to influence the activity directly—though, obviously, the line separating the two may be thin.[19]

It was also mentioned that these wants can be both intrinsic and extrinsic (depending on the underlying system concepts): intrinsic motivation implies the actions being performed for their own sake (e.g., for fun), whereas extrinsic motivation points to external incentives (e.g., rules and rewards). Using terms common in game studies (see, e.g., Klabbers, 2009, pp. 52–53; Stenros, 2015, p. 23), I will refer to the intrinsic intentions as *autotelic* (Section 3.2.1) and the extrinsic intentions as *allotelic* (Section 3.2.2).

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[18] This last condition comes close to the phenomenological concepts of *safety-zone frame* and *confidence frame*, the former of which refers to the perceived absence of danger (even if there exists one), whereas the latter means individuals' trust in their capability to face the possible threats so that the activity never seems genuinely threatening (Apter, 1989/2006, pp. 50–51).

[19] It is not rare to hear someone referring to an audience as the "extra player" in sports, for instance.

3.2.1 Autotelic Intention

The thought of autotelicity (i.e., self-purposiveness) as a characteristic of play is not new. It appears already in the aestheticism of the 18th century German idealists, such as Kant (1790/2000, pp. 182–183, §43) and Schiller (1794/2012, 27. letter), and it has later been recognized by many 20th and 21st century scholars as well (see, e.g., Caillois, 1961/2001, p. 6; Goffman, 1974/1986, p. 43; Huizinga, 1949/2009, p. 8; Piaget, 1951/1999, p. 148; Sicart, 2014, p. 16; Simmel, 1950, pp. 41–46; Vygotsky, 1967). Indeed, autotelic mindset has been—similar to voluntary acceptance—one of the core features regularly associated with playfulness (Stenros, 2015, pp. 92–93).

As for games—oddly enough—the reviews by Salen and Zimmerman (2004, p. 79) and Juul (2005, pp. 32–33) indicate autotelicity being less often proposed as a necessary condition. It is also absent in their own definitions presented earlier. Suits' analysans, on the contrary, do include this idea, as we saw in his description of the lusory attitude. Rather than disagreement, however, the difference is due to the dissimilar genera: both Salen and Zimmerman and Juul define games as *systems* for interaction, whereas Suits analyzes the *act* of playing a game. Viewed in this latter sense, game playing is described as autotelic (at least to some degree) by all three scholars (Juul, 2005, p. 33; Salen & Zimmerman, 2004, p. 332; Suits, 1978/2005, pp. 133–135). Again, this makes sense so far as the activity is regarded as an overlap between games and playful play (this is obviously not the case in all the disciplines within game sciences).

Of course, intrinsically motivated intentions are not universal to all conceptualizations of play, either. As with voluntariness earlier, Sutton-Smith (1997, pp. 187–190) reckons that part of the appeal of describing play as autotelic is due to modern tendencies of highlighting individualistic dispositions and pleasure—especially in psychology—whereas anthropological and historical studies suggest that the contemporary conception of play as "fun" or non-instrumental experience is largely exaggerated. As expected, the concept of play is also associated with more serious aims, such *using a system* to learn about the play (e.g., play testing, game research) or using it for other external purposes, such as monetary, educational, or social gains (Stenros, 2015, p. 93).

Whether or not self-purposiveness is a necessary condition of play in general is not, fortunately, a point I would need to prove here. Even if some instances of game play are not autotelic, many inarguably are, and as noted earlier, these playful versions are the primary focus of my analysis. This delimitation is justified by the knowledge interests of the study: when designing cooperative games for either recreational or serious contexts, for example, the whole point, one assumes, is to bring some fulfilling experience of engagement[20] to otherwise mundane affairs, either on individual or group level (or both).

Yet, curiously, cooperative game play seems to contradict these interests in some cases. As we will learn in Chapter 4, the stronger forms of cooperation—with group identification and we-mode intentions—require that any personal preferences be subordinated to those of the collective. The group identity thus becomes the underlying system concept instructing the ethos and the entailed be-, do- and motor-goals of the participants, (potentially) resulting in play to order rather than the intrinsically desired playful play. Indeed, as mentioned in Section 1.1.1, this suppression of individualistic pleasures is one of reasons why the idealization of cooperative game play has been criticized. It may also be the root cause for certain design problems, such as the potential role-usurpation, where the more skilled team members dictate or completely assume the actions intended for the less skilled ones, easily leading to unsatisfying interactions between the participants (Burgun, 2013, pp. 142–143; Elias et al., 2012, pp. 64–69).

However, while I do not deny these issues, I see no reason why the collectively stronger forms of game play would invalidate autotelic intentions as a necessary condition per se. After all, just because the activity is not self-purposive from an individual's perspective does not mean that it cannot be that from a collective viewpoint. For example, we could easily imagine parents playing a game with their children not because it would be especially exhilarating or engaging but because they intend to make their whole family happy. As Tyler (2011, p. 40) notes, when people adopt the preferences of the collective as their own, they also "become intrinsically motivated to pursue the group's interest."

[20] I use this wording to avoid excluding the many *parapathic* forms of game play (see Stenros, 2015, p. 95) that evoke negative rather than pleasant feelings yet are still desired by players (e.g., horror games).

3.2.2 Allotelic Intention

Although autotelic intentions were presented above as a defining element of playful game play, it does not follow that we should exclude allotelic intentions and instrumental purposes altogether. Such *radical autotelism* may perhaps be justified regarding purely primitive play (Suits, 1988, 1978/2005, pp. 131–133), but as far as games are concerned, it is quite commonly accepted that both intrinsic and extrinsic incentives can intertwine during the activity (see, e.g., Caillois, 1961/2001, p. 29; Feezell, 2010; Klabbers, 2018b; Salen & Zimmerman, 2004, p. 332; Suits, 1978/2005, p. 133). For example, professional athletes and gamblers certainly play for extrinsic rewards and pleasures, such as money or fame, yet they can still enjoy the activity also for its own sake.

A more interesting question is whether allotelic intentions are *necessary* for game play, alongside autotelic intentions. Is it possible to play a game purely for the sake of it, without considering any external rewards or pressures whatsoever? How about cooperative game play? The answer may not be so straightforward to figure out, for seemingly extrinsic incentives, such as expectations of group loyalty and cohesion, can sometimes be the reason for cooperation to become intrinsically fulfilling (Tyler, 2011, pp. 32–33). In addition, external rewards may be easily ignored, even if they are offered as a motivator.

Still, a good number of arguments can be made for the necessity of allotelic intentions. First—and most obviously—we might point to the game rules as the extrinsic factor that keeps the players' goals and actions in check. For example, it is not rare for someone to switch from *playing the game* (by following its rules) to instead *playing the system* (by changing the rules), or perhaps even *playing the players* (by tricking other participants) (Stenros, 2010). Without any responsibility with regards to the established restrictions, game play essentially breaks—even if (paidia) play continues. Accordingly, rule adherence must figure in the be-contents of the intentions (see Section 3.3).

Second, cooperative game play entails its own set of extrinsic motivations and implicit rules. As we will discover in the next chapter, the strongest forms of collective intentions require accountability not only in *how* one acts but also in one's commitment to *take part* in the action, so that external incentives outweigh any conflicting individual preferences.

Of course, extrinsically oriented actions, such as helping one's teammates, can be intrinsically enjoyable per se, and thereby allotelic intending may also become subsumed under autotelic intending.[21] Still, that does not change the fact that the extrinsic factors (e.g., group authority) must remain acknowledged in the background.

Third, autotelicity is strictly necessary only in the participant frame. Because the motor-goals (i.e., means) are artificially restricted (see Section 3.3.1), they do not hold any value beyond the play itself, even if the do-goal potentially does.[22] However, viewed from the game's internal perspective—in which the constraints are accepted as non-artificial (see Section 3.3.2)—the afforded motor-goal sequences become instead instrumental, as they comprise the only (permitted) ways of contributing to the "genuine" do-goal of the game (viz., overcoming all the obstacles). Within the player frame, then, there necessarily exists at least some extrinsic incentives, and, accordingly, allotelic intending.

Obviously, if we accept the combination of autotelic and allotelic intentions as an inherent feature of games, it becomes more difficult to distinguish between cooperative game play and ordinary group work—especially since work can similarly be intrinsically and extrinsically motivated. As Henricks (2015, pp. 63–64) argues, it could be impossible to tell if someone is working or playing by simply observing them, as both behavior types can be "colored" by the ideal properties of the other: in *worklike play*, for instance, the predominantly consummatory rationale adds in some instrumental flavors (e.g., winning a game), whereas in *playful work* the converse is true (e.g., mundane tasks being presented as puzzles). From this perspective, then, cooperative game play gets (analytically) distinguished only from "pure" group work, entailing extrinsic motivations alone. However, the concept could be further separated to *cooperative worklike play* and *playful group work*, depending on which psychological frames—and the corresponding goal-contents—are superordinate, and which are subordinate (see Sections 3.3 and 5.3).

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[21] In fact, this potential seems to be deeply engrained in humans from an early age. For instance, very young children tend to be more inclined to engage in helping behavior when they are not offered concrete rewards (e.g., social praise or toys) for it (Tomasello, 2009, pp. 9–10).
[22] This would be the case in gamified serious games, for instance.

3.3 Contents

Previous sections have identified (playful) game play as a planned activity with (at least partially) pretend accepted content, voluntary accepted intention to act, and contents deriving from both autotelic and allotelic intending. Conversely, we have separated game play from planned activities with no inherent make-believe element, performed under substantial threat, or lacking either intrinsically or extrinsically guided volitions. The current section makes further refinements by elaborating on the plan (i.e., the hierarchy of the goal-contents) itself. In accordance with the double perspective described in Section 3.1.1, I will investigate contents pertaining to both psychological frames: Section 3.3.1 deals with the participant frame and Section 3.3.2 with the player frame.

3.3.1 Participant Frame

Returning to the three definitions introduced at the beginning of the chapter, we quickly recognize one core component that must feature in the goal-contents of both participant and player frames: *challenge*. Salen and Zimmerman (2004, p. 80), for one, speak of conflict, "a contest of powers," which can occur in many guises—such as multiple players competing with each other, or one or more players attempting to beat the game system. Comparably, Juul (2005, pp. 40, 56) associates conflict and challenge with player effort to work toward the positive outcome, whereas Suits (1978/2005, p. 52) sees obstacles deriving from the prohibition of more efficient means, setting up "a more complex, more difficult, and more indirect approach" (see also Caillois, 1961/2001, pp. 32–33).

We may say, then, that the do-goal content necessarily includes a conflict between counter-actors (agents or systems), which the participants attempt to resolve by pursuing a set of motor-goals. Typically, the latter indicate multiple subsidiary challenges on the way of completing the former. In Tetris, for instance, the do-goal (viz., achieving the highest score) depends on moving and rotating the pieces, building set-ups for line clears and combinations, and then executing on those clears. The game, on the other hand, hinders the performance of these sequences by dropping differently shaped pieces in a randomized order and with gradually increasing gravity. Correspondingly, cooperative game play does not eliminate the element of opposition, either, even if the counter-actors do not include other players. It is simply one of the many forms conflict can take in game playing (Fullerton, 2019, p. 60; Salen & Zimmerman, 2004, p. 250).

Although challenge is essential to both participant and player frames, the two perspectives differ in their interpretation regarding its nature. Viewed from the outside, the conflict is, as Salen and Zimmerman (2004, p. 80) put it, "artificial." In other words, we can recognize it being somehow made-up and unusual, beyond our ordinary understanding of a conflict. But unusual how, exactly? While I do agree that we need the concept of artificial challenge in our theory of cooperative game play, we must also be more precise about the enclosed complexities of the notion.

For Suits (1978/2005, pp. 37–39, 54–55), the peculiarity of the conflict amounts to the less efficient means, or "unnecessary obstacles." On his account, game play is defined by the seemingly irrational (lusory) attitude of facing a challenge in a more arduous manner than is needed, distancing the activity from working. Consider, for instance, a game of darts: beyond the game's internal logic, the darts would be much more effectively inserted in the bullseye by pressing, instead of throwing them from a distance. The latter restriction is completely pointless outside of establishing the artificial challenge. Juul (2005, pp. 33–34) has contested the necessity of this condition, however, claiming that it is always possible to design a game where the *most* efficient means were permitted, and further, players can sometimes hack the game or use a cheat code for the same effect.

On closer inspection, however, Juul's criticism does not seem to hold. First, any "game" that can be resolved as efficiently as humanly possible lacks the element of ludus: it has no rules nor discipline. Instead, it gives a universal mandate, so one could simply say: "I won. Conflict resolved." Considering that rules are approved as a defining component of games by practically everyone (Juul included), such activity cannot count as a species of game play—albeit it might still represent a combination of paidia and *agôn* (see Caillois, 1961/2001, p. 36). Second, inefficiency describes game play only in the participant frame; in the player frame, efficiency—or at least the pretense of it—is not only ideal but mandated, since the challenge is accepted as genuine (see Section 3.3.2). As Suits (1978/2005, p. 38) argues, when one is committed to that end, the game may be played with utmost efficiency *to the extent* that one's efforts are allowed to become sloppy. Mastering a game within its own rules thus ultimately fails as a counterexample, because it is directed at the wrong frame. Third, a player who is hacking the rules or using cheats to be more effective is, as mentioned earlier, either playing the system or a different game.

However, while I do not share Juul's critique of Suits in this respect, I consider his condition of *negotiable consequences* complementary to what makes challenges artificial in the participant frame. After all, inefficiency by itself does not fully explain what is special about them compared to some other rule-restricted activities. When teachers require students to pass exams without cheating, for instance, they are denying more efficient means and promoting less efficient ones (providing that one's do-goal is to pass the exam instead of learning, which is not effectively attained by cheating). Rather, the difference between taking an exam and playing a game lies in the reactions to the means: in the former cheating results in non-optional and serious sanctions, whereas in the latter the ramifications are more harmless and flexible. As Juul (2005, pp. 41–43) argues, consequences in games hold "a special status" as being continuously negotiable from both societal and per-game point of view. Overall, then, I define artificial challenge as follows:

> An *artificial challenge* is a set of mutually exclusive positive and negative outcomes (achievable states of affairs), where the attainment of the positive outcomes is restricted by rules that demand less efficient means than what is otherwise available, and where the consequences of those means remain continuously negotiable.

To complete the do-goal predicate, however, we also need a suitable verb. Since we concluded in Section 3.2.1 that autotelic intentions are a necessary condition of game play, that self-purposiveness should, accordingly, also be reflected by the intentional contents. From this perspective, the superordinate be-goal of fulfillment (recall Section 2.3) is satisfied by simply *engaging* in the artificial challenge (e.g., trying to get a higher score in Tetris), whereas the do-goal itself will be achieved by any motor-goal sequence the game involves (rotating blocks, clearing lines etc.). Regarding the latter, the possible goal-contents are practically limitless, bounded only by the imagination of designers.

On the other hand, we inferred in Section 3.2.2 that game play entails allotelic intentions as well, due to the rules governing what one can and cannot do. In terms of contents, then, the agents must carry the goal of *being rule-adherent*. This be-goal may be considered an umbrella category for more specific types of adherence, depending on the nature of the constraints. According to Salen and Zimmerman (2004, p. 130), for instance, games comprise not only *constitutive rules* (underlying logical form) and *operational rules* (instructions on how to play) but also more covert, *implicit rules* (unwritten norms), such as following etiquette, or sustaining good sportsmanship (see also Juul, 2005, pp. 66–67).

The question about the scope of the rules defining game play—and GPaC particularly—is not trivial. As explained in Section 1.1, rules and the enclosed meanings basically enable the shared discourse—or in Salen and Zimmerman's (2004, p. 256) terms, "systemic cooperation," without which the game could never begin. But to what extent do the participants have to speak that common language? If a Chess player repeatedly resigns after a few moves and celebrates wildly after being defeated, no operational rules are violated. But is the person taking part in GPaC, either? How about quitting an online match at the last second, causing everyone's software to crash due to a known bug in the code? Or sending toxic in-game messages during play? The latter two are, for better or worse, made possible by the constitutive rules, mutually accepted by all those who have started playing. In fact, anyone who has participated in online multiplayer games with some regularity, has probably witnessed actions that seemed uncooperative or even anti-social in spirit, albeit staying within the overt, systemic constraints.

Considering the above, where exactly should one draw the line regarding the be-goal of rule-adherence? On one hand, it could be argued that players complying purely with the explicit rules—while ignoring the implicit ones—are essentially playing a different game (Stenros, 2010). Instead of GPaC, such activity would thus be closer to what Parten (1932) describes as *parallel play*: playing beside others in the same space and using the same resources but driven by one's personal interests and goals. On the other hand, if we infer that playing games requires consensus on all written and unwritten rules, one could also ask whether people, realistically speaking, ever play the same game. As Myers (2010, pp. 18–21) posits, exploitation of constraints happens frequently in digital games—especially in virtual worlds (e.g., MMOGs[23]), where the rules are in more or less continuous flux. Accordingly, he (p. 21) argues that "players constantly make and remake in-game decisions based on what they (mostly mistakenly) *believe* are the game rules." Further, he (2010, pp. 117–131, 2017, pp. 175–176) views oppositional and (potentially) "ugly" play as inherent to games, even in cooperative contexts; without some leeway for rule-breaking, the activity would be suppressed to something other than playing.

[23] Massively multiplayer online games

I think a middle ground solution is possible here. Namely, we do not need to require that game play, GPaC included, presupposes mutual awareness and agreement on *all* implicit rules in multiplayer situations. That would appear too demanding considering the fluctuating nature of the rules, and the prevalence of oppositional and individualistic practices in collectivity-promoting play settings. For an analysis of playful cooperative game play such claim would seem doubly incorrect, as spontaneity and willingness to experiment is one of the key traits associated with playfulness (Stenros, 2015, pp. 66, 77). Still, compliance with the explicit rules is clearly a minimum requirement for the play to count as ludus (instead of paidia), and I treat the be-goal of rule adherence as a reference to these overt constraints, exclusively. However, I will later also specify some key implicit rules that must be respected in cooperative game play, reflected by other be-goal contents.

3.3.2 Player Frame

Section 3.1.1 concluded that game play is representational, self-referential, and self-denying, allowing one to investigate the activity from a dual perspective. Having analyzed the goals of the participant frame above, we can now examine how those mimetic properties alter the same contents in the player frame—or vice versa. The comparisons of the goals should, correspondingly, reveal the assumed paradox and framing hierarchy between participating and playing, and, later, between GPaC and CaGP (see Section 5.3.2).

The self-denying aspect becomes apparent when juxtaposing the readings of the do-goal within both frames. In the previous section, we already gathered that the interpretation of the participant frame implies the idea of an artificial conflict. However, when the superfluous constraints are accepted as essential and imperative—when the participants enter the magic circle as players—that challenge is no longer viewed as factitious, either (Salen & Zimmerman, 2004, pp. 95–96; Suits, 1978/2005, pp. 52–53). As McGonigal (2011, p. 269) asserts, "gamers actively work together to make believe that the game truly matters." Within the player frame, then, the nature of the conflict gets negated: it is now a *genuine challenge*, with the non-artificiality extending to the related motor-goals as well. By inversing the conditions of artificial challenges, we thus arrive at the definition below:

> A *genuine challenge* is a set of mutually exclusive positive and negative outcomes (achievable states of affairs), where the positive outcomes are supposed to be pursued efficiently, and the consequences of those means are non-negotiable.

Obviously, non-negotiability should not be understood here as a lack of power to transform the rules, if needed. Rather, when players disagree about the constraints and propose to change them, they switch their focus back to the participant frame. Basically, the game comes to a halt until an agreement is reached once again (Juul, 2005, p. 37). As long as the agents are acting under the interpretive instructions of the player frame, though, they must have reached at least presumptive consensus on the rules and consequences. Otherwise, the game would not commence or continue.

The verb of the do-goal predicate also changes. Since the conflict is not artificial anymore, the autotelic intention to engage in it is not enough; instead, the player frame requires that the agents try to *overcome* the challenge.[24] Since this striving for winning has an instrumental function within the game realm, the do-goal accordingly reflects allotelic intending (recall Section 3.2.2). Note, however, that similar goals can also appear in the participant frame. In gamified work, for instance, resolving the obstacles may be equally valuable, even if the challenges are artificially restricted and partially pursued for their own sake. Still, analytically the "genuineness" is necessary only in the player frame, allowing for cases with purely self-purposive external interpretation (see Section 3.2.1).

As a related point, Juul (2005, p. 36) suggests that games are also characterized by correct *emotional attachments* to the positive and negative outcomes: namely, the winner should feel happy and the loser unhappy. This is an important psychological detail that is missing from Salen and Zimmerman's and Suits' definitions. Without such condition, our analysis would admit of activities where one of the key implicit rules—deriving from the aforesaid conflict—is violated: to quote Juul (2005, p. 40), a person "who refuses to seek enjoyment in winning, or refuses to become unhappy by losing" is a "spoilsport." More importantly, rejoicing in defeat reveals that the plan to overcome the challenge was never there.

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[24] Comparing these two goals to Suits' (1978/2005, pp. 50–51) typology, we can see that the do-goal of the participant frame (engaging in an artificial challenge) and the do-goal of the player frame (overcoming a genuine challenge) roughly correspond to the *goal of participating* (the external purpose of the activity) and the *lusory goal* (overcoming the obstacles using only means allowed by the game rules), respectively. The challenge itself (e.g., bankrupt others for market monopoly)—without the rules and the ensuing notions of artificiality or genuineness— amounts, in turn, to the *prelusory goal* (a specific achievable state of affairs), which can be described independently of the other two (but not vice versa).

Luckily, our framework of planned activities already has a suitable be-level predicate for the proposed emotional attachment: *being fulfilled* (I prefer this label to "being happy," since overcoming challenges can also elicit more somber feelings of satisfaction). As explained in Section 2.3, this is the superordinate goal satisfied by the successful completion of the plan, and it can be interpreted as entailing the said positive disposition. And because the goal-hierarchy presumes that one will be fulfilled if and only if the lower-order goals are completed successfully, we do not need the negative predicate (viz., being unfulfilled) for the unsuccessful cases, as it is already an implicit feature of our theory. Accordingly, when the explicit and implicit rules are accepted as genuine, the players refrain from expressing satisfaction after defeat. However, losing need not result in negative attachment in the participant frame, due to the underlying autotelic intending (recall Section 3.2.2). As Suits (1978/2005, p. 83) notes, game play can be completed successfully, even when not completed victoriously (see also DeKoven, 1978/2013, pp. 129–135).

The genuineness of the conflict prompts another implicit rule as well: the players should show that they are serious in overcoming the challenge. In other words, they intend *being (sufficiently) efficient*. It would be too much to require maximum efficiency here, though, as the amount of acceptable effort depends on the context (cf. family game night vs professional sports). Being adherent of the explicit rules (see the previous section), in turn, is not strictly required by the player frame. This is because, hypothetically, it is also possible to design a game with only one rule: to break all rules. Alternatively, there can also be further psychological frames with their own internal logic (Fine, 1983, pp. 185–186), where the players may take a role of a rule-breaking fantasy character, for instance.

To end this section, I want to briefly clarify a couple of points. First, it might be tempting to conclude here that the player frame is somehow less "real" compared to the participant frame. However, this need not always be the case. After all, the self-referentiality can go both ways: when the participant frame is the primary setting, one would say "This artificial challenge is 'genuine';" if, on the other hand, the player frame is the paramount one, the same sentence would be "This genuine conflict is 'artificial.'" And as mentioned earlier, players may switch between these two readings during the activity. Indeed, which of the goals are more real is not relevant in terms of the analysis. Rather, the argument is that the double perspective itself —the paradox—is the defining feature.

Finally, we may ask how one can carry intentions with contradicting contents—*P* (artificial challenge) and not-*P* (genuine challenge)—simultaneously, as that seems to ignore Bratman's consistency condition (recall Section 2.2). This is possible because *P* is genuinely accepted as *P* in one psychological frame and pretend accepted as not-*P* in another, or vice versa. Thus, while *P* and not-*P* point to the same extension (the challenge), they situate this object in two parallel conceptual worlds, eliminating the consistency violation that would occur if the conflicting goal-contents referred to one and the same world. The paradox is between the frames, not the intentions per se.

3.4 Summary

The aim of the current chapter was to identify the necessary and sufficient conditions of (playful) game play as a planned activity. Based on comparisons between previous theories and definitions, it was argued that this presupposes a dual perspective to the intended goals: in one psychological frame the agents plan to engage in an artificial challenge—indicating autotelic intending—while in another frame they try to overcome a genuine challenge, implying—together with rule-adherence—allotelic intending. This paradox assumes the pretend acceptance of either the former or the latter reading of the said conflict, while the goals in general require one's voluntary acceptance. The statement below gives the full conditions, integrated into the framework constructed in Chapter 2.

[GAME] Agent *x* (individual or group) is *playing a game (playfully)* if and only if
- (1) [PLAN] with a set of explicit rules R such that
  - (a) each Σ_i is constrained by R;
  - (b) Δ includes an element of challenge φ;
- (2) vis-à-vis (1), there exists a psychological "participant" frame F_1, where Δ refers to *x* engaging in (an artificial challenge) φ, such that
  - (a) R permits only less efficient Σ_i that would be allowed outside of R;
  - (b) the consequences of Σ_i are negotiable;
  - (c) there exists a be-goal Ω_2 that refers to *x* being adherent of R;
- (3) vis-à-vis (1), there exists a psychological "player" frame F_2, where Δ refers to *x* overcoming (a genuine challenge) φ, such that
  - (a) there exists a be-goal Ω_3 that refers to *x* being (sufficiently) efficient in Σ_i;
  - (b) the consequences of Σ_i are non-negotiable;
- (4) either *x* genuinely accepts that (2) and pretend accepts that (3), or *x* genuinely accepts that (3) and pretend accepts that (2);
- (5) *x* voluntarily accepts that (1)–(4) such that
  - (a) *x* consciously chooses to hold (1)–(4) as true;
  - (b) *x* can at any time seize holding (1)–(4) as true;
  - (c) *x* not holding (1)–(4) as true does not result in any substantial harm to *x*, based on *x*'s subjective evaluation of the situation.

Clause (1) identifies game play as a species of planned activities by importing the statement [PLAN] from Section 2.4. Further, it specifies it as a rule-based activity, where each motor-goal is restricted by rules R (1a), and where the do-goal describes a challenge (i.e., a set of possible positive and negative outcomes), such as "I will bankrupt others, or others will bankrupt me" (1b). Following what was discussed in Section 3.3.1, R only denotes explicit rules here. This guarantees that the play counts as ludus, without demanding too much in terms of implicit rules (covered by other conditions instead). R may still be hidden, however, such as in games where the explicit rules are discovered gradually.

Clauses (2) and (3) bring in the paradoxical double perspective, with the former pointing to the participant frame (F_1) and the latter to the player frame (F_2) In F_1, the predicate of the do-goal points to mere engagement in the challenge, meaning that any single motor-goal already completes the whole program (i.e., the means are the end). This reflects the autotelic intending characteristic of playfulness. The challenge is also interpreted as artificial, so that R unnecessarily restricts the motor-goals (2a), the consequences of which remain negotiable (2b). Additionally, F_1 requires the (allotelic) goal of being adherent of R (2c), so that the agent is engaging in ludus play, specifically, and—in case of multiple agents—everyone is playing (systemically) the same game. Conversely, F_2 instructs reading the challenge as a genuine one, implying the be-goal of (sufficient) efficiency in the pursuit of each motor-goal (3a), and non-negotiable consequences (3b). The self-referentiality of these self-denying frames is explicated by Clause (4), allowing either one to represent another. Finally, Clause (5) sees that the whole plan is voluntarily accepted.

Of course, the above definition is purely analytical. For example, while the necessity of autotelic intending and paradoxical frames helps separating game play from planned activities that may also be solely instrumental—such as work and rituals—in practice different behavioral patterns can overlap, so that one activity gets influenced by the properties of the other (Henricks, 2015, pp. 63–67). Thus, there can easily exist cases where the same activity can be viewed through the lenses of playing and working, for instance. However, this does not mean that the analysis of these concepts is pointless. To be able to discern and adjust such combinations in the research and design of cooperative game play one still needs to know the recipes for the "pure" forms.

4 GOALS AND COOPERATION

Previous chapters introduced the intentional structure of planned activities and further explicated its properties in game play. In the process, we already touched on certain collective aspects as well. Employing the same theoretical framework again, I will now investigate the goals of cooperation in detail. Since this presupposes multiple participants, the analysis of acceptances, intentions, and contents needs some additional refinement: besides the conative and epistemic elements, we must also scrutinize the *relations* between the agents' goals, and the entailed agential *identification*.

Goal relations, in particular, have repeatedly featured in the conceptualizations of cooperation. This is already evident in various dictionary definitions: Oxford English Dictionary (2019) characterizes the notion as "working together towards the same end, purpose, or effect," while Merriam-Webster (n.d.) describes it as a "common effort" or "association of persons for common benefit." And as we learned in Section 1.1, cooperative game play has been frequently defined and classified along these lines as well, typically pointing to the shared goal of winning as a team.

Beside these conditions, many have also emphasized the role of group identification, with collective identities and attitudes being the central components of their explanations of joint actions. These are specially familiar notions in the contemporary philosophy of *collective intentionality*—the idea of minds being directed at things as a group—though comparable conceptions have also appeared far earlier, such as Emile Durkheim's *collective consciousness*, Jean-Jacques Rousseau's *collective will*, and Aristotle's *koinonía* ("common striving") (Schweikard & Schmid, 2020). Mead's (1922) "generalized other," referenced in Section 1.1.1, could also be interpreted along these lines.

In this study, goal relations and identification offer, respectively, two pathways to defining and classifying cooperative game play as a planned activity: *interaction relationships* and *agential modes*. Both result in intentional explanation, but with slightly different emphases: the former categories are mainly distinguished by the relations between the goal-contents, whereas the latter depend primarily on the psychological modes and their subjects (i.e., carriers). On one hand, then, my focus is on the plans themselves; on the other hand, I compare the origins and authorities behind those decisions.

In accordance with the framework established in Chapter 2, my analysis is based on the literature on shared and collective intentionality. I draw primarily on the texts by Michael Bratman, Margaret Gilbert, John Searle, and Raimo Tuomela—who have sometimes been called the "Big Four" of this specific subfield (Chant et al., 2014). The aim of the current chapter is to explore and compare these theories and integrate them into the structure of goal-directed activities, while providing examples from game play. Once again, we begin with acceptance (Section 4.1) before proceeding to intentions (Section 4.2) and contents (Section 4.3). As a crucial additional step, the relations between the goal components will be investigated in Section 4.4. Finally, Section 4.5 provides a brief recap and biconditional statements of cooperation and its subcategories.

4.1 Acceptance

As we learned in Chapter 2, acceptance as a mental state (viz., the result of the mental *act* of acceptance) commits the agents to hold some proposition to be true. In the context of planned activities such as game playing, parts of this content reflect practical decisions: Will I pursue something? What am I pursuing? How? Why this way? Why at all? Other aspects indicate theoretical reasoning, such as the ones demonstrated in Section 3.1: How should I interpret the content in the current situation (genuine vs. pretend acceptance)? What happens if I refuse (coerced vs. voluntary acceptance)?

Since it was already concluded that voluntary acceptance describes both (playful) game play and (prosocial) cooperation, I will set that facet aside here. Pretend acceptance, on the other hand, has an additional function in the context of cooperation, and it will thereby be briefly touched on later in this section. However, the primary focus here is on theoretical reasoning concerning agential identity: who is the "author" or "owner" of the decisions? This turns our attention to the subjects (i.e., carriers) of the psychological modes, and, consequently, two further acceptance variants, examined in Sections 4.1.1 and 4.1.2 below: *I-mode acceptance* and *we-mode acceptance*.[25]

[25] I borrow the terms "I-mode" and "we-mode" from Tuomela (2013, pp. 5–9), whose specific criteria for both types of attitudes will be explained in relevant parts of this chapter, particularly in Section 4.2.

4.1.1 I-mode Acceptance

As the term "I-mode acceptance" implies, the attached subject points to an individual agent as the carrier of the attitude. Thus, in the form of propositional attitude reports, one could think "I accept that this artificial conflict is 'genuine'," or "I accept that I intend to overcome this conflict," for example. In such cases the underlying reasoning is fundamentally individualistic, with the agents putting their personal preferences and actions before those of others: What do *I* think? What do *I* want? What should *I* do? (Bacharach et al., 2006, p. 156; Tuomela, 2013, pp. 179–183). While this thought process may sometimes be affected or directed by external forces, the agents nevertheless preserve the final authority over their commitment to said decisions. Consequently, privately accepted contents can always be revoked or altered by individual participants, without violating any mutual consensus. (Gilbert, 2009; Tuomela, 2013, pp. 33–34.)

Singular subject as part of acceptance (or any mode) is, of course, unproblematic per se. After all, a good many of our daily activities are based on personal needs, reasonings, and commitments. I-mode attitudes in the context of cooperation are more controversial, however. For example, Gilbert (1990, 2009) argues that acting together presupposes a *joint commitment*, resulting from mutually expressed and recognized "readiness" between two or more agents to adopt some psychological state as one body. Such signals constitute the idea of the attitude as "ours" (i.e., it has a *plural subject*), which in turn generates certain rights and obligations between the participants. Although these should not be mistaken as moral requirements, the agents nevertheless have a "sufficient reason" not to unilaterally abandon the joint attitude without the others having a rational reason to protest that. And due to this reciprocal exchange of personal authority, Gilbert maintains, acting together cannot be reduced to private commitments and attitudes.

Imagine a case of playing darts together, for instance. I might show you the darts and ask whether you would like to play, therefore expressing my personal readiness to accept the game rules and the implied artificial challenge. You might nod, raise your thumb, or in some other implicit or explicit manner signal that you have understood my message and are similarly ready. On the Gilbertian account, we could now conclude that playing darts together is in fact *our* goal, which *we* have jointly accepted, and to which *we* are jointly committed: if one of us decided to quit the game before the conflict has been resolved (or

otherwise violated the game rules), that person would owe the other one an explanation—and the latter would be entitled to expect that. Without such obligations and rights, our GPaC would not, in Gilbert's view, count as acting *together*.

Generally, Gilbert seems to be correct in that something else than personal commitments is required for connecting the agents. Even identical I-mode accepted intentions may not alone suffice for that glue—for the simple reason that goals can often be attained in many ways. For example, you and I could both carry the goal-content of slaying the same monster in an online multiplayer game, and we might also mutually believe this to be the case. Perhaps we have even specific roles in mind for our individual contributions: I engage in melee combat, while you cast spells from a distance. It seems, then, that we have successfully established CaGP. However, supposing that my character was powerful enough, I might just go and strike down the enemy all by myself—conflict resolved.[26]

If our acceptances of the intention above were in the I-mode—therefore keeping us only privately committed to it—my decision may not have violated any mutual ethos. Yet no CaGP took place, either.[27] As Searle (1990), too, has pointed out, personal attitudes do not yet amount to a sufficient condition for collective intentionality and cooperation, even when coupled with mutual belief and perceived parts for each agent. From this standpoint, only collectively framed psychological modes would guarantee the required stability.

That said, one of the main criticisms of Gilbert's theory has been that joint commitment and mutual obligations appear to be too strong a condition for *all* instances of cooperation (Schweikard & Schmid, 2020). Indeed, Bratman (2014, pp. 70–73, 107–118) argues that besides rights and obligations, the interdependence required by shared activities can also persist on the basis of feasibility and desirability (see Section 4.4.2), presupposing neither joint commitment nor plural subject in the formation of the plan. In other words, a weaker glue may sometimes be enough for joint actions to emerge and endure.

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[26] As mentioned earlier, such individualistic "role usurpation" is not an uncommon problem in games designed for cooperative interaction (Burgun, 2013, pp. 142–143; Elias et al., 2012, pp. 64–69).
[27] This could perhaps count as *unilateral cooperation* (see Section 4.4) had we specifically agreed on your agential role being omissive—but we had not.

Returning to the example above, both of us could, for instance, perceive that the monster cannot in any circumstance be slayed without you and I acting in concert. Thus, in pursuit of our I-mode accepted plans, we would be bound together *situationally* by this brute fact, no obligations needed. Alternatively, we may simply *prefer* to slay the monster together, and these intrinsic, mutually recognized desires to complete the plan precisely *that* way is what assures our cooperation; neither of us would require a reason for owing (or being entitled to) anything in case one of us unexpectedly retreats from the plan. From the perspective of feasibility and desirability, then, cooperative game play need not always involve joint commitment—insofar as the activity is maintained by other bonds.

In fact, while I-mode acceptances and the resulting private commitments may be a viable way for cooperation to emerge, they must be bolstered by additional conditions, such as certain content types, interdependence, and mutual trust.[28] I will cover these components in Sections 4.3 and 4.4. Note, however, that in some individualistic cases the joint unit (e.g., "we") may still appear linguistically as the subject of the mode—albeit only in the collectively weaker, aggregative sense (Tuomela, 2013, pp. 23–24, 71–72). While an expression such as "we accept that *P*" does bring the I-mode agents together, it ultimately serves as a shorthand for a summative reading of their personal attitudes (e.g., "I accept that *P*" *and* "You accept that *P*") (cf. Ludwig, 2016, pp. 182–190).

4.1.2 We-mode Acceptance

We will now shift focus to we-mode acceptance*,* where the subject represents a non-summative group entity—such as in propositional attitude reports "We (as a group) accept that this artificial conflict is 'genuine'," or "Manchester United accepts that they intend to beat Arsenal by utilizing the 4-3-3 formation." Contrary to the I-mode acceptance, here the inherent reasoning process is performed from the group's perspective, favoring the preferences and actions of the joint unit (Bacharach et al., 2006, pp. 156–158; Tuomela, 2013, pp. 179–183): What do *we* think? What do *we* want? What should *we* do?

[28] Mutual trust should not be confused here with obligations. For example, agent A could—perhaps based on A's previous experiences—trust that agent B accepts some proposition *P* yet not expect (nor be entitled to) any explanation if B in fact does not accept *P*.

We-mode acceptance is relevant for our analysis since it can be assumed as a prerequisite of the more strongly collective versions of goals and, consequently, cooperation (see Section 4.2.2). Yet resorting to such group attitudes brings along its own problems. In fact, one of the central debates of collective intentionality has been whether a group can be viewed as the subject of psychological modes in the first place, or whether all jointness ought to be traced back to the contents instead (Schweikard & Schmid, 2020).

Non-individualistic theses—such as Gilbert's (1990) joint commitment (recall the previous section) and Tuomela's (2013) *we-mode* account (which we will return to in a moment)—defend the idea of collective attitudes. Generally, this involves each participant handing over some of their authority to the group so that the accepted decisions cannot be one-sidedly abandoned without offending the mutual interpretation of the situation. Further, the agents are irreducibly one and "in the same boat" regarding the satisfaction of the attitude. (Gilbert, 2009; Tuomela, 2013, pp. 123–146.)

Reductionist theories (e.g., Bratman, 1992, 2014; Ludwig, 2016), on the other hand, endorse the view that all intentionality is ultimately reducible to personal mental states—regardless of whether other agents are involved or not. Accordingly, any references to modes with a group subject (e.g., "We accept…") are merely shorthand expressions for a summation of individual agents. From this standpoint, cooperation is defined by *shared* rather than collective attitudes, and this applies to its strongest forms as well.

The question is not insignificant in game studies, either. As was pointed out in Section 1.1, the same tension can be seen between the authors who tend to promote the role of collectivity in playing a game properly, and those who view that kind of rhetoric as diluting the importance of conflict in games or shoehorning social control into a fundamentally individualistic activity.[29] Hence, if we adopt the idea of cooperative game play forms with collectively accepted and intended goals, we also need to acknowledge the potential counterarguments against these non-summative attitudes.

[29] Regarding the former, see, for example, Dekoven (1978/2013) and McGonigal (2011, pp. 266–276), and for the latter, Crawford (1984, p. 11) and Myers (2010, pp. 127–131).

The criticisms spring from several sources. First, such conceptions seem to imply *supra-individualism*: namely, the existence of rational minds over and beyond individuals. This is a markedly controversial position in the philosophy of sociality, especially when groups are seen as ontologically factual entities (Schmitt, 2003; Schweikard & Schmid, 2020).[30] Second, group attitudes raise concerns about *circularity*: unless they are primitive phenomena, how can we-mode acceptances and intentions emerge without some sort of collective acceptance already in place? Third, ascribing mental states to group agents may be analytically *redundant*: supposing that all mental activity happens in individual brains and that we-mode attitudes are *not* primitive but instead consciously constructed, is it not plausible that conditions for even the strongest versions of "us" can instead be expressed in the contents of each participants' personal attitudes?

In some preliminary sense, we-mode attitudes *are*, of course, primitive. Similar to Gestalt psychology, social units have been explained as deriving from our perceptual capabilities to organize stimuli into wholes that are greater than the sum of their parts, based on the proximity, similarity, continuity, or common fate between those elements; the more one discerns such uniting attributes, the stronger the perceived *entitativity* (i.e., groupness) of the whole (Campbell, 1958; Johnson & Johnson, 2005, pp. 187–289, 315–316). Consequently, football players wearing identical uniforms and attempting to get the ball across the same goal-line are viewed as a team rather than individuals, for instance.

Indeed, the fact that we can arrange things into social groups is clearly essential for the we-mode acceptances and intentions to appear in the first place. As Searle (1990, p. 414) puts it, collective intentionality requires "communal awareness," a pre-intentional (i.e., non-representational) background sense identifying others as a candidate for some group. However, entitativity alone is not a sufficient condition of we-mode attitudes, and thus it cannot do away with the above criticisms. After all, the agents might see themselves as belonging to a group yet fail to reason and act as such. Alternatively, one might recognize the group from the outside, without considering oneself a functional part of it.

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[30] For a defense of ontological supra-individualism, see, for example, Pettit (2014).

What is missing is a type of *group identification* that directs the reasoning in a way that makes it plausible to speak of non-summative group attitudes: not only must the participants "frame" themselves as one unit, they must also think and act from the perspective of that unit; in other words, they need to switch from individual to *team reasoning* (Bacharach et al., 2006, pp. 69–79, 120–137). And while group entitativity and group identification might be pre-intentional and privately conducted, team reasoning—implying rational decision-making as a group—clearly cannot.

Searle seems to assume that this kind of thinking may be entirely subjective, though. For him (1990, 1995, pp. 23–26), collective intentionality can derive directly from communal awareness; all that is needed is one's background knowledge of others as candidates for cooperation, which can also occur without any rational thinking process. Of course, Searle cannot be criticized of supra-individualism here, as he (1990, p. 406) explicitly denies the possibility of group minds and group consciousness. And since his "we" is biologically primitive, there is no circularity, either.

However, Searle's theory can be accused of *solipsism*, because it allows for collective attitudes independent of others (Schweikard & Schmid, 2020). For example, I could now perceive you and I as a social entity that accepts to overcome an artificial challenge of defeating a video game opponent, and on Searle's account I would basically exercise collective intentionality. Yet it does not automatically or by some mysterious telepathic powers follow that you have also accepted that same goal. Without any communication involved, it would be irrational for me to think that *we* accepted anything.

Similar to Searle, both Gilbert (2009) and Tuomela (2013, pp. 5, 8) admit all mental phenomena being ontologically rooted in individual brains, while still permitting references to groups as the carriers of the attitudes. They also see "we" as primitive—albeit conceptually rather than simply biologically; basically, group agents exist as fictional constructions, through imagination and emulation. Just like one of the do-goals of game play (see Section 3.3), collective entities are, from this perspective, *pretend accepted*: the members think and act *as if* they were a unified whole irreducible to its parts and capable of intentional states. Accordingly, such views reflect *conceptual non-individualism* instead of ontological supra-individualism (Schmitt, 2003, pp. 9–16), escaping the first criticism.

Contrary to Searle, however, Gilbert and Tuomela consider intersubjective processes necessary for the formation of those attitudes—hence also evading the charges of solipsism. As explained in the previous section, Gilbert's theory requires joint commitment: mutual expression of personal readiness to hold an attitude as a single body, with reciprocal rights and obligations guiding each agent's reasoning. Comparably, Tuomela suggests *collective acceptance* (CA) as the key element, which he explains as follows:

> "(CA) The members of a group g qua group members *accept p as true or correctly assertable for g* if and only if they (come to) jointly have an attitude expressed by p such that the attitude is for the "use" of the group (viz., for promoting its ethos or other accepted attitudes) and has either the world-to-mind direction of fit (one in the intention family of attitudes) or the mind-to-world direction of fit (one in the belief family)." (Tuomela, 2013, p. 128.)

According to Tuomela (2013, pp. 123–146), CA presupposes "proposals" by the participants to adopt an attitude for the use of the group, as well as corresponding agreements, which can be implicit or explicit (e.g., gestures or words). When this process involves not only group identification but also thinking and reasoning from the group's perspective, the resulting attitude comes to satisfy the three criteria of the we-mode—*group reason*, *collectivity condition* and *collective commitment* (see Section 4.2.2 for details). Such collective acceptance thus binds the agents to the attitude and the related ethos in the non-summative, group-authoritative sense, allowing for the formation of *group acceptance* and other we-mode mental states (e.g., we-mode intentions).

Yet one problem with the theories of the above kind is that—at least on the surface—they appear to be circular (Schweikard & Schmid, 2020; Searle, 1990). Indeed, if mutual commitment—which by itself seems to imply collective intentionality—is necessary for collective attitudes, we are at risk of facing infinite regress (i.e., "We accept that we accept that we accept that we accept that we accept…"). Obviously, this kind of vicious circularity would undermine the explanatory power of our analysis.

Gilbert's (2002) response is that group attitudes require only the individuals' *idea* of holding an attitude as one body—as well as personal commitments of each agent to seek ways to realize that—which would not be equivalent to the participants (already) carrying the attitude as a group. The issue is perhaps more glaring in Tuomela's theory, which assumes collective acceptance as a necessary condition of the we-mode attitudes. But as he (2013,

pp. 71, 136) clarifies, the aforesaid we-mode criteria derive from a preanalytical deliberation process, which is fundamentally individualistic and therefore need not satisfy those same conditions; rather, the agents assess the situation in the *prospective we-mode*, entailing "precommitment" to accept the proposals for the we-mode attitude—if their reasoning so concludes. In Tuomela's eyes, then, this does away with the circularity.

Such responses, however, lead us to the third criticism, claiming that plural subjects and we-modes bring nothing to the analysis that could not be expressed within the contents of individual attitudes; in other words, they seem redundant. Bratman (2014, p. 129), for example, argues that Gilbert's plural subject—if understood as primitive—"does no further philosophical work" in her theory. By the same token, Ludwig (2017) claims that Tuomela's three we-mode criteria—group reason, collectivity condition and collective commitment—are already present in Bratman's reductive account of shared intentions (see Section 4.2.1), and no references to group modes are thus needed.

Arguments of the above kind are a part of a long and ongoing debate, and I do not claim to have definite answers here. But even if the criticism is accurate, it can also be inversed: why should collectivity be described in terms of personal attitudes in the cases that *could* be explained by the we-modes? What additional value would a reductive analysis offer in these situations compared to the non-individualistic one?

This is not to imply that the question is meaningless, as often the choice between referencing an individual or a group may be of ethical significance (e.g., who is responsible for whose actions). The point is, rather, that both approaches can provide useful insight: while aggregation of personal mental states may be more consistent with the psychobiological aspects of collective life, to allow the analyses to also reference we-mode attitudes could better capture the *conceptual* reality in which we operate. Just as people construe their social world by speaking of individuals, they constantly refer to "us," teams, clans, guilds, and other group agents as well. As Tuomela (2013, p. 4) notes, "neither individualism nor collectivism is capable of expressing the whole truth." And we have a good reason to assume that cooperative game play makes no exception in this regard.

4.2 Intention

Much of what was said about I-mode acceptance and we-mode acceptance above analogously applies to *I-mode intentions* and *we-mode intentions* as well. Chiefly, the latter requires the construction of—and identification with—a group agent, to which the irreducible collective mental state (in this case, intention) can then be attributed. The main difference is that (individual or collective) acceptance as such need only concern the truth of some proposition (or its part), while intending—as explained in Section 2.2—involves conative commitment to complete the action-plan expressed by its content.

Considering that cooperation is typically viewed as an activity, it comes as no surprise that intentions play the key role in most theories of collective intentionality attempting to explain it. Predictably, the reductive descriptions see I-mode intentions as the dominant feature, whereas the non-individualistic views give prominence to we-mode intentions instead. Yet, as discussed, both sides can be taken under the umbrella of cooperation.

This section juxtaposes these accounts and contemplates on the implications that both modes of intending have for the analysis of cooperative game play. Keeping the focus on the subjects, we thereby arrive at the following aspects of reasoning: *Who* will commit to pursuing such-and-such states of affairs? *Who* will be fulfilled? Section 4.2.1 focuses on the individualistic cases, while Section 4.2.2 deals with the collective ones.

4.2.1 I-mode Intention

One of the most well-known theories of cooperation based on I-mode intentions is Bratman's (1992) *shared cooperative activity* (SCA), which he (2014) has later revised as *modest sociality*. In these formulations, the intentions take the form "I intend that we *J*" and "You intend that we *J*," where *J* designates a cooperatively neutral (see Section 4.3) joint-act-token. The participants are glued together by several features: Since "we *J*" constitutes the content of the intention, each agent must monitor not only their own roles and responses in favor of *J*-ing but also those of everyone else—while expecting the others to do the same. In addition, the contents of the intentions must refer to "meshing" subplans such that there is no conflict between them, and the agents are to perform and—if required—adjust their responses in maintaining that interconnectedness. Lastly, the participants need to be mutually aware of the aforesaid conditions.

Bratman's theory is largely compatible with Tuomela's (2013, pp. 148–152) account of *cooperation in the I-mode* (CIM). Namely, the latter is similarly defined by individually intended goals with interdependent means-actions, the performance of which is mutually believed to contribute to the achievement of each participant's goal. Being aware of that interdependence, the agents commit to adjusting their actions and goals so that the satisfaction of each agent's personal intention can be furthered. This implies a shared goal in the summative sense, which may simply comprise a set of desired result-events for the means-actions; a shared long-term goal is not required (though possible).

As some of the conditions of SCA and CIM are more closely related to intentional contents and relations, I will revisit them later in Sections 4.3 and 4.4. Regarding the mode itself, we can—following Tuomela's (2013, pp. 64–73, 185–190) line of thought—see a trio of features separating I-mode intentions from we-mode intentions. First, I-mode intending presupposes private commitment (i.e., I-mode accepted intentions) to act, so that one may—barring some other type of enforcement—abandon his plan whenever one pleases. As Tuomela (2013, p. 70) writes, one "has not delegated part of his individual authority to the group, in contrast to what happens in the we-mode case." Second, I-mode agents are primarily seeking to satisfy their personal preferences. As the sole owners of the intentions, the superordinate be-goals (i.e., "being fulfilled") are thereby individualistic, ultimately instructing one's reasoning process—other-regarding or not. Third—and basically because of the first two conditions—I-mode intentions are not necessarily satisfied in an optimal way for all participants, even if the goals are shared.

In addition, Tuomela (2013, pp. 70, 148–152) distinguishes between two versions of I-mode attitudes and, accordingly, I-mode intentions and I-mode cooperation: *private* and *pro-group*. The difference is that private I-mode cooperators attempt to satisfy their personal goals *only* for themselves, whereas in the pro-group I-mode this is also done partially for the group which the participants are members of and with whom they share the same (long-term) goal. Because of this, pro-group agents may think in terms of "us" (e.g., "it is our goal that *P*"), even though they lack collective commitment to said objectives (Miller & Tuomela, 2014, p. 41; Tuomela, 2013, pp. 71–72). The distinction is especially interesting considering cooperative game play, which might sometimes suffer from too much social control (Burgun, 2013, pp. 142–143; Myers, 2010, pp. 127–131). In this

study, I will call cooperation in these two agential modes 1) *cooperation as private individuals* (PRI-COOP) and 2) *cooperation as pro-group individuals* (PGI-COOP).[31]

How would I-mode intentions manifest in game play and our framework of planned activities, then? To give an example of PRI-COOP, consider a trading sequence in Monopoly, where player X offers player Y a green property (which Y has two of) in exchange for Y's two red ones (which X has one of). If Y accepts, the completion of their respective sets becomes their joint motor-goal *J*, which they are privately committed to and which they mutually believe to further their plans. Yet both X and Y also carry the personal do-goal of collecting all the properties on the board, while bankrupting everyone else. Since these programs cannot be successfully completed without the others failing their plans, the reasoning behind *J*—while clearly other-regarding—must also be fundamentally individualistic, aiming to fulfill their private interests, first and foremost.

As for PGI-COOP, imagine two hockey players—A and B—in a scoring chance against their opponent: A and B share both the motor-goal (scoring a goal) *and* the long-term do-goal (winning the game), which they attempt to satisfy for their team. However, these objectives may still count as mere I-mode intentions, with individualistic reasonings and commitments. This is best illustrated by a hypothetical decision-making situation: If A passes the puck to B for a one timer, the goal seems all but guaranteed, as the opposing goaltender most likely cannot react in time. If A instead chooses to attempt the shot herself, the probability of scoring is lower, but the selfish payoff—being the hero of the game—is higher. Assume that A opts for the latter option. Doing so she ignores the collective reasoning and commitment to decisions that are optimal from the group's standpoint (see the next section). But because she still attempts to score for the team as well, her actions can nevertheless be described as PGI-COOP.

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[31] While the other "Big Four" (Bratman, Gilbert, Searle) do not propose similar categorization, comparable ideas can be found elsewhere. As Tuomela (2013, p. 185) points out, his *private I-mode*, *pro-group I-mode* and *we-mode* resemble Bacharach's (1999) notions of *reasoners with egoistic payoffs*, *benefactors*, and *team reasoners*, respectively. Brewer and Gardner (1996), in turn, distinguish a similar three-level classification in their review of psychological literature on collective identities and self-representations: *individual level* with personal self-concept and selfish interests, *interpersonal level* with relational self-concept and other-regarding interests, and *group level* with collective self-concept and group-centric interests.

In short, I-mode intending derives from individualistic reasoning and, consequently, from intending being accepted in the I-mode. Notice, however, that this does not necessarily remove we-mode acceptance from the picture. For instance, there are plausible occasions where the agents might identify themselves as a group, which then accepts some part of the plan (such as the "genuineness" of the artificial challenge) to be true. Yet this collective (epistemic) commitment in terms of the content does not automatically lead to (conative) commitment to intending, as exemplified by the cases of spectating. Just as one can part pretend accept and part genuinely accept certain elements of the content (see Section 3.3), the same is true for I-mode and we-mode acceptance as well.

4.2.2 We-mode Intention

Theories of cooperation based on non-summative collective intentions—which I will call *cooperation as a group* (G-COOP)—are provided by the non-individualistic accounts, such as those by Gilbert, Searle, and Tuomela (viz., his we-mode thesis). As explained in Section 4.1.2, common to these three is the idea of participants framing themselves as one unit, allowing references to a group agent as the carrier of the intention. And because "we" is assumed at least conceptually primitive, it is possible to describe such we-mode cases of cooperation as irreducible to I-mode intentions.

Thus, where in PRI-COOP and PGI-COOP the basic structure of intentions is "I intend that we *J*," G-COOP is instead characterized by the form "We intend to J ($m_1 + m_2$)," and "We intend that I m_1 and you m_2 (as the respective parts of our *J*ing)." The personal goals in the latter case are thereby derivative of—and subordinate to—the joint goals and collective intending. This is the basic assumption that all three aforesaid philosophers seem to agree upon (Gilbert, 2009; Searle, 1990; Tuomela, 2013, p. 67).

But beside the logical form, what exactly separates we-mode intending from I-mode intending and, consequently, G-COOP from PRI-COOP and PGI-COOP? For Tuomela, the difference lies in the *origin* of those attitudes: as we learned in Section 4.1.2, he views collective acceptance as a necessary starting point, giving rise to the three features unique to we-mode attitudes: group reason, collectivity condition, and collective commitment. I will next explore these components in more detail, with examples from game play, followed by comparisons to both Gilbert's and Searle's accounts.

Group reason, according to Tuomela (2013, pp. 38–40, 183–190), refers to group-centered motivation behind the participants' actions. This means that the reason for acting is not only the intentional content per se (i.e., *what* was accepted), but also—imperatively—the fact that the content represents the will of the group (i.e., *that* it was accepted by others as well). Accordingly, such motivations are derived from reasoning that prioritizes satisfaction of the whole group over oneself, whereas the converse is true for I-mode reasoning.[32] Applied to the framework of planned activities, then, we could say that the superordinate be-goal ("being fulfilled")—and thus the primary reason for the whole plan—is ascribed to "us," regardless of the participants' (potential) subordinate personal aims.

In the hockey example presented in the previous section, player A—choosing to make the shot herself—clearly lacked group reason and reasoning in the above sense. Viewed from her team's perspective, the preferred course of action would have been to pass the puck to player B, since that was the most promising strategy for successfully finishing the play. At that moment, however, A was predominantly attempting to satisfy her personal plan and be-goal (e.g., being the star of the game), therefore overriding the ethos of the group and engaging in PGI-COOP rather than genuinely framing her intention as that of the team, as required by we-mode intending.

Collectivity condition in turn determines specific rules of satisfaction for we-mode intentions. In the spirit of "all for one and one for all" or being "in the same boat," such intention can only be satisfied for one participant if and only if it is satisfied for everyone else, and vice versa. This is a direct result of CA (see Section 4.1.2): if the intention is formed together for the group, it is conceptually (and thus also situationally) necessary that it is fulfilled for all the members simultaneously and unconditionally, as one cannot settle the matter separately. By contrast, collective acts based on the I-mode (i.e., I-mode accepted) goals are—at best—only situationally and conditionally interdependent in terms of their satisfaction. This allows for individualistic reasoning on how the actions are performed, without needing to consult the others. (Tuomela, 2013, pp. 40–43.)

[32] For somewhat similar game theoretical accounts (in the field of economics), see for example Bacharach (2006) and Gold and Sugden (2007).

Thus, had A passed the puck to B in the aforesaid situation, the G-COOP play would have been completed optimally for the whole team (presuming that any scoring strategy most likely to succeed is preferred and agreed upon by everyone). The difference to the PGI-COOP case is evident even if the latter resulted in a goal (by A): while this correlates with the aims of the team, it does not satisfy the whole plan (be-goals, do-goals, motor-goals) in the *right* way. Consequently, it is easy to imagine some team members feeling sour and unfulfilled by A's selfish approach, depending on the importance of the goal.[33] I-mode cooperation does not, by definition, require such expectations: In the Monopoly example from earlier, X and Y were both aware of their PRI-COOP being merely opportunistic, and as competitors neither was attempting to satisfy each other's whole plans. In other words, both players preferred the interdependence extending only so far.

Finally, *collective commitment* ensures that the participants cannot—on group-normative grounds—quit their cooperative efforts without at least owing an explanation to the rest, as leaving the activity might cause harm for the group. Unlike the I-mode cases, agents acting in the we-mode thus give away part of their personal authority to each other, while also gaining power over each other's agency. Such mutual entitlements and obligations are the "glue" that helps organizing the group's actions and maintaining its cohesiveness and effective achievement of its we-mode goals. (Tuomela, 2013, pp. 43-46.)

For Tuomela (2013, pp. 62–90, 130–140), collective commitment is closely linked to *joint intentions*, which he views as a conceptual bridge between *we-intentions* and *group intentions*. We-intentions are basically member-level "slices" of joint intentions with contents such as "We will do X together." When these personal proposals are expressed to others, the agents can prospectively reason from the collective perspective and rationally come to accept that they count as a group whose members jointly see to it (i.e., jointly intend) that they will do X. Joint intentions—and the resulting collective commitment—thus entail more than mere aggregation of wills: they imply mutual rights and responsibilities, allowing one to view the group as the "owner" of the intention.

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[33] This does not mean that I-mode cooperation would categorically fail at attaining the optimal outcome for everyone, as one's personal preferences may also sometimes align with those of others.

To give an example of collective commitment from the GPaC perspective, suppose that some agents form a club that gathers weekly to play video games. This requires that each agent implicitly or explicitly communicates to the others their willingness (i.e., their personal we-intentions) to take part in the activity. For instance, one might propose that they meet online every Tuesday night after work to play for a few hours. The others respond: "That's a good idea," "Yeah, why not," or something along those lines. Having this information, the agents frame themselves as a cohesive group and mutually trust that each of them is (with some probability) conatively committed to bringing about the plan. They end the discussion with expressions such as "See you next Tuesday!" "Sure. Bye." "Catch ya later!" Here the agents indicate being also collectively and epistemically committed to *the fact that* they have together agreed to pursue the activity and, subsequently, given up part of their authority regarding their actions. Assuming that the conditions of group reason and collectivity condition are also met, the joint intention can now correctly be ascribed to the club, and if one of them cannot show up at Tuesday night, the other members of that we-mode group can expect to be informed.

Where Tuomela's descriptions of I-mode intentions and I-mode cooperation are comparable to Bratman's SCA, his we-mode counterparts are in turn compatible with Gilbert's philosophy of acting together. In the latter theory, the conditions of collective commitment largely correspond to mutual expressions of personal readiness to adopt the intention for the group as a unified body, as well as the exchange of personal authority (see Section 4.1.1). On both Tuomela's and Gilbert's accounts, then, there exists a shared, pre-analytic reasoning process and precommitment preceding the construction of the group agent and its plan, and the members have a sufficient reason to adhere to the accepted decisions—or explain themselves to the others if they do not.

While Gilbert does not explicitly declare conditions that would accord with Tuomela's group reason and collectivity condition, both features are implied as necessary products of joint actions in her book *On Social Facts*: Regarding the former, she (1989, pp. 421–425) describes a similar idea in connection with the notion of *participant agency*. Essentially, a person engaging in a joint activity is reasoning not only as an individual but as a participant of the group, so that one's primary reason for acting can simply—and intelligibly—be the fact that it is the group's will, regardless of one's individual preferences.

Furthermore, Gilbert (1989, pp. 157–168) clearly presumes that a joint goal with a plural subject cannot be attained independently by the participants, which is also the core idea of Tuomela's collectivity condition.

As explained earlier, Searle disagrees with the above theorists regarding the formation of group attitudes, since he (1990) suggests that collective intentions can be privately created (whereas Gilbert and Tuomela require an intersubjective process with at least rudimentary communication). However, it does not follow that the theory would be incompatible with the we-mode and plural subject accounts per se; just because Searle thinks that communication is not essential for collective intending, he obviously does not propose its exclusion as a necessary condition, either. After all, his notions of *constitutive rules* and *institutional facts* provide a fitting framework for precisely such cases: Briefly, the form of the constitutive rule is "X counts as Y in C," where X describes a phenomenon for which Y—by continuous collective agreement or acceptance—assigns a new *status* (and accompanying functions) in some context denoted by C, resulting in an institutional, (viz., representational, language-dependent) fact (Searle, 1995, pp. 43–78). This is fundamentally what happens in the we-mode account: the participants signal to each other that the perceived collection of agents (X) counts as a group entity (Y) in the current situation. And from here, it is a short step to collectively (pretend) accept that this entity may also represent an intentional agent carrying its own intentions.

Thus, the contradictions between the theories are, rather, due to different ranges of focus. Searle's idea of cooperation is much more inclusive, allowing for solipsistic cases which would perhaps be better defined by some other, socially weaker terms. Personal intentions ascribed to "us" may, for instance, be adequate for what Tuomela (2000a, pp. 6, 24) describes as (collective) *independent single actions*, which involve a shared social reason but do not depend on others (e.g., going to the sauna each Saturday due to the internalized sense of it being a national custom). In game playing, an analogous case might be a solo player submitting to the rules and meanings of a game, which corresponds roughly to the concept of systemic cooperation in Salen and Zimmerman's (2004, pp. 255–256) terminology (recall Section 1.1.1). But insofar as intentional cooperation is understood as an intersubjective phenomenon, Searle's theory is nonetheless lacking.

4.3 Contents

It was noted in Section 2.3 that the contents of intentions must include both a predicate (a verb and possible complementary elements) and an agent (typically the subject of the sentence).[34] Regarding the goal-contents of game play (see Section 3.3), we merely focused on the former. With respect to cooperation, however, we also need to examine the latter. These aspects—covered respectively in Sections 4.3.1 and 4.3.2 below—are crucial components in gluing the agents together, especially in PRI-COOP and PGI-COOP where the underlying reasoning is otherwise individualistic.

4.3.1 Predicates

Starting with the predicates, we can identify some broad classes of sentences that characterize intentional cooperation in general—and PRI-COOP, PGI-COOP and G-COOP particularly. In terms of the do- and motor-goals, there is not much else to say than what has already been stated; basically, the contents must refer to the completion of some program through a series of sequences. These can entail nearly anything—with certain restrictions that I will explain in a moment. As for the be-goals, however, the matters can be further elaborated. Obviously, the superordinate goal of "being fulfilled"—assigned either to individuals (in PRI-COOP and PGI-COOP) or group (in G-COOP)—is still in place, so here I will only focus on the subordinate be-goals.

First, each cooperating participant must aim at *being responsive* to the other agents. Bratman (1992) explains this well in his analysis of SCA, requiring mutual responsiveness in both intention and action. The former means shaping one's subplans so that they "mesh" with those of others (i.e., the goals are not in conflict in terms of their satisfaction). The latter implies the tracking and adjusting of individual actions: if you and I are singing a duet, for instance, I need to monitor your behavior to know when and how to enter—and vice versa. Without mutual responsiveness in action, Bratman maintains, our cooperation

[34] Grammatically, the subject of a sentence may also represent something else than the agent (e.g., "*The conflict* will be overcome by us."). In my analysis, though, the structure of the propositional contents always entail an *agentive* subject (e.g., "*We* will overcome the conflict.")

would be merely *prepackaged*, essentially lacking the interaction itself. Similar conditions are also proposed by Tuomela (2013); namely, I-mode cooperation presupposes that the agents adjust to each other's performances and goals (p. 150), whereas in we-mode cooperation this is a built-in, intrinsic feature (p. 156).

It is worth noting that responsiveness is not only a requirement of cooperation, but many forms of conflict and competition as well.[35] As Bratman (1992) demonstrates, even two soldiers in a battlefield are reading each other's intentions and regulating their behavior based on their expectations of the other one's actions and anticipations. In the same vein, Searle (1995, pp. 23–24) finds cooperative foundations in activities such as prizefighting, litigants opposing each other in court, or faculty members exchanging insults in a cocktail party, while Tuomela (2013, p. 101) makes a similar remark for warfare, economic competition, and competitive sports. From this perspective, being responsive does not alone distinguish cooperative game play from competitive game play but rather from unilaterally antagonistic forms of social play, such as "griefing."[36]

Indeed, cooperation—unlike competition—also implies the intention of *being supportive* of others. For Bratman, this reciprocity marks a key difference between SCA and merely *shared intentional actions*. To illustrate the latter, he (1992) provides the case of "unhelpful singers," where the singing of a duet entails no tolerance for error nor intention to help each other in case one stumbles unexpectedly. In other words, the singers prefer the other one's failure to the success of both. While the activity is clearly joint, it lacks the prosocial aspect taken as the premise of the analysis. Mutual support is also assumed by Tuomela, as even his (2013, pp. 148–152) I-mode case requires the personally intended events to aim at furthering each other's goals. Obviously, in PRI-COOP and PGI-COOP the target goals of the supportiveness do not have to—and in many cases simply cannot—extend to all levels of abstraction, as exemplified by the Monopoly case in Section 4.2.1.

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[35] In fact, the etymology of the verb "compete" derives from the Latin word *competĕre*, meaning "to strive after (something) in company or together" (Oxford English Dictionary, 2018).
[36] "Griefing" refers to hostile practices in multiplayer games, such as attacking lower-level characters for no obvious reason, or discouraging others by sending malicious messages (Thomas et al., 2007, p. 34).

Lastly, and in addition to responsiveness and reciprocity intrinsic to (prosocial) cooperation in general, G-COOP specifically presupposes the idea of *being one* with others. As discussed in Sections 4.1.2 and 4.2.2, entitativity and group identification are necessary for the emergence of team reasoning and collective attitudes characteristic of the stronger, we-mode cases of cooperation. After all, groups cannot be ascribed attitudes without two or more agents first accepting to count as such a unified body, since any group agent can only act through their members. Of course, collective identities may also appear in the goal-contents of PRI-COOP and PGI-COOP; the difference is that in G-COOP the conceptual construction of the group entity is—unlike the former two—a necessary condition and imperative in terms of one's reasoning (recall Section 4.2).

To tie the aforesaid predicate categories—responsiveness, supportiveness, and unity—to game play, we may consider them extensions to the be-goal of rule adherence (depending, of course, on the psychological frame and type of game examined). As explained in Section 3.3, players must attempt to be respectful of the constitutive, operational, and (at least some) implicit rules of the game, since this allows the activity to occur in the first place. The be-goals of cooperation would perhaps more often fall under the implicit set of rules, discernible "between the lines" rather than being overtly stated. For example, games may afford a shared do-goal and accompanying interaction mechanics designed for synergetic sequences, suggesting mutual support between the players without openly enforcing it. That said, nothing prevents the participants from making such rules explicit as well.

Besides the aforesaid be-goal categories, there is another restriction that applies to the predicates, and in this case on all levels of abstraction. This has to do with the avoidance of circularity: generally, the goal-contents supposed to explain the necessary and sufficient conditions of cooperative game play cannot tautologically refer to sentences that already contain the idea of shared agency, or, as Bratman (1992, 2014, pp. 40–48) puts it, expressions that are *cooperatively loaded* (e.g., dancing a tango). None of the predicates introduced so far in my study violate this rule: it is clearly possible to engage in an artificial challenge or be socially responsive and supportive independently of others, and people can also identify with groups without ever actually interacting with them. However, we may not be able to escape the issue so easily when considering the subjects of those goal-contents as well. Hence, I will return to this topic in the next section.

4.3.2 Agentive Subjects

Although non-individualist and reductionist theorists disagree on whether "we" may extend to psychological modes, they do agree on that plural (agentive) subjects can appear within the intentional contents (Bratman, 1992, 2014, p. 126; Gilbert, 1989, pp. 160–162; Searle, 1990; Tuomela, 2013, pp. 64–72). In case of cooperation this may even be deemed necessary (at least implicitly), since shared predicates alone do not guarantee there being any joint activity in the I-mode-based PRI-COOP and PGI-COOP. For instance, you and I could carry our personal intentions to participate in an artificial game conflict—and we might also mutually acknowledge this—yet we would still be able to satisfy our goals without any interaction between us (e.g., by playing with NPCs). That said, it is also clear that even the contents of the (irreducibly) collective intentions must at some point of the plan involve separate subjects (e.g., "you," "I") for the agents to be able to perform their part-actions (Searle, 1990, p. 410; Tuomela, 2013, p. 151).

To illustrate the above arguments, let me revisit the (CaGP) PRI-COOP case of Monopoly (Section 4.2.1). On some motor-goal level, X and Y obviously carry their personal subplans (with individual agentive subjects), denoted here by m_1 ("X gives Y a green property") and m_2 ("Y gives X two red properties"), respectively. But since X intends m_1 with the expectation that Y intends m_2—and vice versa—there exists also a joint motor-goal J ("X gives Y a green property *and* Y gives X two red properties"). Taken together, we thus have a summative reading of the contents: "We" [X + Y] J [m_1 + m_2]," where J can refer to making a deal, for instance. Naturally, the same conditionality and aggregation applies to the be-goals of responsiveness and support as well, though the latter lasts only for the duration of the PRI-COOP sequence, after which X and Y are competing again.

Identical points hold for PGI-COOP, with the exception that the plural subject extends from the sequences to the whole program. This is due to the shared do-goal, which the agents are attempting to achieve (by one or more joint motor-goals) for the benefit of the group, albeit in a way that best satisfies their personal interests (recall Section 4.2.1). For the same reason, the summative "we" (X + Y) need not—and the stronger, non-summative "we" (XY) strictly cannot—be entailed by the superordinate be-goal of (optimal) fulfillment, though both can still appear within the subordinate be-contents.

The goals of G-COOP, on the other hand, contain the non-summative version on all levels of abstraction. Since we-mode intentions are "owned" and controlled by the group (recall Section 4.2.2), the collective subject must also be referenced somewhere in the contents—supposing that at least two group members are playing their mutually responsive and supportive roles.[37] Basically, when *we* interact from this unified perspective, *our* intentions necessarily aim at the performance of *our* joint action-sequence(s), the completion of *our* program(s), and, ultimately, the whole group being (equally and optimally) fulfilled by the successful achievement of its plan and ethos. Yet even the collectively stronger cases must involve further motor-goal contents with individual subjects. In a G-COOP hockey play situation, for instance, there could exist personal motor-goals "A passes the puck to B," and "B shoots the puck toward the goal," amounting to the joint motor-goal "*we* score," which also contributes to the do-goal "*we* defeat our opponent," and eventually all the way to the superordinate be-goal "*we* are fulfilled."

The aforesaid conditions might raise some questions. Firstly, it may seem counterintuitive that one can have intentions of the form "I intend that we (do something)" or "We intend that I (do something)," as proposed here. After all, how could one conatively commit to something without also being the one who plans to act? As Bratman (1993, 2014, pp. 12–15, 60–64) has argued, though, this *own-action principle*—which normally involves taking full responsibility of one's intentional actions and anticipating the experience of performing them—is only required of intending *to* but not intending *that*. According to him, both intention types satisfy the demands for consistency and agglomeration (recall Section 2.2). But unlike intending *to*, intending *that* may indicate commitment to merely *influence* the action, to see that something is brought about (e.g., parents intending that their child cleans up his room). In other words, the intender still preserves some responsibility within the plan structure, even though the contents give roles for other agentive subjects as well. My analysis treats intentions in this latter sense.

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[37] This also holds for omissive actions that could appear in unilateral cooperation (see Section 4.4.1). Note, however, that the plural subject is not a necessary content element in pure mind-to-world cases of collective intentionality, as they need not be satisfied by anyone. For example, a non-summative group *xy* could accept (and thus believe) that "conflict φ is artificial", without *xy* ever appearing in that content sentence.

Perhaps more worryingly, the inclusion of the agentive group subject seems to lead to cooperatively loaded contents, which, as noted in the previous section, would taint our analysis with circularity—at least when the subject is understood as non-summative and irreducible to the individual members. For instance, while overcoming an artificial conflict can be done without acting jointly with others (e.g., by playing solitaire or single player video games), to carry an intention "we (together) overcome an artificial conflict" appears to indicate otherwise. The *explanans* threaten to entail the *explanandum*.

According to Petersson (2007), there has been three types of responses to the issue. The first is Bratman's idea of cooperatively neutral act descriptions, suggesting that the expressions cannot be "loaded" with the conception of shared agency; in other words, while "we" does appear within the intentional contents in his framework, those propositions can also become true without cooperation. If you and I play video games in the same room, for example, it is not irrational to assume that *we* play video games together, yet there need not be any action-dependence between us. Indeed, Bratman (2014, pp. 125–126) has argued that such contents must be bolstered with the other conditions of the theory (see Section 4.2.1) for the agents to be "glued" together properly and the activity to be counted as cooperative. However, Petersson (2007) argues that those conditions do not yet suffice for distinguishing collective actions from a set of individual interdependent actions, since they only satisfy the behavioral conditions of cooperation; Bratman's solution thus makes his account even more reductive than he likely originally intended.

The second response regards collective content elements as refinements of more basic non-joint elements, with the latter gradually—but without reference to the said joint notions—becoming subsumed by the former, through a sort of "bootstrapping" process of the mind (Petersson, 2007). When X and Y play Monopoly together, for instance, they would both first perceive the game from their individual perspectives: X must roll the dice, move the token, pay the price on someone else's property, and X may also purchase any unowned properties, make trades with other players, build houses and hotels, and so on. Of course, similar constraints hold for Y. However, when X and Y internalize these rules and start to recognize their relationships to other players, their point of view shifts self-reflexively from X (or Y) playing Monopoly to X and Y jointly intending to play together. The problem with this type of explanation, as Petersson (2007) contends, is that

it does not eliminate definitional circularity, since the characterizations of collective actions would still resort to cooperative constructs in the contents of the intentions. Further, the idea that non-joint content elements always temporally precede the joint ones might not hold for all cases of collective actions (see, e.g., Tuomela, 2013, pp. 78–79).

Finally, the third type of response downplays the original problem altogether; from this angle, the circularity is merely *analytical* and not *inferential*, thus still allowing for sufficiently explanatory analyses of the phenomenon (Petersson, 2007). We might say, for example, that the do-goal "we score against our opponent" by motor-goals "A passes to B" and "B shoots the puck" provides informative clues about the social configuration of the situation, even though A and B's cooperation is implied by the we-indexical do-goal content. One can intrinsically and pre-analytically acknowledge that having such an intention does not yet automatically result in A and B attempting to score a goal together by the same token as personal intentions might lead to individual actions, although the idea of joint action—as both Gilbert's and Tuomela's accounts suggest (recall Sections 4.1.2 and 4.2.2)—is prospectively conceived.

However, Petersson (2007) also rejects this third response, claiming that the main purpose of the analyses—to distinguish joint actions from non-joint ones for practical (and sometimes moral) interests—does not admit of such leeway. Instead, he proposes another solution: the conception of groups as units of *causal agency*. This refers to the perceived causal powers and behavioral dispositions of a set of agents, entailing a rudimentary notion of collectivity (required of cooperation) but avoiding the more sophisticated idea of shared intention that would lead to definitional circularity. Just as one may consider ant colonies or bee swarms as cohesive wholes possessing such capabilities—without any special knowledge about the internal composition of those groups or the mental properties of their members—the same switch from individual to collective perspective can occur when observing the behavior of people, such as a team of football players. In this respect, Petersson's suggestion resembles the theory of entitativity discussed in Section 4.1.2.[38]

[38] Gilbert's (2002, p. 46) response is, however, quite similar, requiring only understanding of how a single body (e.g., a group formed by individuals) can hold an attitude—without already holding it as a group.

In any case, it seems inevitable that some notion of a joint agentive subject and, consequently, analytical circularity is unavoidable in connection with the psychological modes or the goal-contents to provide an explanation of cooperative game play based on intentional mental states. I leave it up to discussion which of the above strategies is the most serviceable. That said, the scope and purpose of my analysis is clearly narrower compared to collective action theories in general, applying perhaps more often to descriptive contexts (e.g., player observation) rather than strictly normative ones (e.g., legal issues)—even though the research of cooperative game play can encompass both aspects. For most applications, then, avoiding inferential circularity may be enough here.

4.4 Goal Relations

Goal-contents with other-regarding predicates and (summative or non-summative) plural subjects do not yet suffice for cooperation as an intersubjective affair, however. Namely, even if those contents happened to be identical between the agents—and even if the related intentions and acceptances were ascribed to some group—the intended actions could still be entirely independent from each other. As noted in Section 4.2.2, one might engage in solipsistic we-indexical thinking and acting, based on group entitativity and subjective evaluation of others' mental states (e.g., playing lottery each Saturday as part of a national tradition). Yet, calling such efforts acting *together* seems like an overstatement.

In addition to the psychological modes and goal-contents, then, we must also investigate the *relations* between them. This presupposes, to begin with, an additional psychological mode that comprises the said intersubjectivity. Bratman (1992, 2014, pp. 57–59) and Gilbert (1989, pp. 186–197), for example, speak of *common knowledge*, whereas Tuomela (2002, p. 25, 2013, p. 42) uses the notion of *mutual belief*. These are basically abbreviated versions of (infinitely) iterative conceptions, indicating that each participant is aware of the modes and contents carried by themselves and others but also—more importantly—that everyone is aware of each other's awareness of this being the case.

In this study, I will refer to the above condition by *mutual trust* (viz., *reliance*). As Alonso (2009) has argued, in some cases the agents might engage in a joint activity due to pragmatic reasons rather than purely evidential ones (e.g., when the participants are not completely sure about each other's intentions), and—unlike beliefs or knowledge— reliance

encompasses both of these aspects. Further, as Alonso (2009, p. 457) maintains, "reliance requires, in contrast to belief, that its characteristic disposition toward reasoning be activated," thus better capturing the idea that the awareness of others' similar goals becomes one of the premises for forming the shared plan in the first place. Returning to the PGI-COOP hockey case, for example, player A might have known that player B was aiming to shoot (from A's pass), yet—opting for the selfish action—A ignored this belief in her reasoning, refusing the afforded joint sequence. But in the cooperatively successful version, A would decide to pass the puck to B not just because it is her (or her team's) desired strategy but also because she already *expects* B to shoot—and vice versa. And if this was public information between the agents, it seems correct to say that both A and B mutually trust (rather than just believe or know) that they intend the joint motor-goal.

Intersubjective evaluations of the attitudes effectively reveal the relations between the attached satisfaction conditions. When deemed favorable for each party—and when coupled with mutual trust—these correlations may then serve as a catalyst not only for group entitativity (recall Section 4.1.2) but also the "glue" required to join the participants together. The key term in understanding these relations is *interdependence*. Below, I will examine some classifications of this concept that are crucial for the current analysis.

4.4.1 Positive and Negative Interdependence

An important account on goal-relations in group contexts comes from social psychology and the tradition of *social interdependence theory*. The core idea is that the agents' goal-structures determine the type of interdependence between them: goals that are perceived as attainable if and only if others also achieve their goals indicate *positive interdependence*, whereas goals that can be reached if and only if others do not accomplish theirs imply *negative interdependence*. Both relations then lead to different interaction patterns in the pursuit of the objectives: negative interdependence points to competition, positive interdependence to cooperation. (Johnson & Johnson, 2005, pp. 285–293.)[39]

[39] Notice the similarities to Tuomela's collectivity condition, explained in Section 4.2.2.

Applying this premise to our framework of planned activities allows us to identify further patterns as well. Specifically, by testing the interdependencies with the hierarchy of goal-contents—including the predicates from Section 4.3—we get a handful of potential combinations corresponding to various *interaction relationships*.[40] These instances differ accordingly in their strength of cooperativeness, depending on the pervasiveness of positive and negative interdependence at the three levels of abstraction (be-goals, do-goals, motor-goals).[41] The classification of the relationships is presented in Table 1 below, followed by the explanations of each category.

Table 1. Interaction relationships and outcome interdependence of goal-contents. POS = positive interdependence, NEG = negative interdependence, ● = necessary, ○ = possible.

LEVEL	GOAL-CONTENT	Collaborative		Symbiotic		Coopetitive		Competitive	
		POS	NEG	POS	NEG	POS	NEG	POS	NEG
"Be"	Be fulfilled	○					●		●
	Be responsive in intention and action	●		●		●		●	
	Be supportive in action	●		●		●			
	Be (irreducibly) one	○							
"Do"	Complete an activity program	●					●		●
"Motor"	Perform an action sequence	●		●		●			●

In the above breakdown, the collectively weakest (non-independent) relationship is *competitive*, with a relatively thin prosocial foundation. Since rivals are trying to defeat each other to fulfill their private plans, their aims are necessarily in conflict and negatively interdependent at all levels of abstraction, from motor-goals to do-goals and the superordinate be-goal of fulfillment. Accordingly, the sequences are separate and contribute to different programs, entailing no joint agentive subjects. In Chess, for example, player X's motor-goal might be to promote one of the pawns to a queen, advancing the do-goal of defeating player Y, whereas Y could in turn aim at protecting his king by castling, which improves the odds of beating—or at least drawing with—X. There is no expectation of mutual support or unity (in the actional sense). However, as implied in Section 4.3.1, the

[40] According to Hinde and Groebel (1991, p. 5), "[a] relationship can be defined as involving individuals who interact on a series of occasions so that each interaction is affected by past interactions with the same individual and/or by expectations of future ones."
[41] Indeed, Johnson and Johnson (2005, pp. 335–336, 342) encourage applying social interdependence theory to multi-goal situations that may entail positive, negative, or no interdependence in the same context.

participants must still intend that they be responsive to each other, separating competition from purely oppositional, unrestrained conflict. These be-goals are always positively interdependent: for instance, if a tennis player does not try to return the ball to his opponent but instead just stands still, it is not possible for the other player to respond appropriately, either. In addition, since games also involve explicit rules, the competitors' personal intentions that everyone be adherent of those restrictions are, of course, positively interdependent as well, allowing the game to start in the first place.

Other times the collectivity of competition may be further developed due to opportunistic reasoning, as exemplified by the trading sequence in Monopoly. In such cases, there exists positively interdependent motor-goals (e.g., no player aiming to make a deal can complete that objective alone), while the do-goal of winning and the be-goal of fulfillment remain negatively interdependent (i.e., the deal is only made because it improves one's changes of prevailing over the other). Obviously, the agents must also intend that everybody helps each other to successfully complete the action-sequence, also indicating the presence of—and positive interdependence between—the be-goals of supportiveness. Generally, then, the interests are not fully opposed nor aligned. We learned in Section 1.2 that this type of interaction has been previously called "cooperation" (in contrast to full collaboration) or "semi-cooperation," for instance. However, I will instead opt for a term from economics (see, e.g., Padula & Dagnino, 2007; Zineldin, 2004)—*coopetition*—that better reflects the above intricacies and differentiates the interaction from other cooperative forms.

Alternatively, it is also possible that the cooperators' do-goals and superordinate be-goals (of fulfillment) are unshared and personal but with neither positive nor negative interdependence regarding their satisfaction. In this case, the required jointness derives from—as with coopetition—the interrelated motor-goals, as well as the be-goals of mutual responsiveness and support. However, here the agents have neither interdependent nor conflicting long-term aims, allowing for a more stable and lasting relationship. Borrowing a biological term, we might call this type of cooperative interaction *symbiotic* (viz., "living together") (Martin & Schwab, 2013), with mutual benefits for the agents' personal (final) goals. A potential context for symbiotic cooperation could be, for instance, a virtual game world where players would occasionally meet up to exchange knowledge, in-game items, or other resources to further their chances of overcoming later challenges.

Lastly, in the cooperatively strongest relationship, positive interdependence spans all levels of abstraction, from motor-goals to do-goals and be-goals. Here the agents are glued together not only by some temporary aim but also by their shared long-term goal, which, similarly, cannot be attained without the others achieving the objective (e.g., team members defeating their opponent). Consequently, the superordinate be-goals of fulfillment are not negatively interdependent, although in PGI-COOP cases they cannot be positively interdependent, either (regarding the optimal plan satisfaction). However, positive interdependence is still required of the subordinate be-goals of responsiveness and supportiveness, for the same reason as in the collectively weaker forms above. To be consistent with similar descriptions of social interactions with shared long-term objectives (see Section 1.1.2), I will name this category *collaborative*.

While all the above relationships entail at least some degree of collectivity, it seems reasonable to assume that only collaborative, symbiotic and coopetitive interactions may be considered cooperative relationships.[42] Unlike competition, these cases involve positive interdependence not just at the level of ideals and oughts (i.e., be-goals) but also in the action itself—albeit the jointness need not extend beyond the motor-goals. Indeed, accepting such shared effort as a necessary condition of cooperation is firmly in line with the definitions referenced at the beginning of this chapter. Note, however, that this makes no claim about the depth or proximity of the interactions. For example, members in large teams could contribute to the same programs or sequencies and acknowledge the mutual dependencies, yet their cooperation might be asynchronous and take place in relative isolation from each other. Employing again terminology from social psychology (see, e.g., Johnson & Johnson, 2005, p. 313; van der Vegt et al., 2001), we may say that such groups are united by *outcome interdependence* but not by *task interdependence*.

Cooperative relationships can also be further divided to *unilateral* and *multilateral*. The former comes close to the notion of *helping*, which Tuomela (2000a, p. 136) defines as a contribution to another agent's autonomously acquired (i.e., non-coerced) goal, while that

[42] From a long-term perspective, coopetition may be viewed as intersecting competition as well, as rivalries are perhaps best characterized by negatively interdependent do-goals.

other agent accepts the support. In unilateral interactions, then, one party adopts someone else's motor- or be-goal—which separates the relationship from competition—while their mutual trust in this plan establishes positive outcome interdependence in action—distinguishing the interaction from purely independent helping, such as donating.[43] The difference to multilateral relationships lies in the predicates describing the part-actions (viz., roles) further down the sequence hierarchy: in multilateral affairs these indicate positive task interdependence with active, contributive roles for all, whereas unilateral endeavors suggest only one active role, with the rest representing omissive actions (i.e., one's role is to refrain from contributing). As Gilbert (1989, p. 412) notes, acting together does not require that the responsibilities be equally distributed, even though the final responsibility of attaining the goal remains shared. Moreover, unequally divided roles do not remove positive interdependence regarding responsiveness and support. Rather, "passive" agents manifest these intentions in their attempts not to interfere with the goal-satisfaction.

Before moving on, it is worth juxtaposing the three cooperative interaction relationships with PRI-COOP, PGI-COOP, and G-COOP. The interdependence combinations of these latter categories are summarized in Table 2 below. In accordance with our earlier conclusions, any form of cooperation must always entail positive interdependence between motor-goals and the be-goals of responsiveness and support, ensuring—together with mutual trust—that there is enough "glue" for bringing the participants together. As a fundamentally selfish approach, PRI-COOP need not require any more than this, which—with the possibility of either negative or no interdependence between the do-goals and the be-goal of fulfillment—makes it compatible with coopetitive and symbiotic patterns. Since PGI-COOP and G-COOP are instead characterized by a shared do-goal (eliminating negative interdependencies), they can only manifest in collaborative relationships. The difference between the two is that in G-COOP the whole ethos—including the be-goals of unity and fulfillment—are positively interdependent, resulting from the conceptually constructed group agent that "owns" the plan and the ensuing activity.

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[43] For example, in the video game *Dark Souls* (2011, FromSoftware), players may choose to drop items as gifts to help other players, without necessarily expecting reciprocity. While this type of game play sequence is unilaterally prosocial, the receiver does not engage in any planning, nor, therefore, cooperation.

Table 2. Agential modes of cooperation and outcome interdependence of goal-contents. POS = positive interdependence, NEG = negative interdependence, ● = necessary, ○ = possible.

LEVEL	GOAL-CONTENT	PRI-COOP (private individual)		PGI-COOP (pro-group individual)		G-COOP (group)	
		POS	NEG	POS	NEG	POS	NEG
"Be"	Be fulfilled		○			●	
	Be responsive in intention and action	●		●		●	
	Be supportive in action	●		●		●	
	Be (irreducibly) one					●	
"Do"	Complete an activity program		○	●		●	
"Motor"	Perform an action sequence	●		●		●	

4.4.2 Persistence Interdependence

The common fate suggested by positively interdependent outcomes helps to explain why the agents may consider themselves a group entity (recall Section 4.1.2), "glued" together by references to a joint agentive subject within their goal-contents or as the carrier of their attitudes.[44] However, we may still ask how those bonds are supposed to endure over time. This turns our attention to the underlying reasons and, analogously, the "strength" of the glue, allowing for further distinctions between the species of cooperation.

I will briefly return here to Bratman's (2014, p. 65) idea of *persistence interdependence* brought up as a counterpoint to Gilbert in Section 4.1.1. This entails that the agents not only intend to engage in the joint activity but also *continue* to do so, and they intend this if and only if the other members keep doing so as well. More specifically, Bratman (2014, pp. 70–73) identifies three forms of persistence interdependence, those based on desirability, feasibility, and obligations: *Desirability-based interdependence* binds the agents together by preference;[45] if one ceases to pursue the shared plan, the activity stops being desirable for all, and—conversely—as long as the intentions are retained, each may conclude that the activity is preferred by everyone and thus likely to continue, albeit with

[44] From this angle, it may seem redundant to include both joint agentive subjects and positive interdependence in the theory. However, both can also exist separately, so that the required conditions are not met.
[45] In the video game *Journey* (2012, Thatgamecompany), for instance, two randomly matched online players can help each other to reach their destination or find secrets (e.g., by showing the way) without the game never forcing this kind of interaction by design (the game can be beaten alone, and the communication tools are minimal). Cooperation is simply afforded for those who enjoy travelling together.

nothing really obliging the agents as such. *Feasibility-based interdependence*, on the other hand, stems from brute situational facts: namely, the participants' goals cannot be realistically or effectively achieved unless they join forces. Here the objectives may be merely individually desired by each agent, without the others' intentions affecting that desirability per se. As a result, the following cooperation is at least partially instrumental, emerging from pragmatic necessity rather than pure enjoyment (although, obviously, desirability- and feasibility-based interdependence might also overlap). Finally, *obligation-based interdependence* is built on mutual recognition of—and respect of—the expectation to continue with the joint activity. This could involve explicit promises by the agents to stick with their shared plan—though other times similar norms might arise more gradually and organically, such as by habit (see, e.g., Gilbert, 2006).

Where the different scopes of positive interdependence separate cooperative interaction relationships from collectively weaker ones—such as competition and independent prosocial actions—the species of persistence interdependence offer us further indicators of the strength of those collective bonds. It also marks another difference between the three agential modes of cooperation, PRI-COOP, PGI-COOP, and G-COOP. For example, the interdependence in PRI-COOP and PGI-COOP can be based merely on feasibility or desirability, as both cases lack the collective acceptance of the intentions "for the group," and, consequently, these affairs do not involve the agents giving away their personal authority regarding their intending (recall Section 4.2.1). However, as Tuomela (2013, pp. 41–42) notes, reinforcing agreements are still possible within this limitation, admitting of versions of PRI-COOP and PGI-COOP that (overtly) resemble the we-mode forms.

In G-COOP, by contrast, the joint project can only persist due to obligation-based interdependence. As explained in Sections 4.1.2 and 4.2.2 earlier, cooperating as a non-summative group requires the agents coming to collectively accept themselves as counting as a group entity, and, more importantly, their shared intentions being ascribed to that collective agent. This results in reciprocal exchange of rights and responsibilities between the members, so that none of them can simply leave the joint effort without informing the others. Unlike PRI-COOP and PGI-COOP, then, group-normative expectations are a necessary condition of G-COOP, although, as said, these obligations can also be implicit.

4.5 Summary

In this chapter, I have explored the necessary and sufficient conditions of cooperation as a species of goal-directed activities, drawing on the theories of collective intentionality. In terms of psychological modes, a distinction was made between intentions ascribed to non-summative group agents, requiring reasoning and, consequently, acceptance from the collective perspective of "us," as well as personal intentions presupposing individualistic reasoning and acceptance—though still involving at least summative group entitativity within the act descriptions. As for the goal-contents, various defining predicate categories were identified, along with conditions concerning the agentive subjects and the relations (viz., interdependencies) between the intended outcomes. The statements below summarize the findings and integrate them to the framework established in Section 2.4.

[COOP] Agents a_1, a_2, …, a_n are *intentionally cooperating* if and only if
- (1) [PLAN] for each a_i, such that x includes a_i;
- (2) vis-à-vis (1), for each a_i there exists be-goals Ω_4 and Ω_5 such that
  - (a) Ω_4 refers to being responsive to each other;
  - (b) Ω_5 refers to being supportive of each other;
- (3) vis-à-vis (1), for each a_i there exists a joint motor-goal Σ_J such that
  - (a) the agentive subjects in Σ_J represent a summative or non-summative group entity consisting of a_1, a_2, …, a_n;
  - (b) Σ_J entails lower-order motor-goals m_1, m_2, …, m_n where the agentive subjects represent singular entities a_1, a_2, …, a_n, respectively;
- (4) vis-à-vis (2)–(3), Ω_4, Ω_5, and Σ_J are satisfied for each individual agent a_i if and only if Ω_4, Ω_5, and Σ_J are satisfied for all agents a_1, a_2, …, a_n;
- (5) (1)–(4) persist because
  - (a) a_1, a_2, …, a_n desire that (1)–(4), or
  - (b) a_1, a_2, …, a_n believe that Ω_i cannot be effectively achieved otherwise, or
  - (c) a_1, a_2, …, a_n implicitly/explicitly agree (i.e., collectively accept) that (1)–(4);
- (6) a_1, a_2, …, a_n mutually trust that (1)–(5).

In the generic case of [COOP], Clause (1) first imports the framework of planned activities [PLAN] (see Section 2.4) for each agent, where x can refer to an individual or a group. This excludes merely reactive (i.e., unplanned) coordination from the picture, while also making the theory compatible with both reductive and non-individualistic accounts. The next conditions specify the plans as comprising shared be-goal and motor-goal contents, with included group entitativity: Clause (2) ensures that the agents aim to be responsive (2a) and supportive (2b) in their interactions—whatever their other shared goals may be. Clause (3) then brings the agents together in action, indicating a shared higher-order sequence Σ_J with an agentive subject framed as a group entity (3a), which can be summative

(e.g., "X and Y exchange items") or non-summative (e.g., "We score a goal against team B"). Further, it requires that the shared lower-order motor-goals m_1, m_2, …, m_n be assigned to the agents individually (3b), so that each of them still has a separate (active or omissive) role in the plan-structure (e.g., "A passes," "B shoots"). The remaining clauses concern the agents' relations: (4) denotes positive outcome interdependence between the aforesaid shared goals, while (5) demands persistence interdependence based on desirability (5a), feasibility (5b), or obligations (5c). Lastly, (6) links the participants intersubjectively by mutual trust, which excludes solipsistic prosocial actions and "accidental cooperation"[46] from the scope of the definition. Employing [COOP] as a template, we can now construct statements for the three agential modes of cooperation, PRI-COOP, PGI-COOP, and G-COOP, presented below:

[PRI-COOP] Agents a_1, a_2, …, a_n are *cooperating as private individuals* iff
(1) [COOP];
(2) [COOP] (1) such that for each a_i x includes a_i alone;
(3) vis-à-vis (1), and due to (2), P may be satisfied for any a_i independent of the others;
(4) a_1, a_2, …, a_n mutually trust that (2)–(3).

[PGI-COOP] Agents a_1, a_2, …, a_n are *cooperating as pro-group individuals* iff
(1) [COOP];
(2) [COOP] (1) such that for each a_i x includes a_i alone;
(3) vis-à-vis (1), Δ for each a_i such that the agentive subjects in Δ represent a summative group entity consisting of a_1, a_2, …, a_n;
(4) vis-à-vis (1), and due to (2)–(3), P may be optimally satisfied for any a_i while P is only suboptimally satisfied for the others;
(5) a_1, a_2, …, a_n mutually trust that (2)–(4).

[G-COOP] Agents a_1, a_2, …, a_n are *cooperating as a group agent* iff
(1) [COOP];
(2) vis-à-vis (1), for each a_i there exists be-goal content Ω_6 such that Ω_6 refers to a_1, a_2, …, a_n being one as x, where x counts as a non-summative group entity pursuing P;
(3) vis-à-vis (1)–(2), P is satisfied for any a_i if and only if P is satisfied for x;
(4) (1)–(3) persist because
  (a) a_1, a_2, …, a_n implicitly or explicitly agree (i.e., collectively accept) that 2);
  (b) due to 4a), x accepts that (1)–(3);
(5) a_1, a_2, …, a_n mutually trust that (2)–(4).

[46] In accidental cooperation there exists mutual dependence but no mutual awareness of the common goals (Conte et al., 1991). Thus, it lacks the required intersubjectivity. In the light of the discussion from Sections 4.1.2 and 4.2.2, solipsistic collective actions (which were also excluded) may fall under this category.

As Clause (2) in both [PRI-COOP] and [PGI-COOP] denotes, agents cooperating in these modes pursue their own individual plans, based on reasoning that seeks to best fulfill their personal interests. Thus, it is possible for a participant to complete his plan (and, accordingly, be fulfilled), while everyone else remains ultimately unsatisfied ([PRI-COOP] (3)), or—at best—partially satisfied ([PGI-COOP] (4)). The difference between [PRI-COOP] and [PGI-COOP] is that the latter presupposes a shared long-term goal (3), enabling we-indexical thoughts such as "our goal is that…" in the weaker, aggregative sense (namely, as a linguistic shorthand). When this do-goal is brought about successfully, each participant then automatically completes their intended personal program—though not necessarily in a way that is ideal for everyone else.

[G-COOP], in contrast, requires that the entire plan be assigned to a non-summative group entity *x*, consisting of the participants (2) and constructed by their collective acceptance (4a). Correspondingly, there exists positive outcome interdependence (3) and obligation-based persistence interdependence (5) throughout the entire goal-complex. And since the underlying reasoning prioritizes the group's interests before those of the individuals, *x* effectively counts as the (pretend accepted) carrier of the psychological modes as well (4b, [PLAN] (2)–(3)), enabling the we-mode acceptances and we-mode intentions discussed in Sections 4.1.2 and 4.2.2, respectively.

Finally, using [COOP] once more as a starting point, we can specify the three cooperative interaction relationships: coopetitive [COOPET-COOP], symbiotic [SYMB-COOP], and collaborative [COLLAB-COOP]—as well as their subcategories, unilateral [UNI-COOP] and multilateral [MULTI-COOP]. Unlike the three agential modes above—the collectivity of which is more covertly perceived and mainly depends on the reasoning behind the entire plan—these species can be distinguished primarily by the pervasiveness of positive and negative outcome interdependencies within the goal-hierarchy. The following statements summarize the necessary and sufficient conditions of each category:

[COOPET-COOP] Agents a_1, a_2, …, a_n are *cooperating in a coopetitive relationship* iff
(1) [COOP];
(2) [COOP] (1) such that for each a_i x includes a_i alone;
(3) vis-à-vis (1), Δ (and therefore also Ω_i and P) is satisfied for any a_i if and only if Δ is not satisfied for the others;
(4) a_1, a_2, …, a_n mutually trust that (2)–(3).

[SYMB-COOP] Agents a_1, a_2, …, a_n are *cooperating in a symbiotic relationship* iff

(1) [COOP];
(2) [COOP] (1) such that for each a_i x includes a_i alone;
(3) vis-à-vis (1), Δ (and therefore also Ω_i and P) is satisfied for any a_i independent of whether Δ is satisfied for the others;
(4) a_1, a_2, …, a_n mutually trust that (2)–(3).

[COLLAB-COOP] Agents a_1, a_2, …, a_n are *cooperating in a collaborative relationship* iff

(1) [COOP];
(2) vis-à-vis (1), Δ for each a_i such that the agentive subjects in Δ represent a summative or non-summative group entity formed by a_1, a_2, …, a_n;
(3) vis-à-vis (1), Δ is satisfied for any a_i if and only if Δ is satisfied for the others;
(4) a_1, a_2, …, a_n mutually trust that (2)–(3).

[UNI-COOP] Agents a_1, a_2, …, a_n are *cooperating in a unilateral relationship* iff

(1) [COOP];
(2) [COOP] 3b) such that m_1, m_2, …, m_n include only one non-omissive role;
(3) a_1, a_2, …, a_n mutually trust that (2).

[MULTI-COOP] Agents a_1, a_2, …, a_n are *cooperating in a multilateral relationship* iff

(1) [COOP];
(2) [COOP] 3b) such that m_1, m_2, …, m_n include multiple non-omissive roles;
(3) a_1, a_2, …, a_n mutually trust that (2).

Since we are dealing with species of cooperation, Clause (1) first brings in the conditions of [COOP] for each species. In both [COOPET-COOP] and [SYMB-COOP], Clause (2) specifies that the participants carry their personal plans with individualistic reasoning, I-mode acceptances, and I-mode intentions. (3) reveals why: in coopetition the agents' do-goals—and, accordingly, the be-goal of fulfillment and the entire plan—are always negatively interdependent, whereas in symbiotic cases there is no interdependence between those contents at all. [COLLAB-COOP], on the other hand, requires that the participants' do-goal contents be shared and include a plural agentive subject (2). The subject may be either summative or non-summative, depending on whether the underlying reasoning process points to the I-mode or the we-mode. The goals are also positively interdependent in terms of their satisfaction (3). Notice, however, that in PGI-COOP collaboration the full plan may still fail to be (optimally) satisfied for everyone, if the do-goal is not attained in a way that respects everyone's interests (unlike in G-COOP collaboration). [UNI-COOP] and [MULTI-COOP], on the other hand, are simply separated by the positive task interdependence (i.e., non-omissive roles in relation to each other) (2), which the former lacks. Finally, all the aforesaid specifications must be intersubjectively acknowledged, which is why each statement ends with the mutual trust condition.

5 SYNTHESIS

Having analyzed the goal-components of game play and cooperation, it is finally time to put all the building blocks together. I will not rewrite the biconditional statements here, as in principle we can simply replace [PLAN] in [COOP] (1) with [GAME] when examining cooperative game play in general (refer to Sections 2.4, 3.4, and 4.5). Correspondingly, excluding [GAME] (2) gives the analysans of CaGP, whereas leaving out [GAME] (3) matches the conditions of GPaC. As argued in Section 3.1.1, however, both perspectives are needed for understanding the phenomenon, as well as the relevant implications for collectivity. As a further clarification, I offer more concise and general-purpose definitions for these two notions below (see also Appendix 1).

> *Game play as cooperation* (GPaC) is a (goal-directed) planned activity involving two or more intentional agents who voluntarily accept to perform an action-sequence as a summative or non-summative group, advancing their personally or collectively accepted intentions of engaging in an artificial challenge as a summative or non-summative group, being adherent of the explicit rules unnecessarily constraining the sequence, and being responsive to and supportive of each other during the act, with the interdependence between their goals persisting due to desirability, feasibility or obligation, and enabled by mutual trust.
>
> *Cooperation as game play* (CaGP) is a (goal-directed) planned activity involving two or more intentional agents who voluntarily accept to perform an action-sequence as a summative or non-summative group, advancing their personally or collectively accepted intentions of overcoming a genuine challenge, being (sufficiently) efficient in their efforts, and being responsive to and supportive of each other during the act, with the interdependence between their goals persisting due to desirability, feasibility or obligation, and enabled by mutual trust.

A closer inspection of the above definitions helps to separate cooperative game play from other social play forms. First, the initial requirement of two or more intentional, planning agents excludes game play with (or between) animals (equestrian sports, dog races, etc.), video game systems (e.g., Solitaire or Minesweeper), and NPCs—insofar as these actors are considered non-intentional—but also with multiple characters being controlled by a single intentional agent.[47] Voluntary acceptance, on the other hand, dismisses the seem-

[47] An example of such game is *Brothers: A Tale of Two Sons* (2013, Starbreeze Studios), which is marketed as "co-op play in single player mode" in Steam (Valve Corporation's digital game store).

ingly cooperative cases where the intentional agency is deprived. Next, artificial challenge and rule adherence differentiate the activity from free-form cooperative play that has no perceivable conflict or explicit rules (flirting, a jazz band performing music, etc.). Further, mutual responsiveness and support leave out prepackaged and purely antisocial (e.g., deceitful) joint actions, respectively. Finally, the conditions of interdependence and mutual trust exclude instances of accidental (viz., unintended) cooperation, parallel play occurring *beside* rather than *with* others), and solipsistic collectivity with no action-dependence or intersubjective evaluation of the mental states of others (e.g., playing the national lottery every Saturday because one deems it a social tradition).

The main difference between GPaC and CaGP concerns the challenge: in the former the conflict is accepted as artificial, while in the latter it is interpreted as genuine. And since GPaC merely requires everyone's engagement in that challenge, the intentions are at least partially autotelic, while in CaGP the same conflict serves an allotelic function (winning), which can also be pursued individually. Moreover, CaGP does not strictly require that the agents adhere to the explicit rules of the game, as the player frame might assume violation of all restrictions, and players can establish additional psychological frames with rule-breaking characters. CaGP does require one to follow the implicit rule of being efficient in their actions, however (unlike GPaC). Based on the definition, we can also argue that CaGP by itself does not substantially differ from other forms of (prosocial) cooperation (e.g., group work), as it does not acknowledge the artificiality of the situation. Indeed, it is rather the combination of—and the interplay between—these paradoxical perspectives that separates playful cooperative game play from its non-playful counterparts.

From the viewpoint of goals, this interrelatedness can manifest in multiple ways, depending on the included agential modes and interaction relationships within GPaC and CaGP, as well as the representational structures of the related psychological frames (participant and player frame). The following sections will elaborate on these aspects, with Section 5.1 focusing on GPaC and Section 5.2 on CaGP. Further, Section 5.3 deals with the relations between the psychological frames and the entailed consequences for collectivity. To illustrate the results of the analysis, Appendix 1 provides a tabulated synthesis of the whole complex, and I will refer to it throughout the current chapter.

5.1 Game Play as Cooperation (GPaC)

Looking at the table in Appendix 1, we notice that GPaC covers all the subcategories of interaction relationships and agential modes within the player frame—including competition.[48] This can be explained by the goals of the participant frame that GPaC is defined by. Due to the self-purposiveness of the activity (i.e., the means are the end) both the joint do-goal (g) and the joint motor-goal (i) indicate engagement in an artificial challenge—either by the summative ($x + y$) or non-summative (xy) group entity—allowing for non-cooperative player actions to be interpreted as cooperative from the external perspective. Accordingly, even the individualistic motor-goals (j) in competition—entailing no joint sequence token J ($m_x + m_y$) in the player frame—complete that do-goal, as these separate means still amount to jointly engaging in the challenge within the participant frame.

Of course, the above assumes that the other participant frame conditions are met as well. In other words, each agent must intend being (separately or jointly) fulfilled by the plan completion (a), as well as everyone being adherent of the explicit rules of the game (b), being responsive to each other (d), and being supportive of each other (e). These latter three be-goals (b, d, e)—along with the joint do-goal (g) and joint motor-goal (i)—are also positively interdependent, so that they cannot be satisfied unless they are satisfied for all the participants,[49] and this interdependence persists based on feasibility, desirability, or obligations. Finally, the intentions presuppose voluntary acceptance, and the agents must mutually trust that they carry the aforesaid mental states.

Collaborative GPaC is the default relationship in the participant frame when parallel activities are left out. The reason is, once again, the built-in autotelicity. While it is possible for the do-goal (g) to serve as a motor-goal for some side mission (e.g., earning money or gaining reputation), the self-purposiveness required of (playful) game play (recall Section

[48] Technically, other types of interactions (e.g., purely anti-social acts) could also count as GPaC, so long as such deeds are permitted within the player frame. They do not count as CaGP, however.
[49] This is due to the summative ($x + y$) or non-summative (xy) group subject included in the act description, meaning that each agent intends and expects the act to be realized by everyone (e.g., y intends that $x + y$ be rule-adherent—and vice versa). Even though one can be rule-adherent alone, for instance, it is not possible to independently satisfy the we-indexical versions of that same goal-content.

3.2.1) means that engaging in the activity is still its own program. And because collaboration was defined by a shared do-goal, (autotelic) GPaC is thus inevitably collaborative, even if it is symbiotic, coopetitive, or competitive outside the activity.[50]

Further, if the collaborators' individual motor-goals (j) involve multiple active parts, the activity may be described as *multilateral* GPaC (e.g., two players giving inputs on their controllers). If, on the other hand, only one agent assumes an active role—with the others' actions being omissive (yet seeing to it that the goal is pursued)—their collaboration corresponds to *unilateral* GPaC. For example, live streamers may play video games for those who do not have direct access to the product but desire to engage in and comment on the shared experience (Taylor, 2018, pp. 38–44). Note, however, that multilateral interaction does not require mutual activeness at the same time, as the roles could be asynchronous with no task interdependence (e.g., taking turns by passing the game controller).

The collaborative foundation also means that GPaC is performed either in the *pro-group individual* (PGI) or in the non-summative *group* (G) agential mode. Since the do-goal is shared—and thus the activity is (at least partially) pursued for the benefit of everyone—*private individual* (PRI) mode is not possible here (unless, of course, the potential parallel programs are figured in). For the same reason, PGI-GPaC and G-GPaC allow the intentions to be thought as "ours," although in the former—which is still dominated by selfish interests—the joint entity is merely a summative shorthand expression for all the participants involved in the act. In contrast, the latter requires an additional goal of being (irreducibly) one with each other (f). By collectively (pretend) accepting (f) the participants thus construct the intentional group agent to which they delegate the authority of the plan, including the superordinate be-goal of fulfillment (a). This agreement also means that G-GPaC, unlike PGI-GPaC, always persists based on mutual obligations.

[50] In the symbiotic cases the do-goal (g) would serve as a joint motor-goal contributing to non-conflicting personal programs (learning, research, production, etc.), whereas in the coopetitive instances it would further conflicting personal programs (e.g., internal rivalries in a sports team). GPaC with competitive (player frame) game play could be externally competitive if overcoming the challenge (h) holds value beyond the play as well. As Stenros et al. (2011) assert, "a competitive game is competitive outside of the game only if extraludic meaning is attached to it (professional sports, gambling and duels to the death)."

PGI-GPaC can often be seen in team sports, for instance, where each team member collaborates during the conflict, yet they might still opt for strategies that are ideal for their personal fulfillment but suboptimal for the group (e.g., attempting a selfish play to be the hero of the game, or to improve one's individual stats). In G-GPaC, on the other hand, the participants always seek strategies that are optimal for the team, due to the collectively constructed, non-summative group agent to whom the whole intention—and thereby also the superordinate be-goal of fulfillment (a)—is attributed. In other words, the group identity becomes the underlying system concept instructing the participants' reasoning, goals, and actions. Vesa's (2013, pp. 119–120) ethnographic study explains how corresponding modes manifest in intergroup settings: in *progroup* cases, the game play mainly aims at the satisfaction of one's own group but may be opportunistic regarding the wider organization; in the *we mode* cases the agents are in turn guided by the ethos of the latter.

To some extent, the above helps to clarify the discussions about the role of the collective versus the self in defining multiplayer game play. For example, when Myers (2010, pp. 127–131) criticizes the idealization of cooperative and productive play as neglecting the selfish foundations of games, it seems that he is primarily referring to the agential mode, not the interaction relationship per se. Indeed, as he (2017, pp. 1–16) argues elsewhere, games are universally cooperative due to the mutual act of agreeing upon the rules, even though this cooperation may become subordinate to competition within the paradoxical semiotic system of games (see Section 5.3). On the other hand, while McGonigal (2011, p. 272) declares that "gamer culture is moving insistently in the direction of more shared intentionality" the promoted collectivity mostly concerns the collaborative interaction between the players, instead of the agential mode. Interpreted this way, the ideal of productive and prosocial play may also leave room for selfish reasoning.

Accordingly, then, emphasizing the individualistic parts of game play need not deny the prosocial and collective spirit of the activity or the potential for stronger group identification. Conversely, to say that playing games together is always and necessarily collaborative is not categorically downplaying the self-regarding characteristics of play. Nor is it automatically advocating for social cohesion as the exemplary or proper way of playing. To avoid confusions, the distinction between the interaction relationships and the agential modes is particularly useful in the related debates.

5.2 Cooperation as Game Play (CaGP)

Since CaGP is exclusive to the player frame, where mere participation in the challenge is not sufficient—and where the rules can include anything—all kinds of cooperative interaction relationships and agential modes are possible within its scope. As indicated by Appendix 1, common to all of them is the do-goal of overcoming a genuine challenge (h), joint motor-goals (i) consisting of separate motor-goals (j), the be-goals of fulfillment (a) (implying correct emotional attachments to the outcome), efficiency (c), mutual responsiveness (d) and mutual support (e), separate agentive subjects in relation to (j), and summative or non-summative group subject—as well as positive outcome interdependence—in relation to (d), (e) and (i). Mutual trust on others' mental states is required in CaGP as well, though full reliance is not needed (e.g., in games with traitor mechanics).

Competitive player frame game play—while cooperative from the GPaC perspective—does not satisfy the above conditions, since only (d) involves a group subject and positive interdependence. Instead, all the other necessary goal-contents (a), (i) and (j) are personal and negatively interdependent, which effectively excludes it from CaGP. Playing tennis, for instance, presupposes mutual responsiveness (e.g., moving around the field, trying to return the ball)—and in this case also mutual rule adherence (b)—yet all the motor-goal sequences still aim at the failure of the opponent's sequences, and the do-goal of overcoming the challenge can be satisfied if and only if the other one loses. That said, competitive game play may still run parallel to CaGP. For example, some game design patterns include giving collaborating players individual scores or allowing them to betray each other during their interactions (Reuter, 2016, pp. 176, 179).

Coopetitive CaGP is otherwise akin to competition but entails joint motor-goals (i) and the be-goals of mutual support (e) with summative group subjects and positive interdependence. This satisfies the minimum conditions of CaGP, even though the long-term do-goals (h) and the be-goals of fulfillment (a) are negatively interdependent. A typical case of coopetition would be a trading sequence in an otherwise competitive context, such as two players exchanging properties in Monopoly for the short-term benefit of both, while aiming to bankrupt each other and win the game by themselves in the long-term.

Symbiotic CaGP, on the other hand, differs from coopetition only by the fact that it lacks both positive and negative interdependence relative to the do-goal of winning (h) and the be-goal of fulfillment (a). These personal distant goals can thus be attained independently, regardless of whether the other players satisfy their corresponding goals or not. The lack of a shared long-term objective does not mean that the interaction itself would necessarily be short-lived, however. With no negative interdependence involved, symbiotic relationships may be more long-lasting and stable compared to coopetitive CaGP: for example, a group of players could meet up regularly in a virtual game world to exchange resources, before splitting off to use those assets in their personal challenges.

Collaborative CaGP is instead distinguished by the shared do-goal (h), entailing a summative or non-summative group subject and positive outcome interdependence. Thus, the agents are not only joining forces in some individual sequence (e.g., *x* attacks the enemy while *y* casts healing spells); they are trying to overcome the whole conflict (i.e., win the game) together. Of course, it may sometimes be difficult to draw the line between motor-goals and do-goals in this respect, as games are typically a series of challenges, and some of them—such as role-playing games—need not have an end or a winner, to begin with. The clearest sign that one has overcome a do-goal challenge is the attainment of the superordinate be-goal of fulfillment (a), after which the entire plan is completed, and the play session should, by all reason, come to a halt. Depending on the game examined, this condition can be interpreted more or less liberally, though.

Each of the aforesaid interaction relationships can be further divided to *multilateral* CaGP and *unilateral* CaGP, depending on the act descriptions of the separate motor-goals (j). As explained, predicates indicating multiple active roles point to the former, whereas a single active role implies the latter. For instance, unilateral collaborative CaGP could occur when the most skilled player hijacks the role of the less skilled ones to overcome the (genuine) challenge more efficiently, while in the multilateral case all players would contribute to that do-goal (though not necessarily in equal measure). Unilateral cases can also make sense in symbiotic and coopetitive relationships, insofar as it is necessary for the active agent's victory that the others achieve some of their motor-goals. In coopetitive game play with traitor mechanics, for example, it might be beneficial to offer one's help to others in order to gain their trust—only to betray them later.

As for the agential modes, PRI-CaGP is only possible in coopetitive and symbiotic CaGP, whereas PGI-CaGP and G-CaGP are only compatible with collaborative CaGP. Although all cooperative relationships have at least a weak prosocial foundation (viz., mutual support in relation to the motor-goal), pro-group and group intentions in the sense described in Section 4.2.1 require a shared, positively interdependent do-goal, which the agents attempt to satisfy for the group. And unlike collaboration, coopetitive and symbiotic relationships lack this element. It is also worth stressing that the modes of the participant and player frame are not mutually dependent. For example, G-GPaC might entail PGI-CaGP in a role-playing game where more selfish reasoning makes for a better story.

5.3 Frame Relations

To end this chapter, I will discuss two important features—and the related collective implications—of the underlying psychological frames that are not explicitly captured by the table in Appendix 1. The first deals with the *depth* (i.e., the representational complexity) of the framings, while the second concerns the *alignment* of the cooperators' personal framings compared to each other. Both aspects—covered in the sections below—have to do with the frame relations within GPaC and CaGP.

5.3.1 Depth

In this study, I have analyzed cooperative game play and the related goals from the double perspective of participants and players. Of course, the reality is not always so simple. As Erving Goffman (1974/1986)—who has further developed Bateson's idea (recall Section 3.1.1)—explains in his book *Frame Analysis*, the frame hierarchy of social interactions can run deeper than just the minimum of two layers. Similar to Bateson, Goffman considers the frame established when some conventional context gets coded by social clues, instructing one to interpret it in different light regardless of its resemblance to the original. Borrowing musical terms, he (pp. 43–44) calls such a transformed situation "the key" and the transformation process itself "keying." Or, if the intention is to make the participants falsely believe that the new interpretation is more real or dominating—which in its most harmless form occurs in playful contexts—one may use the terms "design" and "fabrication," respectively (pp. 83–92). More importantly, however, he (pp. 182–188) argues that the keyed and fabricated situations can also be further keyed and fabricated, extending the *transformational depth* of the whole framework.

Thus, while we can explain cooperative game play and the relevant subcategories by explicating the goals from the dual perspective of participants and players, in practice we may be dealing with several layers instead. Drawing from Goffman's theory, Fine (1983, pp. 185–187) identifies three levels of frames in fantasy gaming, for instance: *people* (ordinary world) *player* (world outlined by the game rules), and *character* (imaginary world with its own logic and culture). One also comes close to such multi-perspective in coopetitive CaGP, where the artificial conflict of the participant frame is first transformed to a genuine one in the player frame, and where the players then further transform their roles as rivals to those of cooperators (albeit temporarily). Since each keying and fabrication essentially carves a new frame of reference, mutually conflicting reasoning and, accordingly, agential modes and interaction relationships can occur simultaneously, without violating the consistency requirement of intentions.

In Monopoly, for instance, the agents may enter the competitive (player frame) game play with collaborative (participant frame) PRI-GPaC, and then engage in a cooperative trading sequence within another nested player frame. If this joint motor-goal is framed as an independent program (i.e., a do-goal), it can even count as G-CaGP—although combined with the superordinate (competitive) perspective it remains coopetitive PRI-CaGP. The sequence might therefore have, among other potential combinations, the following framing structure, where the inner brackets denote the transformed frames (recursively traceable to the outer-most frame that remains dormant on the background):

[Collaborative PRI-GPaC [Competitive PRI-GP [Collaborative G-CaGP]]]

From both analytical and practical standpoints, then, the appropriate label for cooperative game play largely depends on how the agents frame their goals in each situation: which keys and designs are currently active, and which are not. Since these interpretational relations can sometimes have more depth and complexity than meets the eye—and players may also switch back and forth between the frames (Fine, 1983, pp. 196–200)—the overall collective experience could be characterized by multiple GPaC and CaGP categories, intertwined with in-between competitive layers. To grasp these nuances, empirical studies on cooperative game play should not be limited only to games designed for cooperation, nor should they ignore the aforesaid framing dynamics.

5.3.2 Alignment

As explained in Section 3.3.2, the self-referentiality between the participant and player frames can go both ways in game play, so that either of them could be pretend accepted while the other is genuinely accepted. In other words, the entailed paradox is what defines the activity, not the predominance or "realness" of one frame over another (cf. Goffman, 1974/1986, pp. 269–270; Myers, 2012). This has interesting implications regarding collectivity, however, as we may have a situation where one agent pretends what the other agent deems genuine (and vice versa), yet the actual goals could still be compatible to a degree that allows for GPaC and CaGP to emerge. After all, pretending is not equivalent to deception here; rather, players regulate their behavior as if they truly believed something, whereas liars would only aim at making others believe.[51]

Thus, while corresponding referential hierarchies would undoubtedly contribute to more stable relationships, they are not necessary for cooperative game play—and neither are identical plans and agential modes. As Goffman (1974/1986, pp. 346–347) notes, some deviation in involvement may usually be tolerated without the frame breaking (especially if these divergencies are credibly disguised). In games, such misalignments might occur when one's urge for winning takes over the autotelic aim of engagement, for instance, or, conversely, when not enough emphasis is put on the win in the player frame. In Goffman's (1974/1986, pp. 308–321) terms, the former would be a case of "upkeying" and the latter of "downkeying," both of which represent a type of "misframing." Similarly, the agents could misinterpret their long-term plans and modes of reasoning, which—depending on the seriousness of the error—may or may not break the cooperation, once detected. Table 3 illustrates the potential framing alignments (between *x* and *y*) with examples of cooperative game play combinations (the list is obviously not exhaustive, due to the vast number of possible cases). The participant frame is displayed on the left and the player frame on the right. In addition, the pretend accepted frame (inner brackets) is highlighted in italics, whereas the genuinely accepted frame (outer brackets) is not.

[51] Moreover, Bratman (2014, pp. 37–39, 101–102) maintains that deceptive shared activities are not shared *cooperative* activities—even if they are shared *intentional* activities.

Table 3. Examples of framing alignments in cooperative game play.

INCOMPATIBLE ALIGNMENT	*x*: [Collaborative G-GPaC [*Competitive PRI-GP*]] *y*: [Collaborative G-GPaC]
	x: [Collaborative PRI-GPaC [*Collaborative G-CaGP*]] *y*: [Collaborative PRI-GPaC [*Competitive PRI-GP*]]
IMPERFECT BUT COMPATIBLE ALIGNMENT	*x*: [Collaborative PRI-GPaC [*Symbiotic PRI-CaGP*]] *y*: [[*Collaborative PRI-GPaC*] Symbiotic PRI-CaGP]
	x: [Collaborative G-GPaC [*Collaborative PRI-CaGP*]] *y*: [Collaborative PRI-GPaC [*Coopetitive PRI-CaGP*]]
PERFECT ALIGNMENT	*x*: [Collaborative G-GPaC [*Coopetitive PRI-CaGP*]] *y*: [Collaborative G-GPaC [*Coopetitive PRI-CaGP*]]

Incompatible alignment results when the dual (or multi-) perspective is missing, or when the opposing modes and relationships become evident. For example, one might collaborate in the participant frame by engaging in an artificial conflict but fail to read the conflict as genuine in the player frame. And since games were defined by the said paradox (recall Section 3.3), the situation cannot count as cooperative *game play*, specifically. The frame-breaking could also happen when CaGP is mistaken for (purely) competitive game play. Due to the separate means of the latter, the misalignment is revealed instantly, whereas coopetitive and symbiotic CaGP could cover the error for some time.

Imperfect but compatible alignment includes cases where the self-referencing, modes or interaction relationships deviate from each other—though not in a way that would immediately break the interaction. For instance, if one player starts giving too much importance to overcoming the challenge (viz., "upkeying" the non-artificiality), the self-referentiality between the participant and player frames could be inversed (i.e., *x*'s untransformed frame reflects *y*'s transformed frame, and vice versa). The underlying reasonings can also vary without necessarily failing the activity; the selfish hockey player (recall Section 4.2), engaging in PGI-GPaC instead of G-GPaC, may fall under this category, for example. Comparably, certain conflicting relationships—such as collaborative and coopetitive CaGP—could succeed over a sequence, until the contradicting long-term plans are noticed.

Perfect alignment occurs when everything is interpreted along the same lines among the participants. In other words, there exists mutual understanding not only about the relationships and agential modes of the attempted interactions but also the underlying framing structure and the entailed representational recursion. This is, obviously, the collectively strongest version, as the perceived similarity of the mental states—and, accordingly, the potential for group entitativity (recall Section 4.1.2)—is the most prominent.

6 CONCLUSION

In this conceptual analysis, I have pursued an intentional explanation of cooperative game play—and its stronger and weaker subspecies—by investigating the agents' goal-contents and the related psychological modes (viz., acceptances and intentions) in both the external and internal instances of the activity (GPaC and CaGP). It was argued that the combination of these mutually paradoxical perspectives was necessary for (analytically) separating the phenomenon from non-playful cooperative affairs, as well as understanding the collective dynamics between the respective psychological frames (participant and player). Further, cooperative game play was considered an umbrella notion for several subcategories, differentiated by the enclosed goal relations and reasoning processes at three levels of abstraction: be-, do-, and motor-goals. These included collaborative, symbiotic and coopetitive interaction relationships (and their multilateral or unilateral forms), and private individual, pro-group individual, or group agential modes.

Together with the possible framing alignments between the agents, the above classification constitutes a flexible framework for identifying more solid or fragile versions of cooperative game play. In the collectively strongest case, for example, the agents would be collaborating as a non-summative group entity in both participant and player frames, and the representational hierarchies (i.e., the self-referential relations between genuinely and pretend accepted contents) of the underlying psychological frames would align perfectly. In the weakest event, by contrast, the agents would collaborate as merely pro-group individuals within the participant frame, while competing as private individuals in the player frame, and the alignment of their framing structures would be imperfect—albeit compatible. Besides these polar opposites, multiple other combinations are obviously possible as well. And if the potential parallel activities (outside of game play) and the potential additional frames (e.g., character frames) were considered in this context, even more complex variations of cooperative game play could be distinguished.

Returning to the research questions of this thesis, the identified analysans (see Ch. 5) help explain the essence of cooperative game play and its subcategories (from the perspective of goals), while illuminating their differences to other social play forms. Excluded were,

for instance, unplanned, unconstrained, involuntary, solely autotelic or allotelic, prepackaged, unhelpful, accidental, solipsistic, and parallel play, each of which can occur in collective contexts (in some cases even jointly) but cannot be characterized as intentionally cooperative game play in the assumed playful and prosocial sense. The separation between the interaction relationships, agential modes, and frames, on the other hand, inform the discussions about the tensions between the self and the group—as well as cooperation and competition—in multiplayer game play. The conclusion was that externally such activities are always collaborative, although not necessarily conducted as a non-summative group or regarded as primary in relation to internally competitive game play (as the self-referentiality of the psychological frames works in both directions).

When comparing the findings to the literature reviewed in Section 1.1, we can see that most elements brought up in the earlier definitions and classifications are also included in my synthesis: A shared goal—by far the most common condition—appears in all cases of cooperative game play analyzed, at least at the motor-goal level. Other ideas, such as mutual consensus on the rules (systemic cooperation), coordination and supplementation of each other's actions, as well as group identification (generalized other, play community), are in turn reflected by the be-goals of rule adherence, responsiveness, support, and unity (though the last one is only required by the stronger versions). Further, the distinctions between shared long-term or short-term goals and positive or negative interdependence correspond here to the various interaction relationships, whereas the modes of commitment—previously observed in player organizations—have their (interpersonal) counterparts in the aforesaid agential modes. However, my theory also complements these conditions and categories in many ways, by specifying their connections to the players' goal-hierarchies and the associated psychological modes and frames. Moreover, it offers solutions to the detected terminological inconsistencies.

Aside from elaborating on a notion that has so far lacked dedicated conceptual analyses—as well as bridging previous theories from game studies and the philosophy of collective action—one might still wonder about the usefulness or validity of these results. To conclude this study, then, I will consider some potential application areas, points of criticism, and directions for future research, covered in Sections 6.1 and 6.2 below.

6.1 Application Areas

From a design perspective, the theory presented in this study provides a useful conceptual footing when planning for certain types of cooperative experiences—or when attempting to avoid some other forms of social play. For instance, the problem of the most skilled or authoritative players assuming or dictating the roles of the less skilled and more submissive ones could be alleviated by aiming for cooperative game play that encourages pro-group or private individual reasoning, instead of rigorous group conformism. As Burgun (2013, p. 143) suggests, competitive-cooperative outcome conditions or traitor mechanics may sometimes resolve the harm that too strict social control causes to the play experience of those who seek some creative freedom alongside the social aspects—the caveat being that the game is then no longer purely cooperative. In addition to coopetitive relationships, then, a closer inspection of symbiotic alternatives could prove fruitful as well.

Regarding the interest in utilizing cooperative game play in serious settings (e.g., learning environments), the definitions offered here serve as a reminder of the role of the players and their personal or collective attitudes in establishing the play. While formal analyses of game mechanics designed for cooperation are not insignificant factors when building gamified platforms, simply picking and choosing such patterns does not yet address the emergent nature of player agency or the psychological attributes (e.g., autotelic intentions and paradoxical goal-contents) distancing the activity from mundane, non-playful group efforts. Aside from the game system itself, it is also crucial to acknowledge the connections to the agents' intentionality: how the reasoning may not always align with the intentions of the designers, and how individualistic and collective interests may intertwine in surprising and complex ways during the interaction.

The results might also be of interest for the research of social interaction in multiplayer games. When investigating the effects of cooperative and competitive mechanics on aggressiveness or toxic behavior, for example, a more profound understanding of the interplay between self-oriented and group-oriented modes and relationships—within and between the participant and player frames—is required for making credible arguments one way or another. Depending on the perspective, a combination of G-GPaC and competition could be collectively stronger than a mix of PGI-GPaC and PGI-CaGP, for instance.

Lastly, while this study has concentrated on cooperative game play between intentional planning agents (i.e., human participants), the theory is not necessarily useless in the design and analysis of single player games, either. After all, in many video games players do "cooperate" with computer-controlled characters—although the latter have no free will of their own. If one takes the so-called *intentional stance*, however, attributing intentional mental states to such actors could be reasonable if it helps to predict their behavior, such as when one has to treat a computer opponent in Chess as a highly intelligent and rational agent to be able to prevail against it (Dennett, 1971).

6.2 Limitations and Future Guidelines

Of course, the preceding analysis is not without shortcomings and potential points of criticism. First, some may argue that the essentialist definitions with their necessary and sufficient conditions are too strict to be useful in practical contexts, where—as admitted earlier—game play could overlap with other types of activities, such as work or rituals. Second, the requirement of planning agents might seem overly demanding, considering that spontaneity was recognized as one of the core features of playfulness. Third, and similar to many other theories explaining collective actions, the analysis is susceptible to circularity, as the joint agentive subjects appear in the contents of the intentions, and because the strongest versions presuppose a prospective act of collective acceptance. Fourth, from a phenomenological standpoint, cognitivist accounts of collective intentionality could be criticized of ignoring the many affective factors (viz., shared emotions) contributing to the agents' intentions (Chelstrom, 2016; Krueger, 2016).

As a response to the above points, necessary and sufficient conditions should be understood here—first and foremost—as tools for exposing argumentation errors and internal inconsistencies in the analysis. Regardless of one's stance on essentialist definitions, I find value in aiming at that precision, even if some odd cases may slip out of the scope of the analysans. Regarding the plan-centric view, my theory need not strictly exclude spontaneous—or even irrational—acts, insofar as they occur *within* the larger, goal-directed framework. The circularity problem, as discussed in Section 4.3, need not lead to *inferential* circularity—though this remains an open question in the philosophy of collective actions. And as for the phenomenological critique, at least some emotional aspects—such as safety, trust, fulfillment, and unity—are implied by my analysans.

The limitations open pathways for future research on the topic, however. Besides goal-based explanations, affective intentionality could provide a complementary angle for the analysis of the concept: how do shared feelings (love, respect, empathy, unity, envy, mistrust, etc.) help to define the collectively stronger and weaker forms of cooperative game play, for instance? Mutual trust in multiplayer games—only briefly touched upon in this study—is an intriguing subject in its own right, with some preliminary theoretical models already proposed (see, e.g., Koster, 2018). And beyond the intentional elements, the phenomenon could also be explained by its structural, processual, or functional aspects. Due to the growing multidisciplinary interest in cooperative game play (see Ch. 1), wide-ranging and versatile conceptualizations will be needed.

In terms of empirical research, a natural next step would be to operationalize the presented intentional components into suitable metrics that could be utilized in player observations, surveys, and questionnaires, for example. Another obvious direction would be to explore the connections of different design patterns to the said categories: which mechanics nurture or impede each relationship and agential mode? Finally, while my analysis focused mainly on interpersonal cases of cooperative game play, the applicability of the components should also be tested in intergroup contexts, such as team competitions or larger player organizations. The ongoing success of MMO games—and the rising popularity of esports and live streaming (see, e.g., Taylor, 2018)—ensure that the potential avenues for subsequent studies on the topic are abound. As the landscape of multiplayer game playing keeps changing and diversifying—along with the commercial and academic interests—research on cooperative game play is warranted to continue.

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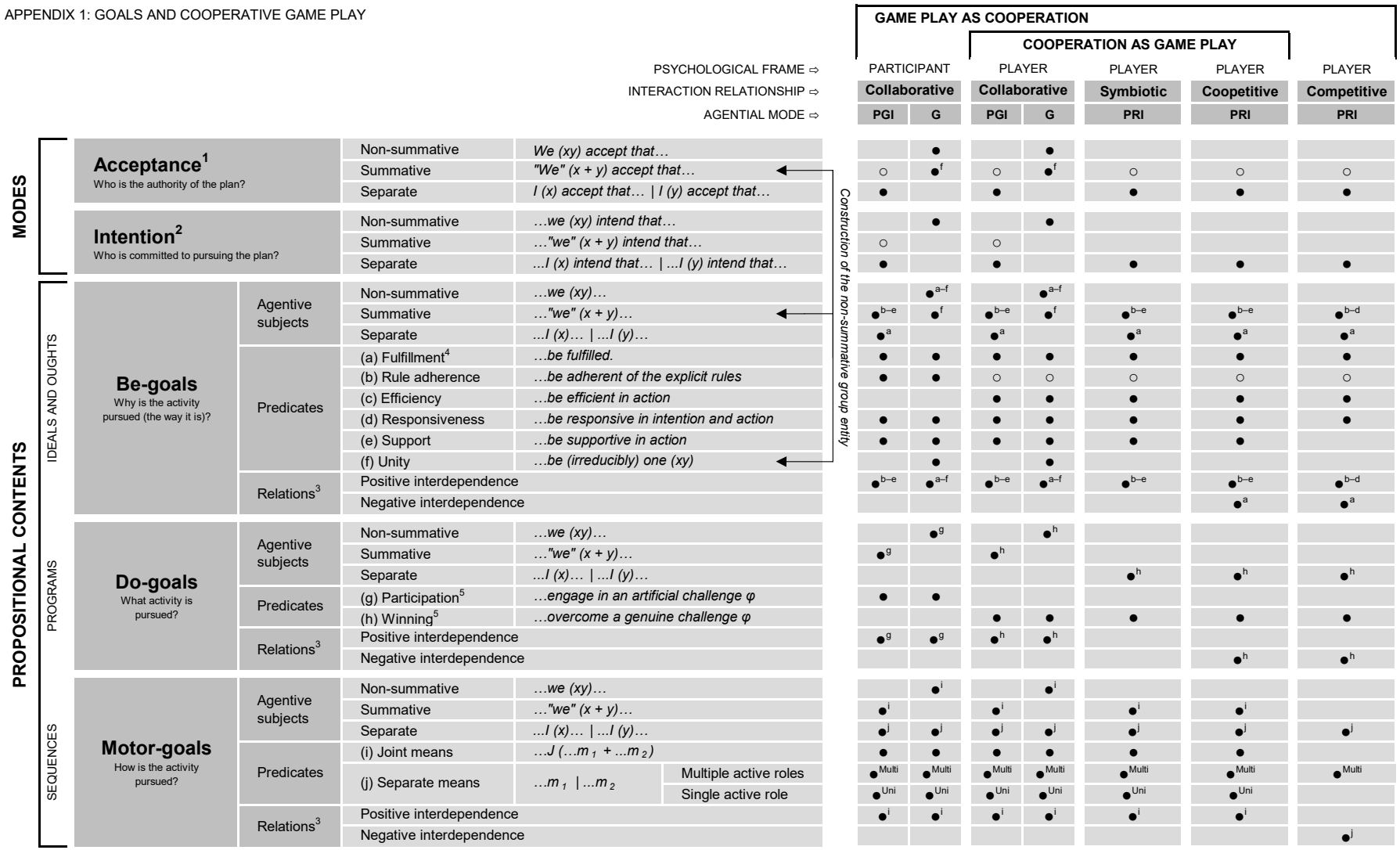
APPENDIX 1: GOALS AND COOPERATIVE GAME PLAY



● = Necessary ○ = Possible **PRI** = Private individual **PGI** = Pro-group individual **G** = Group **Multi** = Multilateral relationship **Uni** = Unilateral relationship

[1] The acceptances are voluntary (one can at any time abandon the plan without bringing any substantial harm to oneself, based on one's subjective evaluation).

[2] In the participant frame, the intentions are both autotelic (any motor-goal satisfies the do-goal of participation) and allotelic (the participants have to account for explicit and implicit rules).

[3] Requires mutual trust on each other's mental states. Persists based on feasibility, desirability, or obligations.

[4] Superordinate to any other goal. Entails appropriate emotional attachment to the plan completion.

[5] Either (g) is genuinely accepted in the participant frame and (h) is pretend accepted in the player frame—or vice versa.