

# Collective Intentionality, Team Reasoning and the Example of Economic Behavior

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## Introduction

Collective intentionality is essential to understanding how we act as a “team”. In this article, I will offer an overview of the contemporary debate on the sense of acting together. There are some theories that focus on unconscious processes and the capabilities we share with animals (Tomasello, Walther, Hudin) and others that concentrate on the voluntary, conscious processes of acting together (Searle, Tuomela, Bratman, Gilbert). Collective intentionality is also a relevant issue for economic theories. The theories of team reasoning move from the assumption that agents can sometimes behave according to the beliefs and preferences attributed to a group or a team.

From a philosophical perspective, intentionality is the propriety of the human mind which allows it to be directed at objects, state of affairs, goals and values. In this sense, intentionality is the means for knowledge and action. Consequently, collective intentionality (CI) corresponds to that property of human minds to be “jointly” directed at objects, states of affairs, goals and values.

There are some important modes in which CI occurs in everyday life: 1) shared intention, 2) joint attention, 3) shared beliefs, 4) collective acceptance, 5) collective emotion. Shared intention means that the participants act in the world together intentionally, in a coordinated and cooperative fashion, and to achieve collective goals. Joint attention is the process through which the world is experi-

enced as perceptually available for a plurality of agents. Shared beliefs represent our common background knowledge that becomes salient when we decide to share information with others. Collective acceptance is the fundamental prerequisite for creating social practices, a world of symbols, institutions and social statuses. Collective emotions are very important because they provide us with a conception of common good; they create the group perspective from which we can reason and act; moreover, we can conceive ourselves in terms of our social identities and social roles.

### **The Famous “Central Problem”**

Let us first address the central problem connected with CI: is CI a primitive phenomenon or does it derive from the collection of individual mental states?

If I want to go to the cinema to see “The Wolf of Wall Street” tomorrow and you want to go to the cinema to see “The Wolf of Wall Street” tomorrow, does it mean that we have a collective intention? No, to have a collective intention does not mean to summate individual intentions. CI is irreducible to individual intentionality, and by virtue of this irreducibility, CI can be attributed to participants *as a group*. Obviously, the fact that intentions are shared by a group does not block the attribution of the intentionality in question to the individuals. So, for instance, to say that a group intends to go for a walk is *the same as* saying that the participating individuals intend to go for a walk.

Some philosophers criticize the irreducibility thesis and propose the individual ownership thesis (Miller, Pettit), namely the basic claim that each individual has a mind of his/her own and has a sort of intentional autonomy that is incompatible with the view that individual minds are somehow fused when intentional states are shared.

Let us introduce a brief history of CI. This notion was introduced by John Searle (1990), but we can try to find some similar background ideas. Starting from sociology, Emile Durkheim (1898) presents a study on “collective consciousness” and Max Weber (1922) thinks that we have a “subjective meaning” of what he calls communal or consensual action. In the field of philosophy, the most important sources come from phenomenology and existential philosophy. Gerda Walther (1923) maintains that we can have empathetic experience and identifica-

tion with others. Max Scheler (1954) and Martin Heidegger (1928/29) think that a common intentional attitude like a reciprocal awareness is not the combination of individual intentionality and reciprocal attitudes. In the ambit of analytic philosophy, Wilfrid Sellars (1980) presents an interesting account of what he calls “we-intentions”. We-intentions involve a shared point of view from which the participants may critically assess each other’s contributions.

## CI as a Natural Capacity

If we think that CI can be an unconscious process, then our task is to consider our natural capacity for shared intentionality. CI is at the center of important studies in evolutionary anthropology and developmental psychology. Michael Tomasello (2009) and his collaborators investigated our capacity for shared intentionality that is the most basic difference between humans and other primates. They did many experiments by studying the behavior of primates and concluded that they seem to be apt strategic reasoners with an impressively well-developed sense of what other individuals perceive. On the contrary, humans have an inclination to cooperation even where this does not immediately serve one’s own purposes. This basic cooperative-mindedness expresses human capacity for shared intention and so it is the prerequisite for human communication and language.

Jennifer Hudin (2009) shows that we have natural reasons to cooperate or to act in a *we mode* and moreover, that we share this possibility with many animals. It seems an important philosophical point to find some natural locus for demonstrating the fact that we “can” act in an altruistic way because of an emotional bond. I quote three examples:

- Two people are engaged in a conversation while they are walking down the street. They come to a stoplight at the corner of the street and without interrupting their conversation, they stop. When the light turns green, they proceed across the street with no lapse in their conversation.
- George Bailey decides to commit suicide one snowy evening by jumping off a bridge into a river when he sees a man who has just fallen into the river. George jumps into the river and saves the drowning man.
- Lassie (a dog) sees Timmy fall into the lake. Lassie jumps into the lake and pulls Timmy to shore, saving his life.

At first glance these actions seem irrational if we reason according to the laws of self-interest. Thus the conditions for social acts, which must be underscored to overcome the constraints of this approach are the following: 1) they require another person to be the acts that they are and 2) they require a certain degree of self sacrifice even if this means minimally censoring their behavior in terms of their self interest in order to consider the benefit of another.

The interesting point of Hudin's argumentation is the functioning of social intentionality as entailed by the cognitive operator principle (COP). Hudin's challenge is to demonstrate that COP is responsible for collective intentionality by showing how neural mechanisms could operate to transform the indexicality of the mental state from I to we, from the self into the collective self.

## **CI as a Voluntary Phenomenon**

Let us briefly refer to the most relevant studies of CI. John Searle (1995, 2010) coined the term "collective intentionality" while extending his previous research on intentionality and speech acts to society. He thinks that CI is as "primitive" as individual intentionality and "has to exist inside individuals' heads". CI cannot be analyzed as the summation of individual intentional behavior. The sense is that persons think and conceive a joint action in a "we" form, which is characteristic for cooperation. Joint action means that each person derives his/her contribution and participatory intention from his/her collective intention, assuming that the respective other will perform his/her contribution.

Michael Bratman (1999) presents a study on joint activity. The participants have to intend this activity in such a way that their intending is aligned both socially and with other plans on each side and that it is common knowledge among them. He rests his conception on three fundamental points:

- 1) participants must be mutually responsive to the intentions and actions of others;
- 2) participants must each be committed to the joint activity;
- 3) participants must each be committed to supporting the efforts of the others.

Raimo Tuomela (1995, 2007) introduced the theory of "we-intentions" regarding joint activity, grounded in:

- 1) the intention of the agent to do his/her part;
- 2) a belief that others will do their part;
- 3) a belief that there is (or will be) mutual belief among the agents involved that relevant opportunities for performing the joint activity exist.

Margaret Gilbert (1996) focuses on the notion of “joint commitment”, namely a kind of commitment of the will. In this case, the wills of two or more people create it, and two or more people are committed to it. Joint commitments imply a normative relationship in some way, then each of the partners is obligated to act accordingly and each of them is entitled to demand the other’s conforming action. Gilbert introduces three conditions:

- 1) people must know that are entering into an agreement by communicating it clearly (even if they are coerced);
- 2) the agreement implies that each member is obligated to completing the final goal;
- 3) because of the implied obligation, any and all members may rebuke anyone who fails to do their part towards achieving the goal. The right to rebuke is stated as a necessary feature of the group arrangement. This functions as a tool for each member of the group to ensure the goal is achieved.
- 4) in order to break the agreement, there has to be joint consent among all members of the group.

## **Collective Intentionality and Team Reasoning**

Team reasoning is an important topic in the field of CI because it studies rational coordination. Coordination is at the center of classical “game theory” and “Bayesian equilibrium”, which apply to economics. Game theory fails because it does not consider conventions and institutions that help the agents to coordinate their actions. For this point, we can also refer to the latest research conducted by Cristina Bicchieri on the function of social norms to overcome the problems of game theory (Bicchieri 2016).

The idea of team reasoning is that agents may choose from a joint perspective; they do not consider what is best for them, individually, given the other’s expected choice, but look at such situations with an eye on what is best for them “jointly”. Team reasoning in economics is represented in the very important

theories of Michael Bacharach (2006) and Robert Sugden (2000). They build on the assumption that sometimes agents can behave according to preferences and beliefs attributed to a group or a team. For this reason, we have to accept the necessity of institutions to account for coordination and more generally for agent’s choices in strategic interactions.

Institutions are usefully defined as *social norms, conventions, legal rules or formal organizations that generate a set of consistent beliefs in a population such that a stable behavioral pattern is observable through time*. Starting from this idea, I refer to Herbert Gintis (2009) and Cyril Hedoin (2013), who formalize institutions as “correlated equilibria” in games.

**Table 1: The property game**

		Bob	
		attack	negotiate
Ana	attack	$(V-C)/2; (V-C)/2$	$V; 0$
	negotiate	$0; V$	$V/2; V/2$

Table 1 shows the so-called “property game” (also known as the chicken game). It depicts an interaction where two agents are fighting for an asset (a prize, a territory) of value  $V$ . Each player has two strategies available: either to attack in order to take the asset by force or to negotiate peacefully. When one of the players attacks while the other attempts to negotiate, the former wins the prize for sure. If both negotiate, they share the asset equally. If both attack, each player wins with a probability of  $1/2$  and the loser suffers a loss of  $-C$  that is interpreted as an injury. It is assumed that  $C > V$ .

The players know this structure and act in accordance with the two Nash equilibria (negotiate; attack). There is also a third strategy, namely the case in which each player attacks with the probability  $V/C$ . But because  $C > V$ , each player could prefer to lose the asset rather than fight when the other attacks. But this result is inconsistent with the fact that players want to take the asset.

Inconsistency can be avoided if we consider the institutions as already having selected one of the equilibria. Entitlements to the asset depend on the situation of the two players.

**Table 2: The property game with incumbent and challenger**

		<b>Bob</b>			
		always attack	always negotiate	attack if incumbent	attack if challenger
<b>Ana</b>	always attack	$(V-C)/2$	$V$	$(3V-C)/4$	$(3V-C)/4$
	always negotiate	$0$	$V/2$	$V/4$	$V/4$
	attack if incumbent	$(V-C)/4$	$3V/4$	$V/2$	$(V-C)/2$
	attack if challenger	$(V-C)/4$	$3V/4$	$(V-C)/2$	$V/2$
<i>N.B. Only the payoffs of the row player are shown.</i>					

Table 2 shows that a norm could distinguish between the actual possessor of the asset (the incumbent) and the non-possessor (the challenger). Starting from the assumption that each player is equally likely to be the incumbent and the challenger, they can use “conditional” strategies which associate an action to a state of the world. A “property norm” will select, for instance, the (attack if incumbent; attack if incumbent) equilibrium avoiding costly conflicts that arise with the probability of  $(V/C)^2$  when the players play the mixed-strategy equilibrium.

To explain the problem of coordination, we can therefore choose between standard economic theory and CI as the ground for joint action and coordination. The former maintains that institutional facts are tied to a set of actions, which entail a set of incentives, namely a measure of relative desirability of the components of a set of possible actions. We do not need a deep analysis of the source of these incentives as long as they function for the desired behavior. CI on the contrary provides a deep background for theories of coordination and institutions.

## The Role of the Institution for Cooperation

Hedoin tries to elucidate the distinction between the two perspectives. He quotes a very famous example by Searle:

Consider for example a primitive tribe that initially builds a wall around its territory. The wall is an instance of a function imposed in virtue of sheer physics: the wall, we will suppose, is big enough to keep intruders out and the members of the tribe in. But suppose the wall gradually evolves from being a physical barrier to being a symbolic barrier. Imagine that the wall gradually decays so that the only thing left is a line of stones. But imagine that the inhabitants and their neighbours continue to recognize the line of stones as marking the boundary of the territory in such a way that it affects their behaviour. [...] The line of stones performs the same function as a physical barrier but it does not do so in virtue of its physical construction, but because it has been collectively assigned a new status, the status of a boundary marker (Searle 1995, 39–40).

Smit et al. (2011) offer the following alternative account of borders as institutional objects. Let's imagine two individuals who Hedoin will name, for the sake of consistency, Ana and Bob. These two individuals are lost on a desert island. After a dispute, Ana warns Bob that if he enters this half of the island she will beat him up. To give some substance to her words, Ana simultaneously points to two rocks on opposite sides of the island, cutting the island in half. Bob angrily replies to Ana that the same will be true for her if she enters his half of the island. Assume that the threats are credible. Given this assumption and provided that incentives to ignore the credible threats are insufficient for both individuals, then the invisible line drawn by the two rocks will actually function as a border. According to the authors:

It would be difficult to deny that a border had been set up on the island. But this has happened in a way that violates the essence of Searle's view. Firstly, the requirement for collective intentionality has not been met, as all the relevant thoughts and claims can be expressed using the singular 'I'. Secondly, nowhere is reference needed to any irreducibly social facts, objects, or properties. Both actors can understand the situation fully by using concepts like 'line', 'crossing', 'probability of getting beaten up', etc. [...] We need nothing



beyond an understanding of the incentives and beliefs of the two actors in order to grasp the situation fully (Smit, et al. 2011, 9).

The authors' account makes the creation of the border depend on the effectiveness of incentives. Contrary to what Searle argues, CI is not constitutive of the creation of the border. Hedoin thinks that the authors' argument, though perfectly in line with a standard rational choice or game-theoretic account, is partially misguided. It fails both to properly state Searle's approach and to acknowledge the hidden epistemic requirements for their explanation to be valid. The authors appear to underestimate the role of language in Searle's theory of institutional facts. Searle has forcefully argued that there cannot be institutional facts and institutions without language, i.e. that language is constitutive of institutional reality. Language is a set of symbolic devices representing something beyond themselves, and helps to convey meaning because it consists of symbolic devices that are publicly understandable.

The notion of "status function" is a peculiar kind of function from which we as humans create the social world. Our social world is strictly dependent on intentionality-relative functions that are characterized by two special features. They require (a) a shared intentionality, namely "collective intentionality", and (b) collective imposition and recognition of a status.

The "constitutive rule" is essential to the process of the constitution of institutions in general. The canonical form introduced by Searle (1997, 2010) is:

Status Function = X counts as Y in C

For instance, a certain expression counts as a promise in a certain context C. So, it is fundamental to assign functions to objects and persons. We use ordinary language to represent state of affairs and norms, namely to understand what the conditions are of satisfying different acts of speech (assertions, commands, promises, etc.). Beyond the classical dimensions of syntax, compositionality and generativity, there is a fundamental dimension which generates public norms, i.e. "deontology", which is characterized by the speech act of "declaration". For example, if we say "This is my house" or "This is my coach", we not only represent a state of affairs, but we create a deontology which manifests itself in rights, obligations and duties as well as in the acceptance of the corresponding speech acts on the part of the interlocutors. This is the process by which a public deontology is created, namely public reasons for acting that are desire-independent. Lan-

guage not only describes something but creates and “partially” constitutes what it describes and creates at the same time. Representations that partially constitute institutional reality, the reality of government, private property, money, universities and cocktail parties, are essentially linguistic. What must be clarified is the sense of what this “partially” constitutes, because language use works on the basis of a prelinguistic dimension embedding background capacities, such as the capacity to cooperate, to act as a “we”.

Together with the notion of status function, there are two more basic notions that occur in explaining the successful functioning and stability of social institutions. The first is “cooperation” as a “strong” form of collective intentionality and the second is “collective recognition” as its “weak” form. We think that these two forms of intentionality correspond to the notion of “flexibility”, which implies the voluntary control over our actions and to the notion of “rigidity”, which characterizes the mere following of rules in the sense of routine behavior (Giovagnoli 2016, 2017, 2018, 2019).

For example, in an actual transition when I buy something from somebody and put money in their hands, which they accept, we have full-blown cooperation. But in addition on this intentionality, we have prior of the transaction and continuing after the transaction an attitude toward the piece of paper of the type I am placing in the hands of the seller, that we both recognize or accept the pieces of paper as money and indeed, we accept the general institution of money as well as the institution of commerce. As a general point, institutional structures require *collective recognition* by the participants in the institution in order to function, but particular transactions within the institution require *cooperation* of the sort I have been describing (Searle 2010, 57).

First, we need to be moved to act in a certain way. We-intentionality works when we want to do something together (we have a collective intention) so that we can cooperate to achieve our common goal. As we already anticipated, collective intentionality takes a weak form (collective recognition) and a strong form (cooperation). Both are crucial to create and stabilize social norms and institutions. To schematize:

- 1) We have “collective recognition”, which means that people simply accept the deontic dimensions that structure the relevant social situation;

- 2) But, the actual performance of the required moves is an example of active cooperation, in which individuals enter in a new social situation, consequently acquiring new social statuses;
- 3) This fact is obtained by the performance of corresponding speech acts, depending on the roles of the agents in the relevant social contexts.

## **Conclusion**

We presented several conceptions of we-intentionality or CI. We recognize that a theoretical consideration of this notion also has important results for economics. Even though “spontaneous order” provides an explanation of how institutions can emerge and also of the capacities we share with animals, team reasoning introduces the plausible view of institutions as correlated equilibria in which players can coordinate.

Beyond this important contribution, we need to investigate the dimensions of cooperation and the role of ordinary language in the creation of the social world that represents the most important device humans have to coordinate their actions and to favor social order. Ritual behavior is a fruitful dimension that aims at favoring the stabilization of cultural norms and institutions. Non-human animals also have their rituals, but in the human case, they are expressed in a different form of we-intentionality. Moreover, they need conventional devices that are mutually recognized through ordinary communication. Rituals have the important function of helping to create social spaces in which individuals can share emotions, experiences, values, norms and knowledge. The function of helping to share experiences is fulfilled when a social space exists, created by cooperation with the view of reaching a certain goal. In this context, cooperation is a kind of intersubjectivity typical of human beings who, differently from apes, are able to have “collective intentionality”, i.e. the basic intention to cooperate and therefore to reach a certain goal together. If we want to achieve a positive result about the role of norms and institutions to coordinate social behavior, we need to move from an analysis of the notions of “weak” and “strong” cooperation, which are the fundamental dimensions of ritual behavior.

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## Summary

Collective intentionality is essential to understanding how we act as a "team". We offer an overview of the contemporary debate on the sense of acting together. There are some theories which focus on unconscious processes and on the capabilities we share with animals (Tomasello, Walther, Hudin), while others concentrate on the voluntary, conscious processes of acting together (Searle, Tuomela,

Bratman, Gilbert). Collective intentionality also represents a relevant issue for economic theories. The theories of team reasoning move from the assumption that agents can sometimes behave in accordance with beliefs and preferences attributed to a group or a team. We will point out the role of institutions as created by collective intentionality (Searle) for understanding coordination and cooperation.

**Key words:** collective intentionality, team reasoning, economic behavior, institutions, cooperation

## Streszczenie

### **Intencjonalność zbiorowa, myślenie zespołowe oraz przykład zachowania ekonomicznego**

Pojęcie intencjonalności zbiorowej jest kluczowe dla prób zrozumienia, w jaki sposób ludzie działają „zespołowo”. Przegląd współczesnej debaty na temat natury wspólnego działania, jaki proponuje niniejszy artykuł, pozwala wyróżnić w niej dwa główne wątki: część teorii skupia się na nieświadomych procesach oraz na kompetencjach, które dzielimy ze zwierzętami (Tomasello, Walther, Hudin), podczas gdy inne interesują się przede wszystkim świadomym, celowym podejmowaniem wspólnego działania (Searle, Tuomela, Bratman, Gilbert). Zbiorowa intencjonalność jest także istotna dla teorii ekonomicznych. Teorie myślenia zespołowego wychodzą z założenia, że podmioty działają czasami na podstawie przekonań i preferencji, które przypisują swojej grupie lub zespołowi. Dlatego na szczególną uwagę zasługuje rola, jaką w koordynacji ich działań i komunikacji między nimi odgrywają tworzone przez zbiorową intencjonalność instytucje (Searle).

**Słowa kluczowe:** intencjonalność zbiorowa, myślenie zespołowe, zachowania ekonomiczne, instytucje, współpraca