

# Lecture 08

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## 1. Joint Action: The Challenge

‘participation in cooperative ... interactions ... leads children to construct uniquely powerful forms of cognitive representation.’ (Moll & Tomasello 2007)

‘perception, action, and cognition are grounded in social interaction’ (Knoblich & Sebanz 2006, p. 103)

‘human cognitive abilities ... [are] built upon social interaction’ (Sinigaglia & Sparaci 2008)

## 2. What Is Joint Action? Bratman’s Account

‘I take a collective action to involve a collective [shared] intention.’ (Gilbert 2006, p. 5)

‘The sine qua non of collaborative action is a joint goal [shared intention] and a joint commitment’ (Tomasello 2008, p. 181)

‘the key property of joint action lies in its internal component [...] in the participants’ having a “collective” or “shared” intention.’ (Alonso 2009, pp. 444–5)

‘Shared intentionality is the foundation upon which joint action is built.’ (Carpenter 2009, p. 381)

‘I will ... adopt Bratman’s ... influential formulation of joint action ... each partner needs to intend to perform the joint action together “in accordance with and because of meshing subplans” (p. 338) and this needs to be common knowledge between the participants.’ (Carpenter 2009, p. 281)

## 3. What Joint Action Could Not Be

Objection: Meeting the sufficient conditions for joint action given by Bratman’s account could not significantly *explain* the development of an understanding of minds because it already *presupposes* too much sophistication in the use of psychological concepts.

The objection arises because not all of the following claims are true:

- (1) joint action fosters an understanding of minds;
- (2) all joint action involves shared intention; and
- (3) a function of shared intention is to coordinate two or more agents’ plans.

These claims are inconsistent because if the second and third were both true, abilities to engage in joint action would presuppose, and so could not significantly foster, an understanding of minds.

What are our options?

## 4. Development of Joint Action: Planning

Objection: ‘Despite the common impression that joint action needs to be dumbed down for infants due to their “lack of a robust theory of mind” ... all the important social-cognitive building blocks for joint action appear to be in place: 1-year-old infants understand quite a bit about others’ goals and intentions and what knowledge they share with others’ (Carpenter 2009, p. 383).

‘I ... adopt Bratman’s (1992) influential formulation of joint action or shared cooperative activity. Bratman argued that in order for an activity to be considered shared or joint each partner needs to intend to perform the joint action together “in accordance with and because of meshing subplans” (p. 338) and this needs to be common knowledge between the participants’ (Carpenter 2009, p. 381).

‘shared intentional agency [i.e. ‘joint action’] consists, at bottom, in interconnected planning agency of the participants’ (Bratman 2011).

‘3- and 5-year-old children do not consider another person’s actions in their own action planning (while showing action planning when acting alone on the apparatus). Seven-year-old children and adults however, demonstrated evi-

dence for joint action planning. ... While adult participants demonstrated the presence of joint action planning from the very first trials onward, this was not the case for the 7-year-old children who improved their performance across trials.' (Paulus Paulus, p. 1059)

'by age 3 children are able to learn, under certain circumstances, to take account of what a partner is doing in a collaborative problem-solving context. By age 5 they are already quite skillful at attending to and even anticipating a partner's actions' (Warneken, Steinwender, Hamann & Tomasello Warneken et al., p. 57). 'proactive planning for two individuals, even when they share a common goal, is more difficult than planning ahead solely for oneself' (Gerson, Bekkering & Hunnius Gerson et al., p. 128).

## 5. Development of Joint Action: Years 1-2

'By 12–18 months, infants are beginning to participate in a variety of joint actions which show many of the characteristics of adult joint action.' (Carpenter 2009, p. 388)

'infants learn about cooperation by participating in joint action structured by skilled and knowledgeable interactive partners before they can represent, understand, or generate it themselves. Cooperative joint action develops in the context of dyadic interaction with adults in which the adult initially takes responsibility for and ac-

tively structures the joint activity and the infant progressively comes to master the structure, timing, and communications involved in the joint action with the support and guidance of the adult. ... Eager participants from the beginning, it takes approximately 2 years for infants to become autonomous contributors to sustained, goal-directed joint activity as active, collaborative partners' (Brownell Brownell, p. 200).

'While 4-year-olds coordinated the timing of drum hits, children between 2- and 4 years of age showed indications of interpersonal coordination as indicated by the beginnings and endings of drumming bouts. Children showed more overlap in their bouts than would be expected by chance' (Endedijk, Ramenzoni, Cox, Cillessen, Bekkering & Hunnius Endedijk et al., p. 720).

'The 14-month-olds of this study displayed coordinated behaviors in the elevator task Role A of positioning themselves in the right location and retrieving the target object from the cylinder when the partner pushed it up, but they had major problems performing Role B, pushing the cylinder up and holding it in place until the partner could fetch the object. If they pushed up the cylinder at all, they would repeatedly drop it when the other person was just about to take the object out' (Warneken & Tomasello Warneken & Tomasello).

Infants' 'attempts to reactivate the partner in interruption periods indicate that they were aware of the interdependency of actions—that the exe-

cution of their own actions was conditional on that of the partner ... these instances might also exemplify a basic understanding of shared intentionality' (Warneken & Tomasello Warneken & Tomasello, p. 290–1).

'advances in infants' ability to coordinate their behavior with one another are associated with multiple measures of developing self-other representations. One- and two-year olds' symbolic representation of self and other in pretend play (e.g., pretending that a doll is feeding itself) was related to the amount of coordinated behavior they produced with a peer on the structured cooperation tasks described above (Brownell and Carriger 1990)' (Brownell Brownell, p. 206).

'children who better produced and comprehended language about their own and others' feelings and actions, and who could refer to themselves and others using personal pronouns likewise monitored their peer's behavior more often and produced more joint activity with the peer (Brownell et al 2006)' (Brownell Brownell, p. 206).

## 6. Collective Goals vs Shared Intentions

'all sorts of joint activity is possible without conscious goal representations, complex reasoning, and advanced self-other understanding ... both in other species and in our own joint behavior as adults, some of which occurs outside of re-

flective awareness ... In studying its development in children the problem is how to characterize and differentiate primitive, lower levels of joint action operationally from more complex and cognitively sophisticated forms' (Brownell Brownell, p. 195).

An outcome is a *collective goal* of two or more actions involving multiple agents if it is an outcome to which those actions are collectively directed (Butterfill 2016).

For us to have a *shared goal*  $G$  is for  $G$  to be a collective goal of our present or future actions in virtue of the facts that:

1. We each expect the other(s) to perform an action directed to  $G$ .
2. We each expect that if  $G$  occurs, it will occur as a common effect of all of our actions.

(Compare Butterfill 2012; Vesper et al. 2010.)

'the basic skills and motivations for shared intentionality typically emerge at around the first birthday from the interaction of two developmental trajectories, each representing an evolutionary adaptation from some different point in time. The first trajectory is a general primate (or perhaps great ape) line of development for understanding intentional action and perception, which evolved in the context of primates' crucially important competitive interactions with

one another over food, mates, and other resources (Machiavellian intelligence; Byrne & Whiten, 1988). The second trajectory is a uniquely human line of development for sharing psychological states with others, which seems to be present in nascent form from very early in human ontogeny as infants share emotional states with others in turn-taking sequences (Trevvarthen, 1979). The interaction of these two lines of development creates, at around 1 year of age, skills and motivations for sharing psychological states with others in fairly local social interactions, and then later skills and motivations for reacting to and even internalizing various kinds of social norms, collective beliefs, and cultural institutions' (Tomasello & Carpenter 2007, p 124).

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