

# Joint Action

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## 1. The Question

Overall: Which forms of shared agency underpin our social nature?

Requirement: An account of joint action must draw a line between joint actions and parallel but merely individual actions.

What distinguishes genuine joint actions from parallel but merely individual actions?

A *joint action* is an exercise of shared agency.

## 2. The Simple View

*The Simple View* Two or more agents perform an intentional joint action exactly when there is an act-type,  $\alpha$ , such that each agent intends that they, these agents,  $\alpha$  together and their intentions are appropriately related to their actions.

## 3. The Circularity Objection

‘how can an individual refer to a joint activity without the jointness [...] already being in place?’ (Schweikard & Schmid 2013)

## 4. Walking Together in the Mafia Sense

Bratman offers a counterexample to something related to the Simple View (see Bratman 1992, 2014). Suppose that you and I each intend that we, you and I, go to New York together. But your plan is to point a gun at me and bundle me into the boot (or trunk) of your car. Then you intend that we go to New York together, but in a way that doesn’t depend on my intentions. As you see things, I’m going to New York with you whether I like it or not. Does this provide the basis for an objection to the Simple View?

## 5. The Circularity Objection Again

‘Examples of what I shall refer to ... as “acting together” include dancing together, building a house together, and marching together against the enemy, where these are construed as something other than a matter of doing the same thing concurrently and in the same place’ (Gilbert 2013, p. 23)

‘The key question in the philosophy of collective action is simply ... under what conditions are two or more people doing something together?’ (Gilbert 2010, p. 67)

‘two or more people are acting together if [and only if] they are jointly committed to espousing as a body a certain goal, and each one is

acting in a way appropriate to the achievement of that goal, where each one is doing this in light of the fact that he or she is subject to a joint commitment to espouse the goal in question as a body.’ (Gilbert 2013, p. 34)

‘any random group of agents is a group that does something together’ (Ludwig 2014, p. 128)

## 6. Walking Together in the Tarantino Sense

Imagine two sisters who, getting off an aeroplane, tacitly agree to exact revenge on the unruly mob of drunken hens behind them by positioning themselves so as to block the aisle together. This is a joint action. Meanwhile on another plane, two strangers happen to be so configured that they are collectively blocking the aisle. The first passenger correctly anticipates that the other passenger, who is a complete stranger, will not be moving from her current position for some time. This creates an opportunity for the first passenger: she intends that they, she and the stranger, block the aisle together. And, as it happens, the second passenger’s thoughts mirror the first’s. So the feature under consideration as distinctive of joint action is present: each passenger is acting on her intention that they, the two passengers, block the aisle. But the contrast between this case and the sisters exacting re-

venge suggests that these passengers are not taking part in a joint action—at least, their’s is not the kind of joint action associated with the paradigm cases mentioned at the start of this chapter. Apparently, then, our being involved in a joint action can’t be a matter only of there being something such that we each intend that we, you and I, do it together.

## 7. Shared Intention: A Placeholder

‘A first step is to say that what distinguishes you and me from you and the Stranger is that you and I share an intention to walk together—we (you and I) intend to walk together—but you and the Stranger do not. In modest sociality, joint activity is explained by such a shared intention; whereas no such explanation is available for the combined activity of you and the Stranger. This does not, however, get us very far; for we do not yet know what a shared intention is, and how it connects up with joint action’ (Bratman 2009, p. 152).

‘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)

## 8. Why Not Take ‘Shared Intention’ Literally?

Strategies for explaining shared intention:

1. mess with the subject (e.g. Helm 2008; Schmid 2008, 2009; Pettit & Schweikard 2006)
2. mess with the attitude (e.g. Searle 1990; Gallotti & Frith 2013)
3. mess with the content (e.g. Bratman 1993, 2014)
4. mess with all three (e.g. Gilbert 2013)

## 9. From Individual To Joint Action

‘What events in the life of a person reveal agency; what are his deeds and his doings in contrast to mere happenings in history; what is the mark that distinguishes his actions?’ (Davidson 1971, p. 43)

‘Echoing Wittgenstein’s question about the difference, in the individual case, between my arm’s rising and my raising it, we can ask:

what is the difference between such a contrast case and corresponding shared intentional activity? In the case of individual intentional human action, we can see the difference from a contrast case as involving an explanatory role of relevant intentions of the individual agent. ... I propose an analogous view of the shared case: the difference in the case of shared agency involves an appropriate explanatory role of relevant shared intentions. Our painting together is a shared intentional activity, roughly, when we paint together because we share an intention so to act.’ (Bratman 2014, p. 10)

## 10. Bratman on Shared Intention

Modest sociality: ‘small scale shared intentional agency in the absence of asymmetric authority relations’ (Bratman 2009, p. 150)

Concerning modest forms of sociality,

1. ‘What concepts do we need to understand them adequately?’
2. In what do these forms of sociality consist?’
3. How are they related to relevant forms of individual agency?’ (Bratman 2014, p. 3)

Aim: ‘provide ... a sufficiently clear and articulated framework of ideas to help support ...

theorizing about these basic forms of sociality both in philosophy and ... other domains and disciplines' (Bratman 2014, p. 3)

The *Continuity Thesis*: 'once God created individual planning agents and ... they have relevant knowledge of each other's minds, nothing fundamentally new—conceptually, metaphysically, or normatively—needs to be added for there to be modest sociality' (Bratman 2014, p. 8).

What is shared intention?

*Functional characterisation*: shared intention serves to (a) coordinate activities, (b) coordinate planning, and (c) structure bargaining

'We seek ... a construction of interconnected intentions and other related attitudes ... that would ... play the roles characteristic of shared intention.' (Bratman 2014, p. 32)

*Sufficient conditions*. For you and I to have a collective/shared intention that we J it is sufficient that:

- (1) '(a) I intend that we J and (b) you intend that we J;
- (2) 'I intend that we J in accordance with and because of la, lb, and meshing sub-plans of la and lb; you intend that we J in accordance with and because of la, lb, and meshing subplans of la and lb;
- (3) '1 and 2 are common knowledge between us' (Bratman 1993, View 4)

To illustrate: if we share an intention that we cook dinner, this shared intention will (iii) structure bargaining insofar as we may need to decide what to cook or how to cook it on the assumption that we are cooking it together; the shared intention will also require us to (ii) coordinate our planning by each bringing complementary ingredients and tools, and to (i) coordinate our activities by preparing the ingredients in the right order.

'Our shared intention to paint together involves your intention that we paint and my intention that we paint' (Bratman 2014, p. 12).

'The sub-plans of the participants *mesh* when it is possible that all of these sub-plans taken together be successfully executed.' (Bratman 2014, p. 53)

## 11. Two Objections to Bratman

'the team intention ... is in part expressed by "We are executing a pass play." But ... no individual member of the team has this as the entire content of his intention, for no one can execute a pass play by himself.' (Searle 1990, pp. 92–3)

The *own-action condition*: 'it is always true that the subject of an intention is the intended agent of the intended activity' (Bratman 2014, p. 13) [Note that Bratman \*denies\* this claim.]

The *settle condition*: 'intentions . . . are the attitudes that resolve deliberative questions, thereby settling issues' (Velleman 1997, p. 32).

A solution?:

1. if we both do as we intend, we will paint
2. our intentions that we paint are persistence interdependent

Our intentions have *persistence interdependence* just if (a) each of us 'will continue so to intend if, but only if the other continues so to intend' and (b) 'there is this interdependence because each will know whether or not the other continues so to intend, and each will adjust to this knowledge in a way that involves responsiveness to norms of individual plan-theoretic rationality' (Bratman 2014, p. 65).

## 12. Shared Intention and Development

'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)

‘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)

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.

### 13. 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 evidence for joint action planning. ... While adult participants demon-

strated 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 et al. 2014, 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).

### 14. 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 actively 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 2007).

Infants' 'attempts to reactivate the partner in interruption periods indicate that they were

aware of the interdependency of actions—that the execution of their own actions was conditional on that of the partner ... these instances might also exemplify a basic understanding of shared intentionality' (Warneken & Tomasello 2007, 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).

## 15. A Counterexample to Bratman

Other objections allow that Bratman gives sufficient conditions but charge that Bratman presupposes what is to be explained:

'Bratman's account presupposes the element of sharedness it aims to explain.' (Schmid 2009, p. 36)

'It is only because we intend J that I can have intentions of the form "I intend that we J"' (Schmid 2009, p. 36)

'Bratman's ... account of shared intentionality ... fails to give an account of the crucial element of collectiveness that is presupposed at its very base' (Schmid 2009, p. 37)

An alternative approach: Bratman's conditions are not sufficient after all ...

We have an *unshared intention* that we  $\langle J_1, J_2 \rangle$  where  $J_1 \neq J_2$  just if:

- (1') (a) I intend that we  $J_1$  and (b) you intend that we  $J_2$
- (2') I intend that we  $J_1$  in accordance with and because of la, lb, and meshing subplans of la and lb; you intend that we  $J_2$  ...
- (3') 1 and 2 are common knowledge between us.

Our individual subplans concerning our  $\langle J_1, J_2 \rangle$ -ing *mesh* just in case there is some way I could  $J_1$  and you could  $J_2$  that would not violate either of our subplans but would, rather, involve the successful execution of those subplans.

## 16. Is Common Knowledge Necessary?

Why require common knowledge in the construction of shared intention? ‘in shared intention the fact of the shared intention will normally be out in the open: there will be public access to the fact of shared intention. Such public access to the shared intention will normally be involved in further thought that is characteristic of shared intention, as when we plan together how to carry out our shared intention. Since such shared planning about how to carry out our shared intention is part of the normal functioning of that shared intention, we need an element in our construction of shared intention whose functioning supports some such thinking of each about our shared intention.’ (Bratman 2014, p. 57)

Objections: see Blomberg (2016)

## 17. Commitment in Shared Agency

Intentions are associated with commitments to yourself.

‘Having a desire to walk together is compatible with having a desire not to do so ... whereas, in intending, one has gone beyond the point of weighing considerations for and against, and has committed to a course of action.’ (Roth 2004, p. 361)

Shared intentions are associated with commit-

ments to each other.

‘the parties to a joint commitment are in an important sense obligated to conform to the commitment. Notably, the obligation in question is directed: ... one is obligated to the other parties to conform to the commitment.’ (Gilbert 2013, p. 367)

‘joint commitment is ... a commitment by two or more people of the same two or more people.’ (Gilbert 2013, p. 6)

‘When people regard themselves as collectively intending to do something, they appear to understand that, by virtue of the collective intention, and that alone, each party has the standing to demand explanations of nonconformity and, indeed, to demand the conformity of the other parties. A joint commitment account of collective intention respects this fact. Though it would take too long to argue this here, accounts that do not appeal to joint commitment—such as those of Michael Bratman and John Searle—are hard-pressed to do so.’ (Gilbert 2013, pp. 88–9)

‘If they are walking together, both Andrea herself and Heinrich will have the understandings so far described: by virtue of their walking together Andrea has a right to Heinrich’s continued walking alongside her, together with the standing to issue related rebukes and demands.’ (Gilbert 2013, p. 25)

‘Mightn’t one have a noncommittal attitude

toward one’s walk with someone if, for example, one suspects that person might turn out to be irritable and unpleasant company?’ (Roth 2004, p. 361)

## 18. The Objection From Contralateral Commitment

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## 19. Gilbert on Joint Commitment

Is having a contralateral commitment just a matter of having an intention?

‘it is unclear how one’s own intention to pursue a goal amounts to a commitment to anyone besides oneself.’ (Roth 2004, p. 371)

Is having a contralateral commitment just a matter of having conditional commitments?

‘It’s not even clear from the start that Bob has any commitment ... because his commitment is, in effect, conditioned on itself (by way of the conditioning on Sue’s intention).’ (Roth 2004, p. 378)

Are contralateral commitments irreducible to personal commitments?

Gilbert’s two-part account of joint commitment:

1. ‘joint commitment is ... a commitment by two or more people of the same two or more people.’ (Gilbert 2013, p. 6); joint commitment is ‘the collective analogue of a personal commitment’ (Gilbert 2013, p. 85)
2. ‘Any joint commitment can be described in a statement of the following form: ‘A, B, and so on (or those with property P) are jointly committed as far as is possible (by virtue of their several actions) to emulate a single doer of X’. (Gilbert

2013, p. 311)

‘What is a “single body” [...]? whereas a single human being constitutes a single body [...], a plurality of human individuals does not in and of itself constitute such a body. [...] however, such a plurality can emulate such a body—one with a plurality not only of limbs, eyes, and ears, but also of noses and mouths’ (Gilbert 2013, p. 116)

‘a “body” here is understood to be a non-collective body.’

## 20. Joint Commitment and Shared Intention

‘joint commitment underlies a host of central social phenomena in the human realm’; (Gilbert 2013, p. 400) it is a ‘precondition of the correct ascription’ of acting together, collective belief, shared intention, and more’ (Gilbert 2013, p. 9)

Gilbert: For us to have a shared intention that we  $\boxtimes$  is for us to be jointly committed to emulate a single body which intends to  $\boxtimes$

The Disjunction Criterion: ‘when two or more people share an intention, none of them need to have a contributory intention’ (Gilbert 2013, p. 103).

For two or more agents to collectively:	... is for each to be jointly committed to emulate a single body that:	see chapters
intend to $\phi$	intends to $\phi$	1,4,5,10
believe that $p$	believes that $p$	6,7
value item $I$	believes that $I$ has a certain value	8
have a social convention concerning regularity $R$	accepts the fiat that $R$ is to be conformed to	9
make an agreement that $p$	upholds a decision that $p$	9,13,18
feel guilt over action $A$	feels guilt over action $A$	10
attend to $X$	attends to $X$	14

## 21. Aggregate Animals, Aggregate Subjects

On accounts like Bratman’s or Gilbert’s, ‘it makes some sense to say that the result is a kind of shared action: the individual people are, after all, acting intentionally throughout. However, in a deeper sense, the activity is not shared: the group itself is not engaged in action whose aim the group finds worthwhile, and so the actions at issue here are merely those of individuals. Thus, these accounts ... fail to make sense of a ... part of the landscape of social phenomena’ (Helm 2008, pp. 20–1).

All joint commitments are commitments to emulate, as far as possible, a single body which does something (Gilbert 2013, p. 64). In manifesting any collective phenomenon, we can truly say ‘We have created a third thing, and each of us is one of the parts’ (Gilbert 2013, p. 269).

‘society consists of nothing but individuals. Since society consists entirely of individuals, there cannot be a group mind or group consciousness. All consciousness is in individual minds, in individual brains.’ (Searle 1990, p. 96)

## 22. Are There Joint Commitments?

‘what is needed, to put it abstractly, is expressions of readiness on everyone’s part to be jointly committed [...]. Common knowledge of these expressions completes the picture.’ (Gilbert 2013, p. 253)

‘In order to *create* a new joint commitment each of the would-be parties must openly express to the others his readiness together with the others to commit them all in the pertinent way. Once these expressions are common knowledge between the parties, the joint commitment is in place—as they understand’ (Gilbert 2013, p. 311)

‘[i]t is not clear that there is any very helpful way of breaking down the notion of expressing one’s readiness to be jointly committed’ (Gilbert 2013, p. 48)

‘this is pretty much the whole story regarding the creation of a basic case of ... joint commitment’ (Gilbert 2013, p. 48).

## 23. Joint and Contralateral Commitment: Objection to Gilbert on Shared Intention

‘Once the idea of joint commitment has been clarified, one may find it obvious that the parties to any such commitment ... owe each other such actions in their capacity as parties to the joint commitment’ (Gilbert 2013, p. 400-1)

‘What each is committed to, through the joint commitment, is to do his part [...] These actions are owed solely by virtue of the existence of the joint commitment’ (Gilbert 2013, pp. 401–2)

‘just as—in the case of a personal commitment—you are in a position to berate yourself for failing to do what you committed yourself to do, all of those who are parties with you to a given \*joint\* commitment are in a position to berate you for failing to act according to that joint commitment’ (p. 401). (Gilbert 2013, p. 401)

‘We agree with Gilbert that joint action goes, intuitively, with the sort of joint commitment that she describes.’ (Pettit & Schweikard 2006, p. 32)

## 24. Self-representing Aggregate Subjects

The *Intentional Stance*: ‘What it is to be a true believer is to be ... a system whose behavior is reliably and voluminously predictable via the intentional strategy.’ (Dennett 1987, p. 15)

*Cordula’s Imperative*: Theorise about shared agency from the point of view of the subject.

‘The intentional or conversational stance not only enables us to identify and understand patterns that would escape [...] an individualistic stance [...] In the case of self-representing agents, it is also responsible for generating the very patterns that appear in the interaction between them. [...] the perspective is of the greatest importance in understanding agency’ (Pettit 2014, p. 1658)

Compare Helm (2008, p. 40): ‘he is a member of a plural agent whose evaluative perspective he both shares and helps constitute; that is, we each must care about us as a plural agent.’

## 25. Self-representing Aggregate Subjects Presuppose Joint Action

‘joint actions, and the joint [shared] intentions underlying them, may play a role in the formation of group agents’ (List & Pettit 2011, n. 18, pp. 215-6)

‘A corporate attitude (of a collective) is an at-



titude held by the collective as an intentional agent. To say that a collective holds a corporate belief or desire in some proposition *p* is to say that the collective is an agent in its own right, which holds that belief or desire. Thus not all collectives are capable of holding corporate attitudes; only those that qualify as group agents are. For example, the United States Supreme Court and other collegial courts arguably fall into this category, as do commercial corporations, NGOs, and other purposive organizations such as cohesive political parties, universities, and especially states. In consequence, they are capable of holding corporate attitudes. By contrast, a random collection of individuals, such as the people who happen to be on Times Square at a particular time, does not. Such a collection cannot hold corporate attitudes.’ (List 2014, p. 1615)

‘we shall abstract from some differences between these approaches and adopt the following stipulative approach, broadly inspired by Bratman (1999). We say that a collection of individuals ‘jointly intend’ to promote a particular goal if four conditions are met: Shared goal. They each intend that they, the members of a more or less salient collection, together promote the given goal. Individual contribution. They each intend to do their allotted part in a more or less salient plan for achieving that goal. Interdependence. They each form these intentions at least partly because

of believing that the others form such intentions too. Common awareness. This is all a matter of common awareness, with each believing that the first three conditions are met, each believing that others believe this, and so on.’ (List & Pettit 2011, p. 33)

‘Since a joint action can be an isolated act performed jointly by several individuals, it does not necessarily bring into existence a fully fledged group agent in our sense ... In particular, the performance of a single joint action is too thin ... to warrant the ascription of a unified agential status ... For example, in the case of fully fledged agents ... we can meaningfully hypothesize about how they would behave under a broad range of variations in their desires or beliefs, whereas there is a severe limit on how far we can do this with a casual collection that performs a joint action. Moreover, any collection of people, and not just a group with an enduring identity over time, may perform a joint action, for instance when the people in question carry a piano downstairs together or spontaneously join to help a stranger in need. Thus mere collections may be capable of joint agency, whereas only groups are capable of group agency in the stronger sense we have in mind. However, joint actions, and the joint [shared] intentions underlying them, may play a role in the formation of group agents’ (List & Pettit 2011, n. 18, pp. 215-6)

## 26. Aggregate Subjects vs Plural Subjects

Assumption: the right theory of plural quantification exemplifies *Ontological Innocence*. That is, it is a theory on which plural quantification ‘introduces no new ontological commitments to sets or any other kind of “set-like” entities over and above the individual objects that compose the pluralities in question’ (Linnebo 2005).

‘It is haywire to think that when you have some Cheerios, you are eating a *set*—what you’re doing is: eating THE CHEERIOS’ (Boolos quoted in Oliver & Smiley 2001, p. 295). For more on plural quantification, read Linnebo (2005).

A *plural subject* is some individuals who collectively have an intention or other attitude.

An *aggregate subject* is a subject with multiple parts that are subjects.

## 27. Team Reasoning

‘The key difference between the two kinds of intention is not a property of the intentions themselves, but of the modes of reasoning by which they are formed. Thus, an analysis which starts with the intention has already missed what is distinctively collective about it’ (Gold & Sugden 2007)

‘collective intentions are the product of a distinctive mode of practical reasoning, team reasoning, in which agency is attributed to groups.’ (Gold & Sugden 2007)

‘somebody team reasons if she works out the best possible feasible combination of actions for all the members of her team, then does her part in it.’ (Bacharach 2006, p. 121)

## 28. Schmid’s ‘Charlie Brown Phenomenon’

‘participants in joint action are usually focused on whatever it is they are jointly doing rather than on each other. Where joint action goes smoothly, the participants are not thinking about the others anymore than they are thinking about themselves’ (Schmid 2013, p. 37)

‘cooperators normatively expect their partners to cooperate; they do not predict their cooperation’

## 29. Unbearable Reflectiveness

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p. 37)

‘cooperators normatively expect their partners to cooperate; they do not predict their cooperation’

Dominant View: ‘the representation of the participation of the others has a mind-to-world direction of fit.’

Alternative View: ‘the representation of the participation of the others has a world-to-mind direction of fit.’ (Schmid 2013, p. 38)

‘this representation is neither (purely) cognitive nor (purely) normative, but rather a very peculiar combination of the two.’ (Schmid 2013, p. 50)

‘An individual with a purely cognitive stance toward his own future self’s behavior and no normative expectation is a predictor of his behavior rather than an intender of his future action; similarly, an individual with a purely normative stance toward his own future behavior is a judge over [...] his future behavior rather than an agent.’ (Schmid 2013, p. 50)

‘participants in a joint action represent their partners as doing their parts in the same way as individual intentions implicitly represent the agent as continuing to be willing and able to perform the action until the intention’s conditions of satisfaction are reached’ ‘individual agents of temporally extended actions “represent” their own future intentions and actions in the same way in which cooperators rep-

resent their partners’ intentions and actions.’ (Schmid 2013, p. 49)

## 30. Parallel Planning

‘each agent does not just intend that the group perform the [...] joint action. Rather, each agent intends as well that the group perform this joint action in accordance with subplans (of the intentions in favor of the joint action) that mesh’ (Bratman 1992, p. 332).

Our plans are *interconnected* just if facts about your plans feature in mine and conversely.

‘shared intentional agency consists, at bottom, in interconnected planning agency of the participants’ (Bratman 2011).

A representation or plan is *agent-neutral* if its content does not specify any particular agent or agents; a planning process is agent-neutral if it involves only agent-neutral representations.

Practical vs theoretical reasoning: ‘The mark of practical reasoning is that the thing wanted is *at a distance* from the immediate action, and the immediate action is calculated as a way of getting or doing or securing the thing wanted’ (Anscombe 1957, p. 79). See also Millgram (2001, p. 1): ‘Practical reasoning is reasoning directed towards action: figuring out what to do, as contrasted with figuring out how the

facts stand.'

Some agents each *individually make a plan for all the agents' actions* just if: there is an outcome; each agent individually, without discussion, communication or prior arrangement, plans for that outcome; and each agent's plan specifies roles for herself and all the other agents.

Our planning is *parallel* just if you and I are each planning actions that I will eventually perform and actions that you will eventually perform, where the resulting plans non-accidentally match.

What attitude results from parallel planning? Intentions that are open-ended with respect to who will act.

### 31. The Simple View Revised

*The Simple View Revised:* We intentionally exercise shared agency exactly when

1. there is an act-type,  $\alpha$ , such that we each intend that we, you and I,  $\alpha$  together;
2. we engage in parallel planning; and
3. for each of us, the intention that we, you and I,  $\alpha$  together leads to action via our contribution to the parallel planning (where the intention, the planning and the action are all appropriately related).

(Nonaccidental success requires, further, that our parallel planning results in matching plans.)

Two or more plans *match* just if they are similar enough that the differences don't matter in the following sense. First, for a plan in an agent, let the *self part* be those representations concerning the agent's own actions and let the *other part* be the other representations. Now consider what would happen if, for a particular agent, the other part of her plan were as nearly identical to the self part (or parts) of the other's plan (or others' plans) as psychologically possible. Would the agent's self part be significantly different? If not, let us say that any differences between her plan and the other's (or others') are *not relevant for her*. Finally, if for some agents' plans the differences between them are not relevant for any of the agents, then let us say that the differences *don't matter*.

### 32. Searle vs Bratman on Cooperation

'One can have a goal in the knowledge that others also have the same goal, and one can have beliefs and even mutual beliefs about the goal that is shared by the members of a group, without there being necessarily any cooperation among the members or any intention to cooperate' (Searle 1990, p. 95)

Is this a sound objection?:

1. 'The notion of a we-intention [shared intention] ... implies the notion of cooperation' (Searle 1990, p. 95)
2. Meeting Bratman's proposed sufficient conditions for shared intention does not imply that your actions will be cooperative.

Therefore:

3. Bratman's conditions are not in fact sufficient.

'This involves a bit of linguistic legislation' (Bratman 2014, p. 38)

### 33. Objection to (Almost) Everyone

Examples and contrast cases are just not enough to ground a theory of joint action.

### 34. How to Avoid the Objection

If examples and contrast cases are not enough to ground a theory of joint action, what could ground a theory of joint action?

Step 1: identify features ...

- collective goals
- coordination

- cooperation
- contralateral commitments
- experience

Step 2: ... which generate how questions.

## 35. Collective Goals

A *goal* is an outcome to which an action is directed.

An outcome is a *collective goal* of two or more actions involving multiple agents if it is an outcome to which those actions are directed where this is not, or not only, a matter of each action being directed to the outcome.

Objection: Are there collective goals?

Reply: If there is a single outcome, *G*, such that

1. Our actions are coordinated; and
2. coordination of this type would normally increase the probability that *G* occurs.

then there is an outcome to which our actions are directed where this is not, or not only, a matter of each action being directed to that outcome, i.e. our actions have a collective goal.

Question for a theory of joint action: In virtue of what could two or more agents' actions have a collective goal?

## 36. Cooperation

### 36.1. Two Standard Notions of Cooperation

Candidate question for a theory of joint action: What enables humans to cooperate?

a 'cooperator is someone who pays a cost, *c*, for another individual to receive a benefit, *b*' (Nowak 2006, p. 1560)

'[b]y cooperation we mean engaging with others in a mutually beneficial activity' (Bowles & Gintis 2011, p. 2)

'Cooperation appears in nature in two basic forms' (Tomasello 2016)

### 36.2. Philosophers' Notions of Cooperation

Actions are cooperative when appropriately related to a shared intention (and no deception nor coercion) (Bratman 1992, 2014)

'A definition of cooperation ... typically [has this] structure: a set of individual intentions [with] certain origins and ... certain relations, ... is common knowledge' (Paternotte 2014, p. 47) (Paternotte 2014, p. 47)

### 36.3. Trade-off Cooperation

Demandingness and well-suitedness require trade-offs across multiple actions, not all of which need be yours.

Purposive actions are *trade-off cooperative* to the extent that, for each agent, her performing these actions rather than any other actions depends in part on how good an overall pattern of trade-offs between demandingness and well-suitedness can be achieved for all of the actions.

Question for a theory of joint action: What enables humans to perform actions which are trade-off cooperative?

## 37. Motor Representation

A *goal* is an outcome to which an action is directed.

Motor representations represent goals such as the grasping of an egg or the pressing of a switch. These are outcomes which might, on different occasions, involve very different bodily configurations and joint displacements (see Rizzolatti & Sinigaglia 2010 for a selective review).

Motor representations trigger processes which are planning-like insofar as they involve (a) computing means from represen-

tations of ends; and (b) satisfying relational constraints on actions (e.g. Jeannerod 2006; Zhang & Rosenbaum 2007).

Motor processes concerning actions others will perform occur in observing others act (Gangitano et al. 2001)—and even in observing several others act jointly (Manera et al. 2013)—and enable us to anticipate their actions (Ambrosini et al. 2011; Aglioti et al. 2008).

A *very small scale action* is one that is typically distantly related as a descendent by the means-end relation to the actions which are sometimes described as ‘small scale’ actions, such as playing a sonata, cooking a meal or painting a house (e.g. Bratman 2014, p. 8).

## 38. Collective Goals and Motor Representations

An outcome is a *collective goal* of two or more actions involving multiple agents if it is an outcome to which those actions are directed where this is not, or not only, a matter of each action being directed to the outcome.

In virtue of what are very small scale joint actions collectively directed to outcomes?

In joint action, motor processes concerning actions another will perform can occur (Kourtis et al. 2013; Meyer et al. 2011), and can inform planning for one’s own actions (Vesper

et al. 2013; Novembre et al. 2014; Loehr & Palmer 2011).

Conjecture : collective goals are represented motorically (della Gatta et al. 2017).

An intergenerational structure of motor representation:

1. There is one outcome which each agent represents motorically, and
2. in each agent this representation triggers planning-like processes
3. concerning all the agents’ actions, with the result that
4. coordination of their actions is facilitated.

(See also Tsai et al. 2011; Loehr et al. 2013; Ménoret et al. 2014; Meyer et al. 2013; Kourtis et al. 2014).

Where we each represent a collective goal motorically and these representations are appropriately related to our actions, our actions will normally be trade-off cooperative.

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