

A Counterexample to Bratman on Shared Intention

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November 10, 2012

Abstract

At the centre of one leading account of shared agency, Michael Bratman's, is the claim that certain conditions are sufficient for us to have a shared intention that we J. This paper provides a counterexample to the sufficiency of these conditions and suggests a way of strengthening them to avoid the counterexample.

1. Shared Intention

Why, if at all, is a notion of shared intention needed? This question is standardly answered by appeal to contrast cases (compare Bratman 2009, p. 150). Thus Gilbert (1990) contrasts friends intentionally walking together with two people who happen to be walking side by side. And Searle (1990) contrasts park visitors who simultaneously run to a central shelter in performing a dance with park visitors who likewise run to the central shelter but only because of an impending storm. These and other contrast cases invite the question, How do cases involving shared agency differ from cases involving parallel agency only?

The first contrast case, Gilbert's, shows that the difference can't be just a matter of coordination because people who are merely happen to be walking side by side each other also need to coordinate their actions in order to avoid colliding. Note also that in both cases each individual's walking is intentional, so our intentionally walking together cannot be only a matter of our each intentionally walking. The second contrast case, Searle's, shows that the difference can't just be that the resulting actions have a common effect because merely parallel actions can have common effects too.¹ Perhaps,

¹ This use of contrast cases resembles Pears (1971): he uses contrast cases to argue that whether something is an ordinary, individual action depends on its antecedents.

then, a notion of shared intention is needed to distinguish the two cases. Perhaps it is our acting on a shared intention that we walk together which distinguishes us from two strangers who happen to be walking side by side.²

But what could shared intention be? In an influential series of papers,³ Bratman claims that the following are collectively sufficient⁴ conditions for you and I to have a shared intention that we J:

- '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 subplans 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, p. View 4)

In this paper we give a counterexample to Bratman's claim that the above conditions, (1)–(3), are collectively sufficient conditions for shared intention. We shall also suggest a revision to avoid the counterexample.

Before going further we must distinguish two versions of the claim that (1)–(3) are collectively sufficient for shared intention. The *weak claim* is that there is some J such that these conditions are sufficient for you and I to intend that we J. The *strong claim* is that for any J, these conditions are sufficient for you and I to intend that we J. One of Bratman's aims is to show that an account of shared intention can be *conceptually conservative*: he aims, that is, to show that it is possible to give an account of shared intention using concepts that 'are available within the theory of individual planning agency' (Bratman 2009, p. 163). Achieving this aim would require the strong claim, and it is to the strong claim that our counterexample is directed.

How could we show that our meeting Bratman's conditions, (1)–(3), is not in fact sufficient for us to have a shared intention? We seek a case where the conditions are met although we lack a shared intention. But how could we determine that we lack a shared intention? As already mentioned, the notion of shared intention is supposed to make it possible to characterise systematically a difference between cases involving shared agency (such as our walking together) and cases involving parallel agency only (such as two

² Many philosophers agree that a notion of shared intention is useful for understanding acting together. Compare Gilbert (2006, p. 5): 'I take a collective action to involve a collective intention.' See also Carpenter (2009, p. 381), Call (2009, p. 369), Kutz (2000), Rakoczy (2006, p. 117) and Tollefsen (2005).

³ See Bratman (1992, 1993, 1997, 2009). For influences beyond philosophy, see e.g. Tomasello et al. (2005) and Knoblich & Sebanz (2008).

⁴ In Bratman (1992), the following were offered as jointly sufficient *and individually necessary* conditions; the retreat to sufficient conditions occurs in Bratman (1997, pp. 143–4) where he notes that 'for all that I have said, shared intention might be multiply realizable.'

strangers who happen to be walking the same route side-by-side). Suppose, then, that we had a trio of cases, A, B and C, each involving two agents. Suppose, further, that A and B involved parallel agency only, whereas C involved shared agency. Then we could be sure that A and B do not involve shared intention. Now suppose that, for some relevant J, Bratman's conditions, (1)–(3) above, were met in cases B and C alike, that in each case the structure of intention and knowledge played an appropriate role in guiding the agents' actions, and that in each case the agents thereby successfully J. Then case B would be our counterexample: Bratman's conditions are met but there is no shared intention. This is how our counterexample will work.

Several preliminaries are necessary for the construction of our counterexample. These preliminaries might easily give the impression that our counterexample depends on an artificial settings. However, having introduced the primary counterexample in an artificial setting, we will go on to show that counterexamples can also be constructed for mundane activities including walking together.

2. Neutral with Respect to Shared Intentionality

Before we can introduce the counterexample we need to highlight a feature of Bratman's account which we shall be exploiting.

Consider the contents of the intentions concerning our J-ing in the above clauses, (1)–(3). What sort of activity can you intend when you intend that we J? We cannot restrict possible values of J to activities which involve shared agency. In imposing any such restriction we would be assuming the very notion that an account of shared intention is supposed to illuminate. Rather the above conditions, (1)–(3), must be sufficient for shared intention even for some values of J which are 'neutral with respect to shared intentionality'.⁵

A consequence is that, in the right situations, one of us can rationally intend that we J, and can intend this unilaterally, that is without depending on anyone else intending that we J. Suppose you know that I am going to Chicago via a certain route at a particular time, and that I will do this regardless of what you do. Suppose also that you can rationally intend that you go to Chicago in the same manner, and that you know that if you act on this intention the upshot will be that we will go to Chicago together (although I may not know that we are going together—perhaps you will conceal your presence from me). Then you can rationally intend that we go to

⁵ Bratman (1997, p. 147). This refines Bratman's earlier view that some admissible values of J are cooperatively neutral where an act-type is *cooperatively neutral* just if 'joint performance of an act of that type may be cooperative, but it need not be' (Bratman 1992, p. 330).

Chicago together, and you can intend this irrespective of whether I have any corresponding intention—providing, of course, that in so intending you are conceiving of our going to Chicago together in a way that is neutral with respect to shared intentionality. What follows depends on the premise that this is indeed possible.⁶

3. Unshared Intentions

As a further preliminary we need to introduce a definition. Let us stipulate that 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 in accordance with and because of la , lb , and meshing subplans of la and lb
3. 1 and 2 are common knowledge between us.

In defining unshared intention we have used conditions exactly like Bratman's sufficient conditions for shared intention except that Bratman's conditions have $J_1 = J_2$. At this point it might be natural for readers to suppose that agents could not have unshared intentions, or at least that they could not do so without irrationality. In this section we describe a possible situation in which two agents have an unshared intention without irrationality, deception or even ignorance. This possible situation is not the promised counterexample, but it does form the basis for it.

Let us first introduce the activity we shall focus on. Ayesha and Benji are playing a simple video game which involves moving a cross around a two-dimensional space littered with barriers. Ayesha can only accelerate the cross backwards or forwards, while Benji can only accelerate it left or right. The cross moves around and interacts with the barriers in ways both players can predict. The players are given tasks independently. These tasks always involve making the cross hit a target within two minutes of starting. A player succeeds when the cross hits her target, regardless of what happens to the cross afterwards. (It may go on to hit another target.) In this case, Ayesha's task is to make the cross hit the red square while Benji's task is make the cross hit the blue circle. In general it is possible that either or both will succeed, or that they will both fail. Each movement carries a small cost to the player who moves, so that Ayesha and Benji each attempt to minimize

⁶ Bratman (1997) defends this claim at length. Note also that this claim must be true if Bratman's account of shared intention is to provide an informative and systematic distinction between the contrast cases mentioned at the start.

how much he or she moves the cross consistently with completing his or her task. At the outset, Ayesha and Benji are each neutral on whether the other succeeds or fails. They are not opponents and do not seek to undermine each other's efforts, but each is entirely concerned with his or her own task. All of this is common knowledge for Ayesha and Benji. They both know who has which task, what constraints they face and what their motives are.

Consider the possibility of one player intending, unilaterally, that the two players do something. Suppose that one of the players—Ayesha, say—can knowledgeably predict that if she performs a certain sequence actions, $\langle a_1, a_2, \dots a_n \rangle$, then Benji will simultaneously perform certain other actions, $\langle b_1, b_2, \dots b_n \rangle$, and the upshot will be that the cross hits the red square. Were this to happen, it would be true that Ayesha and Benji made the cross hit the red square. Suppose, further, that Ayesha can intend to perform those actions $\langle a_1, a_2, \dots a_n \rangle$. Then Ayesha can intend, unilaterally, that they, Ayesha and Benji, make the cross hit the red square.

Unshared intentions require a kind of symmetry. Let us suppose that the above sequences of actions, Ayesha's $\langle a_1, a_2, \dots a_n \rangle$ and Benji's $\langle b_1, b_2, \dots b_n \rangle$, will also result in the cross hitting the blue circle. (Since the cross has momentum, we can suppose that it will hit both the red square and the blue circle at some time after these action sequences have been performed.) Then by the reasoning just offered, Benji could intend that they, Ayesha and Benji make the cross hit the blue circle. So Ayesha and Benji could meet the first condition, (1), for having an unshared intention.

What about the second condition, (2)? Suppose that Ayesha knows two further things. First, that Benji intends that they, Ayesha and Benji, make the cross hit the blue circle. Second, that in acting on his intention Benji will perform actions $\langle b_1, b_2, \dots b_n \rangle$. Then Ayesha can intend that they, Ayesha and Benji, make the cross hit the red square in accordance with and because of her intention that they make the cross hit the red square and in accordance with and because of Benji's intention that they make the cross hit the blue circle.

This is not quite enough to meet the second condition, (2), because there is also a requirement about meshing subplans. To make apply this requirement we need to generalise Bratman's definition of meshing:

‘our individual subplans concerning our J-ing *mesh* just in case there is some way we could J that would not violate either of our subplans but would, rather, involve the successful execution of those subplans’ (Bratman 1993, p. 106).

A natural generalisation is this:

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.

To illustrate, there would be a failure to mesh if, in intending that they make the cross hit the red square, Ayesha's plans had included pushing Benji out of the way and seizing his controls. There would also be a failure of mesh if Ayesha were planning to trick Benji into a situation where we would be unable to perform the actions he had been planning. But in the case we have been describing there are no such failures to mesh. Each agent's subplans involve manipulating his or her own controls, and the successes each seeks in doing this depends on the other successfully carrying out their subplans. So Ayesha can rationally intend that they, Ayesha and Benji, make the cross hit the red square in accordance with and because of their intentions and meshing subplans of them. And Benji likewise for making the cross hit the blue circle.

The only outstanding requirement for Ayesha and Benji to have an unshared intention is that their various intentions are common knowledge. Assuming common knowledge is possible where agents have a shared intention, it is likewise possible in this case of unshared intention. So Ayesha and Benji can have an unshared intention that they $\langle J_1, J_2 \rangle$ where J_1 is Ayesha and Benji's making the cross hit the red square and J_2 is their making the cross hit the blue circle.

So far we have shown that it is possible for two agents to have an unshared intention without irrationality, deception or ignorance. Of course unshared intentions may be rare. But what matters for our counterexample is just that they are possible.

4. The Counterexample

In the situation just described, Ayesha and Benji are playing a game and have different tasks. Thanks to special features of the game environment, they both succeed by acting on an unshared intention. Now compare two further players, Yasmin and Zak, who are playing the same game. Their situations, knowledge states, intentions and actions are as similar as possible to Ayesha's and Benji's except for one detail. Just by chance they have been assigned identical tasks: Yasmin's task is to make the cross hit the red square and Zak's task is the same. So where Ayesha and Benji have an unshared intention that they $\langle J_1, J_2 \rangle$, Yasmin and Zak meet Bratman's conditions (1)–(3) for having a shared intention that they J_1 . But Yasmin, in planning and acting, does not rely on the coincidence of their intentions; and nor does Zak. (Yasmin relies on the fact Zak intends that they J_1 , of course; but she does not rely on the fact that Zak intends what she intends.) Furthermore, due to an artefact of the way the game is structured, the unshared intention and the

Bratman intention (as we might label the structure of intention and knowledge while leaving open whether it constitutes a shared intention), result in the two pairs performing same actions in the same way. That is, Yasmin reasons about Zak much as Ayesha reasons about Benji and Yasmin and does what Ayesha does, and likewise for Zak and Benji.

We claim that Yasmin and Zak have a shared intention that they J_1 only if Ayesha and Benji have a shared intention.⁷ This claim follows from the similarities of the two cases. The only difference is that Yasmin and Zak happen to be assigned the same task, whereas Ayesha and Benji are not. And neither Yasmin nor Zak makes use of the fact that they have the same task. (This is not due to ignorance: it's just how they choose to approach their tasks.) So if we consider on how the case of Yasmin and Zak differs from that of Ayesha and Benji, we can see that these differences do not plausibly amount to a difference with respect to shared agency. Shared intention cannot feature in one case but not the other.

To show that the case of Yasmin and Zak do not have a shared intention it remains only for us to show that Ayesha and Benji do not have one. Here we must be careful. First note that, since Bratman provides only sufficient conditions for shared intention, his account doesn't tell us that an unshared intention is not a shared intention. For all Bratman says, the conditions defining unshared intention might be sufficient for shared intention.

But doesn't shared intention require at least this much, that there be a single activity about which each the agent involved has an intention? This might reasonably be doubted by those who, like Bratman, reject the Simple View according to which when an individual intentionally F-s she has an intention concerning her F-ing (Bratman 1984). So we shall not infer that Ayesha and Zak lack a shared intention just because (by construction) there is no F such that Ayesha and Zak's each intend that they, Ayesha and Zak, F.

Can we then appeal directly to intuition to show that Ayesha and Zak lack a shared intention? Ayesha sees Benji's actions as constraints on her own, or else as opportunities. She exploits Benji's intentions for her own ends. Of course the situation is reciprocal: Benji exploits Ayesha in equal measure. Each allows himself or herself to be exploited by the other because being exploited enables exploiting, and this is the full extent of their cooperation. We don't suppose that reciprocal exploitation is incompatible with shared intention. But Ayesha and Zak's interaction consists entirely in

⁷ Strictly speaking, what matters for our argument is whether or not Ayesha and Benji have a shared intention *in virtue of having the unshared intention that they* $\langle J_1, J_2 \rangle$. This is because, strictly speaking, we need to show, not that Yasmin and Zak lack any shared intention whatsoever, but only that they lack a shared intention that they J_1 in virtue of meeting Bratman's conditions. For ease of exposition this is not made explicit in the main text.

this sort reciprocal exploitation, where each agent sees the other's actions only as constraints or opportunities. Perhaps it is clear enough that the sort of shared agency that an account of shared intention is supposed to capture must involve more than this. If so, we can already claim that Ayesha and Benji are not acting on a shared intention. But philosophers' intuitions about shared agency may not be entirely, so it would be better if we could avoid such a blunt appeal to intuition.

How else could we support the claim that Yasmin and Zak lack a shared intention? As mentioned at the start, the contrast cases are often used to anchor intuitions in theorising about shared agency. In the next section we shall further support our claim by contrasting Yasmin and Zak's case with a further case, one which is as similar as possible and which does seem to involve shared agency. The fact that Yasmin and Zak's case contrasts with this new case will support the claim that Yasmin and Zak lack shared intention. This is the aim of the following section. A first motive for introducing this new contrast case is that it provides an indication concerning what is missing from Bratman's account, and so may help us to understand why his conditions are not sufficient for shared intention.

5. Agent-neutral Plans

Above we introduced what will turn out to be a counterexample to Bratman's account, the case of Yasmin and Zak. But we have yet to show that this case really is a counterexample. For all we have said so far, a proponent of Bratman's view might insist that Yasmin and Zak do have a shared intention. To show that they do not, we shall contrast Yasmin and Zak's case with a third case that is as similar as possible but does involve shared intention.

First we need to introduce the notion of an agent-neutral plan. We stipulate that a planning process, or a plan, is *agent-neutral* just if it does not involve identifying any particular agents. This sort of planning is quite common. For example, some housemates who have decided to take on an allotment to grow vegetables might sit down together to plan what needs doing without yet assigning roles to particular individuals. In so planning, each housemate is thinking about what is to be done and not what she herself will do. At some point the housemates stop planning. (This does not necessarily mean that they have a fully worked out plan; like any other plans, agent-neutral plans can have gaps that may need filling in later.) They now divide up the roles. Of course they may not find a way of dividing up roles that everyone is prepared to go along with—individuals' preferences, abilities and intentions may block the plan's adoption. But suppose the housemates do divide up the roles in a way that is acceptable to everyone, and that each implements her part in the plan. Then each conceives of her own and the

others' actions as part of single plan directed to achieving a single outcome.

In the above example of agent-neutral planning, the housemates plan together and agree on a common plan. Planning together is plausibly an activity which involves shared agency. Note, however, that an individual can construct an agent-neutral plan by herself, even if its eventual execution will involve others. In fact, two or more individuals who are assigned a task might each individually engage in agent-neutral planning in parallel. The task demands and their planning strategies may conspire to ensure that they each come up with the same agent-neutral plan, and task demands and manifest properties of the agents, such as their distribution in space, may ensure that each agent also assigns the same roles to the same individuals. (Strictly speaking it is not necessary for the plans and role assignments to be identical; it is enough if the resulting agent-specifying plans are, in a special sense, compatible.⁸) Finally, each agent may know enough about herself and the others to be able to determine, without communicating, whether the plan and role assignments will be acceptable to everyone. And all of this—that they engage in parallel agent-neutral planning resulting in compatible plans and role assignments, which are acceptable to all—may be common knowledge to the agents. So it is possible, in principle at least, that several agents might each individually engage in agent-neutral planning and rationally perform their part in the resulting plan, knowing that the others will do likewise. Parallel agent-neutral planning can rationally result in coordinated action without requiring shared agency.

Now that we have some background on agent-neutral plans, let us introduce a third and final case. This case needs to be as similar as possible to that of Yasmin and Zak's while involving shared agency.

Lily and Isabel start in the same situation as Yasmin and Zak. Each is tasked with making the cross hit the red square (J_1). Once again each cares only about her own success at the outset. Lily, knowing that she and Isabel have the same task, takes the view that the best way for her to succeed is plan how two agents in their situation could J_1 . So Lily ends up with an agent-neutral plan that specifies both her own actions and Isabel's actions without

⁸ Suppose that, for some outcome, two or more agents each have a plan for the realisation of that outcome. (These plans may, but need not, specify roles for all of the agents; but the plans must be agent-specific, not agent-neutral.) By saying that these plans are *compatible* we mean that: (i) no agent would be prevented from performing the role she is assigned in her own plan by other agents performing the roles they are assigned in their plans; and (ii) if all facts about which agents have which roles in which plans were common knowledge to the agents, this would not affect the rationality of their each acting on the intention that they realise the outcome by performing the role she is assigned in her own plan. To illustrate, suppose that our task is to press a button simultaneously. If your plan specifies that the agents start to move in exactly 60 seconds and press the button 5 seconds later whereas my plan specifies only that there is a leader and the agents are to press the button 5 seconds after the leader starts moving, then our plans are compatible.

identifying her own actions as such (and without identifying Isabel's actions as Isabel's either). Having done this, Lily then assigns one role in the plan to herself and the to Isabel. At this point Lily considers whether she would be prepared to go along with the plan given her intentions, preferences and values, and she also considers whether Isabel would be prepared to go along with it too. In this case it happens that both would be prepared to go along with the plan. Lily then knowledgeably predicts that Isabel, who has similar planning abilities and has been approaching their task in a similar way, will have made a compatible plan. Lily therefore attempts to carry out her part in the plan she made; and Isabel does likewise.

In short, then, Lily and Isabel are like Yasmin and Zak in nearly every respect. Each pair has a Bratman intention that they J_1 , each pair acts on this intention and each pair ends up performing the same sequence of actions. The difference is just that Yasmin and Zak make no use of the fact that they are performing the same task. This fact does not show up in their planning. Rather, each plans her own actions only and treats the other's actions as constraints to work around or opportunities to exploit. By contrast, Lily and Isabel embrace the fact that they are performing the same task. They may not like having to act together; in fact each may far prefer to act alone were that possible. And, like Yasmin and Zak, they are unconcerned with each other's success except insofar as their own success depends on it. But Lily and Isabel nevertheless make use of the fact that they have to perform a single task together by each constructing a single plan covering both of their actions and then carrying out their parts in these plans. So why does Lily and Isabel's case, but not Yasmin and Zak's case, plausibly involve shared agency? The reason is this: that at some stage of the planning which rationally guides and coordinates their actions, Lily and Isabel each conceive of their actions as part of a single plan directed to achieving a single outcome.

Given that Yasmin and Zak's case contrasts with Lily and Isabel's, we conclude that Yasmin and Zak do not have a shared intention. As explained above, Yasmin and Zak do meet Bratman's conditions for shared intention, and do act appropriately on the corresponding intentions and knowledge. So Yasmin and Zak's case is a counterexample to sufficiency of Bratman's conditions for shared intention.

Note that in describing the case of Lily and Isabel we have not introduced contralateral commitments or other elements foreign to Bratman's account of shared agency. Of course, we have not shown that these are not necessary for shared agency; but if we knew that they were necessary we would not need a counterexample. Our counterexample is useful because it draws on the same planning resources Bratman's account draws on, with just one addition. The addition is the idea that agents can conceive, or fail to conceive, of their actions as part of a single plan.

Given that Yasmin and Zak's case is a counterexample, there are also

many further counterexamples involving mundane activities and less elaborate props. Here, for instance, is how Yasmin and Zak walk together. They are firmly tied at the ankle, and neither is strong enough to move without the other. Yasmin needs to get to the corner, and so does Zak. Further, they have a Bratman intention that they walk to the corner, and they act on this intention in walking to the corner. Again, this is not a case of shared agency. The problem is not that Yasmin and Zak are tied together against their will; after all, many cases of shared agency are involuntary in this sense. The problem is rather that each conceives of the others' intentions and actions only as constraints and opportunities. They fail to make any use of the fact that they intend the same outcome, and so they fail to see their actions as part of a single plan.

Yasmin and Zak's attitude may be unnatural. Perhaps humans in their situation would not normally ignore the fact that they have the same task in the way that these agents do. This may be why Bratman's conditions appear, misleadingly, to be sufficient for shared intention.

6. How to Fix Bratman's Account

How could Bratman's account be revised to avoid the counterexample? We might try strengthening Bratman's requirement about meshing subplans of intentions. This requirement is that, concerning our shared intention that we J, we each intend that we J in accordance with our intentions that we J and meshing subplans of them (see (2) on page 2). The case of Yasmin and Zak suggests that this requirement is not strong enough. And the case of Lily and Isabel suggests that we might try strengthening it by appealing in some way to the idea that each agent can have a plan specifying roles for all of the agents.

One way to strengthen Bratman's requirements is by constraining the possible ways in which agents who have a shared intention that they J may conceive of J in intending that they J. As we have seen, Bratman's account requires only that, in some cases, the agents conceive of J in a way that is neutral with respect to shared intentionality. We shall suggest a further requirement that is compatible with this one.

We stipulate that an activity is *distributed* just if: there is a single outcome, G, and two or more agents each have a plan for G which specifies a role for all of the agents; these plans are compatible⁹ and each acceptable to all; each agent performs the roles assigned to her in her own plan; the activity consists in nothing other than the agents performing these roles; and by performing these roles, the agents G. In specifying the class of distributed activities we have not made direct appeal to shared agency. Nor is any covert

⁹ The notion of compatibility is defined in footnote 8 on page 9.

appeal required, as our earlier discussion should make clear (see Section 5 on page 8). To use Bratman's term (see Section 2 on page 3), distributed activities can be conceived of in ways that are neutral with respect to shared intentionality. So no circularity is involved in appealing to the notion of a distributed activity in explicating shared intention.

Many ordinary interactions involve distributed activities. Two housemates have agreed to make a pizza and each start with an idea of what needs to be done. One starts by preparing the dough, so the other peels, washes and chops the vegetables. As the activity unfolds in this way, each gradually adds details to her plan and assigns roles.

We should also note that distributed activities do not have to be very complex. In walking to a metro station together, you and I may each form and act on a plan that specifies some details of both of our movements.

It is possible, then, that when two or more agents each intend that they do something, perhaps to paint a house, in having these intentions they conceive of the activity as a distributed activity. Where this happens, part of what the agents intend is, in effect, that they each construe their own actions as part of a single plan which also involves the others' plans.

We can exploit this possibility in strengthening Bratman's conditions for shared intention. To avoid counterexamples like the case of Yasmin and Zak, we leave the conditions for shared intention exactly as Bratman specifies them (see on page 2) but add the further requirement that the agents must, in intending that they J, each conceive of J as a distributed activity.

We have not shown, of course, that this modification to Bratman's account will enable it to avoid any other counterexamples. Perhaps further requirements are necessary. Or perhaps it is impossible to give informative sufficient conditions for shared intention. Our aim here has only been to show that there is a way of avoiding one type of counterexample without abandoning core features of Bratman's planning approach to shared intention. If, as we suppose, that general approach succeeds in illuminating at least one kind of shared agency, it needs to be modified in order to capture a simple intuition about shared agency. The intuition is this: our intending to act in accordance with our intentions and meshing subplans of them is not sufficient for us to have a shared intention; instead we must conceive of our actions as part of a single plan. A planning approach to shared agency can readily accommodate this intuition by invoking distributed activities.

7. Conclusion

We started with some contrasts between shared agency and parallel individual agency. These provide one intuitive fix on the notion of shared intention: shared intention, whatever it is, is what distinguishes thinks like two friends

walking somewhere together from things like two strangers who walk the same route side by side. By introducing new contrast cases, we provided a counterexample to the view that a certain interlocking structure of intention and knowledge is sufficient for shared intention. Two agents might meet conditions Bratman offers as sufficient for shared intention—that is, it might be common knowledge to them that they might each intend that they J and intend that they J in accordance with and because of these intentions and meshing subplans of them—even though they lack a shared intention.

Bratman's conditions are not sufficient for shared intention because they leave open the possibility that when two or more agents meet his conditions, each fails to rely on the fact that there is a single outcome to which all of their actions are directed and so conceives of the others' actions merely as constraints and opportunities. Bratman's conditions may appear to be sufficient for shared intention because it may be natural that when two or more agents meet his conditions, they would rely on the fact that there is a single outcome to which all of their actions are directed and therefore be disposed to conceive of all their actions as parts of a single plan. Our counterexample, the case of Yasmin and Zak, shows that although this may be natural, it not necessary.

There is a way to revise Bratman's account so as to avoid this sort of counterexample without departing from the spirit of his planning approach. The remedy we propose hinges on the possibility that sometimes an agent, in planning for an outcome, can specify both her own and other agent's actions. Further, in the right circumstances, two or more agents with the same task can each individually specify roles for all of the agents in planning for that task. Even where such planning occurs in parallel (and so need not involve no shared agency), sometimes it can rationally result in coordinated action. These reflections suggest a way of appealing to the possibility that, in acting on a shared intention, each agent has a plan for all of their actions in order to capture the idea that agents acting on a shared intention conceive of all of their actions as part of a single plan.

No amount of acting on intentions about other's intentions is not sufficient for shared agency. But conceiving of one's own and other's intentions and actions as part of a single plan might be.

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