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Michael E. Bratman

Shared Cooperative Activity: Three Features

We have a recognizable and important concept of a shared cooperative activity. This concept picks out a distinctive kind of interpersonal interaction, one that many of us see as important in our lives. You and I might sing a duet together, paint a house together, take a trip together, build something together, or run a give-and-go¹ together in a basketball game. In many such cases ours will be a shared cooperative activity. Such shared cooperative activities can involve large numbers of participating agents and can take place within a complex institutional framework—consider the activities of a symphony orchestra following its conductor. But to keep things simple I will focus here on shared cooperative activities that involve only a pair of participating agents and are not the activities of complex institutions with structures of authority.

Shared cooperative activity (SCA) involves, of course, appropriate behaviors. If you and I successfully engage in the SCA of painting the house together then, of course, we paint the house together. But we might paint the house together without acting cooperatively. Perhaps neither of us even knows of the other's activities, or though we each know of the other's activities neither of us cares.

Given appropriate behaviors, what else is needed for ours to be a SCA? Suppose that you and I sing a duet together, and that this is a SCA. I will be trying to be responsive to your intentions and actions, knowing that you will be trying to be responsive to my intentions and actions. This mutual responsiveness will be in the pursuit of a goal we each have, namely, our singing the duet. You may have this goal for different reasons than I do; but at the least we will each have this as a goal. Finally, I will not merely stand back

¹A standard offensive basketball play.

and allow you to sing your part of the duet. If I believe that you need my help I will provide it if I can.

This suggests that we can identify, in a rough and preliminary way, a trio of features characteristic of SCA:

(i) *Mutual responsiveness*: In SCA each participating agent attempts to be responsive to the intentions and actions of the other, knowing that the other is attempting to be similarly responsive. Each seeks to guide his behavior with an eye to the behavior of the other, knowing that the other seeks to do likewise.²

(ii) *Commitment to the joint activity*: In SCA the participants each have an appropriate commitment (though perhaps for different reasons) to the joint activity, and their mutual responsiveness is in the pursuit of this commitment.³

(iii) *Commitment to mutual support*: In SCA each agent is committed to supporting the efforts of the other to play her role in the joint activity. If I believe that you need my help to find your note (or your paint brush) I am prepared to provide such help; and you are similarly prepared to support me in my role. These commitments to support each other put us in a position to perform the joint activity successfully even if we each need help in certain ways.

Using this trio of features as my guide, I want to say more precisely what SCA is. I hope thereby to lay the groundwork for an understanding of the distinctive value to us of SCA. But here I limit myself to the prior question about the nature of SCA.

One point is clear: There are cases which satisfy (i) without satisfying either (ii) or (iii). Consider two opposing soldiers in a battle. Each tries to be responsive to the intentions and actions of the other, knowing that the other is trying to be similarly responsive.

²See Thomas Schelling, *The Strategy of Conflict* (Cambridge: Harvard University Press, 1960), chap. 4.

³Similar ideas are suggested by, for example, H. P. Grice, "Logic and Conversation," in *The Logic of Grammar*, ed. Donald Davidson and Gilbert Harman (Encino, Calif.: Dickenson, 1975), at 68, and by John Cooper, "Friendship and the Good in Aristotle," *Philosophical Review* 86 (1977): 290–315, at 305.

Each acts on his expectations about the other, expectations based on beliefs about the other's expectations about him, and so on "in the familiar spiral of reciprocal expectations."⁴ So there is cognitive interdependence. But each is being responsive in this way in the pursuit of a personal goal of survival, and neither is prepared to help the other. So there can be mutual responsiveness in the pursuit of personal goals without commitment to a joint activity and without commitment to mutual support. This said, I turn to (ii).

Commitment to the Joint Activity

In SCA each agent is appropriately committed to the joint activity. But what does this mean? What is it for me to be committed to *our* joint activity? My initial conjecture is that this commitment typically involves, in part, an *intention in favor of the joint activity*.⁵ Each agent may have such an intention for different reasons: when we paint together I may be primarily concerned with having a newly painted house, you with getting some exercise. But in SCA each agent will typically⁶ have such an intention for some reason or other.⁷

⁴Schelling, 87.

⁵Thanks to Philip Cohen for helping to persuade me of some of the virtues of this initial conjecture. I offer a general account of the commitment characteristic of intention in *Intention, Plans, and Practical Reason* (Cambridge: Harvard University Press, 1987), hereafter *Intention*.

⁶Let me indicate why I say only "typically." I argue in *Intention*, chapter 8, that, while intentionally to A one needs to intend something, in certain cases an individual can intentionally A without intending to A. There will probably be similar complexities for cases of SCA; but here (with the exception of a brief remark in note 10) I put them to one side.

⁷A number of theorists have explored, in varying ways, conjectures about the role of intentions, or other practical attitudes, in favor of a joint activity. See, for example, Wilfred Sellars, *Science and Metaphysics* (London: Routledge and Kegan Paul, 1968), 217ff.; Margaret Gilbert, *On Social Facts* (New York and London: Routledge, 1989), esp. chap. 7; Hector J. Levesque, Philip R. Cohen, and José H. T. Nunes, "On Acting Together," *Proceedings of the National Conference on Artificial Intelligence* (Menlo Park, Calif.: AAI Press/MIT Press, 1990), 94–99; John R. Searle, "Collective Intentions and Actions"; Barbara J. Grosz and Candace L. Sidner, "Plans for Discourse"; and Jerry R. Hobbs, "Artificial Intelligence and Collective Intentionality: Comments on Searle and on Grosz and Sidner." These last three papers are in *Intentions in Communication*, ed. Philip R. Cohen, Jerry Morgan, and Martha E. Pollack (Cambridge: MIT Press, 1990). Raimo

We must be careful here. In analyzing SCA we will run into problems of circularity if we appeal to intentions that we *act together cooperatively*. To avoid these problems we need to distinguish joint-act-types that are *cooperatively neutral* from those that are *cooperatively loaded*. A cooperatively loaded joint-act-type—for example, trying to solve a problem together—already brings in the very idea of cooperation. In contrast, in the case of cooperatively neutral joint-act-types, joint performance of an act of that type may be cooperative, but it need not be. There is, for example, a clear sense in which we can go to New York together or paint the house together without our activity being cooperative. We might satisfy the behavioral conditions for such joint activities without having the attitudes essential to cooperative activity. Our analysis of SCA should appeal to intentions in favor of joint activities *characterized in cooperatively neutral ways*.

Talk of my intention that we perform a joint-act-type J may still seem suspect. I cannot, after all, attempt to perform your or our actions. But if this is true about attempts, isn't it also true about intentions? Isn't what one intends one's own actions? And if so, how can we make sense of an appeal to my intention that *we* J?

In response, I grant that what one attempts are one's own actions. But it is a mistake to assume that intending and attempting are subject to the same constraints on their contents. Many approaches to intention see intentional action and action done with an intention as the basic phenomena, thereby lending support to the idea that intention must be tied directly to action. This may make it plausible that the limits of what one can attempt are the limits of what one can intend. But, as I have argued elsewhere, our conception of intention also significantly involves our conception of the roles of future-directed intentions as elements of partial plans.⁸ This planning conception of intention allows us to be more

Tuomela believes that "one can only intend to do something oneself in the last analysis" ("What Goals Are Joint Goals?" *Theory and Decision* 28 [1990]: 1–20, at 10) but still appeals to the idea of having a joint action as a goal. See Raimo Tuomela and Kaarlo Miller, "We-Intentions," *Philosophical Studies* 53 (1988): 367–89.

⁸In *Intention* I argue that intentions, as elements of partial plans, pose problems for further practical reasoning, given the demand that one's plans be means-end coherent, and constrain solutions to those problems,

liberal about what can be intended than we are about what can be attempted; for references to things other than our own actions can function appropriately in our plans. I can engage in planning aimed at settling on means to our joint action: I can, for example, figure out how to support our singing the duet—perhaps by helping you find your note. And I can try to ensure that the rest of my plans are consistent with our performance of a certain joint action: I can, for example, eschew ways of singing that will prevent your coming in on time. In these ways the planning conception of intention supports the legitimacy of the appeal to my intention that *we J*.⁹

In our SCA, then, you and I each intend that we perform the (cooperatively neutral) joint action.¹⁰ I now turn to cases that suggest in different ways that such intentions, while necessary, do not yet ensure the appropriate kind of commitment to the joint action.

Meshing Subplans and Interdependent Intentions

Suppose you and I each intend that we paint the house together. However, I intend that we paint it red all over, and you intend that we paint it blue all over. We each know this about the other, know that we each know this, and so on. And neither of us is willing to compromise. Even if as a result we end up painting the house together (some combination of red and blue), ours would not be a SCA.¹¹

You and I each have subplans with respect to our house painting, and these subplans disagree. This may suggest that SCA requires

given demands for the consistency of plans. In these ways prior partial plans provide a settled background framework for further practical reasoning. The point I go on to make in the text is that intentions in favor of joint activities can play analogous roles in structuring further reasoning.

⁹Though we can still retain a distinction between intentions *that we J* and intentions *to* perform some action. In an unpublished manuscript on objects of intentions Bruce Vermazen also argues that intentions are not limited to intentions to act.

¹⁰But recall the qualification cited in note 6. There may be cases of SCA in which the relevant intentions in favor of *J* are more qualified. For example, it can perhaps be enough in certain cases only to intend that we *J* unless *p*, for some unexpected *p*. But here I put such complexities to one side.

¹¹Thanks to Rachel Cohon for helping me get this example right.

agreement in the agents' subplans. But this is too strong. Suppose I intend that we paint the house with an inexpensive paint, and you intend that we paint it with a paint purchased at Cambridge Hardware. I don't care where we buy the paint, and you don't care about the expense. Still, we could proceed to paint the house with an inexpensive paint from Cambridge Hardware. Our activity could be cooperative despite differences in our subplans.

In this second case, despite differences in our subplans, there is a way of our painting the house together such that none of the activities would violate either of our subplans. Let us say that 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. In the first case, then, our subplans fail to mesh; in the second case they do mesh, despite some divergence.

This suggests that in SCA each agent does not just intend that the group perform the (cooperatively neutral) 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.

Why not just say that cooperative activity must be motivated by subplans that do *in fact* mesh? Why should we build a meshing condition into the *content* of each individual's intention? Well, suppose that you and I each intend that we paint the house together, our subplans happen so far to mesh, but neither of us is committed to maintaining this mesh. Suppose our subplans happen to agree on red. We may still ask how I would be disposed to act if you were unexpectedly to announce a preference for blue. In the absence of a commitment to mesh I would tend to be willing to bypass (rather than seek a mesh with) your subplans, so long as we still thereby paint the house together. For example, I might try to pour red paint into your paint can when you are not looking. And this would signal the absence of a cooperative attitude characteristic of SCA. If, in contrast, I intended not merely that we paint together, but that we do so in accordance with meshing subplans, then I would need instead to track this more complex goal. I would normally do this by working with you to achieve such a mesh.

Of course, even if I intend that we perform the joint action in accordance with meshing subplans I need not be willing to accept *just any* subplans that mesh. There may, for example, be colors that

are, for me, simply beyond the pale.¹² What you and I will be prepared to accept will depend in part on our relevant desires and intentions. If these diverge too much we may fail to arrive at adequate, meshing subplans and so fail in our effort at SCA.

In SCA, then, each agent intends that the group perform J in accordance with subplans that mesh. Turn now to another example. You and I each intend that we go to New York together, and this is known to both of us. However, I intend that we go together as a result of my kidnapping you and forcing you to join me. The expression of my intention, we might say, is the Mafia sense of 'We're going to New York together'. While I intend that we go to New York together, my intentions are clearly not cooperative in spirit. Cooperation, after all, is cooperation between intentional agents each of whom sees and treats the other as such; and in intending to coerce you in this way I intend to bypass your intentional agency. This suggests that for our J-ing to be a SCA I must intend that we J in part *because of* your intention that we J and its subplans. In this way my intention favors your participation as an intentional agent.

However, once we bring into the content of my intention the efficacy of your intentions, it is a short step to including as well the efficacy of *my own* intentions. In SCA I will see each of the cooperators, *including me*, as participating, intentional agents. If this obliges me to include the efficacy of your intention and subplans in the content of my relevant intention, then it also obliges me to include the efficacy of my own intention and subplans in this content. Otherwise there would be in the content of my intention a deep asymmetry between you and me; and I do not see what would support such an asymmetry.

These considerations, taken together, argue that in SCA each agent intends that the group perform the joint action in accordance with and because of meshing subplans of each participating agent's intention that the group so act. That is, for cooperatively neutral J, our J-ing is a SCA only if

(1)(a)(i) I intend that we J.

¹²Credit the example to an editor of the *Philosophical Review*; blame the pun on me.

- (1)(a)(ii) I intend that we J in accordance with and because of meshing subplans of (1)(a)(i) and (1)(b)(i).
- (1)(b)(i) You intend that we J.
- (1)(b)(ii) You intend that we J in accordance with and because of meshing subplans of (1)(a)(i) and (1)(b)(i).¹³

Some important points of clarification about the intentions cited in (1): I may intend that we J by way of meshing subplans even though there are as yet no specific, meshing subplans such that I intend that we J by way of them. You and I may not yet have filled in each of our subplans, or we may have filled them in in ways which do not yet mesh. We may be involved in negotiations about how to fill in our plans even while we have already started to J. What (1) requires is only that we each intend that there be meshing subplans on which we eventually act. Indeed, given my intention in favor of our achieving meshing subplans, I may still bargain with you in an effort to ensure that we J in a certain way. This may eventually prevent us from arriving at subplans that mesh; but it may not. If our bargaining does lead to meshing subplans our resulting J-ing may still be a SCA. Finally, even once our subplans have been completed in ways that mesh, (1) does not require that all the details of each agent's subplans be known to the other. According to (1) I must intend that my subplans mesh with yours whatsoever they may be. But I may neither know nor care about the details of some of your subplans. Though I need to know that you will buy the paint, I may remain ignorant about where you buy it.

Conditions (1)(a) and (1)(b), so interpreted, are central to my account of SCA. But more needs to be said. Begin by recalling the case of coercion. In this case I intended to force you into joining me on a trip to New York in a way that would bypass your intentional agency. But not all coercion works like that. Suppose I put a gun to

¹³I number the conditions in this way to make it clear how they are related to others to be introduced later. In stating (1)(a)(ii) and (1)(b)(ii) in this way I am assuming that they entail that I/you intend that we J in accordance with and because of (1)(a)(i) and (1)(b)(i). These conditions are to some extent in the spirit of Grice's classic discussion of meaning; but there are also very important differences. See H. P. Grice, "Meaning," *Philosophical Review* 66 (1957): 377-88.

your head and tell you that either you must decide that we will go to New York together and then act on that decision or I will pull the trigger. This is attempted coercion, and my attitude is not cooperative, to say the least. But in this case what I intend does include the efficacy of your intention in the route from my threat to your action. To block such cases let us add the further condition

- (1)(c) The intentions in (1)(a) and in (1)(b) are not coerced by the other participant.¹⁴

Consider now the cognitive conditions on SCA. It follows from (1)(a)(ii) and (1)(b)(ii) that we each believe the conjunction of (1)(a)(i) and (1)(b)(i). But we will want to say something stronger than this. In SCA the fact that there is this mutually uncoerced system of intentions will be in the public domain. It will be a matter of common knowledge among the participants.¹⁵ I will know that we have these intentions, you will know that we have these intentions, I will at least be in a position to know that you know this, and so on. So we will want to add

- (2) It is common knowledge between us that (1).

It is the web of intentions cited in (1) that ensures the commitments to the joint activity characteristic of SCA. In SCA, then, there is an important kind of interdependence of intention. The system of intentions characteristic of SCA must be *interlocking*; for each agent must have intentions in favor of the efficacy of the intentions of the other. In this way each agent must treat the relevant intentions of the other as *end-providing* for herself; for each intends that the relevant intentions of the other be successfully executed. And this system of intentions must also be *reflexive*; for

¹⁴Suppose that in reaching meshing subplans you intentionally use large advantages in bargaining power to dictate the terms of our agreement. In some extreme cases this may count as coercion. If it does then condition (1)(c) on SCA will fail to be satisfied. (Here I benefited from discussion with Debra Satz.)

¹⁵There is a large literature on the idea of common knowledge. See, for example, David Lewis, *Convention: A Philosophical Study* (Cambridge: Harvard University Press, 1969). Here I simply use it as an unanalyzed idea.

each agent must have intentions concerning the efficacy of her own intentions.¹⁶ SCA involves appropriately interlocking and reflexive systems of mutually uncoerced intentions concerning the joint activity.

Commitment to Mutual Support

Return now to feature (iii) of SCA: the commitment of each agent to support the other's attempts to play her role in the joint action. Do the attitudes cited so far ensure this feature?

To some extent they do. Suppose I intend that we sing the duet together. I am committed to pursuing means and preliminary steps I believe to be necessary for our so acting. That follows from demands of means-end rationality on my intentions. So I am committed to helping you play your role in our joint action to the extent that I believe such help to be necessary.

But what if I believe that you will not need my help? I might then intend that we sing together and still not be at all prepared to help you should you unexpectedly need it. Consider, for example, the case of the unhelpful singers: You and I are singing the duet. I fully expect you to get your notes right, and so I intend to coordinate my notes with yours so that we sing the duet. But I have no disposition at all to help you should you stumble on your notes; for I would prefer your failure to our success. Were you unexpectedly to stumble I would gleefully allow you to be embarrassed in front of the audience—as I might say, “One false note and I’ll abandon you to the wolves.” And you have a similar attitude: you fully expect me to get my notes right, and so you intend to sing your notes in a way that meshes with mine. But were I to stumble you

¹⁶A number of philosophers have argued that in individual intentional action the content of the agent's intention involves a kind of self-referentiality. (See, for example, Gilbert Harman, “Practical Reasoning,” *Review of Metaphysics* 29 [1976]: 431–63; and John Searle, *Intentionality* [Cambridge: Cambridge University Press, 1983].) When I intentionally raise my arm what I intend is that it go up as a result of this very intention. Or so it is claimed. My claim about the reflexivity of the intentions in SCA is close to being an analogous view about SCA. Nevertheless, my view about SCA does not by itself entail the aforementioned view, or even some close variant of it, about individual intentional action. Indeed, I suspect that SCA and individual intentional action will differ in this respect.

would not help; for you prefer my failure to our success.¹⁷ We each intend that we sing the duet in the world as we expect it to be, and we each intend that we do so by way of meshing subplans. But we do not have commitments to support each other of the sort characteristic of SCA. If we, as unhelpful singers, do in fact sing the duet together our singing may be *jointly intentional*; but it is not a SCA.¹⁸

SCA involves commitments to support the other that go beyond those of the unhelpful singers. How much beyond? Some participants in a SCA may be willing to incur what would normally be seen as fairly high costs in helping the other; others may be willing to help only if the costs thereby incurred are of a sort that would normally be seen as minimal. Willingness to support the other comes in degrees. Is there a threshold beyond which feature (iii) of SCA is realized?¹⁹ I think there is.

Suppose (a) you and I satisfy conditions (1) and (2) on SCA, as these conditions have so far been specified, and are embarked on our J-ing; (b) a problem arises for you: you continue to have the relevant intentions but you need help from me to act in ways necessary for our J-ing successfully; (c) I could successfully help you without undermining my own contribution to our J-ing; (d) there are no new reasons for me to help you in your role in our J-ing (you do not, for example, offer me some new incentive to help you); (e) this is all common knowledge. Let us say that circumstances satisfying (a)–(e) are *cooperatively relevant to our J-ing*. For our J-ing to be a SCA there must be at least some cooperatively relevant circumstance in which I would be prepared to provide the necessary help. And similarly for you.

¹⁷These dispositions not to help may themselves be publicly known. My point is not that there is an absence of what Levesque et al. call a “robustness against misunderstandings” (“On Acting Together,” 95).

¹⁸So John Searle’s remark that “[t]he notion of . . . collective intentionality, implies the notion of *cooperation*” is too strong (“Collective Intentions and Actions,” 406). Still, both jointly intentional action and SCA will involve somewhat similar webs of intentions concerning the joint activity. So if a joint-act-type were to be loaded with respect to joint intentionality but still not, strictly speaking, cooperatively loaded, we would still not want to appeal to it in specifying the intentions essential to SCA.

¹⁹I am indebted to David Copp for helping me formulate the problem in this way.

This is a minimal requirement; and there will be cases of SCA in which it is important that the participants' willingness to help goes beyond this. Still, it is a requirement with some bite. In particular, the mere presence of intentions that we J (by way of meshing subplans) need not by itself ensure satisfaction of this requirement. That is the lesson of the case of the unhelpful singers. Let us say that an intention is *minimally cooperatively stable* if there are cooperatively relevant circumstances in which the agent would retain that intention. In SCA the agents' relevant intentions (that is, the intentions cited in condition (1)) are minimally cooperatively stable.²⁰ This stability of intention ensures that there is a commitment to help in some cooperatively relevant circumstance.

I can now fully state my account of the attitudes essential to SCA.²¹ Where J is a cooperatively neutral joint-act-type, our J-ing is a SCA only if

- (1)(a)(i) I intend that we J.
- (1)(a)(ii) I intend that we J in accordance with and because of meshing subplans of (1)(a)(i) and (1)(b)(i).
- (1)(b)(i) You intend that we J.
- (1)(b)(ii) You intend that we J in accordance with and because of meshing subplans of (1)(a)(i) and (1)(b)(i).
- (1)(c) The intentions in (1)(a) and in (1)(b) are not coerced by the other participant.
- (1)(c) The intentions in (1)(a) and (1)(b) are minimally cooperatively stable.
- (2) It is common knowledge between us that (1).

Mutual Responsiveness and the Connection Condition

If our J-ing is a SCA three things must be true: we J; we have the appropriate attitudes; and these attitudes are appropriately *con-*

²⁰I discuss a general notion of intention stability in several places. See, for example, *Intention*, and "Planning and the Stability of Intention," *Minds and Machines* 2 (1992): 1–16. In my view, while some degree of stability is characteristic of the intentions of reasonable agents, an intention may be reasonable in its stability and yet still not be minimally cooperatively stable.

²¹With this account in hand we can return to the distinction between jointly intentional action and SCA and treat the former as the genus and the latter as a species of that genus. At least part of what is distinctive of SCA is its satisfaction of (1)(c) and (1)(d), and certain aspects of (1)(a)(ii) and (1)(b)(ii). (I was helped here by conversation with David Copp.)

nected to our J-ing. Having given my account of the attitudes involved in SCA, I turn to the connection condition.

This brings us back to feature (i) of SCA: mutual responsiveness. Our intentions that we J by way of subplans that mesh will normally lead each of us to construct our own subplans with an eye to meshing with the other's subplans. This is mutual responsiveness *of intention*. But in SCA there will also be mutual responsiveness *in action*. Consider our SCA of singing the duet. Our intentions lead each of us to be appropriately responsive to the actions of the other: I listen closely to when and how you come in, and this helps guide my own singing; and you are similarly responsive. In SCA our relevant attitudes lead to the joint activity by way of mutual responsiveness both of intention and in action. This supports the following claim:

- For cooperatively neutral J, our J-ing is a SCA if and only if
- (A) we J,
 - (B) we have the attitudes specified in (1) and (2), and
 - (C) (B) leads to (A) by way of mutual responsiveness (in the pursuit of our J-ing) of intention and in action.

This connection condition helps us see the difference between SCA and what I will call *prepackaged cooperation*. In prepackaged cooperation we have the attitudes specified in (1) and (2), and we work out, in advance, just what roles we each will play in our J-ing. So there is mutual responsiveness of intention. But then we each go off and play our role with no further interaction with the other: there is no mutual responsiveness in action. While our activity of prior planning may itself be a SCA, our noninteractive performance of J does not satisfy condition (C), the connection condition: it is prepackaged cooperation, not SCA. Suppose, for example, you and I lay plans for you to go to San Francisco while I go to New York.²² We might have a web of intentions concerning this joint activity, a web that satisfies (1) and (2). And our activity of prior planning may itself be a SCA. But if when we each go our separate ways there is no mutual responsiveness in action, our activity is prepackaged cooperation, not SCA.

²²Example courtesy of an editor of the *Philosophical Review*.

Competition and Levels of Mesh

Suppose you and I play a game of chess together. This will involve some cooperation. We cooperate in keeping the pieces in place, making our moves public, following rules about the movements of pieces, and so on. Yet within this cooperative framework our activity is competitive: I am not trying to mesh my specific game plan with yours; instead I am trying to thwart your game plan. A joint activity can be cooperative down to a certain level and yet competitive beyond that. And on the present account such an activity—one in which we do not intend that our subplans mesh all the way down—is not a SCA.

We can nevertheless capture the sense in which our competition takes place within a cooperative framework. You and I do not intend that our subplans mesh all the way down. But you and I do intend that our subplans mesh down to the level of the relevant rules and practices. Our chess playing is not a full-blown SCA. But it is jointly intentional, and it involves shared cooperation down to the cited level.²³

Concluding Remarks

We can tie some threads together by reviewing some of our examples. The case of the battling soldiers is one of mere mutual responsiveness in which only feature (i) is present. In the Mafia case and in the case in which we firmly disagree about the color of the paint, there are intentions in favor of the joint action. But these intentions fail, in different ways, to be appropriately interlocking. So feature (ii) is not fully present. In the case of the unhelpful singers each agent intends that they perform the joint action by way of subplans that mesh. But these intentions are not minimally cooperatively stable. So we have features (i) and (ii), but not feature (iii). In prepackaged cooperation there is mutual responsiveness of intention, but not mutual responsiveness in action; so feature (i) is not fully present. Finally, SCA involves mutual responsiveness—in intention and in action—in the service of appropriately stable, interlocking, reflexive, and mutually noncoerced intentions in fa-

²³John Searle makes a similar point in "Collective Intentions and Actions," 413–14.

vor of the joint activity. This account of SCA is broadly individualistic in spirit; for it tries to understand what is distinctive about SCA in terms of the attitudes and actions of the individuals involved.²⁴ And in restricting its analyses to joint-act-types that are cooperatively neutral, it aims at a noncircular account of SCA, one that is reductive in spirit²⁵ and that emphasizes an important kind of interdependence of intention.²⁶

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²⁴Assuming that the common knowledge condition can be understood along individualistic lines.

²⁵In "Collective Intentions and Actions" John Searle argues that "collective intentional behavior is a primitive phenomenon" (401) and that we should eschew "a reductive analysis of collective intentionality" (406). In *On Social Facts* Margaret Gilbert focuses on "plural subject concepts": when we cooperatively sing the duet together we constitute a "plural subject." Gilbert argues that this notion of a plural subject is not itself reducible (see, e.g., 435–36). In contrast with both Searle and Gilbert, I have argued that a useful reduction may be possible here.

²⁶Ancestors of this essay were presented at colloquia at Stanford University, University of California at Davis, the March 1990 Paris Conference on Convention cosponsored by Stanford University and The Ecole Polytechnique, Davidson College, University of North Carolina-Chapel Hill, University of North Carolina-Greensboro, University of California at Berkeley, and the Rational Agency research group at the Center for the Study of Language and Information. I have benefitted in particular from the suggestions and criticisms of Dorit Bar-On, David Brink, Philip Cohen, Rachel Cohon, David Copp, Charles Dresser, Fred Dretske, Jean Hampton, John Heil, Daniel Herwitz, Thomas Hill, David Israel, Martin Jones, Michael Jubien, Pierre Livet, Kirk Ludwig, Al Mele, Michael O'Rourke, John Perry, Martha Pollack, Gary Rozencrantz, Geoffrey Sayre-McCord, Debra Satz, Kwong-loi Shun, Thomas Smith, Bruce Vermazen, Bernard Williams, and the editors of the *Philosophical Review*. Work on this essay was supported in part by the Stanford University Humanities Center and by the Center for the Study of Language and Information. Support from the Center for the Study of Language and Information was made possible in part through an award from the System Development Foundation.