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Abstract: According to several philosophical accounts, when two or more agents to engage in a small-scale joint activity J, each of them typically have a commitment to make J come about: an intention of the form "I intend that we J". Such intentions appear to be problematic, since their content violates a widely accepted constraint - which I call the Solipsistic Constraint (SC) - on what can be intended by an agent: one can only intend to perform one's own actions. By appeal to a "planning conception" of intention, one can come around SC (e.g. Bratman 1999). But an account of joint action that relies on such planning intentions are unlikely do be able to deal with joint activities with participants lacking the capacity to have or grasp such intentions in others. In this paper, I examine a Deborah Tollefsen's account of the joint activities of infants and toddlers. Tollefsen's account requires participants to have Searlean intentions-in-action "that we J". This proposal violates SC but I will argue that SC, while widely adhered to, should not be accepted as an unconditional constraint on the contents of intentions-in-action. While Tollefsen's account may not be very promising as a general account of children's joint activities, it is a promising account for accounting for joint activities where there is little room for personal-level deliberation and planning.

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Abstract:

According to several philosophical accounts, when two or more agents to engage in a small-scale joint activity *J*, each of them typically have a commitment to make *J* come about: an intention of the form "I intend that we *J*". Such intentions appear to be problematic, since their content violates a widely accepted constraint – which I call the Solipsistic Constraint (SC) – on what can be intended by an agent: one can only intend to perform one's own actions. By appeal to a "planning conception" of intention, one can come around SC (e.g. Bratman 1999). But an account of joint action that relies on such planning intentions are unlikely do be able to deal with joint activities with participants lacking the capacity to have or grasp such intentions in others. In this paper, I examine a Deborah Tollefsen's account of the joint activities of infants and toddlers. Tollefsen's account requires participants to have Searlean intentions-in-action "that we *J*". This proposal violates SC but I will argue that SC, while widely adhered to, should not be accepted as an unconditional constraint on the contents of intentions-in-action. While Tollefsen's account may not be very promising as a general account of children's joint activities, it is a promising account for accounting for joint activities where there is little room for personal-level deliberation and planning.

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1 Introduction

According to several philosophical accounts, when two or more agents to engage in a small-scale joint activity *J*, each of them typically have a commitment to make *J* come about: an intention of the form "I intend that we *J*". I will call such intentions *group-intentions* (following Kutz 2000). Sometimes the presence of group-intentions is claimed to be a necessary requirement for an activity to count as a truly joint one (Bratman 1999, essays 5 and 6; Pettit and Schweikard 2006; Alonso 2009). At other times, it is presented as at least present in a core class of cases (Bratman 1999, essay 8, 2009a, 2009b; Kutz 2000). Group-intentions appear to be problematic, since their content – typically glossed "that we *J*" - violates a widely accepted constraint on what can be intended by an agent.1 The constraint, which I call the Solipsistic Constraint (SC), says that one can only intend to perform one's own actions. Given that an action can only be owned by one agent, SC implies that one cannot intend to perform another agent's action. Bratman argues that his planning conception of intention allows him to be more liberal about what it is intelligible for an agent to intend (see also Pettit and Schweikard 2006, p. 21). In Bratman's words, "the planning conception of intention supports the legitimacy of the appeal to my intention that *we J*." (1999, p. 98) The intentions of others can function appropriately in our plans since we in many situations can reliably predict that another agent will form a certain

1 There is also a problem concerning *the role* that group-intentions play in accounts of joint intention and action. If a joint action must be preceded by a joint intention, and a joint intention requires participants to have personal intentions "that we *J*", where *J* is a joint activity, then the account leads to an infinite regress. I will not discuss this problem in this paper.

intention. This allows you, for example, to intend to get the time from me by means of asking me what time it is. (Bratman 1999, p.155). Simple examples like this show, convincingly I think, that SC is not a constraint on the contents of plan-intentions.

However, reliance on a planning conception of intention risks making participation in joint activities too cognitively demanding (Pacherie 2007; Pacherie and Dokic 2006). Participants must be capable of both *having* group-intentions and of *grasping* the group-intentions of other participant(s). But infants and toddlers engage in joint activities (social pretend play, for example) which appear to involve joint intentional action, in spite of the fact that they do not have a complex 'theory of mind' (they lack an explicit understanding of others as agents driven by beliefs, desires and plan-like commitments to act). Furthermore, some joint activities that adult participants spontaneously engage in unfold under constraints that are likely to prevent them from going through any personal-level deliberation and planning.2 To account for these types of joint activities, or joint activities with agents lacking planning capacities, joint action theorist thus have propose convincing account of joint action that do not appeal to group-intentions, or reject that SC always holds. In this paper, I will argue that we can have what I call 'socially extended intentions-in-action'. In some circumstances, agents cannot merely plan *that* we *J*, they can attempt to perform an action which includes the performance of another agent's action in its intentional content.

2 I do not doubt that it is possible for Bratman to account for such cases (see 1999, p. 139), but I think that more plausible accounts can be given if "we" do not cling to his planning framework.

In the next section, I will outline Deborah Tollefsen's (2005) analysis of joint action, which is tailored to deal specifically with the joint activities of infants and toddlers.[3] Her analysis follows the structure of Michael Bratman's account of joint intentional activity closely, but the personal intentions of the participants are Searlean intentions-in-action rather than Bratmanian plan-intentions.4 She thus takes something very controversial (what I will argue for) for granted, namely that 'we' – and infants and toddlers in particular – can have intentions-in-action with the content "that we *J*". In section 3, I explain in more detail what SC is and what it entails. Section 4 and 5 contains the meat of the paper. In section 4 I first argue that we can have basic intentions-in-action that are 'technologically extended', and whose conditions of satisfaction thus range beyond movements of the agent's body. In section 5, I argue that intentions-in-action in an analogous way can be 'socially extended', and that as a consequence, SC should not be accepted as an unconditional constrain on our intentions-in-action. However, I conclude that Tollefsen's account is not a good starting point for a general account of *children's* participation in joint activities after all. But her account may be fruitful in understanding other types of joint activities where there is little room for personal-level deliberation and planning.

2 Tollefsen's account

3 Another possibility is to argue that the joint actions of infants and toddlers is a different kind of joint action which only requires the sharing of goal states (see Pacherie and Dokic (2006) on "thin joint actions"). I will not discuss such accounts here.

4 Searle (1990) has an account of what he calls "collective intentions-in-action" that is very different from Tollefsen's account. I will not discuss his account in this paper.

According to Bratman's influential account, a joint intentional activity is the result of a joint intention to *J*, and a joint intention is simply a pattern of "interlocking" personal intentions of the participants about which they have common knowledge. For you and I to have a joint intention, the following conditions must be fulfilled (Bratman 1999, p. 121):

We intend to *J* if[5]

(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 1a, 1b, and meshing subplans of 1a and 1b; you intend that we I in accordance with and because of 1a, 1b, and meshing subplans of 1a and 1b.

(3) (1) and (2) are common knowledge between us.

The primary function of the plan-like "intend that" attitudes of condition (2) and (3) is to coordinate an agent's plans. They are thus only indirectly linked to intentional action, and does not normally specify in detail how the agent should move or behave (Bratman 1984). Bratman's account does not have much to say about what is happening "online" during the course of social interaction that makes up the joint activity. For an activity to be jointly intentional however, the joint intention must lead to a "mutual responsiveness in action" between the participants during the course of the activity (1999, pp. 106-107).

5 Bratman's formulation is actually "if and only if". Elsewhere though, he has admitted that joint intention may be a multiple realisable phenomenon (see 1999, essay 8). In effect, the fulfilment of some other packages of conditions may also result in two or more people having a joint intention.

As Tollefsen (2005) points out, the second condition (2) can only be fulfilled if you and I are proficient "mindreaders", since it is not merely necessary that we have meshing intentions and plans, but that each of us recognise that this is the case. However, children don't appear to develop a full-fleshed "theory of mind" until the age of 4.[6] Given that what 1-to-3-years-olds are doing together is appropriately described as joint intentional activities, then these are clearly of a form that does not satisfy (2). Tollefsen (2005) calls this *the mutual responsiveness problem.*

Children do indeed appear to engage in joint activities with each other or with care takers well before the age of 4. Between the age of 12 and 18 months, they engage in joint attention, and engage in activities together with care takers or other children, say building a block tower. In their second year, they even start to engage in "shared pretence scenarios" (Rakoczy 2008, p. 507). For example, a shared pretence scenario might start with an adult pretending to pour tea into two cups and pretending to spill some, to which the child might respond appropriately by pretending to wipe the tea away from the spot where the adult pretended to spill it. Intuitively at least, such social behaviours are instances of joint activity. In this paper, I will assume that this intuition is correct, and hence, that the mutual responsiveness problem is real problem

6 Following Tollefsen (2005, p. 81), I assume that a full-fledged "theory of mind" includes the following: (i) an understanding of other persons in terms of their thoughts, intentions, and beliefs; (ii) an understanding that other persons' thoughts, beliefs, and intentions may differ from one's own; and (iii) an understanding that others have thoughts and beliefs that may not match with the current state of affairs (false beliefs).

for Bratman's account.[7]

According to Tollefsen, the mutual responsiveness problem can be avoided if "intend that" in conditions (1) and (2) are read not as plan-intentions, but as *intentions-in-action*. 'Intention-in-action' is a technical concept introduced by Searle (1983). It refers to the intentional component of an action, which presents detailed fine-grained conditions that the action's movement component must meet in order for the action to be successful.[8] One of these 'conditions of satisfaction' is always that the intention-in-action itself is the cause of the action's movement component. In other words, intentions are causally self-referential. The content that one accesses in one's experience of acting is the content of an action's intention-in-action, although one can intend-in-action without being conscious of acting (1983, pp. 91-92). Typically, intentions-in-action are expressed verbally in the form "I am *A*-ing" or "I am doing *A*" (1983, p. 84). Deliberate actions also have what Searle calls a prior intention, but for actions that are not premeditated, this is the whole story. Prior intentions are expressed in the form "I intend to *A*" or "I will *A*" and have more coarse-grained contents than intentions-in-action (1983, p. 93).

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7 Note that Tollefsen argues that Bratman's third 'common knowledge' condition also gives rise to a problem, since having common knowledge arguably also requires having a theory of mind. However, a discussion of this problem and Tollefsen's proposed solution is beyond the scope of this paper.

8 Searle writes that "in any real-life situation the intention in action will be much more determinate than the prior intention, it will include not only that the arm goes up but that it goes up in a certain way and at a certain speed, etc." (1983, p. 93)

Tollefsen's (2005) argues that intentions-in-action are perceptually overt by means of various behavioural cues such as "facial expression, extended hands, [or] expressions of cooperativeness." (p. 93) The conditions of satisfaction of an intention-in-action are manifest in such cues, and children can according Tollefsen "literally see these conditions." (p. 91) If this is true, then it is possible that an intention-in-action version of condition (2) can be satisfied, even when the participants are children lacking full mindreading capacities (p. 93). There is at least ample evidence which show that young children can distinguish animate agency from other movements, as well as understand that agents' behaviour is directed towards a specific goal (Tomasello et al. 2005; Gergely & Csibra 2003). This evidence does not necessarily imply that they can perceive Searlean intentions-in-action, but it is at least consistent with this hypothesis.[9] I tentatively accept this interpretation of the evidence.

While Tollefsen's modification of (2) is a promising solution to the mutual responsiveness problem, I have pointed out that her modification puts the account in conflict with SC. While children may *perceive* intentions-in-action with a content "something like 'that we *J*'" (p. 93), it is far from clear that they (or their care takers) can *have* intentions-in-action with such contents.[10] Such contents seem to be ruled out by SC.

9 Pacherie (2000, 2007) and Tomasello, Call and Hare (2003) also suggest that humans and other primates can perceive intentions-in-action (both referring to Searle (1983)).

10 There is one brief reference on to the possibility that such contents may be problematic: "Aside from the difficulties with the notion of an individual intending that we *J* […]." (Tollefsen 2005, p. 93) She does not spell out what these difficulties are though, let alone how they could be overcome.

3 The Solipsistic Constraint

Nicholas Bardsley refers to SC as "an uncontroversial constraint [...] that an individual's intentions cannot be said to range over others' actions" and uses it to rule out analyses of joint intention as inadequate (2007, p. 144)[11] SC is indeed widely accepted and uncontroversial when it comes to what one can intend *to* perform. While one can intend *that* one's guest leaves before midnight, one cannot intend to perform his act of leaving (Bratman 1999, pp. 115-116, 2009b, p. 157; Pettit and Schweikard 2006, p. 21).[12] Bratman accepts that "what one attempts are [only] one's own actions." (1999, p. 97). The contents of what one can intend to *do* are constrained by what Bratman calls the "own-action condition", according to which "the *subject* of an intending is always the intended *agent* of the intended activity." (2009b, p. 156) Insofar as one, pace Bratman himself, ties the concept of intention directly to intentional action, then Bratman would, I take it, urge one to accept SC. Several other joint action theorists also accepts that SC is a constraint on what one can intend to do, among them Christopher Kutz (2000, pp. 21-22) and John Searle (1983, p. 110).[13]

Put in terms of the notion of 'intention-in-action', SC says that the content (conditions

11 It is clear from the context that Bardsley is primarily referring to "intention-in-action" here.

12 Group-intentions, then, is best glossed as "I intend that [we bring about some state of affairs]", rather than as "I intend us to [perform some action]".

13 John Searle thinks that we can have special kind of mental attitude, which he calls a "collective intention" (of the form "We intend to *A*" or "We are *A*-ing"). But he accepts SC as a constraint on the contents of personal intentions (of the form "I intend to *A*" or "I am *A*-ing"). For more discussion about SC, see (Bratman 1999, essay 8; Velleman 1997).

of satisfaction) of an intention-in-action only concern the movements of one's own actions. These movements of one's own actions are typically assumed to be *bodily* movements (but I will argue later that if this qualification is incorporated into SC itself, then it will be routinely overridden in the case of human action). Searle accepts this, as he contends if there is "intervening Intentionality" in the causal chain between the tokening of an intention-in-action and the event that comes about as a result, then that action is not successful. Searle illustrates this with the following example:

> Thus, suppose that unknown to me my arm is rigged up so that whenever I try to raise it, somebody else causes it to go up, then the action is his not mine, even though I had the intention-in-action of raising my arm and in some sense that intention caused my arm to go up. […] And that this is the right way to construe intentions-in-action is at least indicated by the fact that, when my intentions-in-action make explicit reference to the intentions of other agents, then in general the actions become the actions of those agents. Thus, suppose I know how my arm is rigged up and I want it to go up. My intention-in-action then is *getting the other agent to raise it*, not *raising it*. *My* action is getting him to raise it, *his* is raising it. (1983, p. 110)[14]

The latter idea, then, is the following: In general, if I have an intention-in-action that includes in its conditions of satisfaction that it causes you to have an intention-in-action, which in turn causes an action *A*, then *A* is performed by you. This excludes me from also performing *A*; the action I perform is instead getting you to perform *A*.

14 Searle simply writes "intention in action", without the dashes. I have added the dashes to the quote – so that it reads "intention-in-action" – to emphasise that it is a technical concept of Searle's.

Searle thinks that a similar line of reasoning is true even when I am unaware of the mediating role of your intention-in-action. I do not think that this should be accepted however. We can see this by considering one of Searle's own examples (see 1983, p. 98): Gavrilo Princip's striking of a blow against Austria and avenging of Serbia (by means of his killing of the Archduke Franz Ferdinand in Sarajevo on June 28, 1914). Insofar as as "striking a blow against Austria" is an action at all, then it is Princip's intentional action in spite of the fact that most of the links in the causal chain from intention-in-action to massive societal effects must have consisted of "intervening Intentionality". Perhaps we would want to say that Princip was in some sense aware of this "intervening Intentionality", at least upon reflection. In that case, then Searle's line of reasoning does not hold for some cases where the agent is aware of the mediating role of others' intentions in the causal chain leading to the fulfilment of the content of his intention-in-action. Given Searle's choice of example (raising one's arm), it is reasonable to take the principle to hold only (or primarily) in cases where *A* is a basic action. In the case of basic actions, it is furthermore hard not to accept SC as fundamental constraint. But I will argue in the next section that SC does not hold unconditionally even in the case of basic actions.

To sum up, Tollefsen's modification of Bratman's account leads to a problem. By relying on the notion of intentions-in-action rather than plan-intentions, it saws off the branch that allows the original account not to violate SC. Tollefsen doesn't explain how children could have intentions-in-action of the form "I am intending-in-action that we *J*". I will now suggest a way in which this could be explained.

4 Technologically extended intentions-in-action

My strategy will be to first argue that the conditions of satisfaction of an intention-in-action are not restricted to only concern an agent's own bodily movements. Human agents can have what I call *technologically extended* intentions-in-action. After establishing this possibility, I argue in the next section, that intentions-in-action can also, contrary to SC, be *socially extended.*

As far as I can see, there is nothing in Searle's characterisation of intention-in-action as such that restricts the conditions of satisfaction to range over the agent's bodily movements. Indeed, he says explicitly that we can make "intentional bodily movements where the conditions of satisfaction of our intentions go beyond the bodily movements." (1983, p. 99) But Searle calls the intentions of such actions "complex intentions". He characterises the self-reflexive content of the intention-in-action of a man who fires a gun in the following way: "This intention-in-action causes it to be the case that the trigger pulls, which causes it to be the case that the gun fires." (1990, p. 409) While the extended "reach" of the action is to be found in the content's intention, it is represented *as* extended, as pertaining to events beyond the agent immediate control. But there need be nothing complex (at the level of content) about intentions-in-action that reach beyond movements available to the agent considered as an unaided body.[15]

15 The idea that basic actions are bodily movements seem to be a tacit assumption in much philosophy of action. Davidson argues "that all primitive actions are bodily movements", where 'bodily movements' is "openhanded enough to encompass such 'movements' as standing fast, and mental acts like deciding and computing." (1980, p. 49)

Consider the well-known example of the blind man and his cane, who explores his surroundings by moving and tapping the cane in front of him. What, we can ask, is the blind man's 'experience of acting'? His experience is not that of manipulating his arm, wrist and fingers in order to cause the cane to move in certain ways, as if he was holding a cane for the first time in his life. Rather, the blind man simply and directly taps the ground with the tip of the cane. The presence of the stick itself has faded out of the blind man's awareness and attention, just like our arms and hands have faded out of our awareness and attention. We do not intentionally move our joints, wrist and fingers in order to cause our hand to reach out and grasp an object, instead we just reach out and grasp it. Similar things can be said about the perception involved in the skilled use of tools. The blind man's perceptual experience is that of touching the ground at the tip of the cane: he touches the ground *through* the cane. The experience is not that of touching the cane in his hand in order to *infer* what the ground is like. Such extension of our capacities for perception and action is typical of fluent use of tools, where the tools become "transparent" to the user. Following Andy Clark (2008, p. 31), I think that the best picture of the agency involved in such cases is that "of an extended or enhanced agent confronting the (wider) world" rather than that of a bare biological agent facing a tool. Interestingly, neuroscientific findings suggest a subpersonal basis for the shift from phenomenological opaqueness to transparency. It has been shown that an agent's so-called body schema – a neural representation of the body shape and posture – changes as the agent become fluent in using a tool to perform a task (Maravita & Iriki 2004; Clark 2008, sect. 2.5). After learning to use rakes to reach for and collect food, bimodal neurons in the body schema of Japanese

macaques, which normally only fire when the macaque touches something with its hand or sees something near its hand (hence *bi*modal), start to fire when the macaque touches something with *the rake* or sees something in the space around the rake. Thanks to the plasticity of the body schema, tools seem to become incorporated into the suit of resources at hand that the cognitive system simply takes for granted. These taken-for-granted resources defines the agent's proximal action space. These neuroscientific findings, and the phenomenon of transparency itself suggest the that the intention-in-action that is being carried out in transparent tool-use is not complex, but rather basic and technologically extended. At least within the framework of Searle's theory of intention and action, the phenomenology of action should be taken seriously. After all, the content of the intention-in-action is the content that is accessed when one has the experience of acting.

Searle makes some observations that fit this take on transparent tool-use. First, he notes that what counts as a basic action, an action *A* that an agent can intend to perform "without intending to do another action by means of which he intends to do *A*", is relative an agent's skills (1983, p. 100). Hence, a skilled tool user can act on the world through the tool without having to do this by means of intending to manipulate her tool. Secondly, Searle does not want to restrict the kinds of causal sequences that can be involved in an intention-in-action being carried out to those that merely occur within the body (see 1983, p. 110). If I have an intention-in-action to raise my arm, say, and this intention-in-action causes my arm to raise, then this counts as my intention-in-action being carried out successfully, even if someone, unbeknownst to me, has rewired my brain so that the motor commands from my brain go half way

around the world via the internet before reaching the effectors. In effect, there is nothing in Searle's account that precludes that the causal chain between an intention-in-action and the movement it represents extends beyond the agent's body. Besides Searle's habit of calling the intentions-in-action of tool-using actions "complex", his account does not seem to preclude the possibility of basic but technologically extended intentions-in-action.

Since the phenomenon of 'transparency in use' has been used to argue for the view that the vehicles of the contents of perception and action extend beyond the biological boundary of the human (or macaque) organism (Clark 2008, ch. 2; Rupert 2009, ch. 8), it is worth pointing out that rejection of SC does not depend on accepting such vehicle externalism. The question of whether to accept SC as a constraint or not is about whether a certain restriction on the content of intentions-in-action should be accepted or not, it is not about whether the vehicle of the intention-in-action can extend beyond the body surface of the agent, or, for that matter, about the environment of the agent has a role to play in "fixing" the content of its intentions-in-action. Thus, rejection of SC does not depend on accepting either vehicle or content externalism.

5 Socially extended intentions-in-action

In order to reject SC as an unconditional constraint on what one can intend-in-action, I will appeal to considerations similar to those that make technological extension of intentions-in-action plausible. In other words, I argue that intentions-in-action can be socially extended.

What motivated my notion of basic but technologically extended intentions-in-action were the phenomenon of transparency in skilled tool use. Do people experience a similar shift to transparency with increased participation in a joint activity? I think this sometimes happens. Consider the example of two skilled ice skaters performing a figure dance. Axel Seemann (2009) characterises, from an adopted first-person perspective, their sense of joint control in the following way:

> [I]t isn't that *I* experience myself as being in a position to determine *your* by my actions. It is, rather that the experience really is one of *us* controlling our doings. And this experience is an embodied one: in the most obvious kind of case, such as the example of the figure dancers, our bodies really seem to form an experiential unit. The awareness I enjoy of your body in a dance is quite unlike the sensation of your flesh pressing against mine that I might be exposed to in a crowded subway carriage. Your body seems to form part of our joint interface with the world. (2009, p. 508)

To my ears, Seemann's observation here rings true. Like in the case of skilled tool use, agents sometimes experience each other as transparent extensions of their own activity. The coordination of actions recedes to the background of attention and the agents experience themselves acting as one attending to their joint activity. The intentions-in-action here are basic, they are not executing via the execution of other intentions, whether one's own or those of one's co-agent.

I want to suggest that the notion of 'socially extended intentions-in-action' is cogent. It captures the the kind of intentions-in-action that participants engaged in skilled joint activities have, such as figure skaters or dancers. One condition for such joint intentional activity to obtain would then be that the participants have socially extended intentions-in-actions that "mesh". This is one way in which we might understand the idea that intentions-in-action could have the content "that we *J*" that are part of Tollefsen's account. It is also an alternative way of elaborating Searle's analysis of intention-in-action in *Intentionality* (1983) to deal with joint intentional action, which doesn't appeal to a special "We"-mode of intending-in-action.[16]

6 Objections and rejoinders

One initial objection to socially extended intentions-in-action might be the following. The sources of knowledge about our own and others' actions are different in important ways. We have no *proprioceptive* information about the bodily posture or movements of others, and to the extent that such information is required for carrying out intentions-in-action and monitoring whether their conditions of satisfaction have been met, there is reason to doubt that intentions-in-action can be socially extended. But no such proprioceptive information is available in tool use either, so such information does not seem to set a limit to what can part of the content of (non-complex) intentions-in-action.[17]

16 See Bardsley (2007) for yet another alternative elaboration of Searle's notion of intention-in-action to deal with collective intentions-in-action.

17 Indeed, in circumstances where proprioceptive and visual information about our own actions are in conflict, our conscious reports about our own bodily movements seem to rely more on vision than

Some evolutionary considerations suggest, however, that the boundary of the biological organism has an epistemic importance which at least makes it unlikely that extended intentions-in-action are common. Even if vision is important for awareness and knowledge of our own actions, it can be argued that proprioceptive information and perceptual information are treated differently by our subpersonal cognitive systems. In arguing against the hypothesis of extended cognition, Kim Sterelny (2004) draws attention to the fact that an organism is a conglomeration of parts that have evolved together and thus, over time, co-adapted through natural selection. Evolution has ensured that the internal "environment" of the organism is a friendly one: information exchange is reliable, trustworthy and efficient. "[O]ver evolutionary time", as Sterelny (2004) puts it, "the internal informational environment of an agent will become more transparent." In contrast, the external environment is a "shared and sometimes contested space" inhabited by other agents who are potentially out to deceive and manipulate you. Hence, while there is selection pressure on perceptual systems to become more reliable and efficient, it is unlikely that external resources, such as tools, public information, and (I would add) other agents become as transparent to us as our internal resources. This is because perceptual systems pick up information from an epistemically hostile environment. As Clark (2008, p. 103) points out in reply to Sterelny, the evolutionary considerations do not show that technological extension of cognition is impossible, just that we should be sceptical about their prevalence.

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proprioception, as for example the 'rubber hand illusion' demonstrates (Botvinick & Cohen 1998).

Given that Sterelny is correct in characterising internal information flow as basically trustworthy and reliable, and external information flow as always potentially noisy and deceptive, technologically extended intentions-in-action ought to be quite rare, and socially extended intentions-in-action ought to be even more so. The possibility of defection and deception is arguably much greater in the case of other agents than in the case of tools. The idea, then, is that a socially extended intention-in-action will depend on the absence of a kind of vigilance and double-checking that ought to be the norm in interaction with other agents. However, like in the case of technological extension, these considerations do not show that socially extended intentions-in-action are impossible, just that that we should be sceptical about their prevalence. In addition, the epistemic difference between the internal and the external environment shouldn't be exaggerated. If, as Sterelny himself believes (see 2003), group selection has played an important role in the evolution of our pervasive tendency to cooperate, then human groups are in a sense made up of co-adapted parts that have evolved together. Less controversially, infants and toddlers are profoundly dependent on their caretakers and the group into which they are born. Even if it is true that there are cognitive mechanisms in older children and adults with the function of double-checking and vetting during joint action, it does not seem plausible that such mechanisms are operating in young children, at least not during interaction with close kin or other familiar individuals. Furthermore, my argument crucially depends on the phenomenology of participation in joint activity. In cases where an agent experience his participation in a joint activity as transparent, then that should be reflected in the content of his intention-in-action (I am assuming here that Searle's theoy of individual intention and action is acceptable, at least in broad outline). The content of

one's experience of acting, just *is* the content of one's intention-in-action.

One could object that socially extended intentions-in-action, as I have characterised them, do not have the content "that we *J*", as Tollefsen's account requires. The intentions-in-action are extended, but not joint or shared. Hence, it does not go to the heart of what is philosophically puzzling about joint intentional action, namely the possibility of whether to do this or that being up to us, as a matter of us to settle together. As David Velleman (1997) points out, I can only intend something which is up to me to settle. But if it is up to me to settle whether or not to take a course of action, then it cannot simultaneously be up to you to settle whether to do this or not. The puzzle is how an agent to exercise control over something while at the same time delegate control over it to someone else.

What I am proposing here is not a solution to this puzzle. I am not making a proposal about how kids (or other participants) can share a future-directed intention to engage in a joint intentional activity, I am rather trying to suggest what characterises joint intentional activities, irrespectively of whether the participants jointly chose to enter the activity (I take it that many joint activities that kids engage in are characterised by mutual responsiveness in action, but not mutual responsiveness of intentions (see Bratman 1999, essay 5)). What is joint is control and guidance of the unfolding of the joint activity, not a choice about whether or not to together engage in the joint activity. Furthermore, I am not saying that meshing socially extended intentions-in-action are the only condition required for an activity to be jointly intentional. Here I have merely focused on Tollefsen's first condition, however, and for two participants

to engage in joint action, conditions (2) and (3) must also be met. The jointness of joint action must be captured by the analysis as a whole, but not by the each participant's intention-in-action "that we *J*".

That it is possible for participants' intentions-in-action to be socially extended does not, of course, established that the intentions-in-action of infants and toddlers can be so extended. Indeed, infants and toddlers do not appear to be in a good position to establish the kind of fluent expertise that makes coordination during joint activity transparent. Perhaps the conditions needed for two children, or a child and a care-taker, to have "meshing" socially extended intentions-in-action could obtain in some simple forms of social play that involves repetition and predictable turn-taking between the participants. But I do not think that an account based on such intentions-in-action, which I suggest that Tollefsen's account is, could account for children's joint activities in general, including such cases (mentioned by Tollefsen) as building a block tower together or social pretend play.

Even in the case of adult participants, it should be noted that the kind of sustained experience of fluency described by Seemann is an exception rather than the rule. As Christopher Kutz (2000) points out, "the complexity arising from problems of coordination renders collective activity salient, making it stand out against a background of unreflective, self-regarding activity." (p. 12) In line with my reflections on Sterelny's argument against extended cognition, he also notes that the possibility of free-riding makes joint activity unlikely to become automatised and unreflective (p. 13). However, Kutz grants, in line with what I have been saying, that

"well-rehearsed joint action may require no conscious deliberation or reflection." (p. 12)

I have focused on arguing that intentions-in-actions for *basic* actions can be socially extended, and while it does not seem plausible that infants and toddlers have such intentions-in-action, why must they be basic? Why cannot infants and toddlers simply have *complex* intentions-in-actions "that we *J*"? The content of each participants intention-in-action would then specify that it should cause certain bodily movements in turn causes – in combination with the causal power of the other participant's bodily movements – the *J*-ing to come about. Perhaps this is possible, but it looks like it might not then qualify as a core case of joint activity. For a paradigmatic case of joint activity, it seems right to say that the participants should intend to perform the joint activity, not merely that all the participants should intend to perform their bit of it, leading to the effect that *J* is performed if their intentions happen to be aligned with each other in the right way.

7 Conclusions

Avoiding the mutual responsiveness problem that children's joint activities pose to Bratman's account of joint intention by couching it in terms of intentions-in-action rather than prior plan-like intention is problematic. Such an account will require young children to have intentions-in-action with the content "that we *J*" and this violates the widely accepted Solipsistic Constraint (SC) which says that one's intentions-in-action cannot range over the actions of another agent. In this paper, I have argued that SC should not be accepted as a unconditional constraint on the

possible contents of intentions-in-action. I did this by first showing that there is nothing in Searle's analysis of intention-in-action per se that precludes the contents of intentions-in-action to range beyond the bodily movements. The phenomenon of transparency in the skillful use of tools positively indicates that intentions-in-action often actually do have such wide-ranging contents. By analogy with such technologically extended intentions-in-action, phenomenological considerations also suggest that intentions-in-action can be socially extended.

It is unlikely that socially extended intentions-in-action are common among children engaging in various joint activities with each other or with caretakers. As a general account of children's joint activities and the kind of capacities involved in their participation, Tollefsen's account is not so plausible. But I think, the account partly fills a lacuna in the philosophy of joint action. Bratman mentions the importance of mutual responsiveness not only with regards to plans but to *actions*, he does not have much to say about it. Tollefsen's account, coupled with the notion of socially extended intentions-in-action is interesting in itself, because it suggest one way in which joint activities that involve intensive online social interaction may be accounted for.

References

Bardsley, N., 2007. On collective intentions: collective action in economics and philosophy. *Synthese*, 157(2), 141-159.

Botvinick, M. & Cohen, J., 1998. Rubber hands 'feel' touch that eyes see. *Nature*, 391(6669), 756.

Bratman, M.E., 2009a. Shared Agency. In C. Mantzavinos, ed. *Philosophy of the Social Sciences: Philosophical Theory and Scientific Practice*. Cambridge: Cambridge Scholars Press.

Bratman, M.E., 2009b. Modest sociality and the distinctiveness of intention. Philosophical Studies, 144(1), 149-165.

Bratman, M.E., 1999. *Faces of Intention.* Cambridge University Press.

Bratman, M.E., 1992. Shared Cooperative Activity. *The Philosophical Review*, 101(2), 327-341.

Bratman, M.E., 1993. Shared Intention. *Ethics*, 104(1), 97-113.

Bratman, M.E., 1984. Two Faces of Intention. *The Philosophical Review*, 93(3), 375-405.

Clark, A., 2008. *Supersizing The Mind: Embodiment, Action, and Cognitive Extension*, Oxford University Press.

Davidson, D., 1980. *Essays on Actions and Events*. Oxford: Clarendon Press.

Gergely, G. & Csibra, G., 2003. Teleological reasoning in infancy: the naïve theory of rational action. *Trends in Cognitive Sciences*, 7(7), 287-292.

Kutz, C., 2000. Acting Together. *Philosophy and Phenomenological Research*, 61(1), 1-31.

Maravita, A. & Iriki, A., 2004. Tools for the body (schema). *Trends in Cognitive Sciences*, 8(2), 79--86.

Pacherie, E., 2007. Is Collective Intentionality Really Primitive? In M. Beaney, C. Penco, & M. Vignolo, eds. *Mental processes: representing and inferring*. Cambridge: Cambridge Scholars Press, pp. 153-175.

Pacherie, E. & Dokic, J., 2006. From mirror neurons to joint actions. *Cognitive Systems Research*, 7(2-3), 101-112.

Patherie, E., 2000. The Content of Intentions. *Mind & Language*, 15, 400-432.

Pettit, P. & Schweikard, D., 2006. Joint Actions and Group Agents. *Philosophy of the Social Sciences,* 36(1), 18-39.

Rakoczy, H., 2008. Pretence as Individual and Collective Intentionality. *Mind and Language,* 23(5), 499-517.

Rupert, R.D., 2009. *Cognitive Systems and The Extended Mind*. Oxford University Press.

Searle, J.R., 1990. Collective Intentions and Actions. In Philip R. Cohen, Jerry Morgan, and Martha E. Pollack, ed. *Intentions in Communication*. pp. 401-415.

Searle, J.R., 1983. *Intentionality: An Essay in the Philosophy of Mind*, Cambridge University Press.

Seemann, A., 2009. Joint Agency: Intersubjectivity, Sense of Control, and the Feeling of Trust. *Inquiry*, 52(5), 500-515.

Sterelny, K., 2004. Externalism, Epistemic Artefacts and the Extended Mind. In R. Schantz, ed. *The Externalist Challenge*. Walter de Gruyter, pp. 239-254.

Sterelny, K., 2003. *Thought in a Hostile World: The Evolution of Human Cognition*, Wiley-Blackwell.

Tollefsen, D., 2005. Let's Pretend! Children and Joint Action. *Philosophy of the Social Sciences,* 35(1), 75-97.

Tomasello, M., Call, J. & Hare, B., 2003. Chimpanzees understand psychological states-the question is which ones and to what extent. *Trends in Cognitive Sciences*, 7(4), 153-156.

Tomasello, M. et al., 2005. Understanding and sharing intentions: The origins of cultural cognition. *Behavioral and Brain Sciences*, 28(5), 675-691.

Velleman, J., 1997. How To Share An Intention. *Philosophy and Phenomenological Research*, 57(1), 29-50.