Shared Agency and Motor Representation

Stephen A. Butterfill & Corrado Sinigaglia

<butterfillS@ceu.hu>

1. Introduction

A representation (motor or not) is *agent-neutral* if its content does not specify any particular agent or agents.

Two or more motor representations are *reciprocal* just if there is a single outcome which each motor representation represents.

Premise Reciprocal agent-neutral motor representation enables joint action

> 'the social relation between individuals modulates action simulation ... motor activation during action anticipation depends on the ... relation between the actor and the observer ... Simulation of another person's action, as reflected in the activation of motor cortices, gets stronger the more the other is perceived as an interaction partner.'?

Question Does reciprocal agent-neutral motor representation also play a role in explaining what joint action is?

Challenge How could social motor representation and shared intention harmoniously contribute to joint action?

2. The possibility of purposive joint action

What is the relation between a purposive joint action and the outcome or outcomes to which it is directed?

Reciprocal agent-neutral motor representations can (1) involve a representation, on the part of each agent, of an outcome; (2) coordinate the several agents' activities; and (3) coordinate the several agents' activities in such a that would normally facilitate the occurrence of the represented outcome.

For you and I to have a shared intention that we J it is sufficient that: '(1)(a) I intend that we J and (b) you intend that we J; (2) I intend that we J in accordance with and because of la, lb, and meshing 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.'?

3. An objection

'the key property of joint action lies in its internal component [...] in the participants' having a "collective" or "shared" intention.'? pp. 444-5

But could some reciprocal agent-neutral motor representations be shared intentions? No ...

1. Only representations with a common format can be inferentially integrated.

2. Any two intentions can be inferentially integrated in practical reasoning.

3. My intention that I visit Paris on Friday is a propositional attitude.

4. All intentions are propositional attitudes.

5. No motor representations are propositional attitudes.

6. No motor representations are intentions.

4. The Interface Problem

Two outcomes, A and B, *match* in a particular context just if, in that context, either the occurrence of A would normally constitute or cause, at least partially, the occurrence of B or vice versa.

Some joint actions involve both shared intention and reciprocal agent-neutral motor representation.

How are non-accidental matches between the outcomes specified by shared intentions and by reciprocal agent-neutral motor representations possible?

'motor imagery could play a crucial role in bridging the gap'?