

# Mindreading & Joint Action: Philosophical Tools

## Lecture 8: Shared Intention & Motor Representation in Joint Action

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### 1. Question

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

In some cases it is not a shared intention but a special structure of motor representation, a ‘shared motor representation’, in virtue of which a joint action is related to its goal.

### 2. Building blocks

A *goal* is an outcome to which actions are, or might be, directed. A *goal-state* is an intention or other state of an agent linking an action to a goal to which it is directed.

**Distributive goal.** The *distributive goal* of two or more actions is G: (a) each action is individually directed to G; and (b) it is possible that: all actions succeed relative to this outcome.

**Collective goal.** The *collective goal* of two or more actions is G: (a) G is a distributive goal of the outcomes; (b) the actions are coordinated; and (c) coordination of this type would normally facilitate occurrences of outcomes of G’s type

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

### 3. Shared Motor Representation

We have a *shared motor representation* of an outcome just if

- a) we each have a motor representation of this outcome;
- b) we are each disposed to inhibit some but not all of the planning or actions resulting from (a);
- c) we each expect that if the outcome occurs, we will all be among the agents of its occurrence; and
- d) the truth of (a) and (b) depends on the truth of (c).

### 4. Evidence that Shared Motor Representation Exists

In joint action, motor planning can occur for another’s actions,<sup>1</sup> and can inform planning for one’s own actions.<sup>6</sup>

In joint action, it is sometimes necessary to inhibit planning or performing another’s action.<sup>3</sup> Whether this is necessary depends on one’s beliefs about co-actors’ agency.<sup>4</sup>

In some joint actions, the agents have a single representation of the whole action (not only separate representations of each agent’s part).<sup>5</sup>

### 5. 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.

A shared motor representation is in *harmony* with a shared intention if they concern matching outcomes.

Some joint actions involve both shared intention and shared motor representation.

How is non-accidental harmony between shared intentions and shared motor representations?

Proposal: ‘motor imagery could play a crucial role in bridging the gap’<sup>2</sup>

### References

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