

Joint Action and the Emergence of Mindreading

Which Joint Actions Ground Social Cognition?

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challenge

Explain the emergence, in evolution or development, of sophisticated forms of mindreading.

conjecture

The existence of abilities to engage in joint action partially explains how sophisticated forms of mindreading emerge in evolution or development (or both)



challenge

Explain the emergence, in evolution or development, of sophisticated forms of mindreading.

conjecture

The existence of abilities to engage in joint action partially explains how sophisticated forms of mindreading emerge in evolution or development (or both)

2nd objection

Joint action presupposes sophisticated mindreading

shared intention
(or 'collective')

'I take a collective action to involve a collective
[shared] intention.'

(Gilbert 2006, p. 5)

'I take a collective action to involve a collective
[shared] intention.'

(Gilbert 2006, p. 5)

'The sine qua non of collaborative action is a joint goal
[shared intention] and a joint commitment'

(Tomasello 2008, p. 181)

'I take a collective action to involve a collective [shared] intention.'

(Gilbert 2006, p. 5)

'The sine qua non of collaborative action is a joint goal [shared intention] and a joint commitment'

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

(Alonso 2009, pp. 444-5)

'Shared intentionality is the foundation upon which joint action is built.'

(Carpenter 2009, p. 381)

'I take a collective action to involve a collective [shared] intention.'

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'Shared intentionality is the foundation upon which joint action is built.'

(Carpenter 2009, p. 381)

Joint

Not joint

Joint

Jack and Sue walk
together

Not joint

Jack and Sue walk
alongside each other

(Gilbert 1990)

Joint

Jack and Sue walk together

We collectively perform a dance by running to a shelter at the same time

Not joint

Jack and Sue walk alongside each other
(Gilbert 1990)

We each individually run to a shelter at the same time (in response to a sudden shower).

(Searle 1990, 92)

What is shared intention?

What is shared intention?

shared intention



joint action

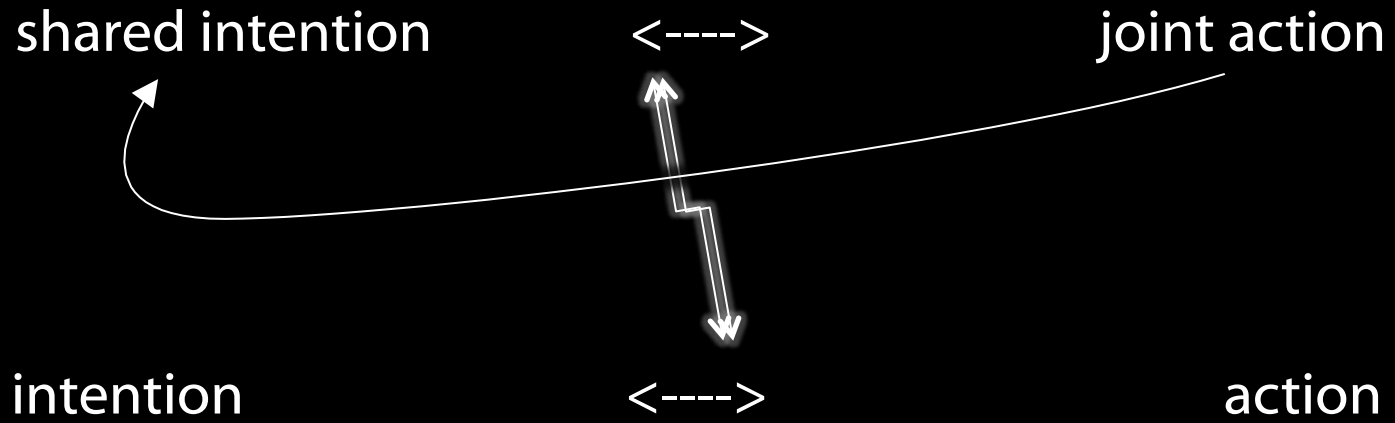
intention



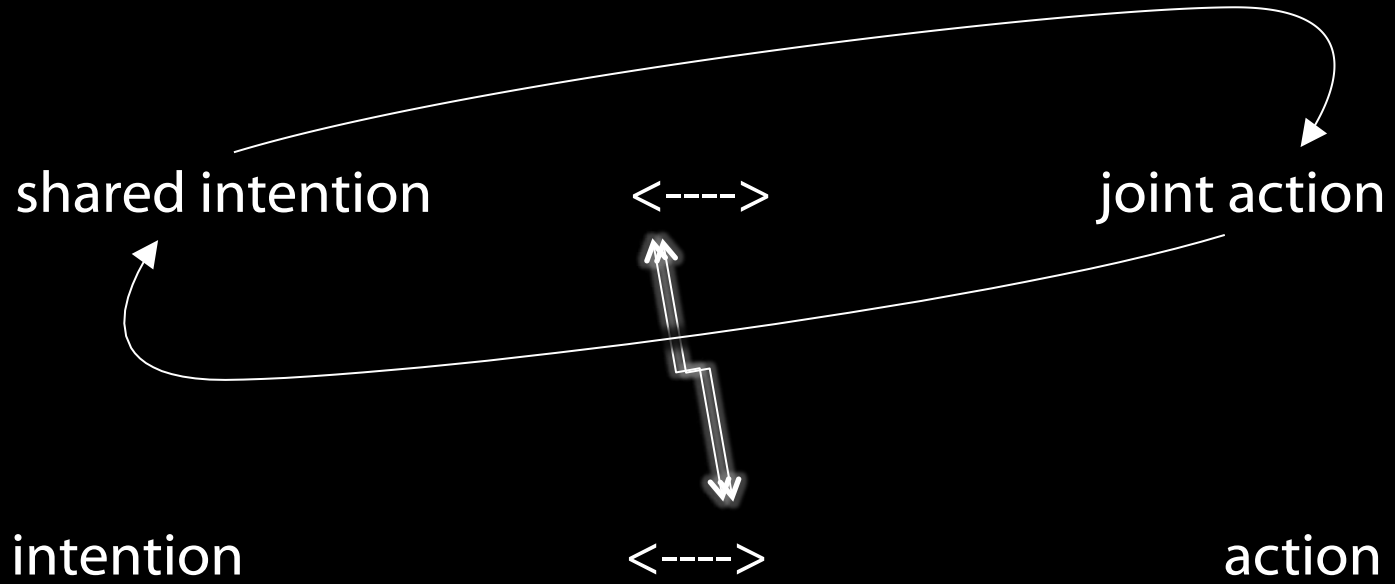
action



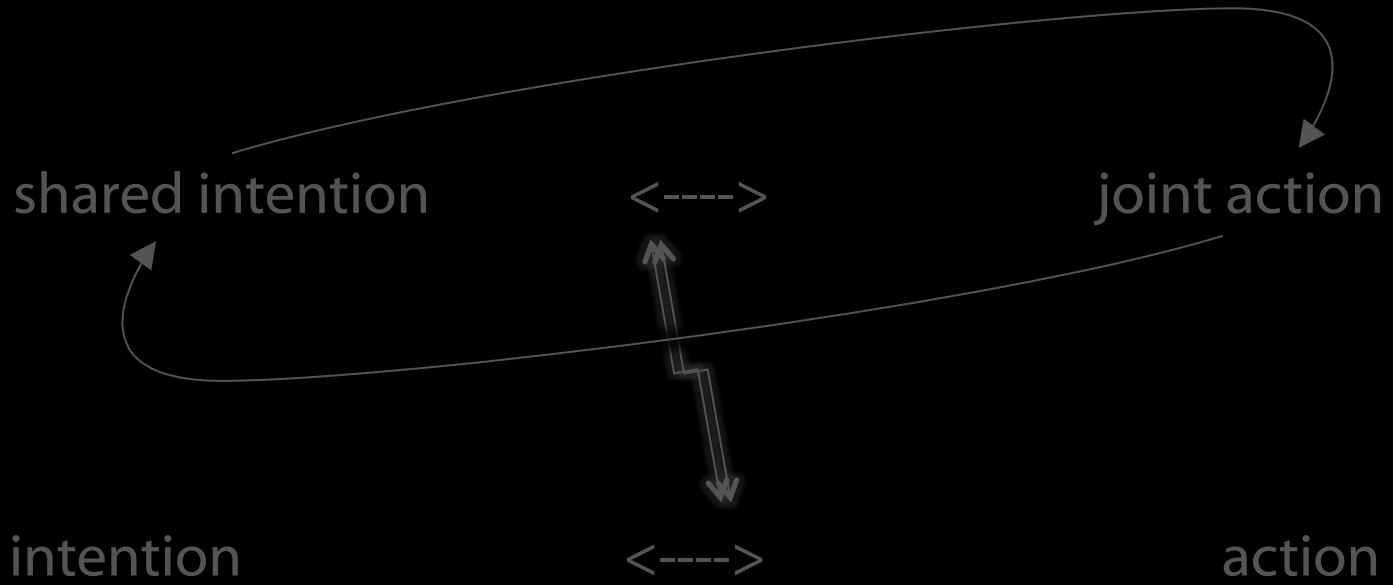
What is shared intention?



What is shared intention?



What is shared intention?



What is shared intention?

Functional characterisation

Substantial account



What is shared intention?

Functional characterisation

shared intention serves to
(a) coordinate activities, (b)
coordinate planning and (c)
structure bargaining

Substantial account



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Substantial account

We have a shared intention
that we J if

“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 Ia, Ib, and
meshing subplans of Ia and
Ib; you intend [likewise] ...

“3. 1 and 2 are common
knowledge between us”

(Bratman 1993:View 4)



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Intentions about intentions



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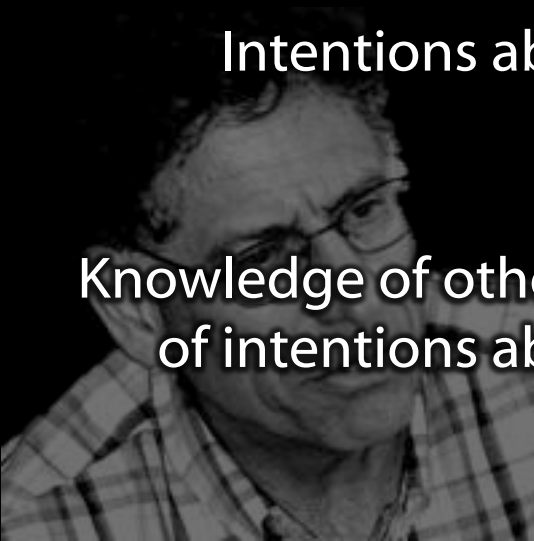
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Intentions about intentions

Knowledge of others' knowledge
of intentions about intentions



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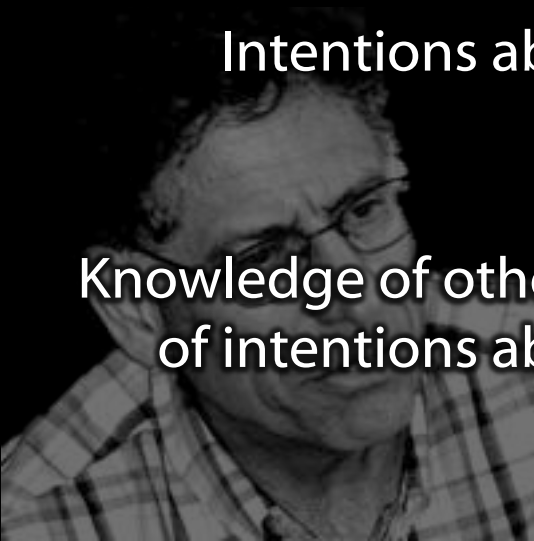
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'shared intentional agency
consists, at bottom, in
interconnected planning
agency of the participants.'

(Bratman 2011, p. 11)

Substantial account

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1. All (significant) joint actions require shared intention.

2. Shared intention requires sophisticated theory of mind cognition.

Therefore:

3. Abilities to engage in joint action could play no significant role in explaining how sophisticated theory of mind cognition emerges.

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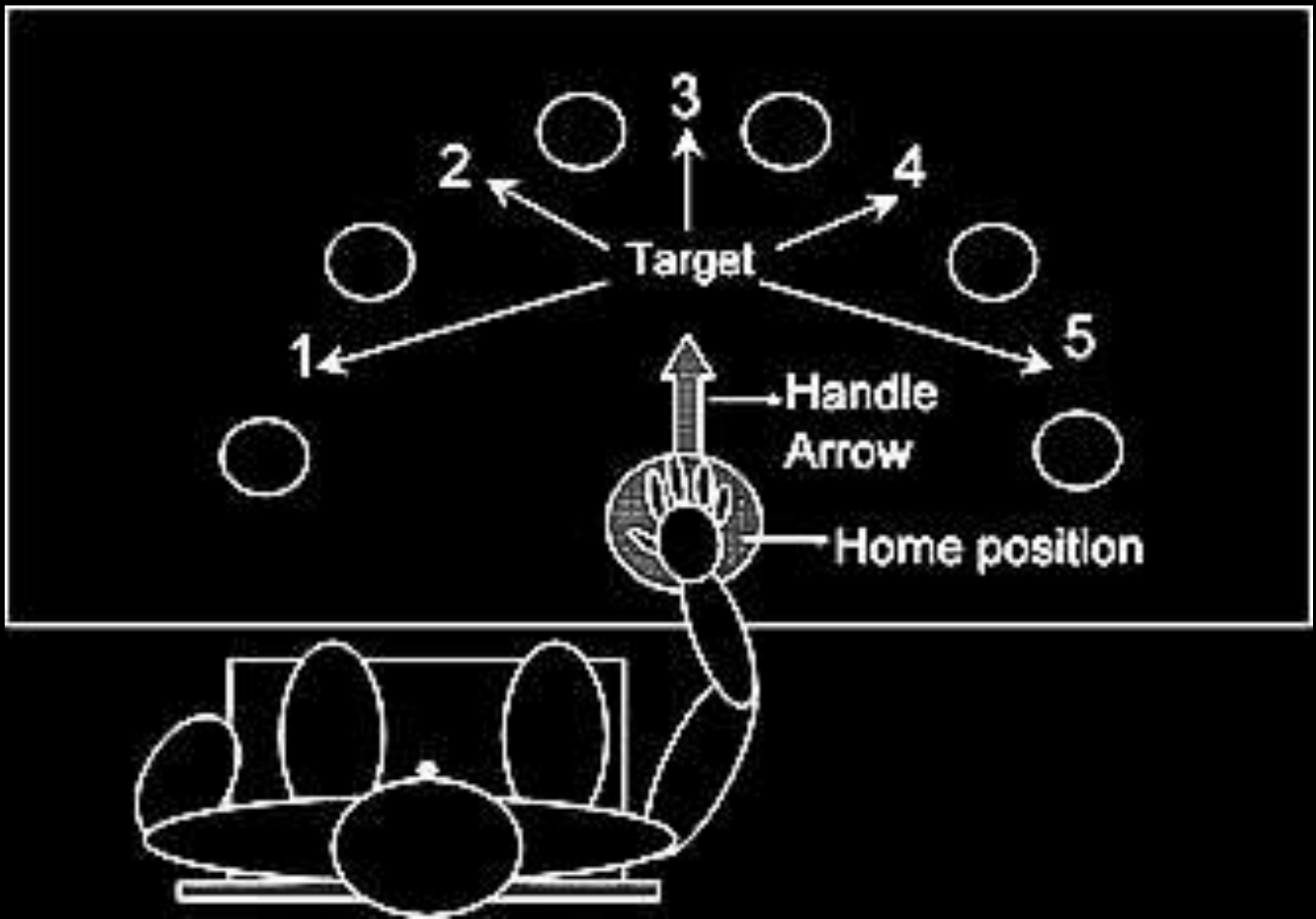
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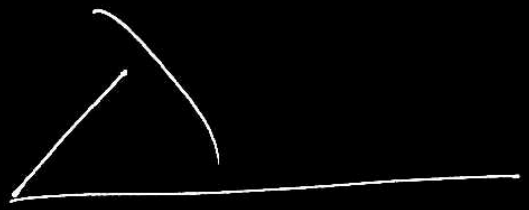
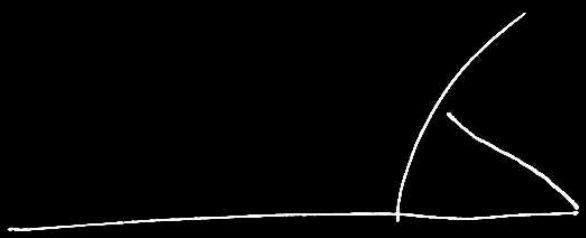
Do all ~~joint~~ actions involve ~~shared~~ intentions? No.



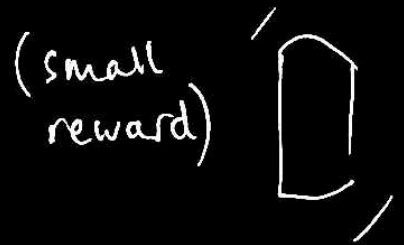
(Zhang and Rosenbaum 2007)



(big reward)



↑
ONE WAY



x start here

shared intention



joint action

intention



action



1. All (significant) joint actions require shared intention.

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Therefore:

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step back : what is joint action?

tidying up the toys together

(Behne et al 2005)

cooperatively pulling
handles in sequence to
make a dog-puppet sing

(Brownell et al 2006)

bouncing a ball on a large
trampoline together

(Tomasello & Carpenter 2007)

pretending to row a boat
together

painting a house together

(Bratman 1992)

lifting a heavy sofa together

(Velleman 1997)

preparing a hollandaise
sauce together

(Searle 1990)

going to Chicago together

(Kutz 2000)

walking together

(Gilbert 1990)

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Joint action:
an action with two or more
agents (Ludwig 2007)

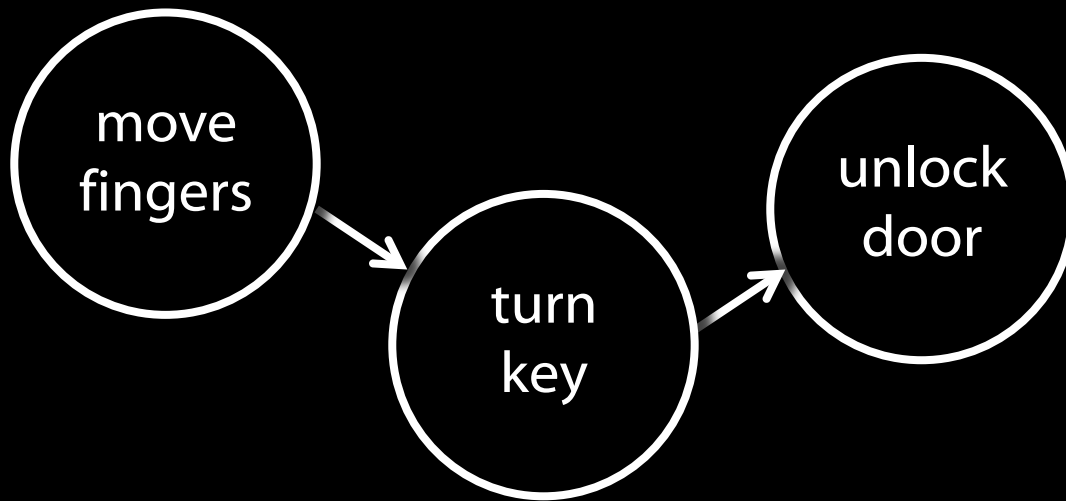
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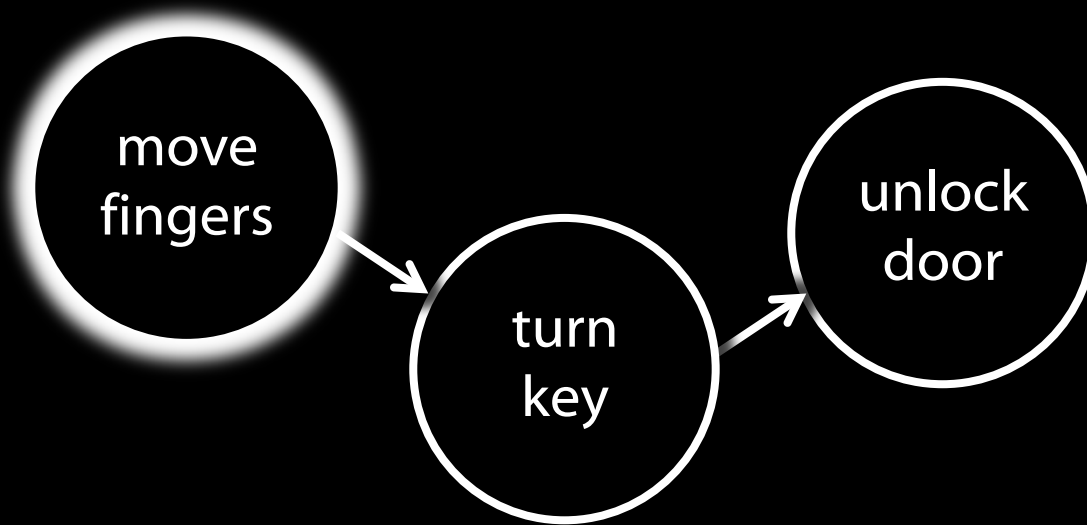
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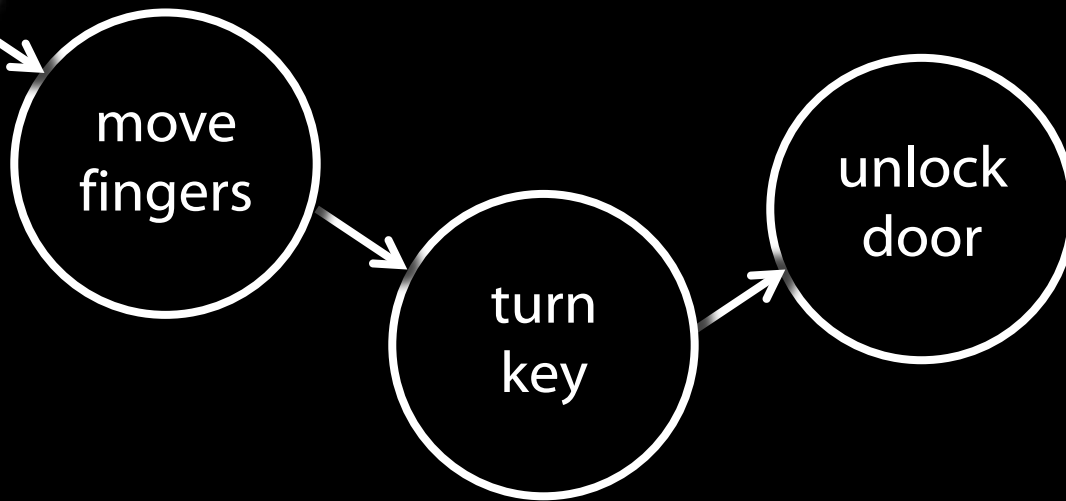
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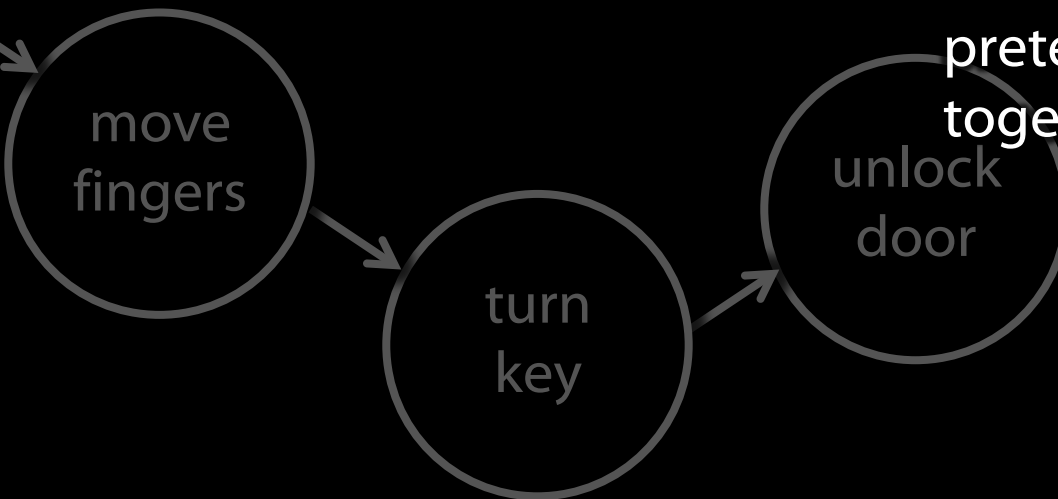
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tidying up the toys together
(Behne et al 2005)

cooperatively pulling
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make a dog-puppet sing
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bouncing a ball on a large
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(Tomasello & Carpenter 2007)

pretending to row a boat
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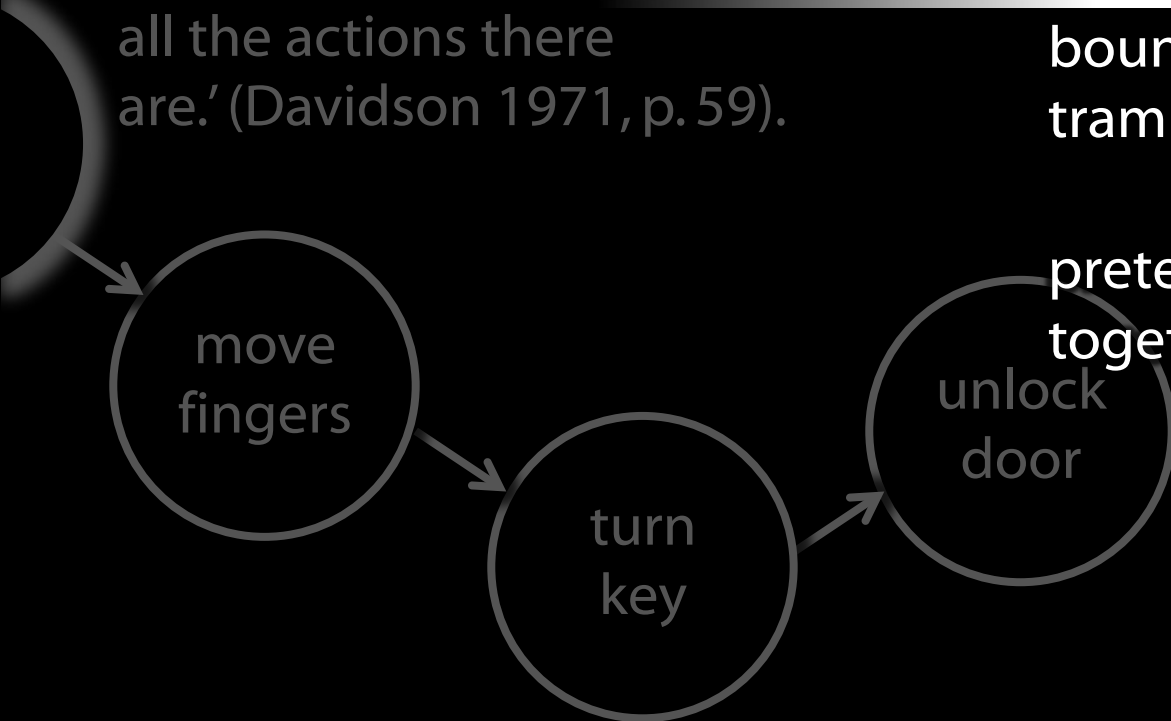
(Tomasello & Carpenter 2007)

pretending to row a boat
together

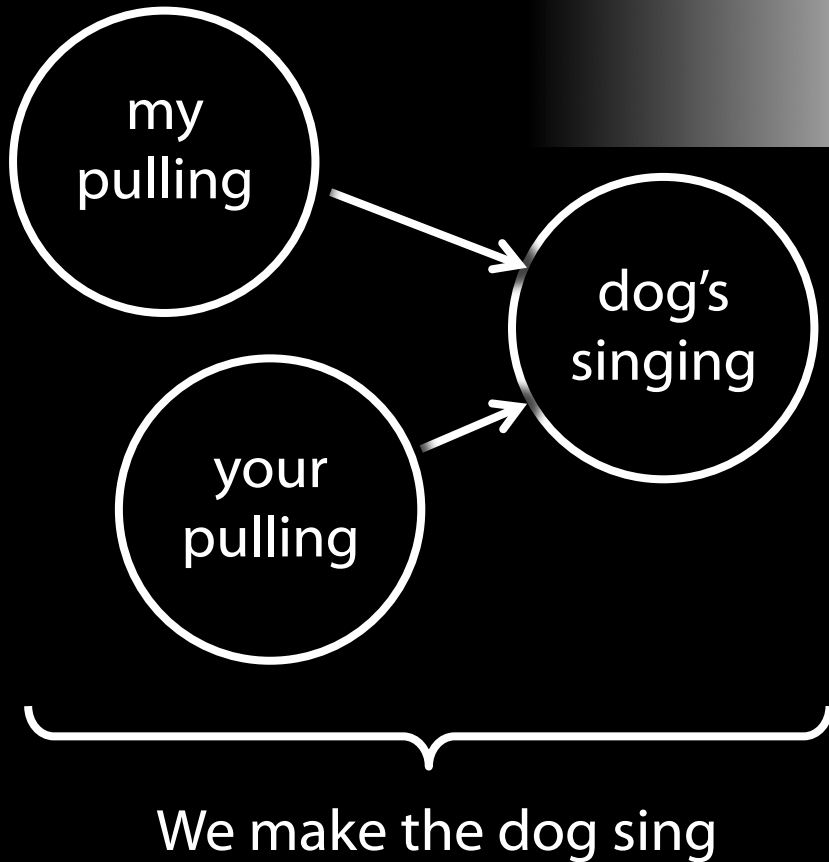
move
fingers

turn
key

unlock
door



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1 Joint action:
an action with two or more
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2 Bodily movements 'are all
the actions there
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3 In supposedly paradigm
cases of joint action, there
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with more than one agent.

Therefore:

4 Supposedly paradigm cases
are not joint actions.

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alternatively pulling
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Joint action:
an action with two or more
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Joint action:
an ~~action~~-event with two or
more agents (Ludwig 2007)

Grounding

events D_1, \dots, D_n ground E , if:

D_1, \dots, D_n and E occur;

D_1, \dots, D_n are each (perhaps improper) parts of E ; and

every event that is a proper part of E but does not overlap

D_1, \dots, D_n is caused by some or all of D_1, \dots, D_n .

(Adapted from Pietroski 1998)

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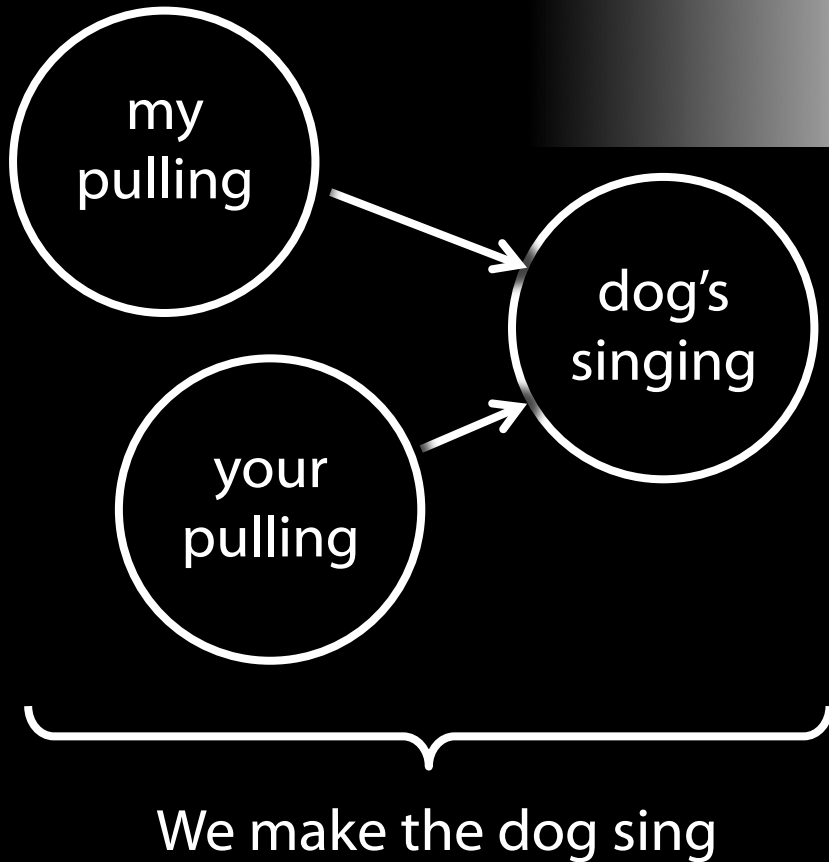
Agency

For an individual to be among the agents of an event is for there to be actions a_1, \dots, a_n which ground this event where the individual is an agent of one or more of these actions.

(Adapted from Pietroski 1998)

Joint action:
an ~~action~~-event with two or
more agents (Ludwig 2007)

Joint action:
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more agents (Ludwig 2007)



tidying up the toys together
(Behne et al 2005)

cooperatively pulling
handles in sequence to
make a dog-puppet sing
(Brownell et al 2006)

bouncing a ball on a large
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pretending to row a boat
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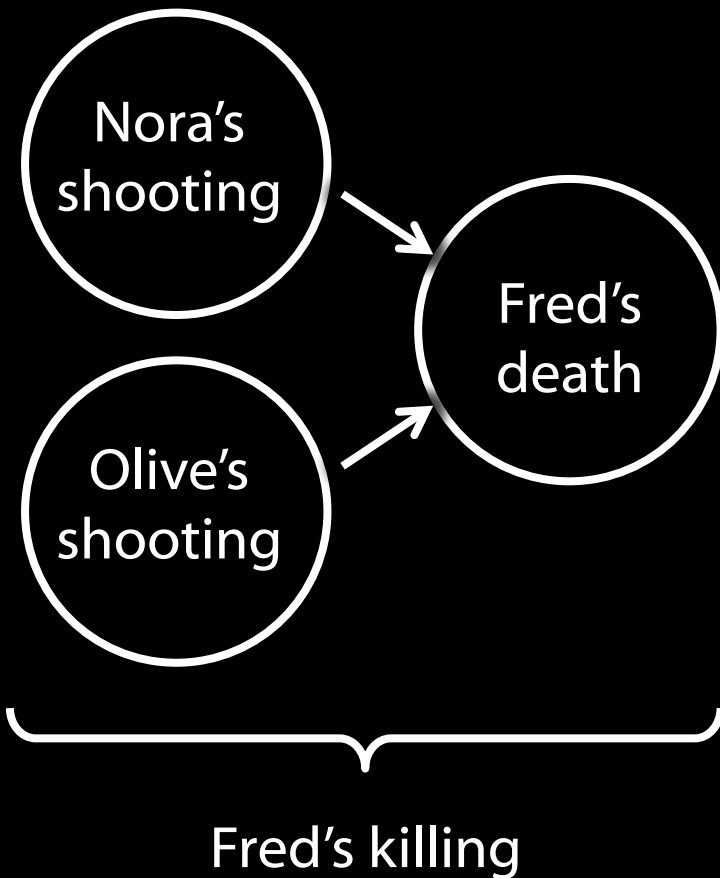
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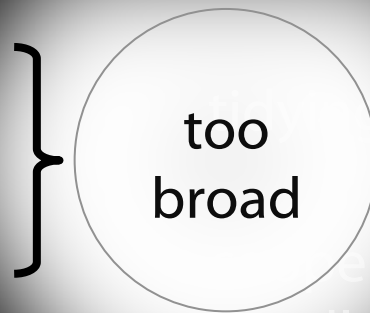
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Joint action:
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pick up the toys together
(Behne et al 2005)

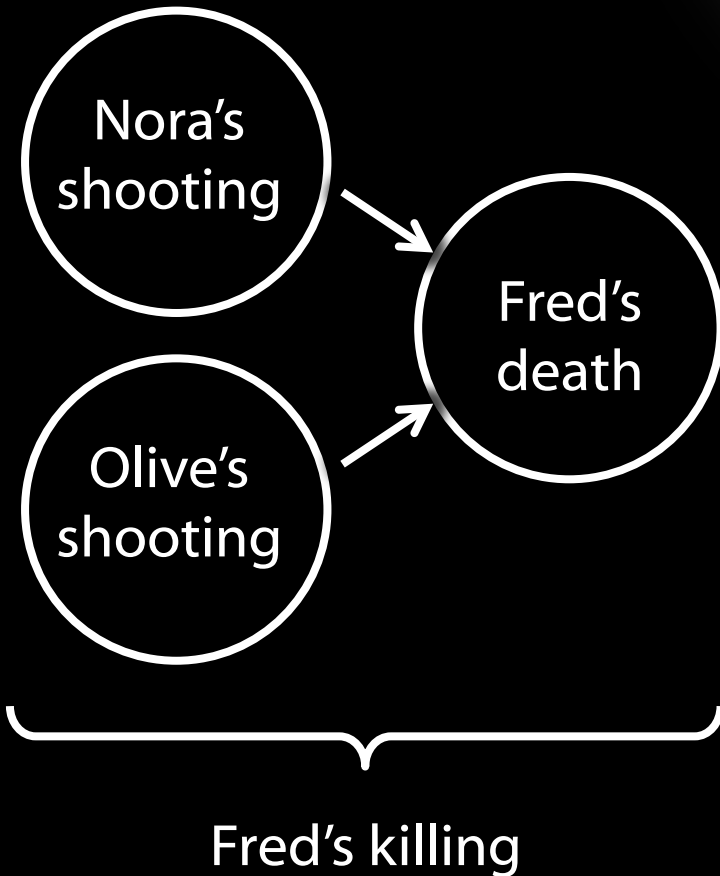
alternatively pulling
handles in sequence to
make a dog-puppet sing

(Brownell et al 2006)

bouncing a ball on a large
trampoline together

(Tomasello & Carpenter 2007)

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Joint action:
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tidying up the toys together
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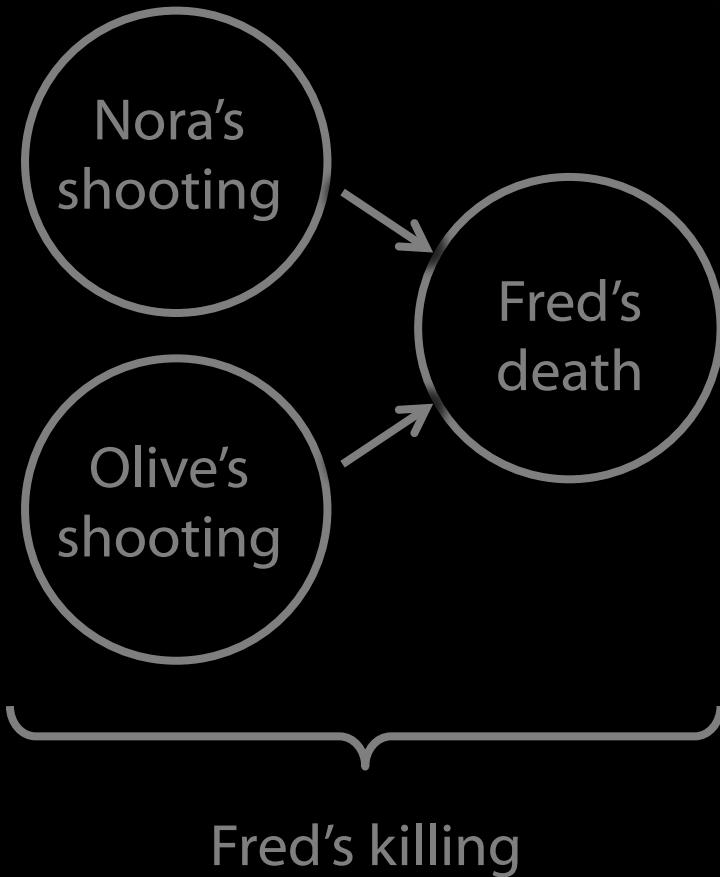
cooperatively pulling
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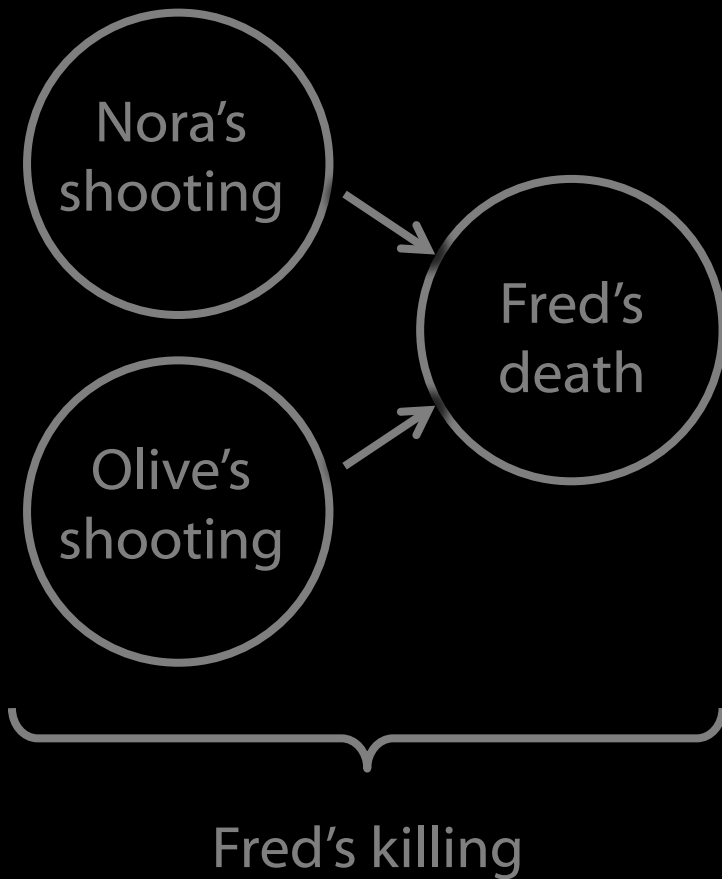
bouncing a ball on a large
trampoline together

(Tomasello & Carpenter 2007)

pretending to row a boat
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Goal-directed joint action: an event with two or more agents which, taken as a whole, is directed to a goal.



cooperatively pulling handles in sequence to make a dog-puppet sing

(Brownell et al 2006)

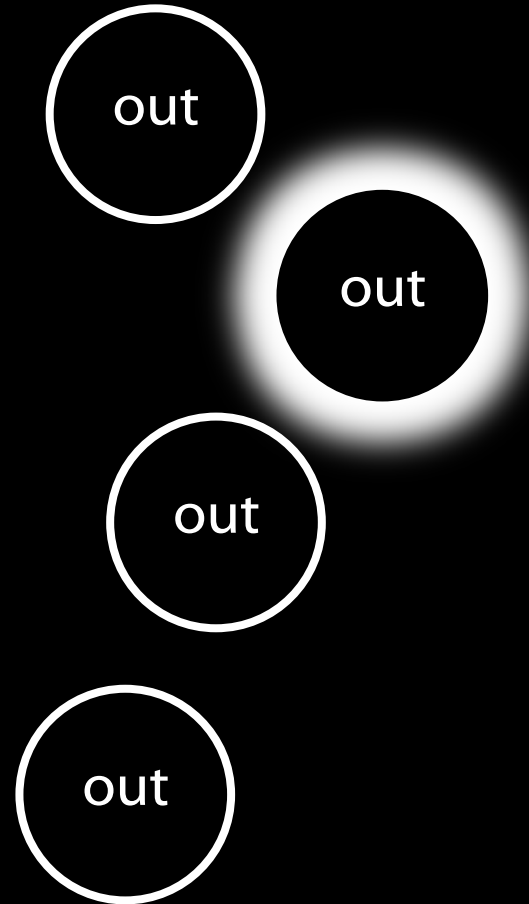
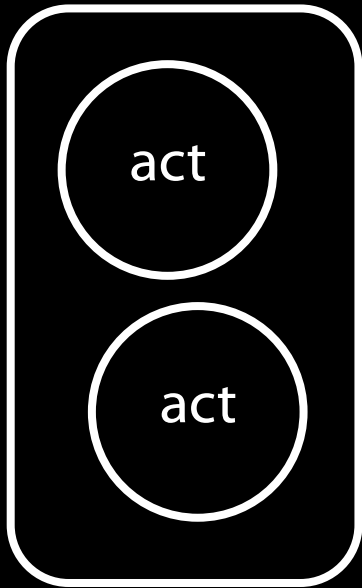
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(Tomasello & Carpenter 2007)

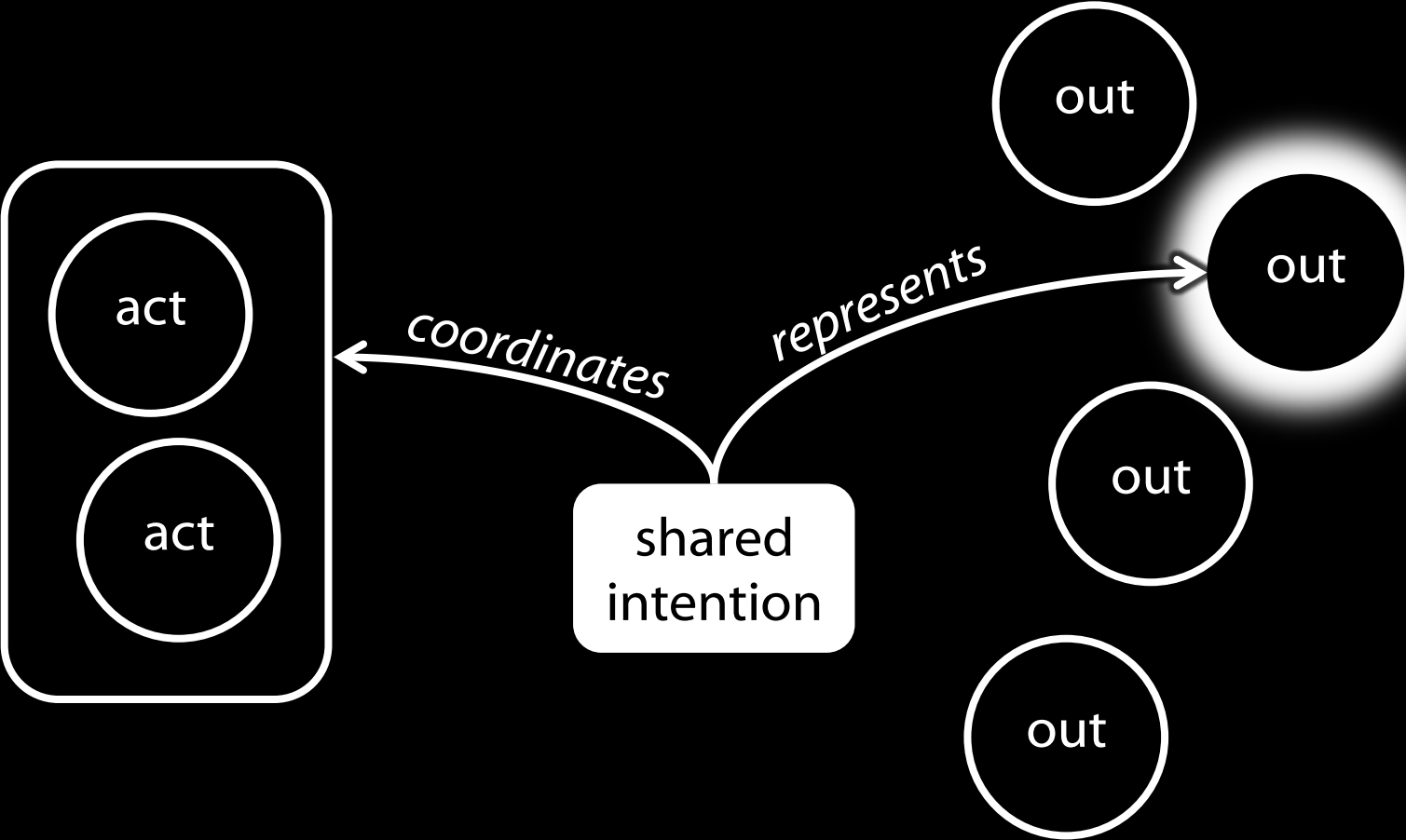
pretending to row a boat together

Goal-directed joint action: an event with two or more agents which, taken as a whole, is directed to a goal.

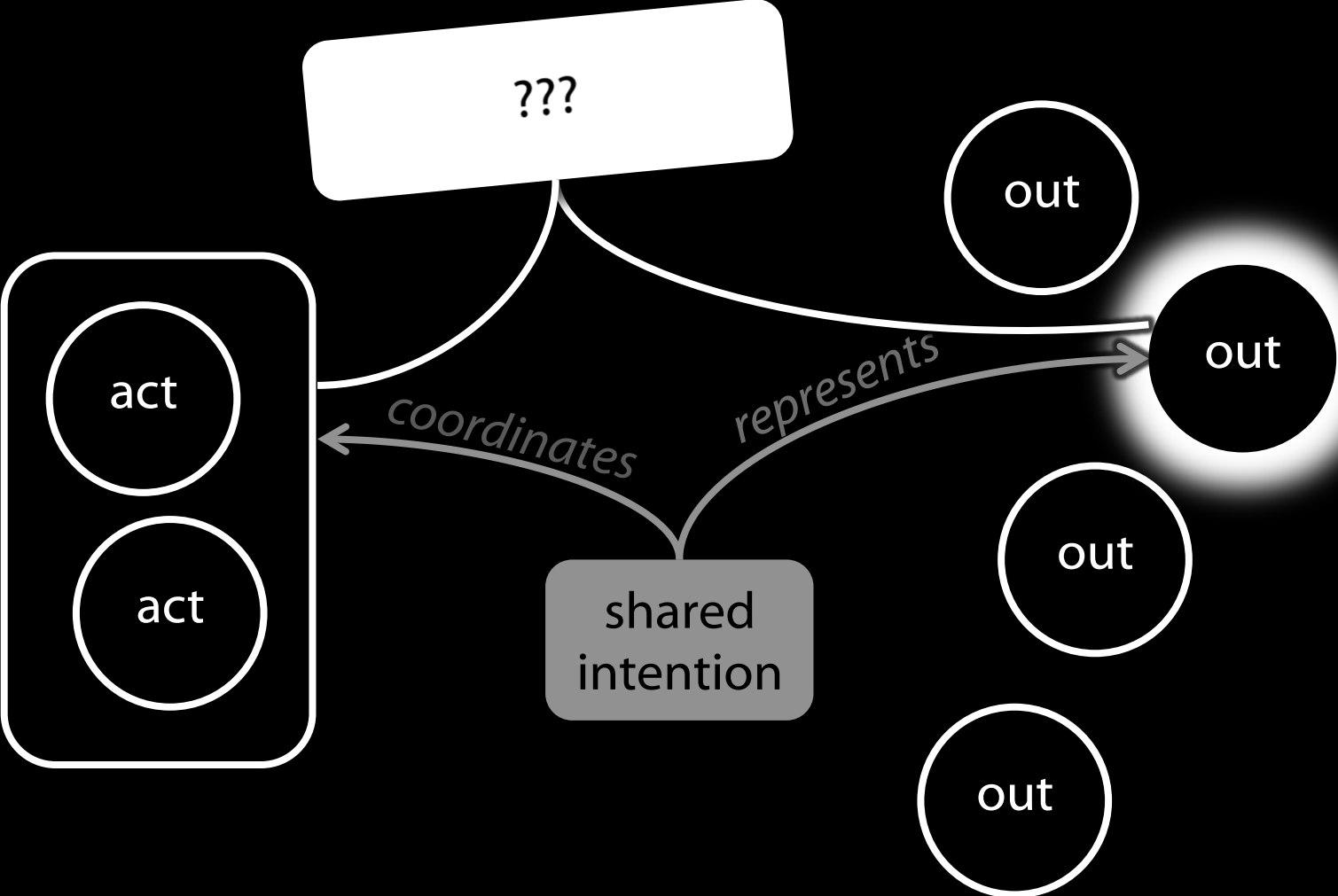
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Detour
Goals are not intentions

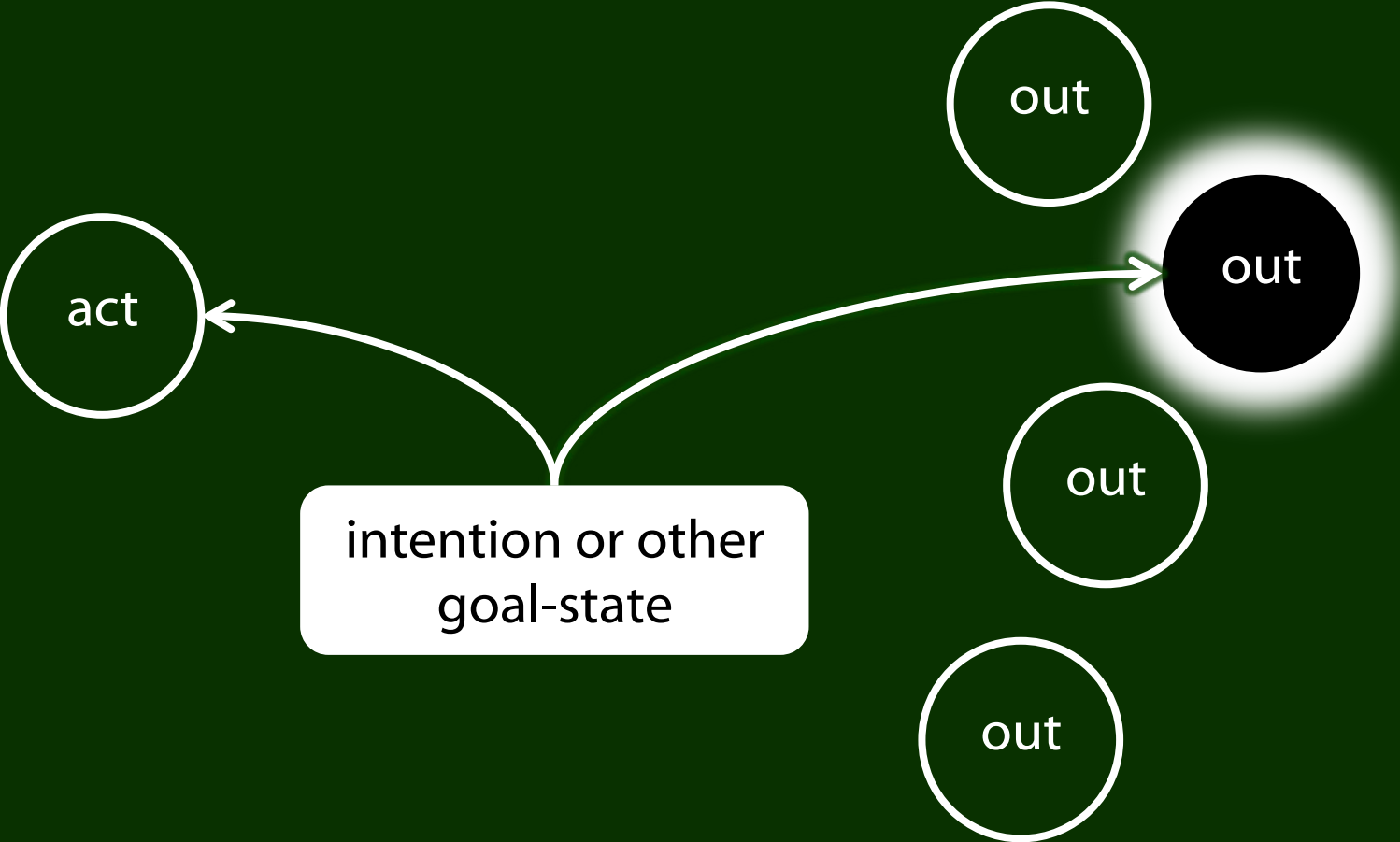
What is the relation between an action and the goal (or goals) to which it is directed?



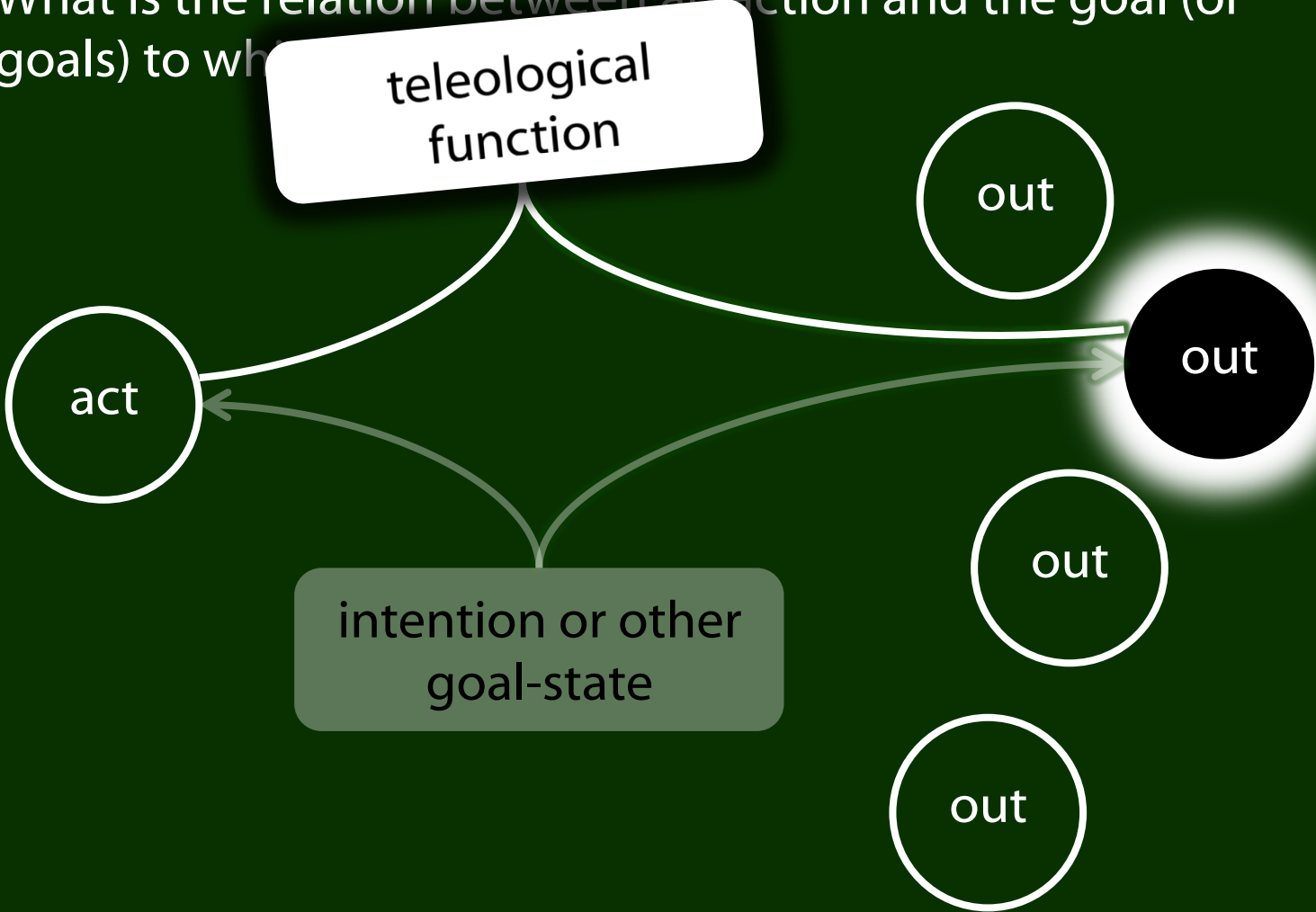
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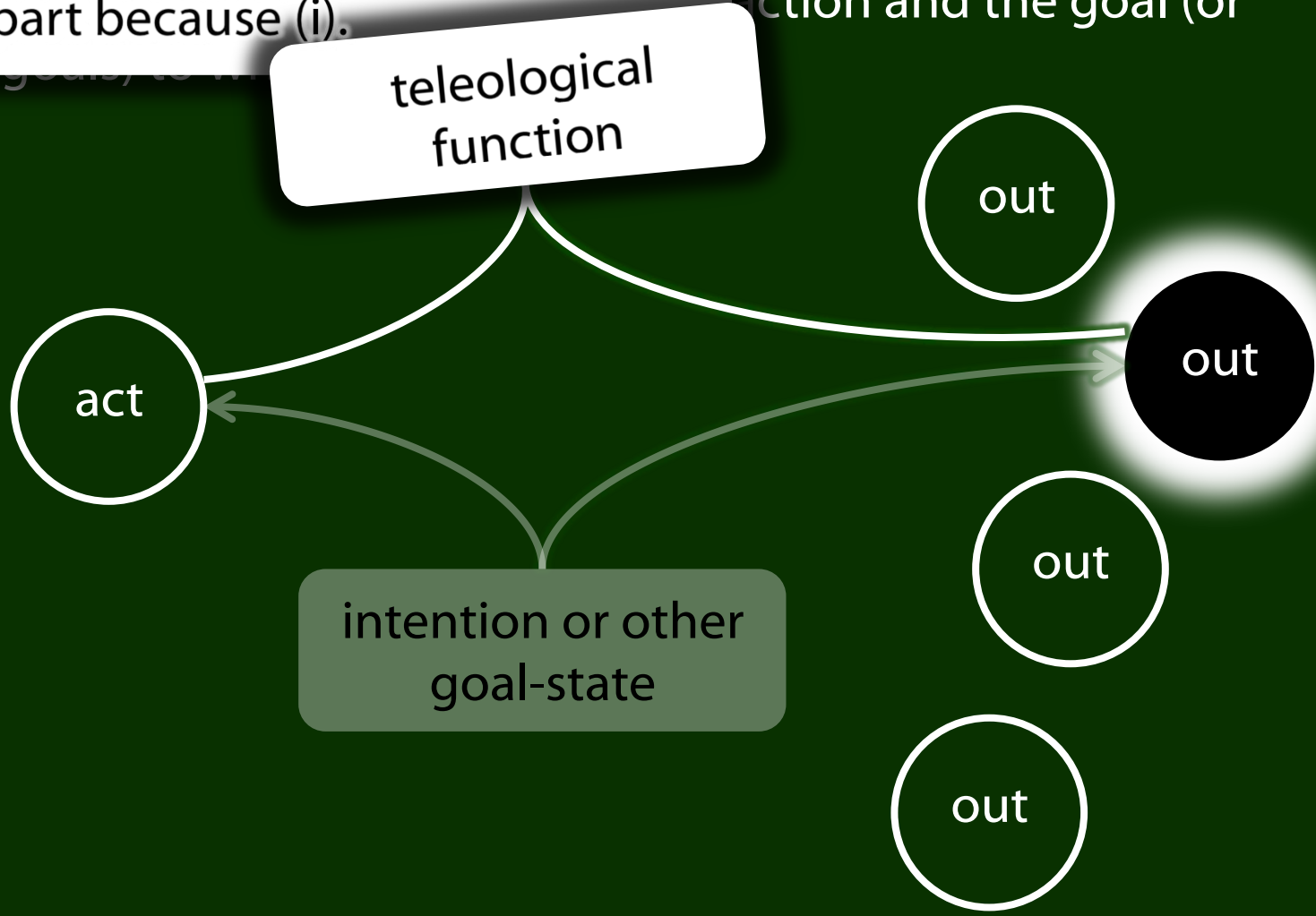


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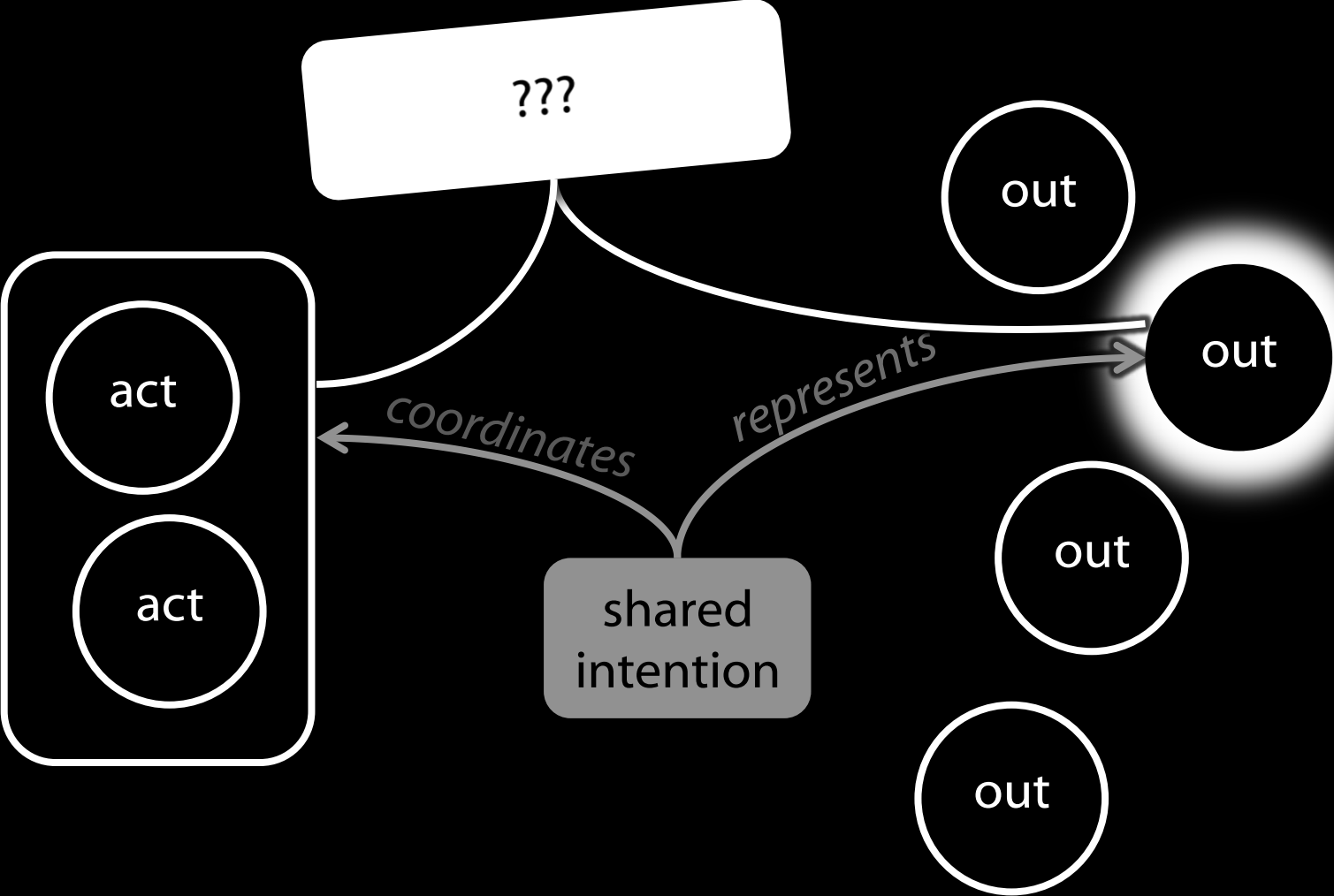
(i) in the past, actions of this type have caused outcomes of this type; (ii) this action happens now in part because (i).

action and the goal (or



End Detour

Goal-directed joint action: an event with two or more agents which, taken as a whole, is directed to a goal.



Goal-directed joint action: an event with two or more agents which, taken as a whole, is directed to a goal.

G is a distributive goal: it is an outcome to which each agent's actions are individually directed and it is possible that: all actions succeed relative to this outcome.

Joint

Jack and Sue walk
together

Not joint

Jack and Sue walk
alongside each other

(Gilbert 1990)

Joint

Jack and Sue walk
together

We collectively perform a
dance by running to a
shelter at the same time

Not joint

Jack and Sue walk
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We each individually run
to a shelter at the same
time (in response to a
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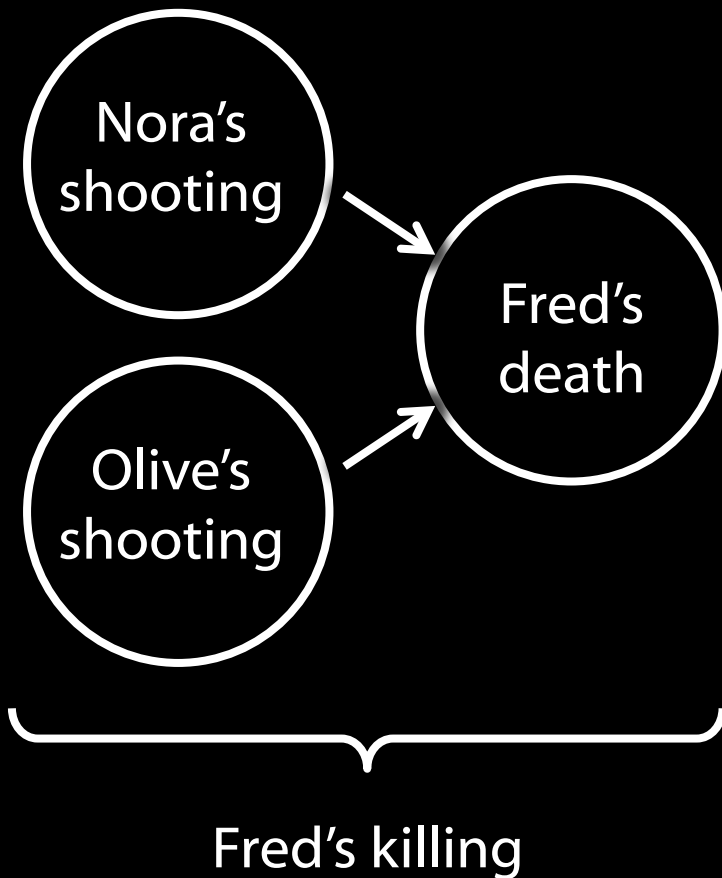
(Searle 1990, 92)

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G is a distributive goal: it is an outcome to which each agent's actions are individually directed and it is possible that: all actions succeed relative to this outcome.

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- (b) the actions are coordinated; and
- (c) coordination of this type would normally facilitate occurrences of outcomes of this type.

“It ... seems useful to draw a distinction between elementary or thin forms of joint action common to humans and other social mammals and sophisticated or thick forms of joint action, perhaps unique to the human species.”

(Pacherie & Dokic 2006, 110)

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sting sting

sting

sting

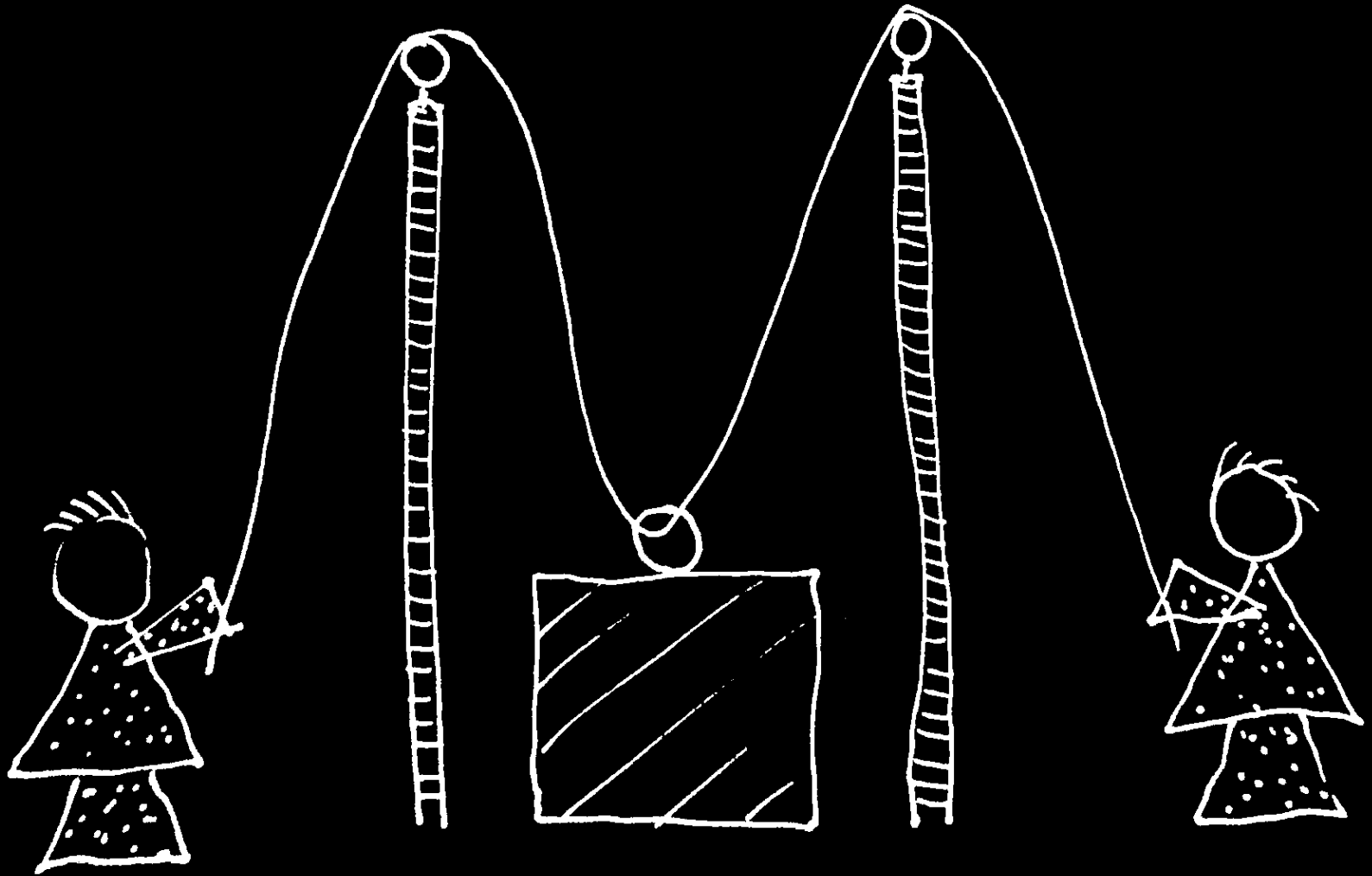
sting

sting

sting

sting

death
of fly



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Each agent most wants and expects each of the other agents to perform activities directed to the goal.

Each agent most wants and expects the goal to occur as a common effect of all their goal-directed actions.

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challenge

Explain the emergence, in evolution or development, of sophisticated forms of mindreading.

conjecture

The existence of abilities to engage in joint action partially explains how sophisticated forms of mindreading emerge in evolution or development (or both)

2nd objection

Joint action presupposes sophisticated mindreading