

# Mindreading & Joint Action

## 8. Shared Intention & Motor Representation in Joint Action



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## Outline

1. The leading philosophical approach to shared agency

2. Limits of this approach

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3. (Building blocks for) an alternative approach

4. Motor representation

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5. The emergence of mindreading





# conjecture

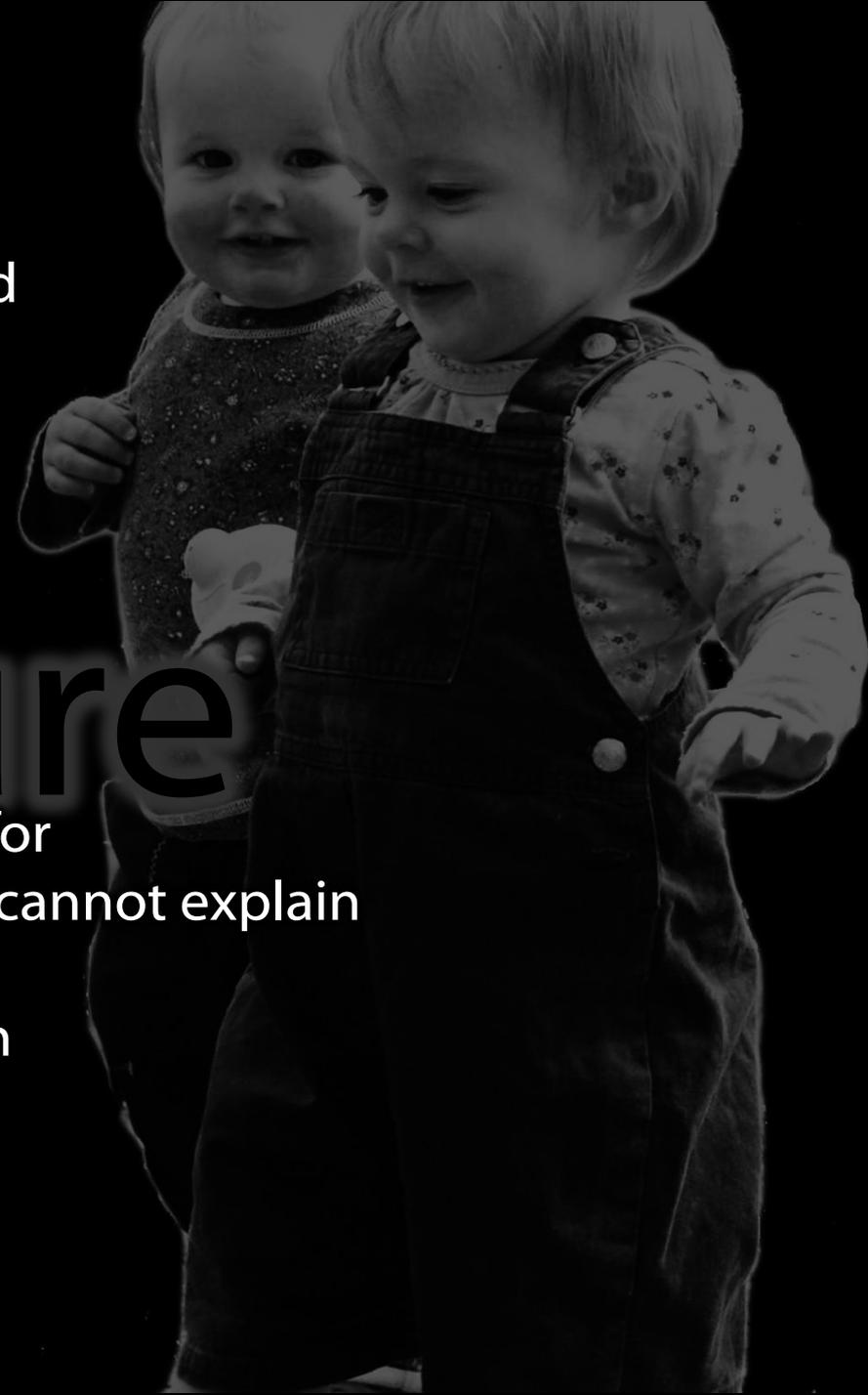
The prior existence of capacities for shared agency partially explains how sophisticated forms of mindreading emerge in evolution or development (or both)

1. All shared agency involves shared intention.

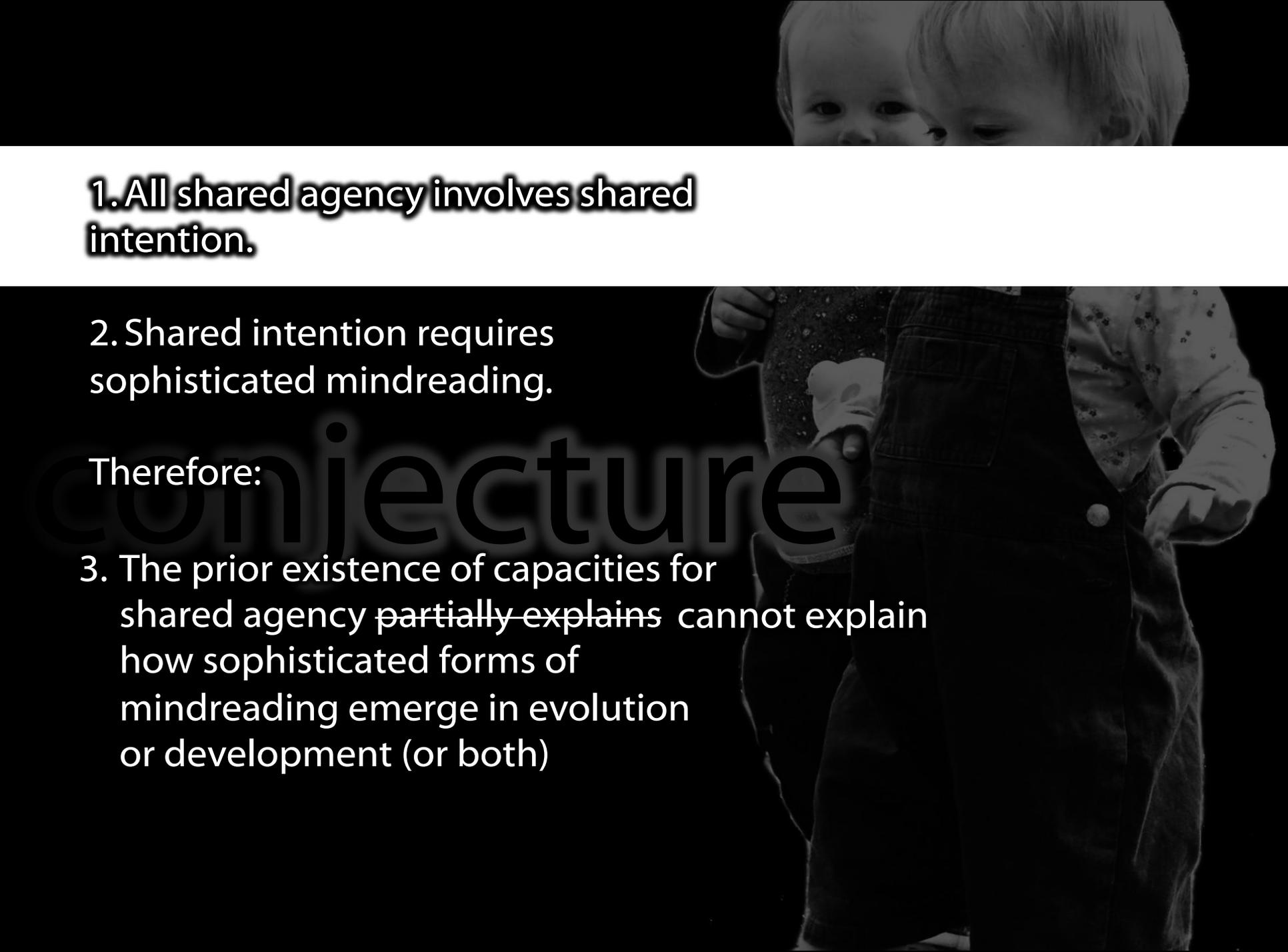
2. Shared intention requires sophisticated mindreading.

Therefore:

3. The prior existence of capacities for shared agency ~~partially explains~~ cannot explain how sophisticated forms of mindreading emerge in evolution or development (or both)



conjecture



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2. Shared intention requires sophisticated mindreading.

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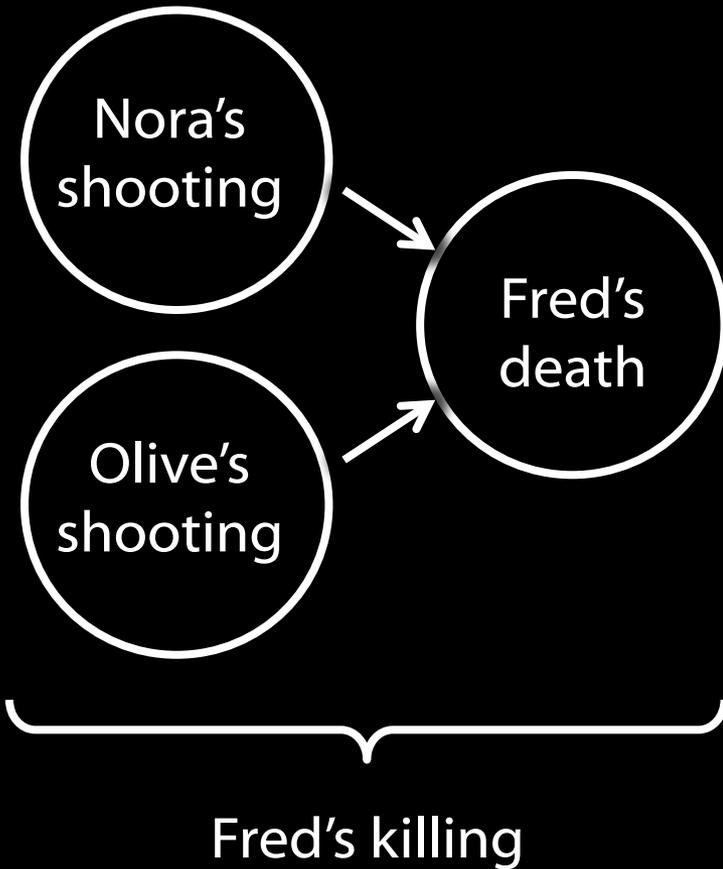
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conjecture

shared agency without shared intention

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

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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

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



too  
broad

putting up the toys together  
(Behne et al 2005)

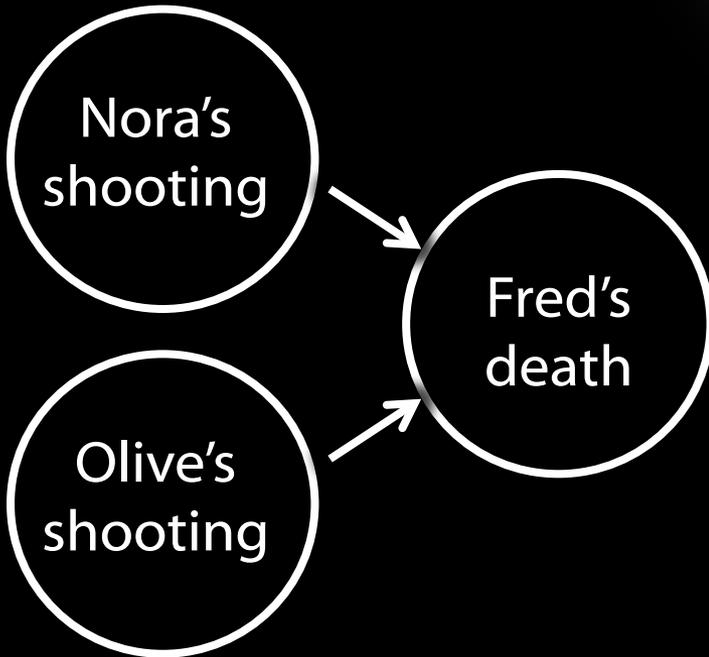
alternatively pulling  
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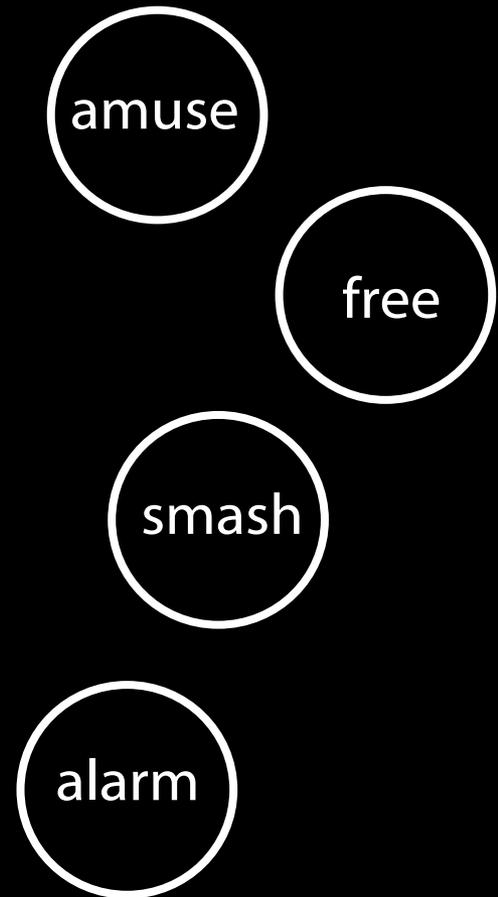
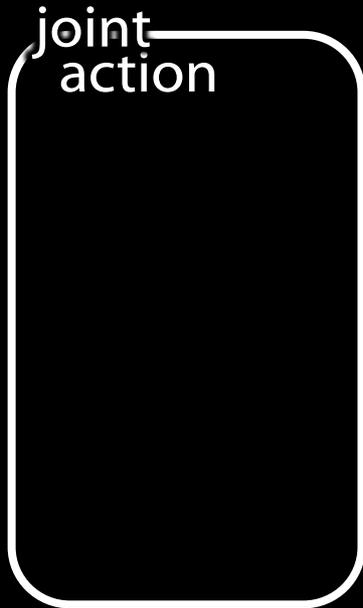
Fred's killing

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

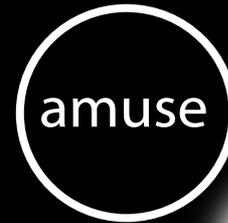
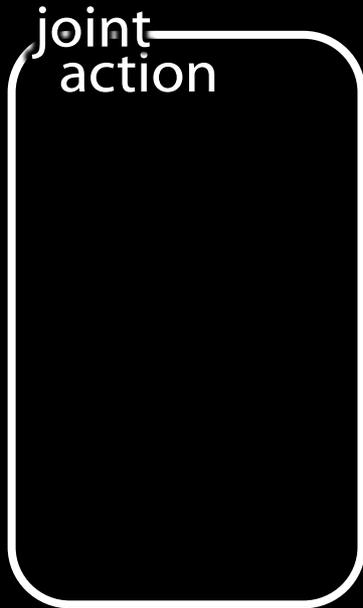
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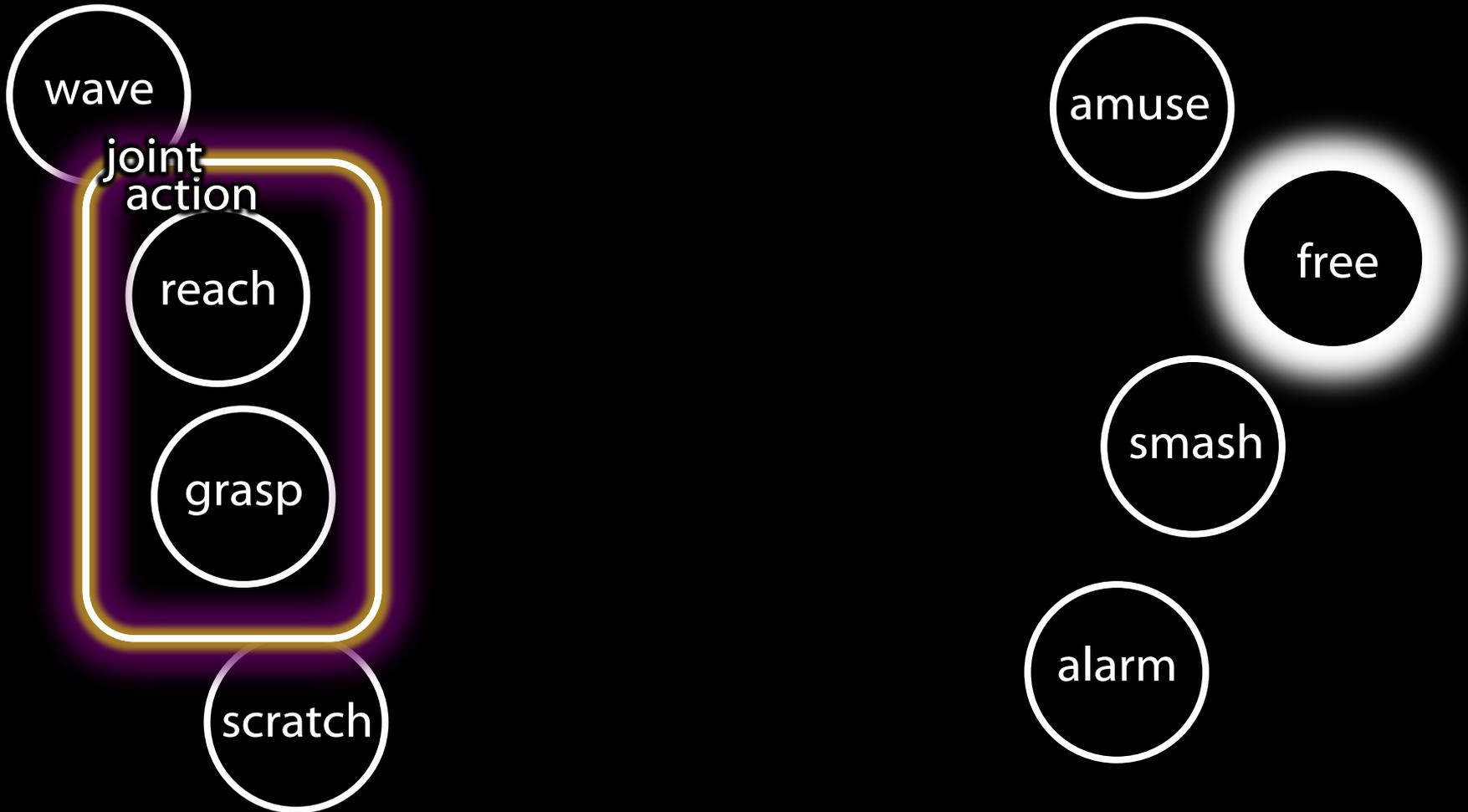
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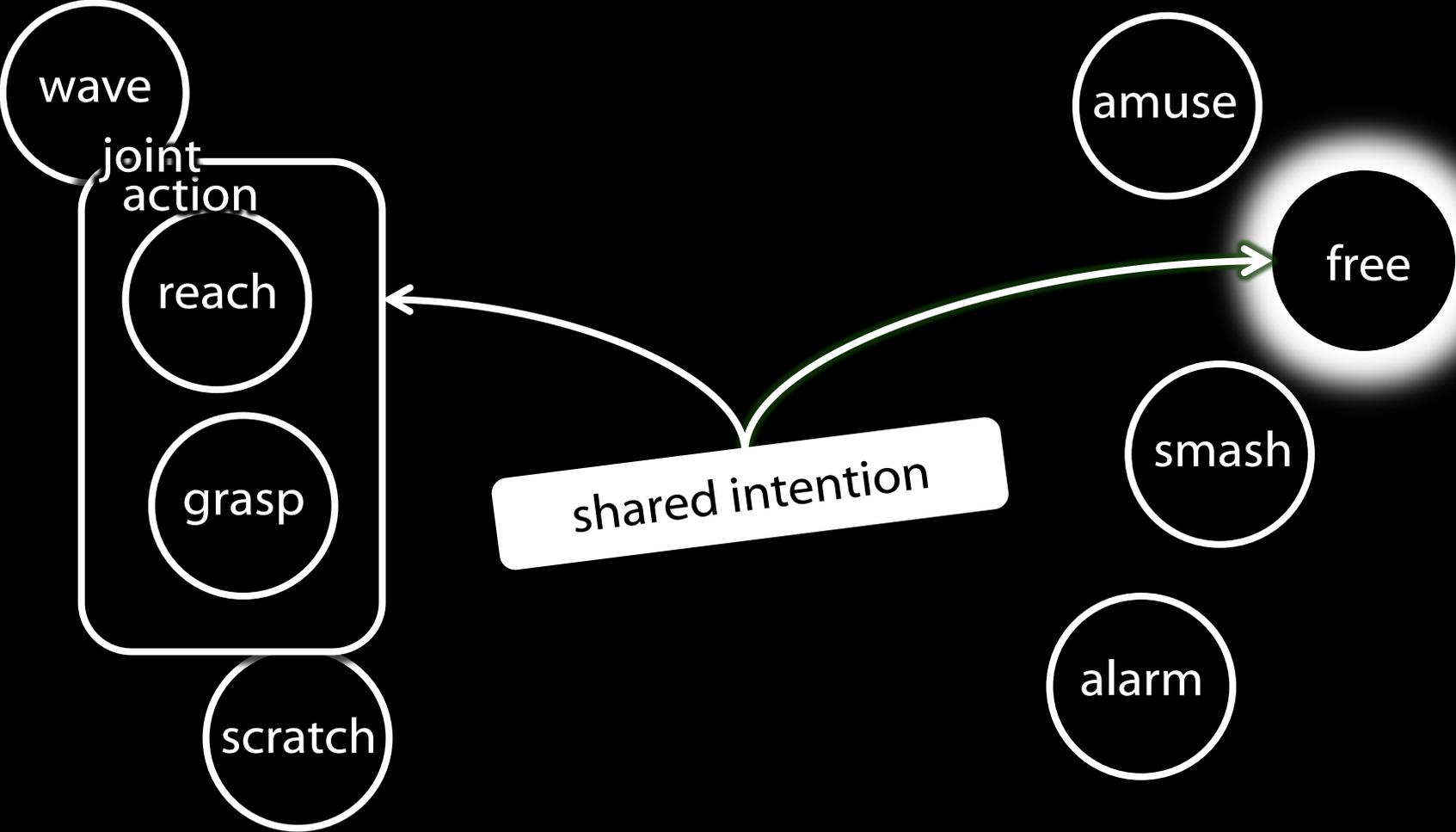
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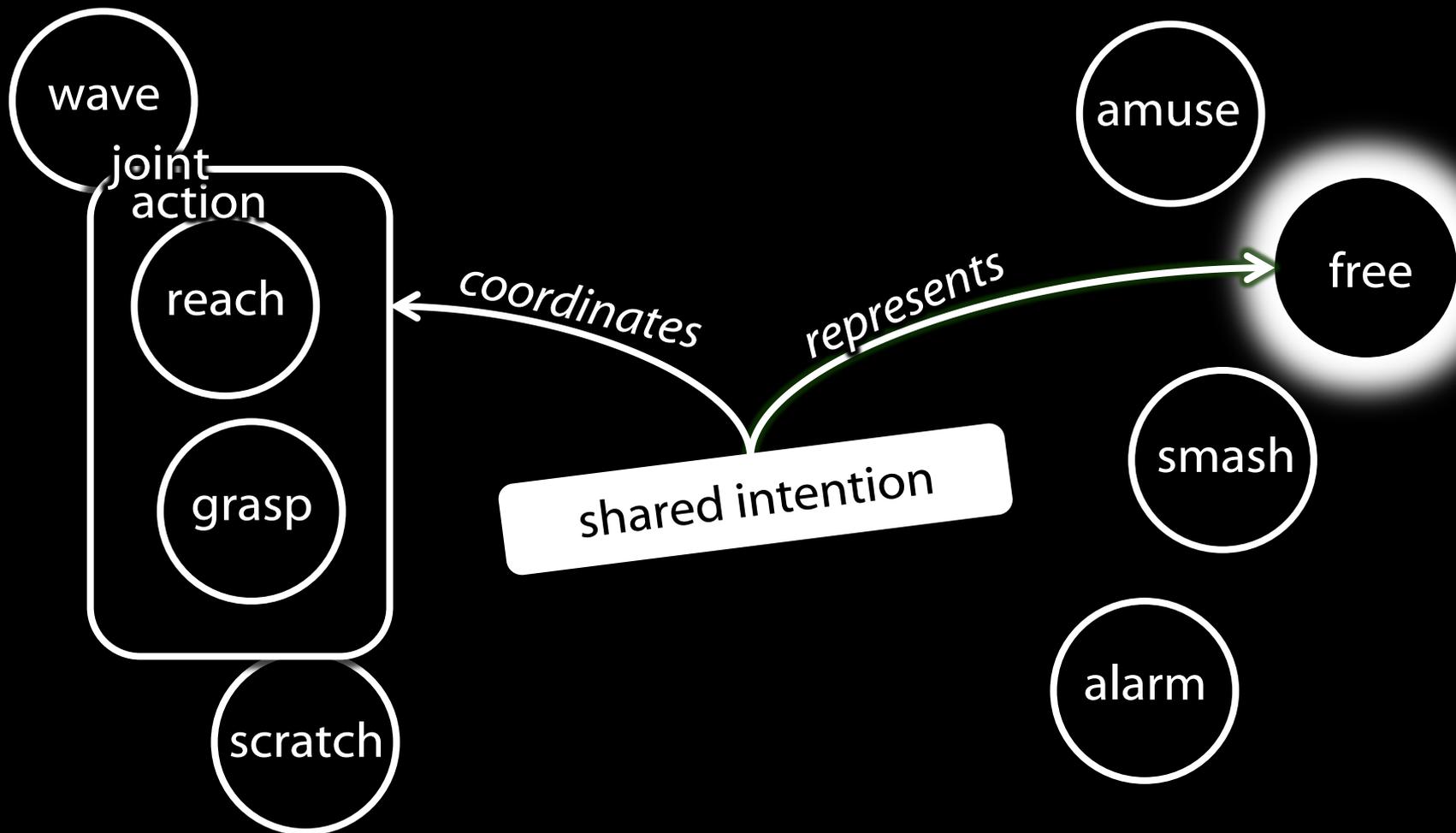
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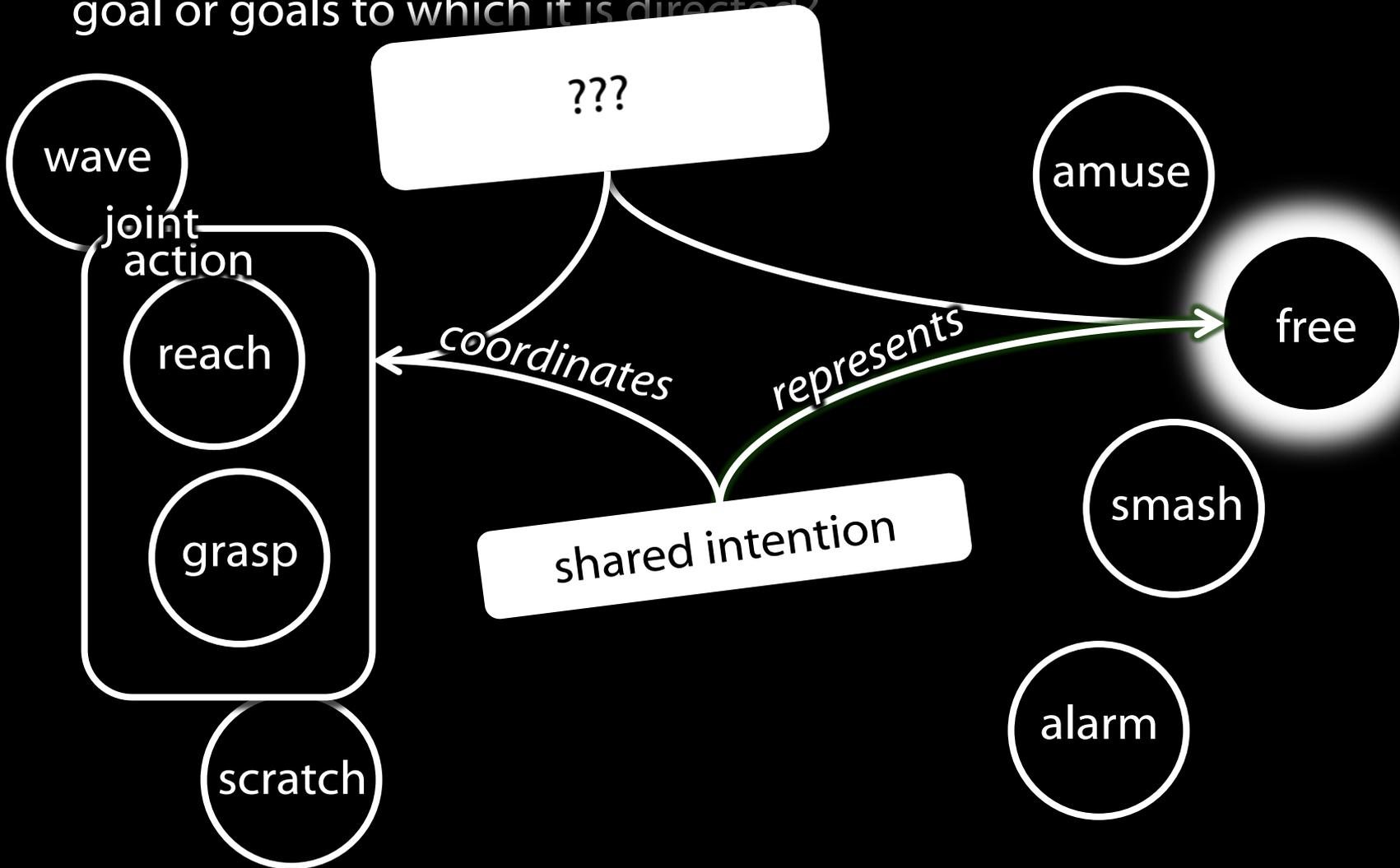
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G is a distributive goal: it is an outcome to which each agent's actions are individually directed and it is possible that: all actions succeed relative to this outcome.

## Shared Agency

## Merely Parallel Individual Agency

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.

Members of a flash mob  
simultaneously open  
their newspapers noisily

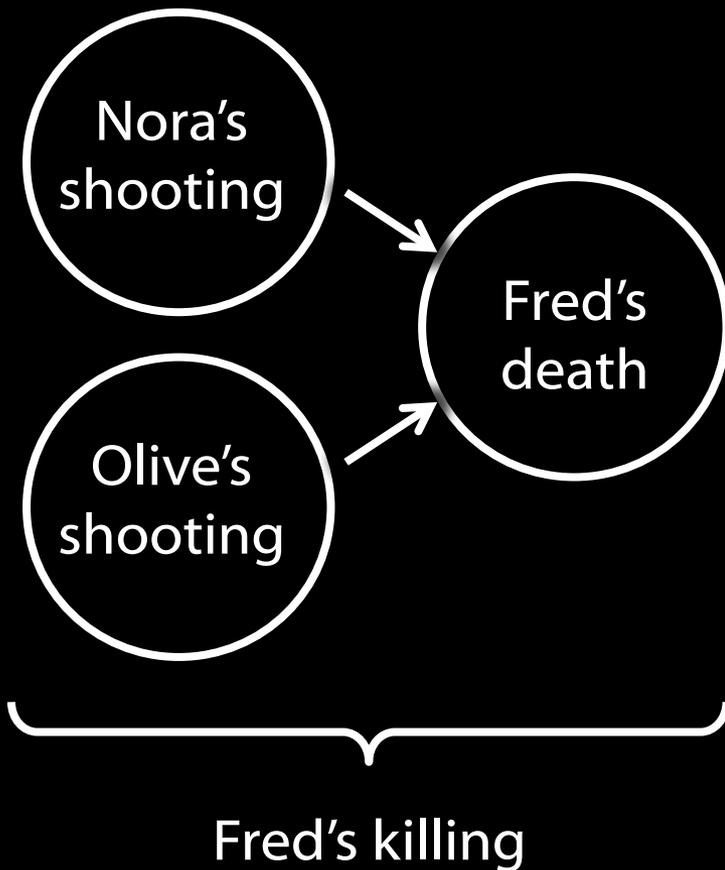
Two friends walk to the  
metro station together.

Onlookers  
simultaneously open  
their newspapers noisily  
(cf. Searle 1990: 92)

Two strangers walk the  
same route side-by-side.  
(Gilbert 1990)

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Nora's  
Two friends walk to the metro station together.

Nora and Olive, deadly enemies, kill Fred.

Two strangers walk the same route side-by-side.  
(Gilbert 1990)

Two friends collaboratively kill Fred.

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.

G is a collective goal

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

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sting sting

sting

sting

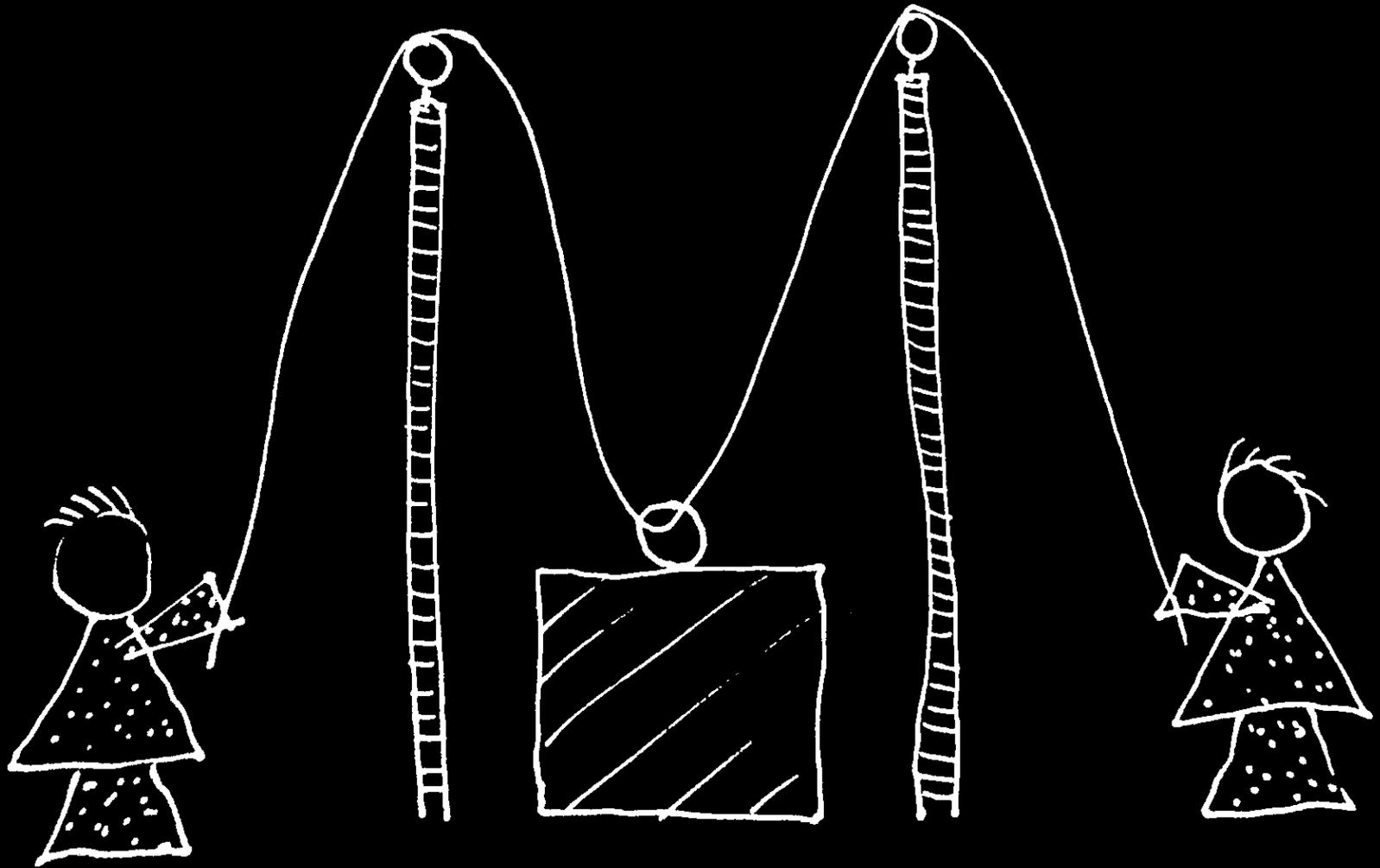
sting

sting

sting

sting

death  
of fly



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"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)

agent-neutral

agent-neutral

planning

for outcomes whose realisation would normally involve  
one's own and another's (or others') actions.

reciprocal, parallel  
agent-neutral

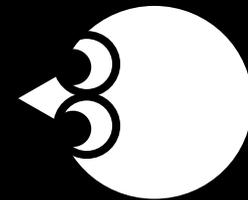
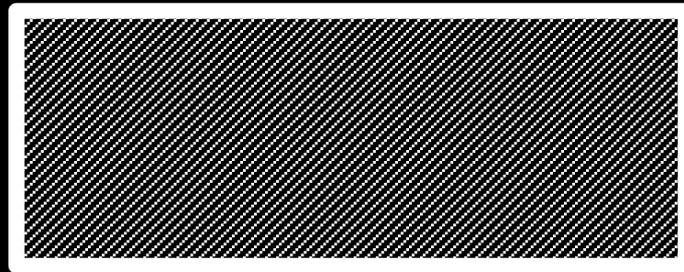
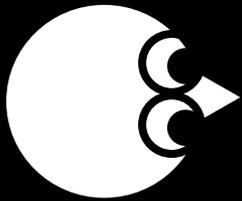
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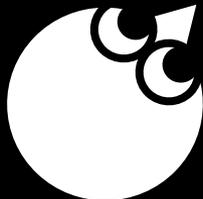
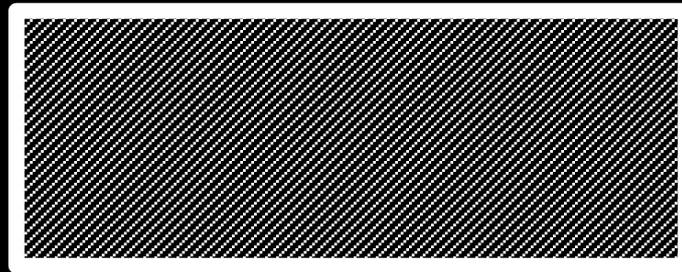
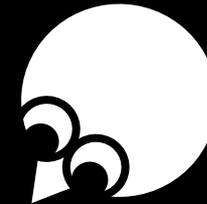
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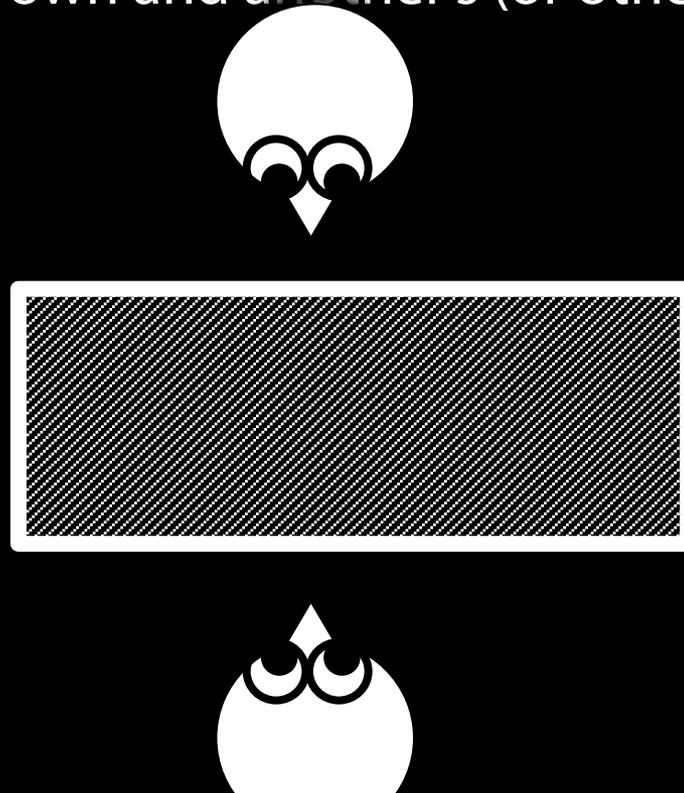
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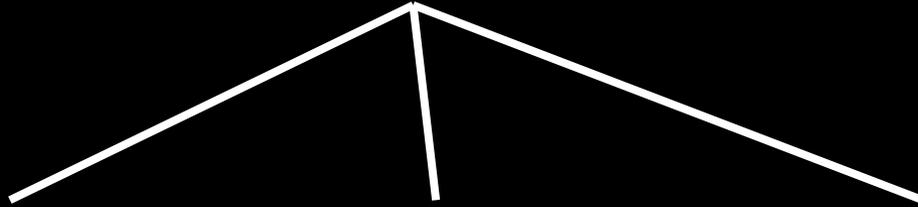
agent-neutral

motor

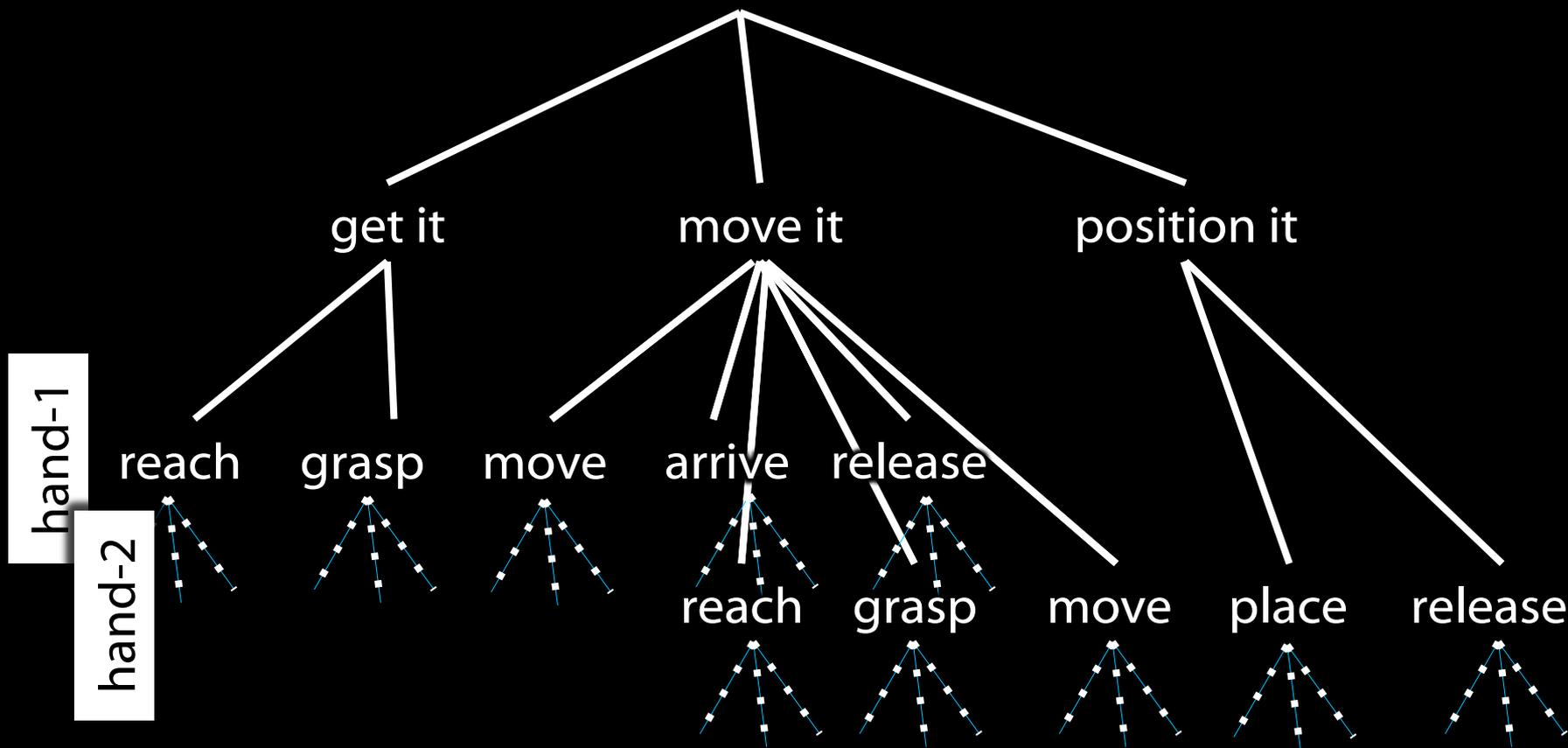
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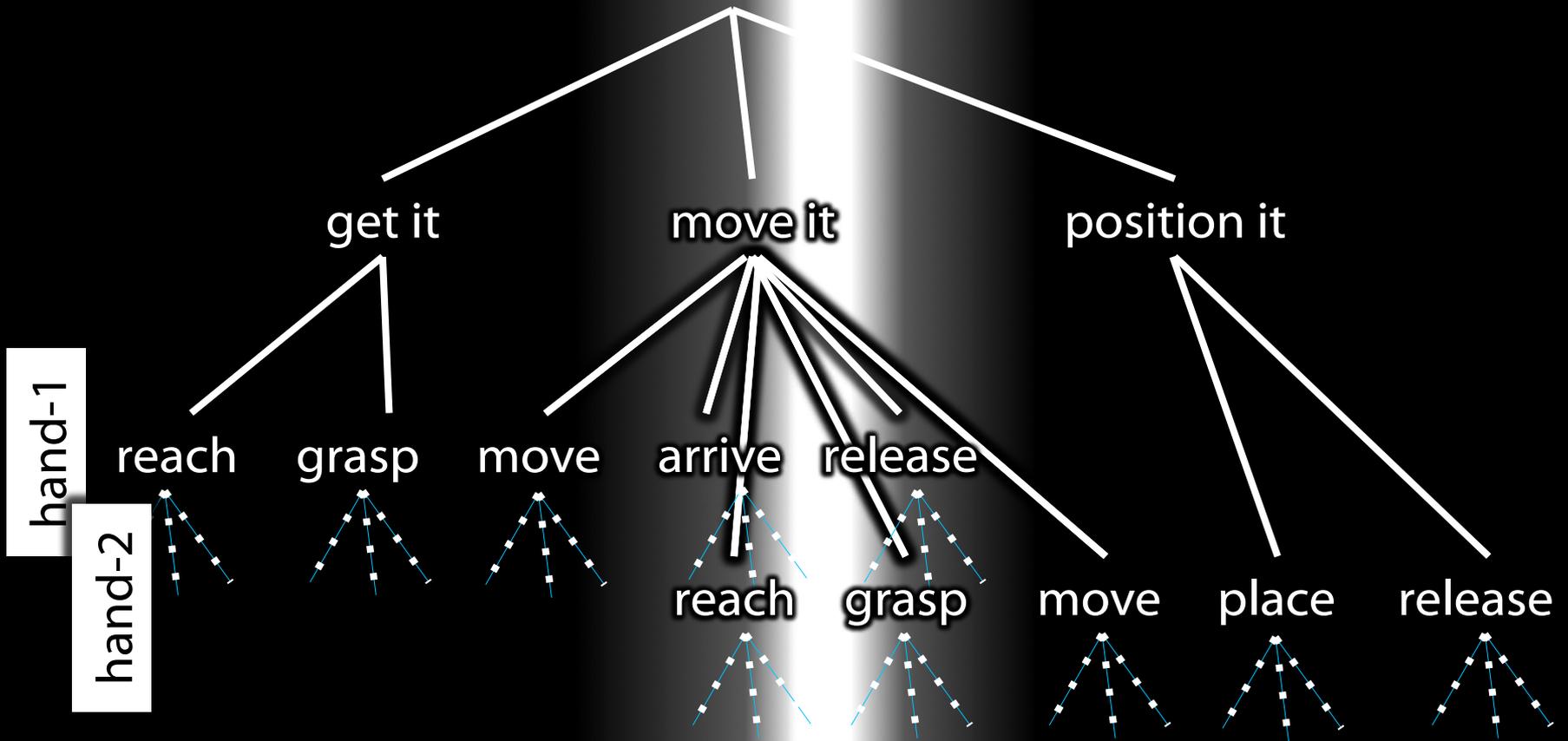
Move it from there to here



Move it from there to here

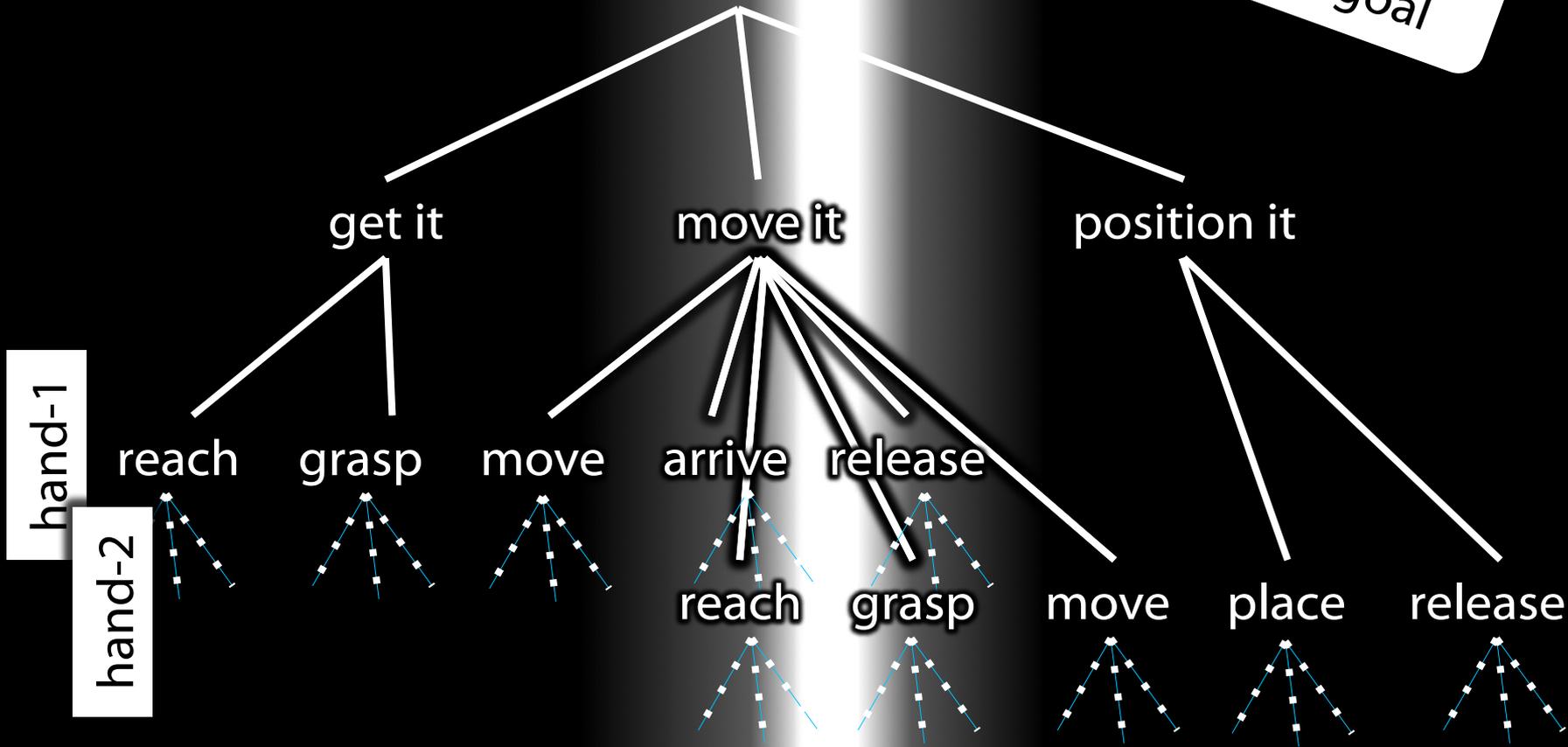


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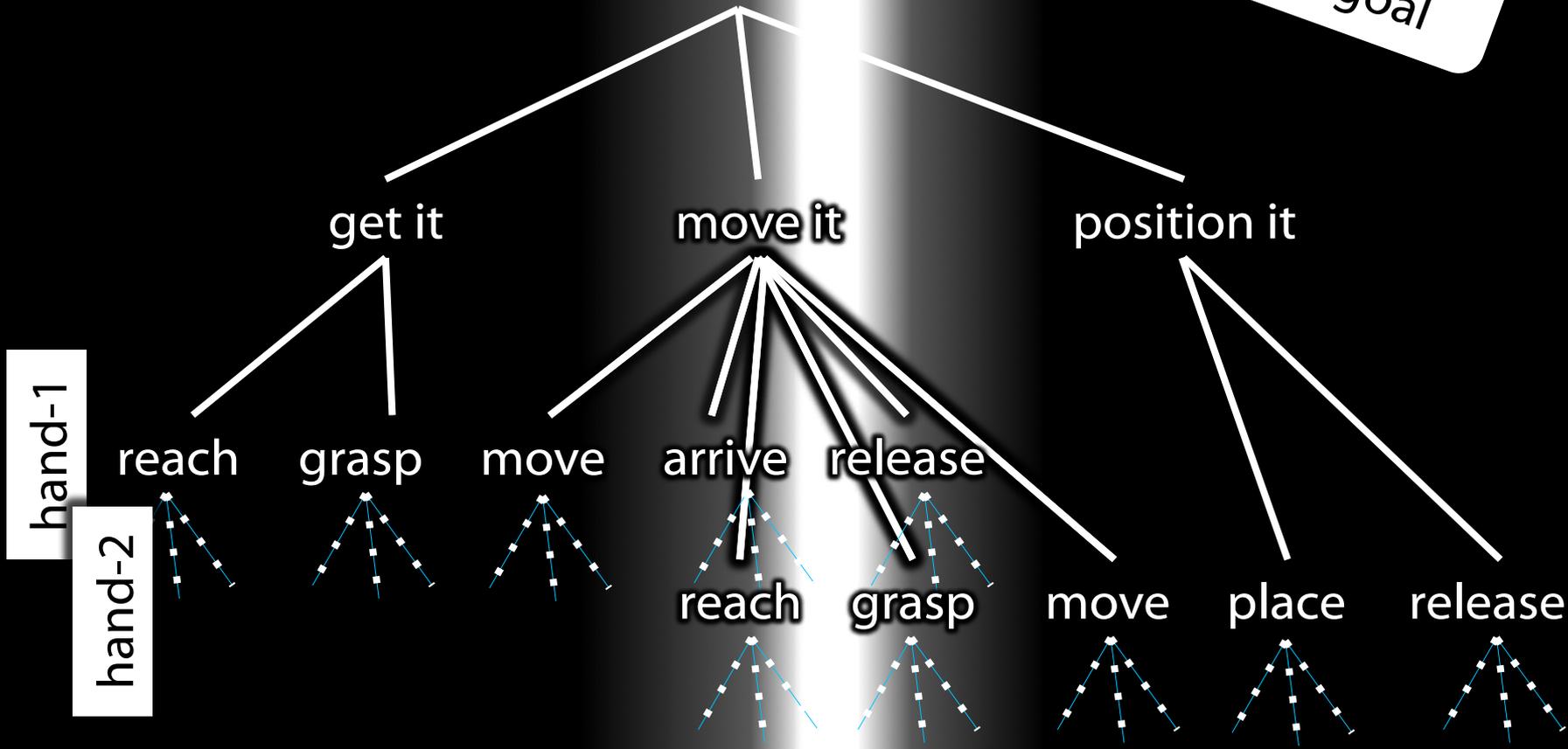
Move it from there to here

joint action:  
same goal



Move it from there to here

joint action:  
same goal



similar timing  
problem

Move it from there to here

joint action:  
same goal

get it

move it

position it

same  
planning

hand-1

hand-2

reach

grasp

move

arrive

release

reach

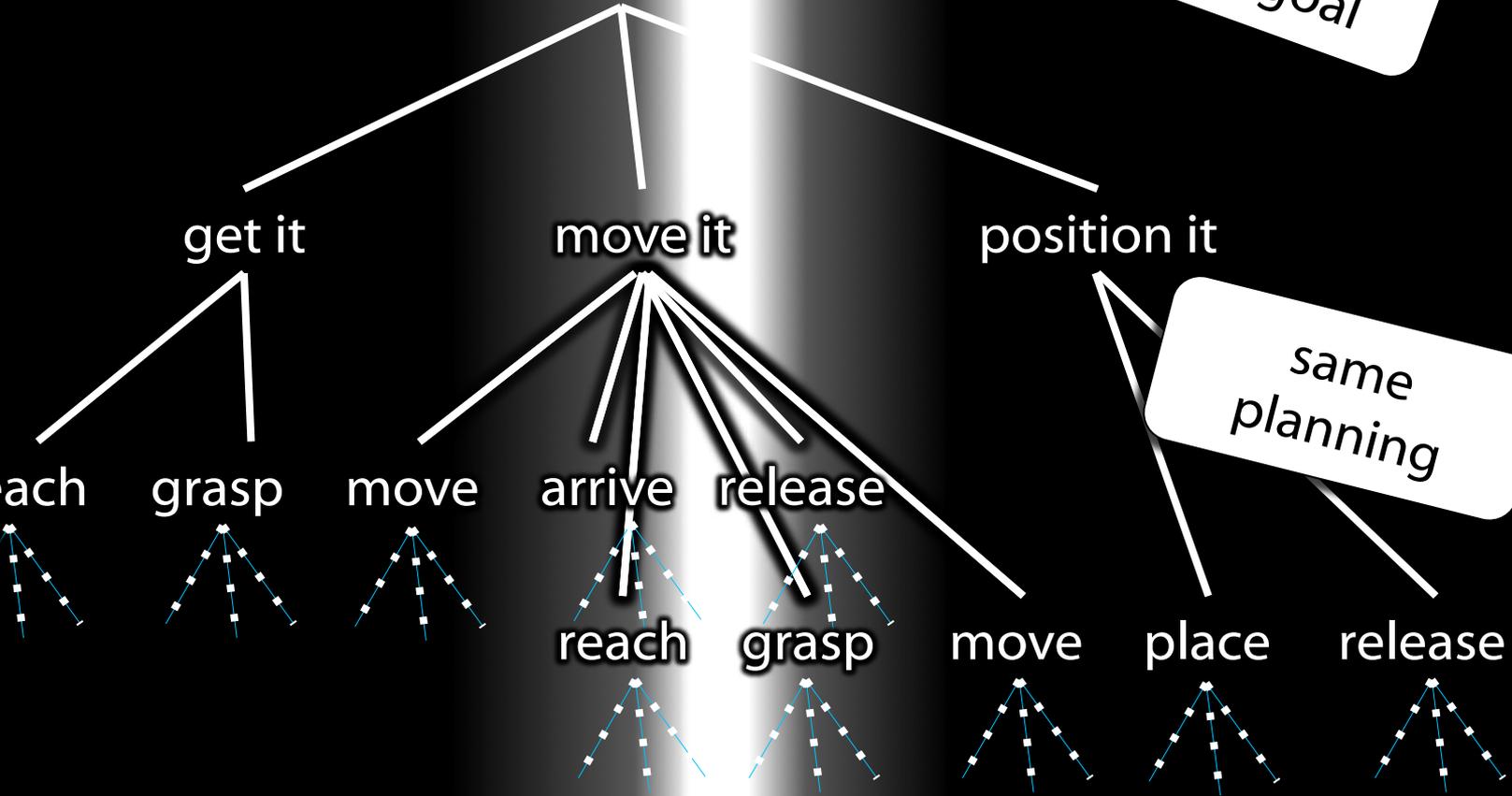
grasp

move

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problem



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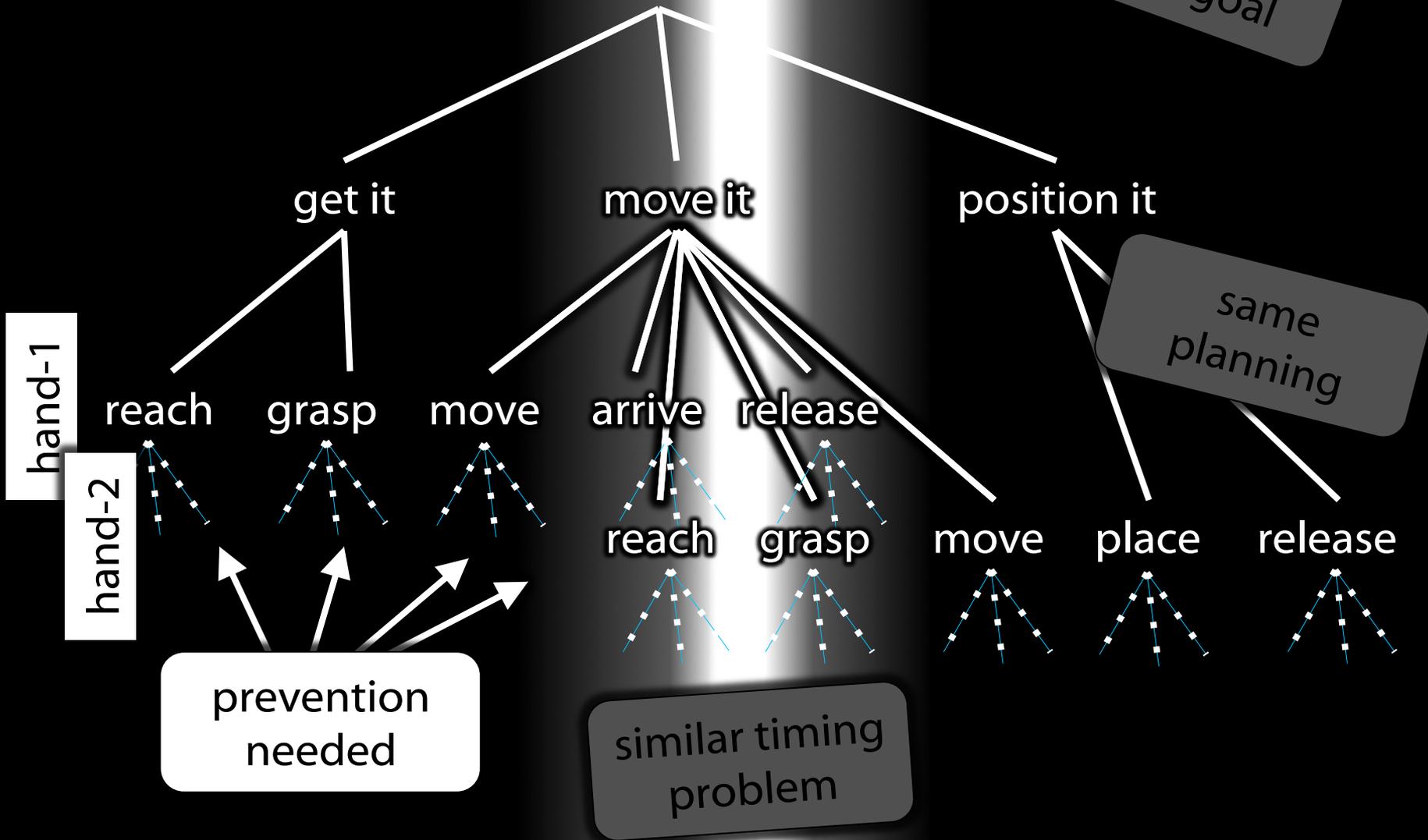
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shared motor action

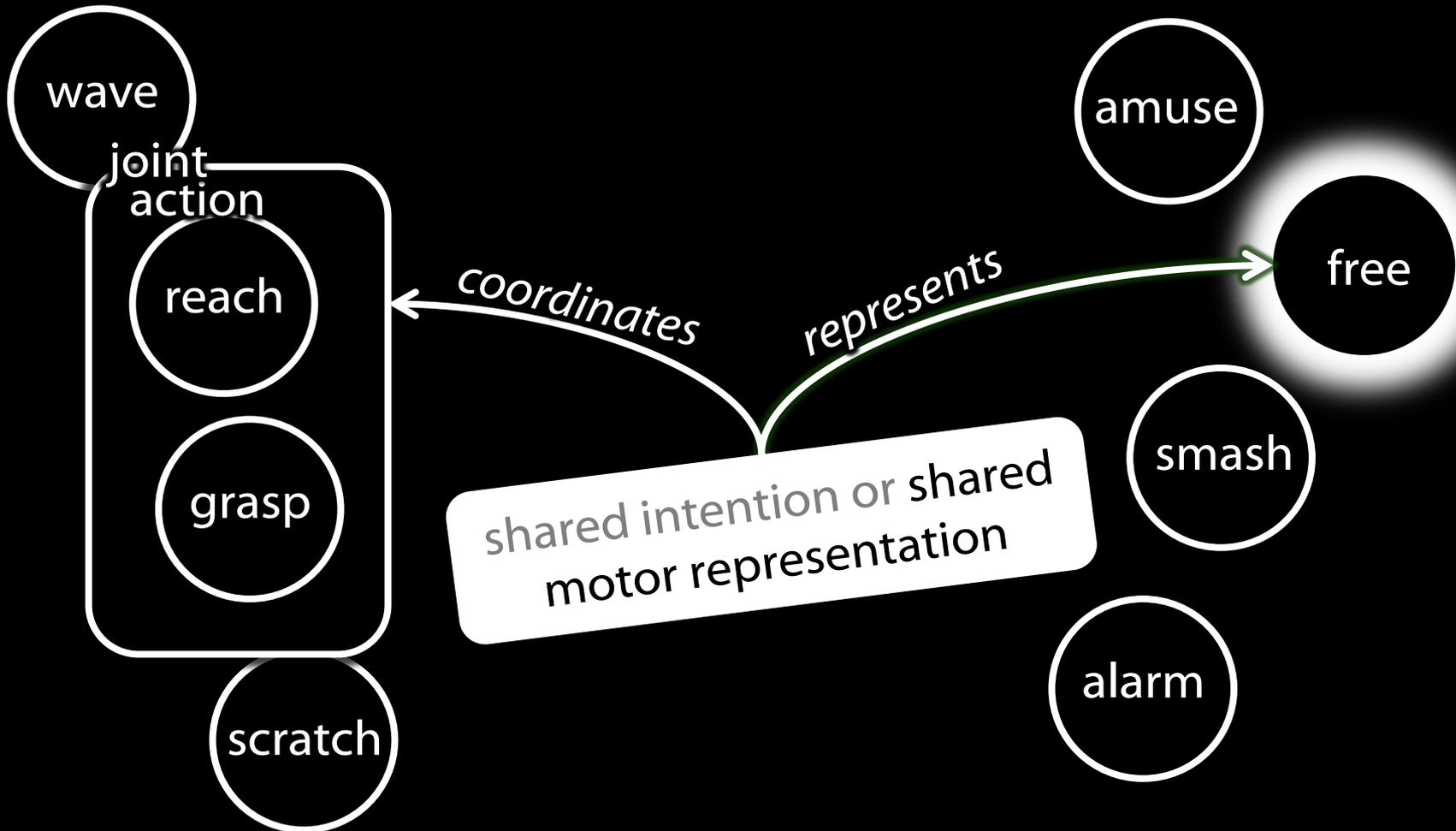
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1. we each have a motor representation of G;
2. we are each disposed to inhibit some (not all) of the resulting planning or actions;
3. we each expect that if G occurs, we will all be agents of it; and
4. (1) and (2) because (3)

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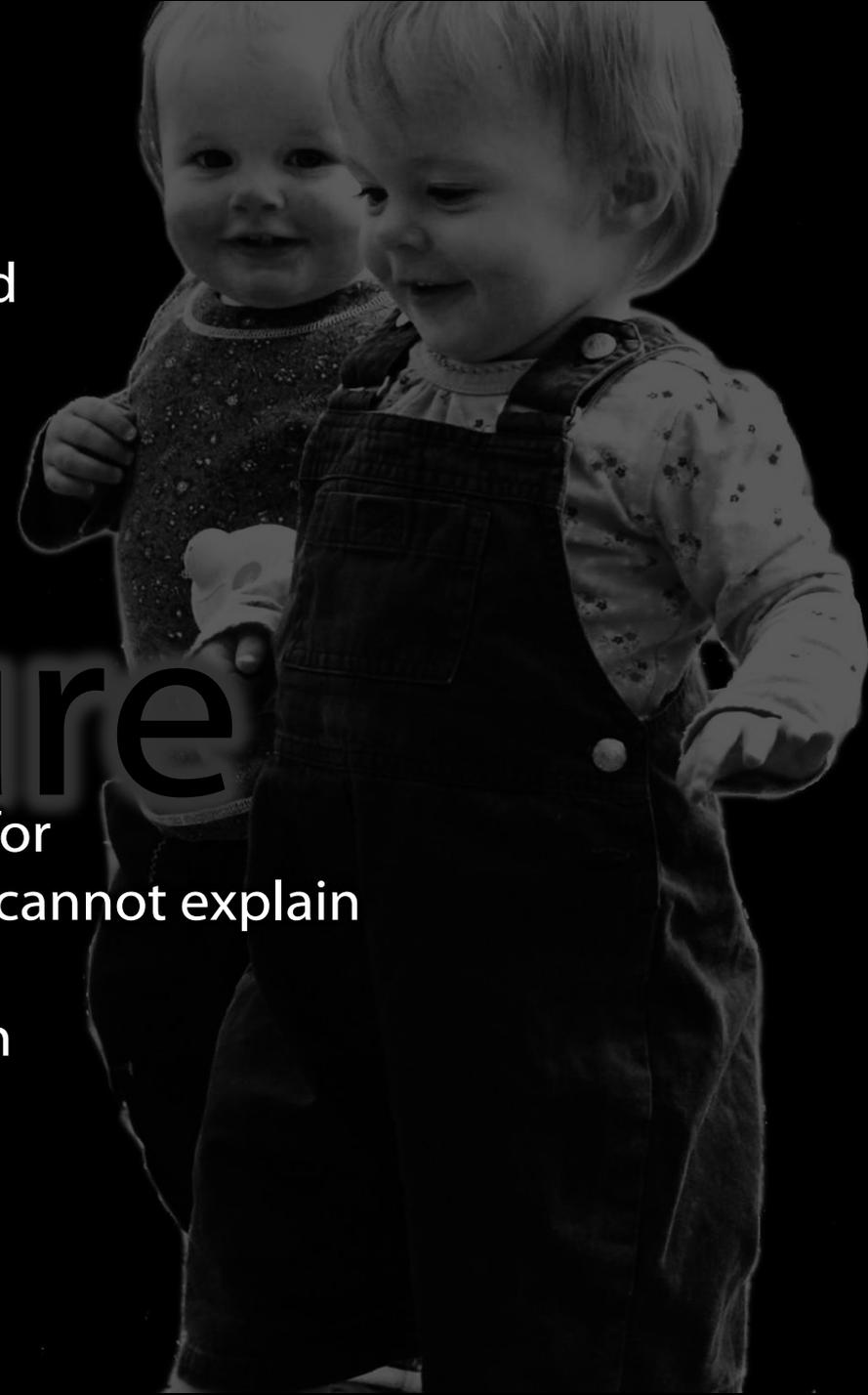


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# conjecture

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< different content >

< different format >

Head southeast on Rue Cujas toward Rue Victor Cousin. Turn right onto Rue Saint-Jacques...



Take RER B and get out at the Luxembourg station, from there it's less than 5 minutes walk.



< different content >

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# The Interface Problem

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Some joint actions involve  
both shared intention and  
shared motor representation

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Shared motor representations:

i. represent outcomes;

ii. ground the purposiveness of some joint actions

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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.

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## The Interface Problem: How are non-accidental matches possible?

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Follow *that* route

=



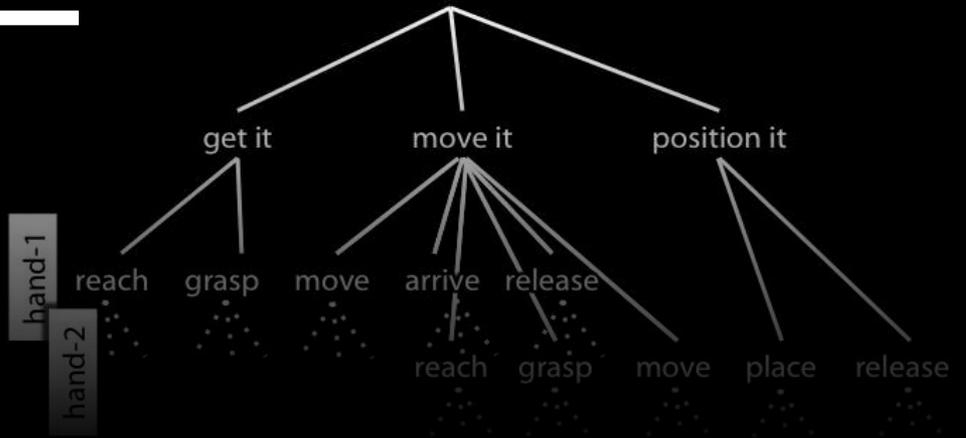
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Do that

==

Move it from there to here

?



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