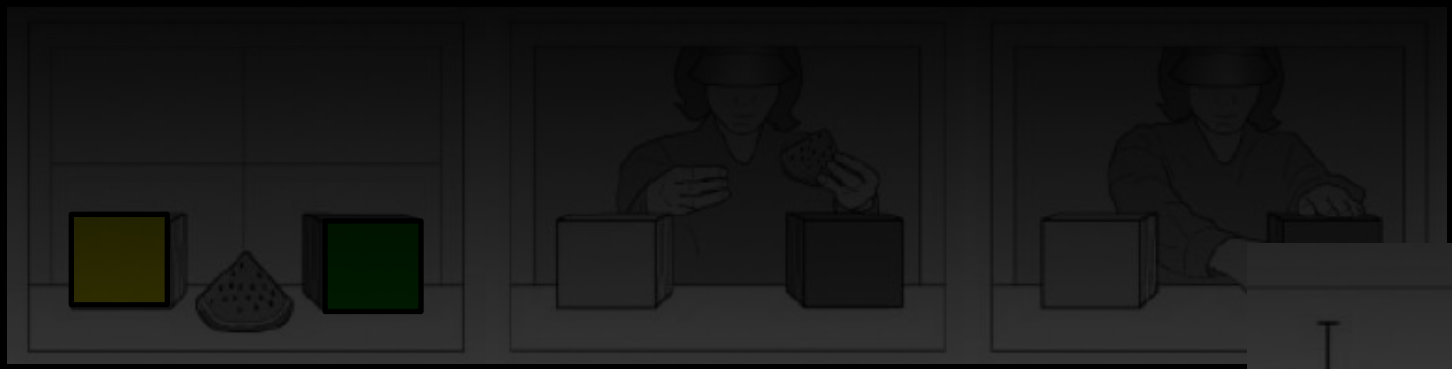
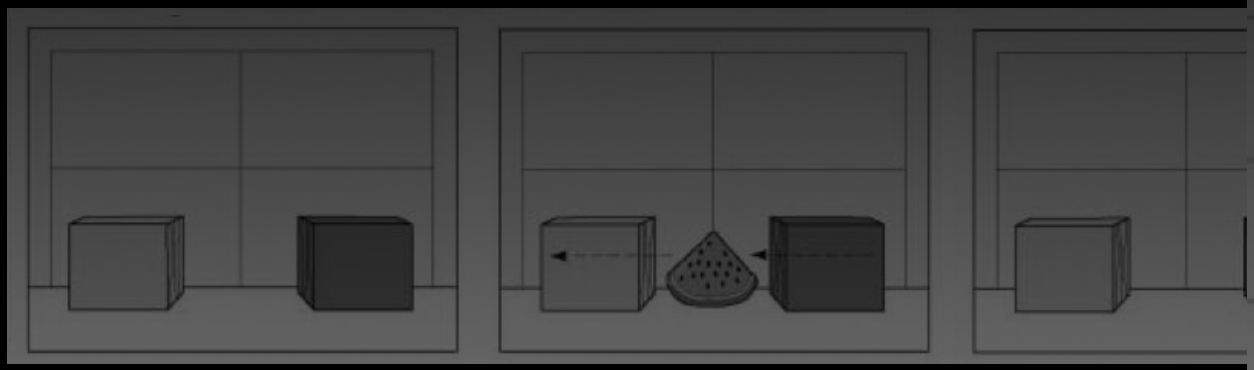
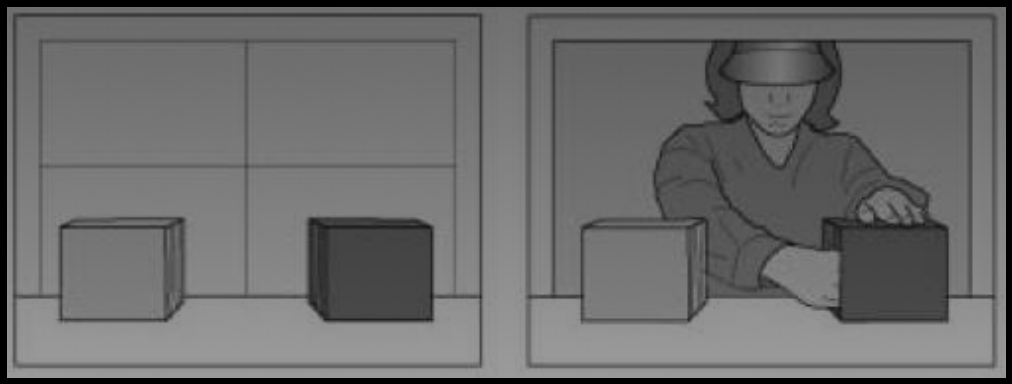
Mindreading & Joint Action

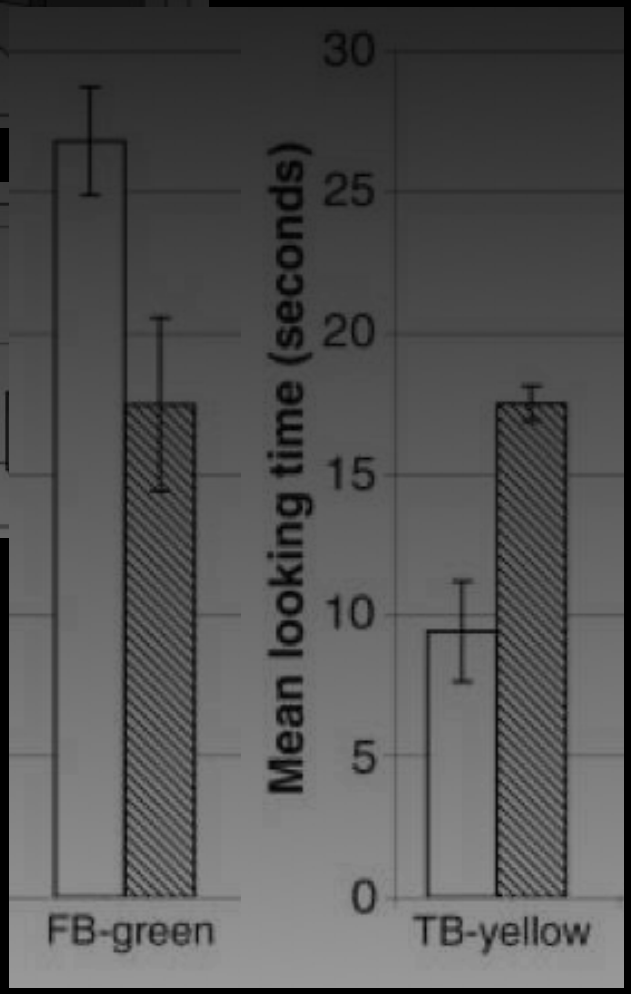
5. Actions, Intentions & Goals

butterfillS@ceu.hu



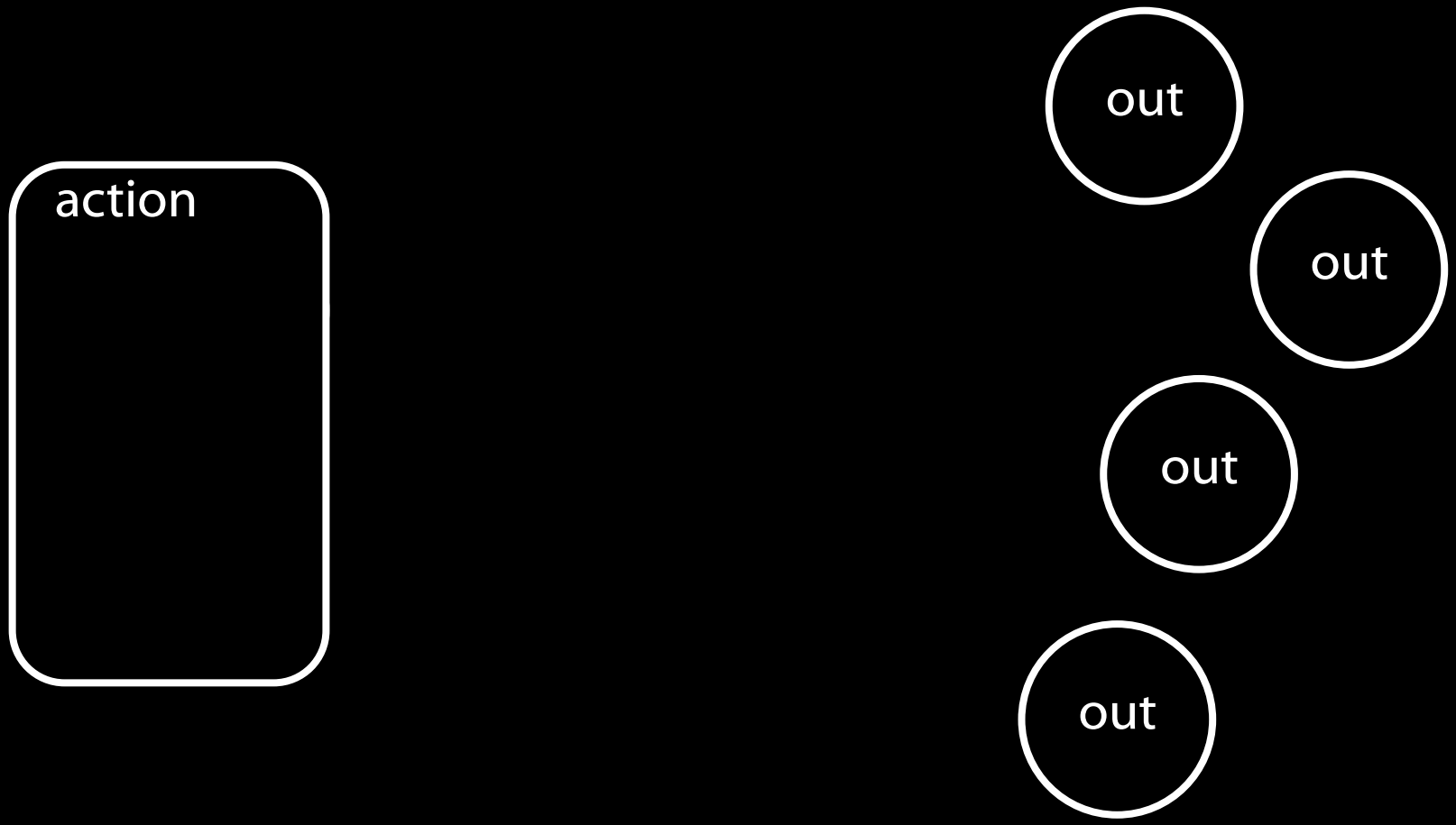






Onishi & Baillargeon (2005)

What is the relation between an action and the outcome or outcomes to which it is directed?



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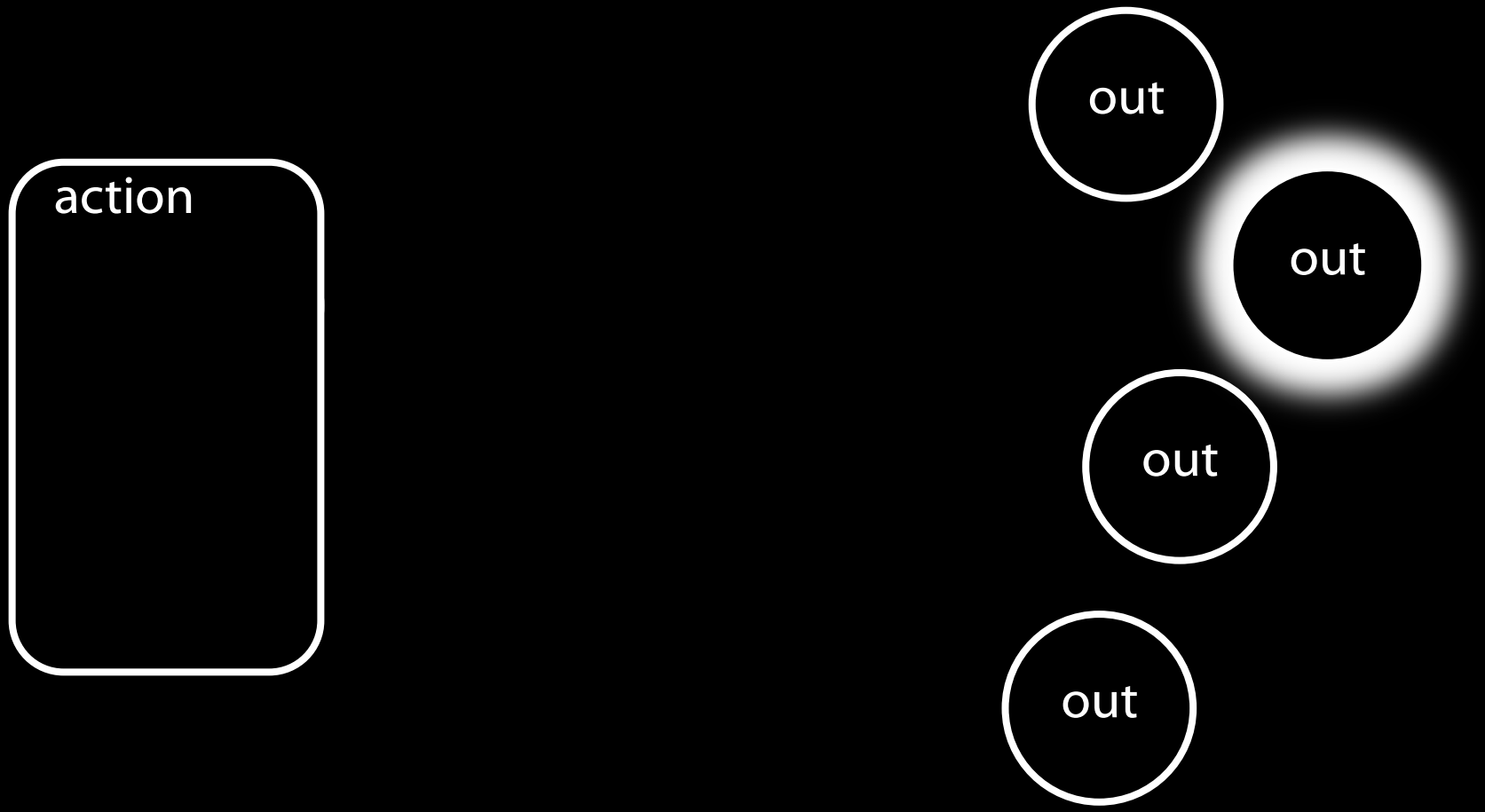

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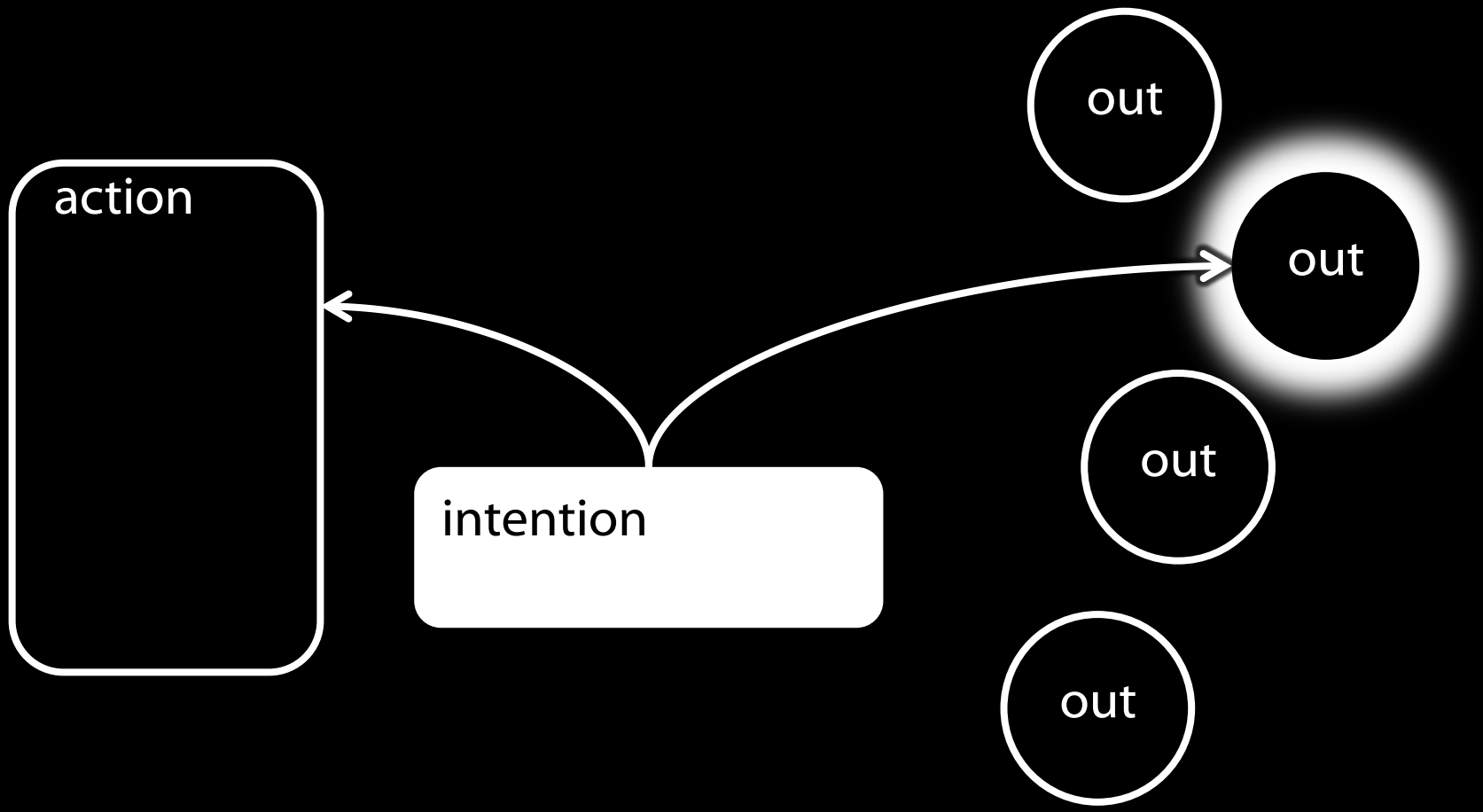

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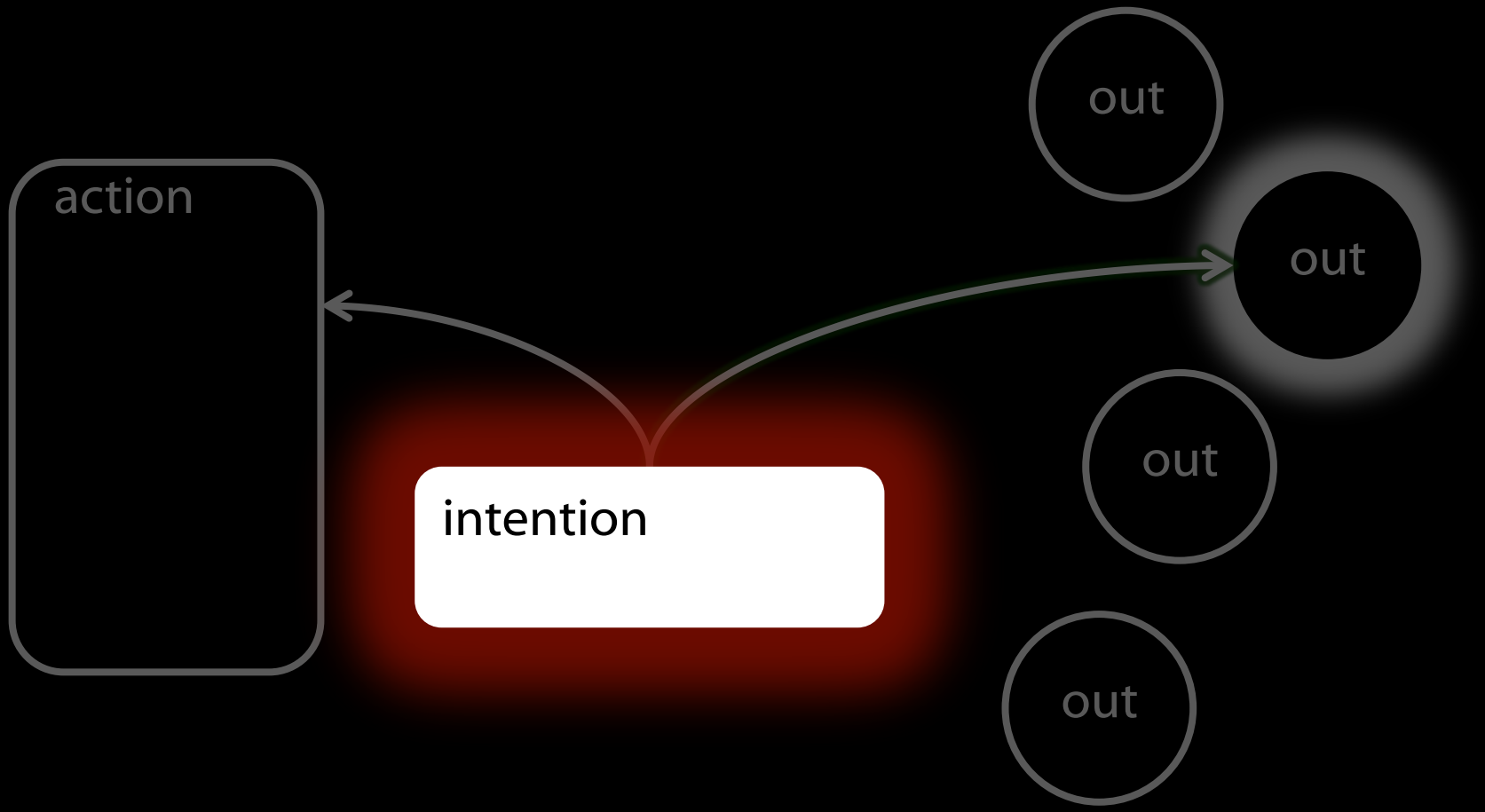

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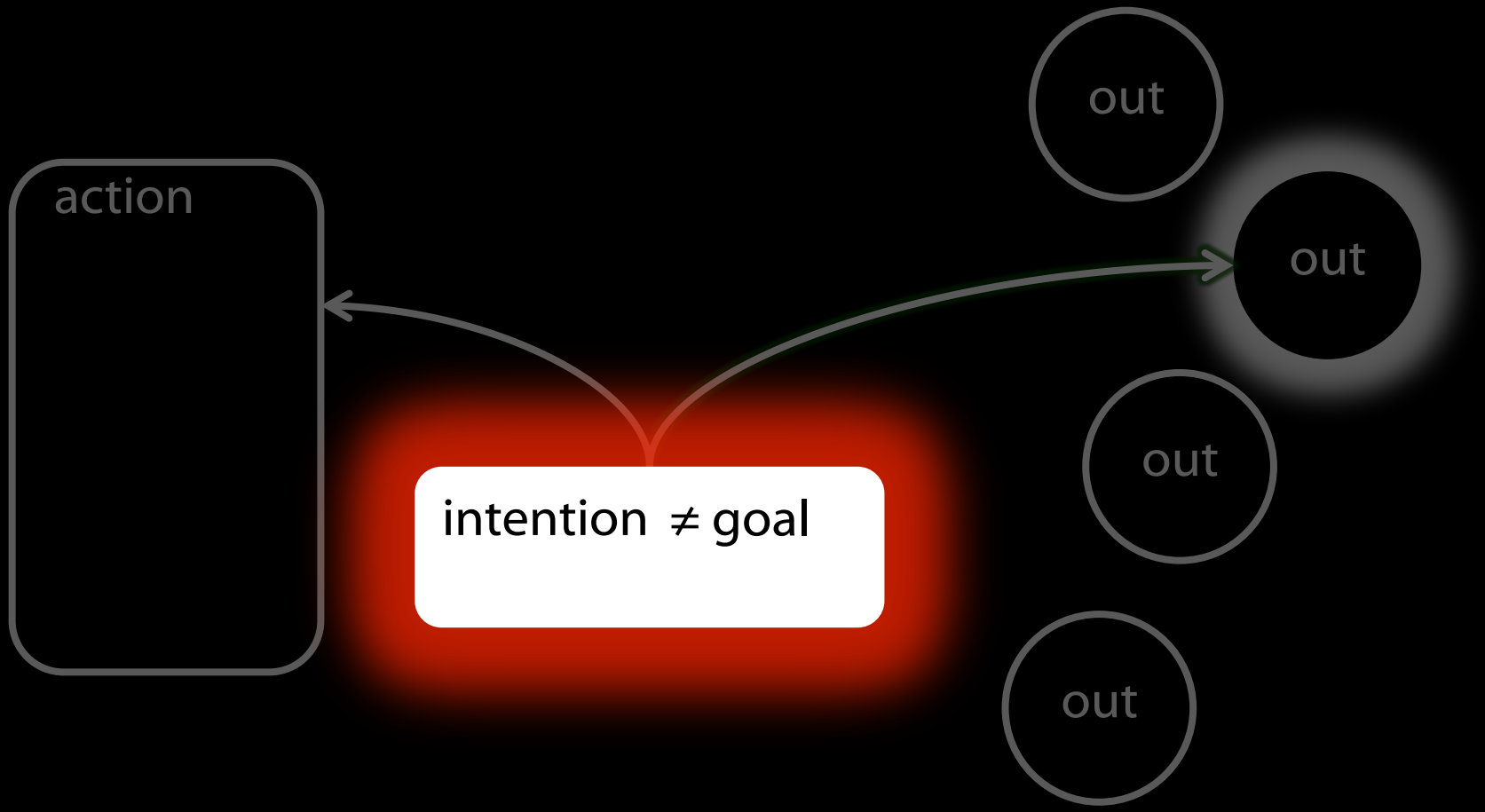

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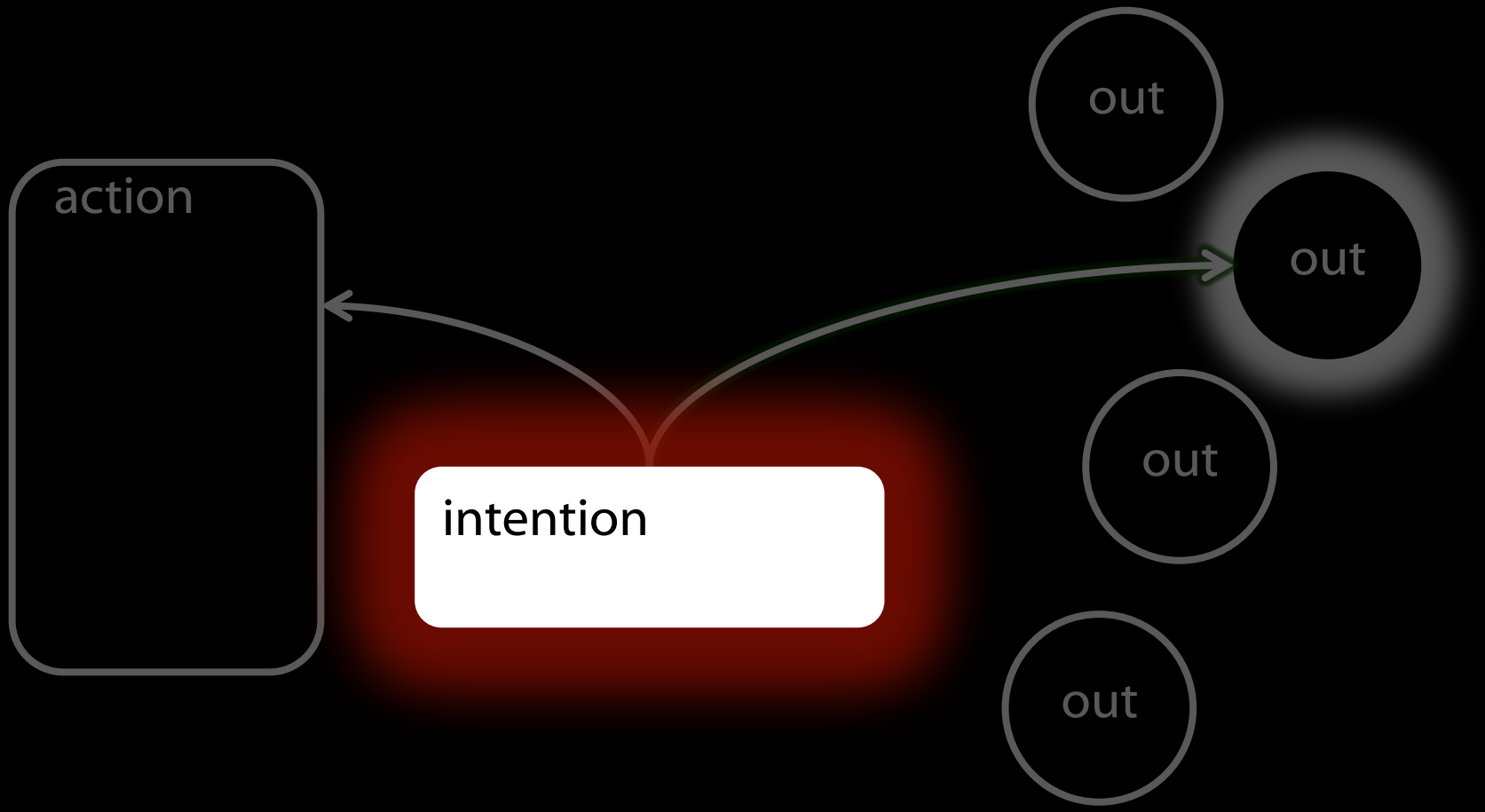
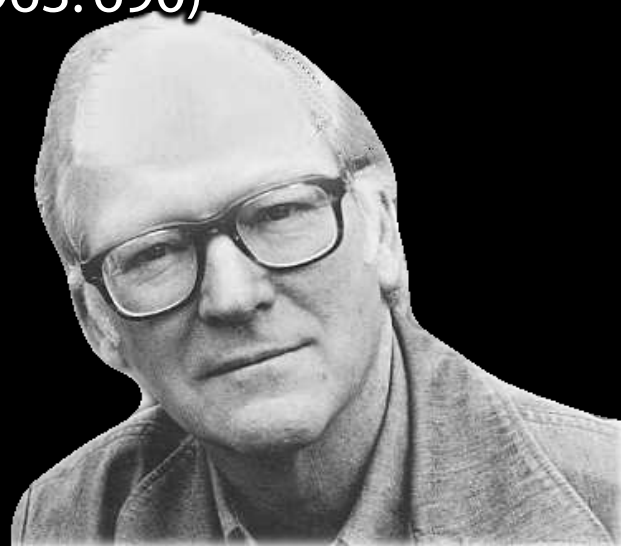


The expression 'the intention with which James went to church' ... cannot be taken to refer to a ... state ....
Its function ... is to generate new descriptions of actions in terms of their reasons;
thus 'James went to church with the intention of pleasing his mother' yields a new, and fuller, description of the action described in 'James went to church'.'

(Davidson 1963: 690)



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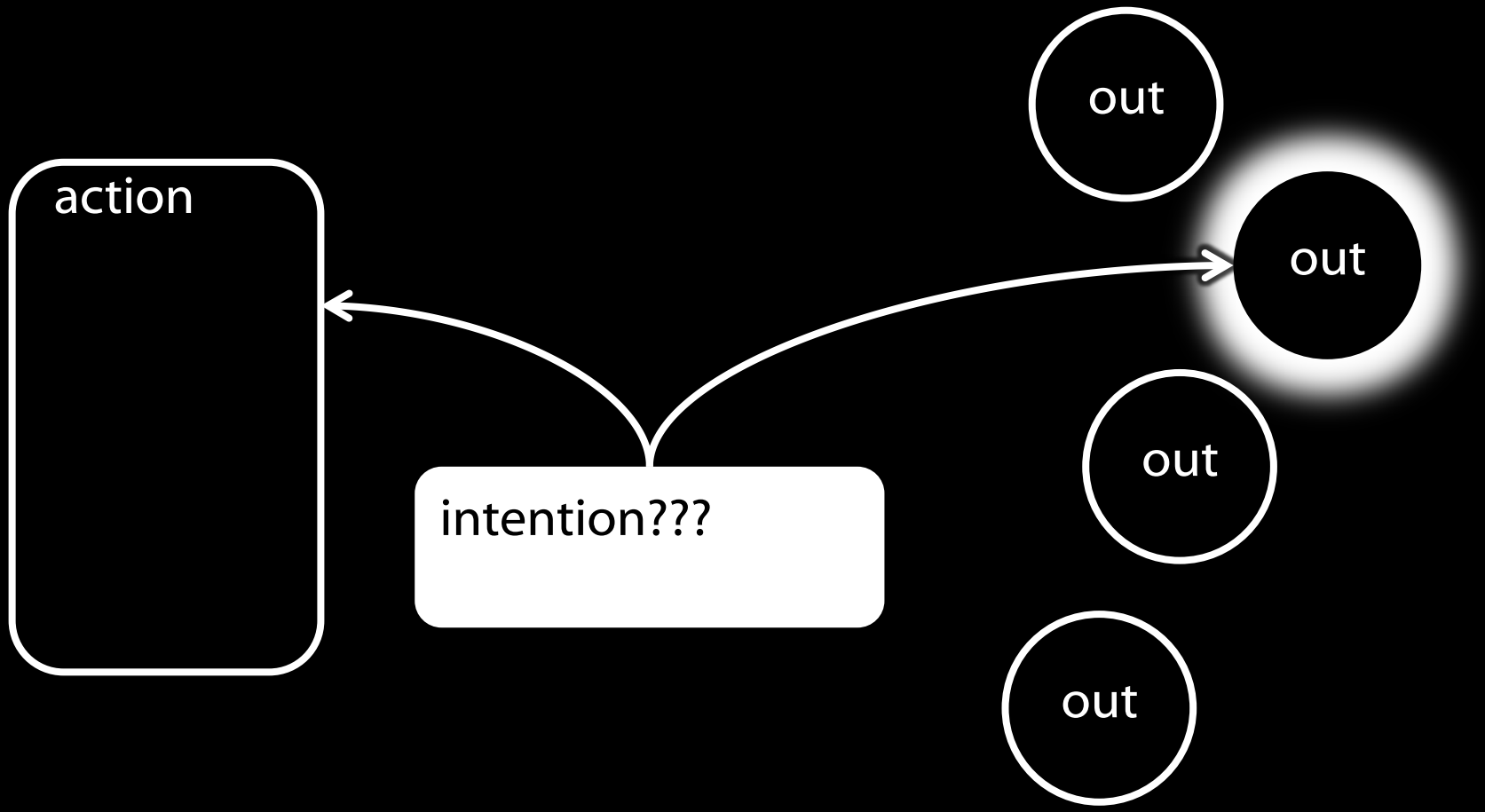

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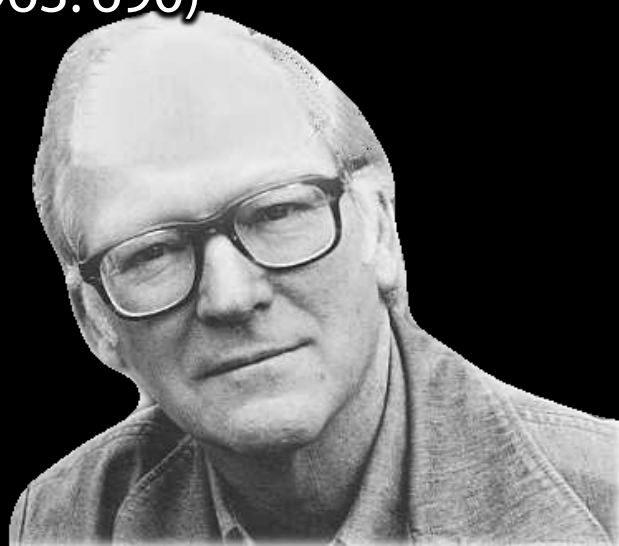
thus 'James went to church with the intention of pleasing his mother' yields a new, and fuller, description of the action described in 'James went to church'.'

(Davidson 1963: 690)

Desire: to please my mother

Belief: I can please my mother by going to church.

Action: Go to church.



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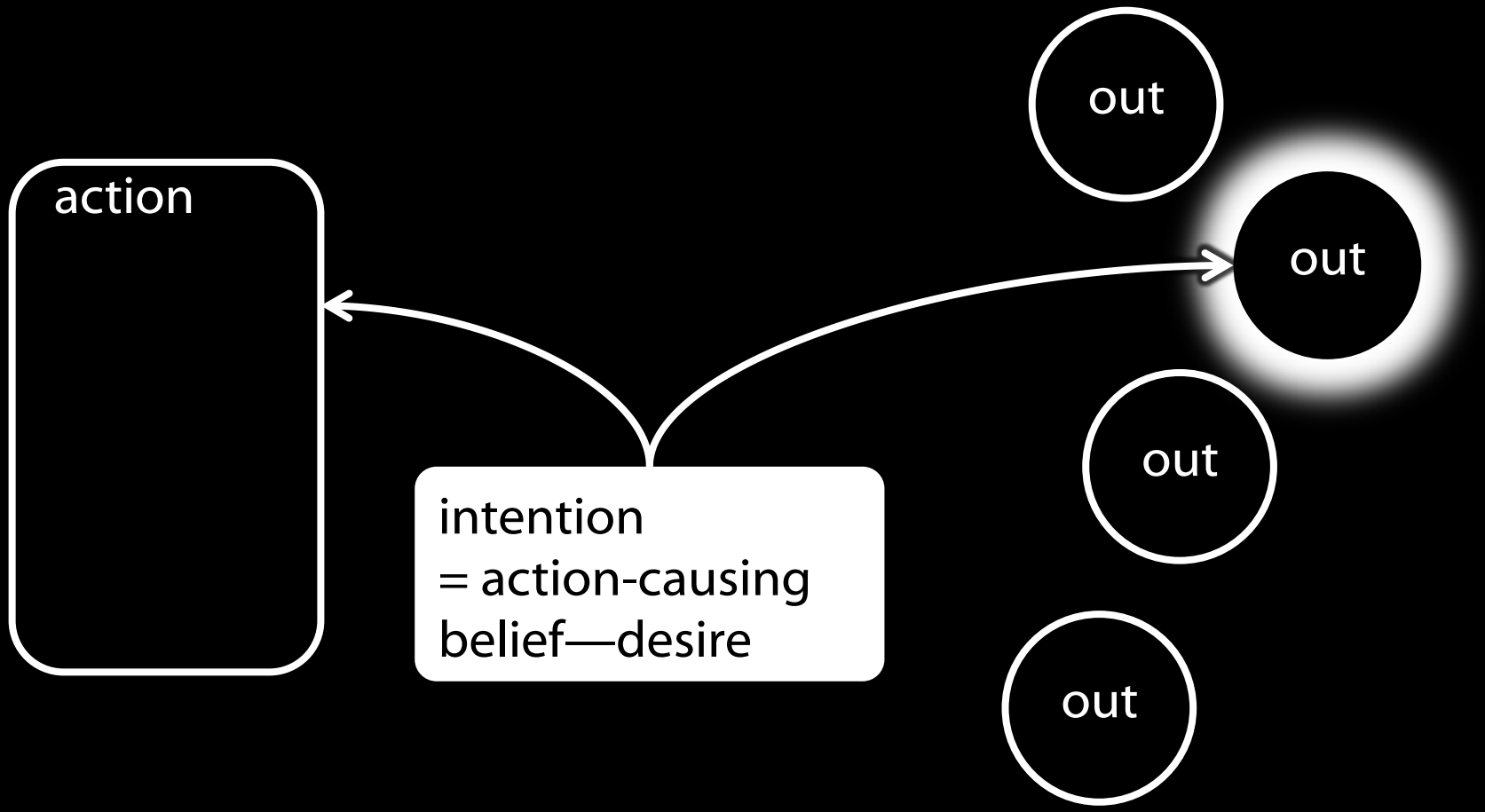

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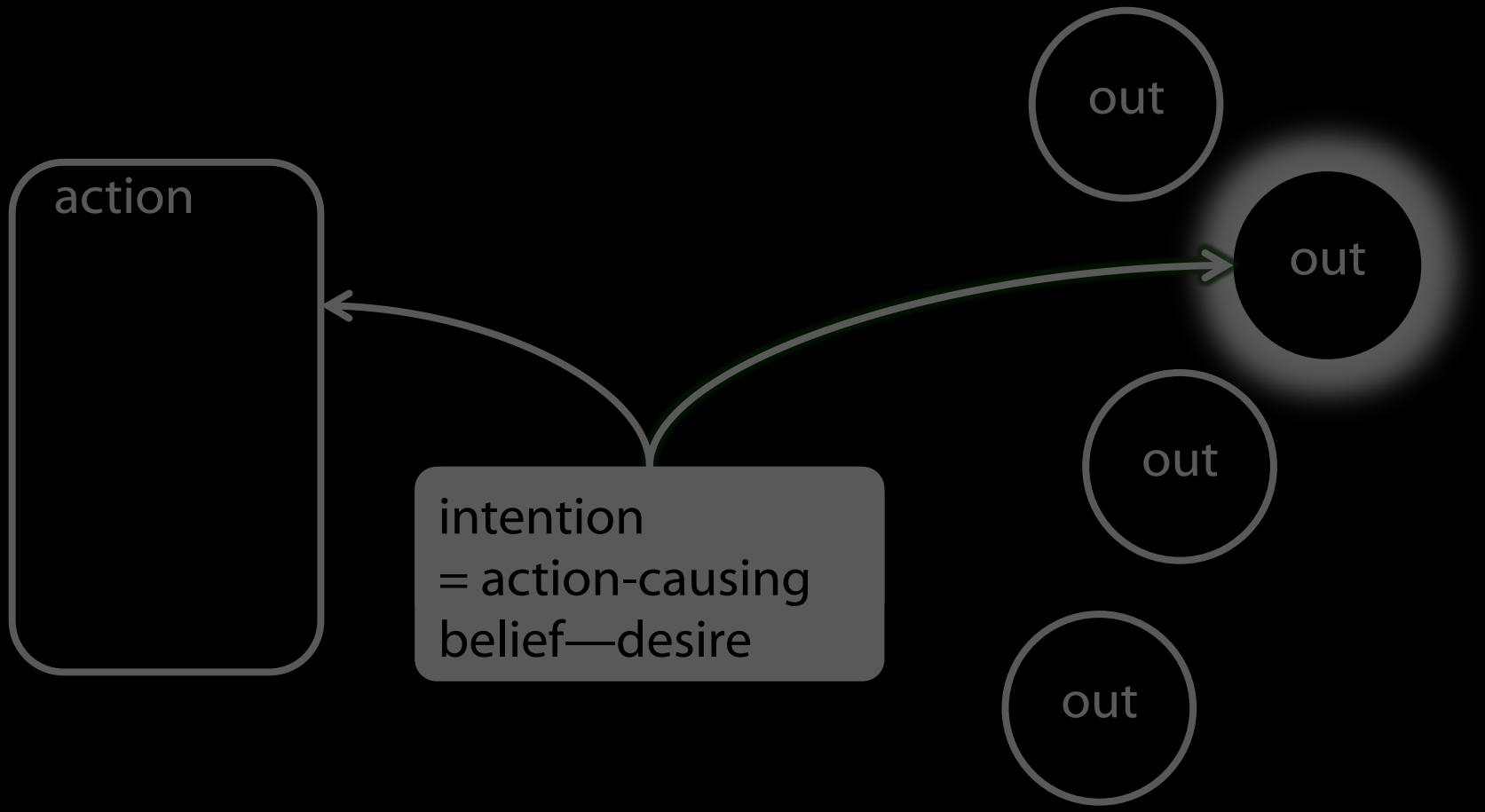

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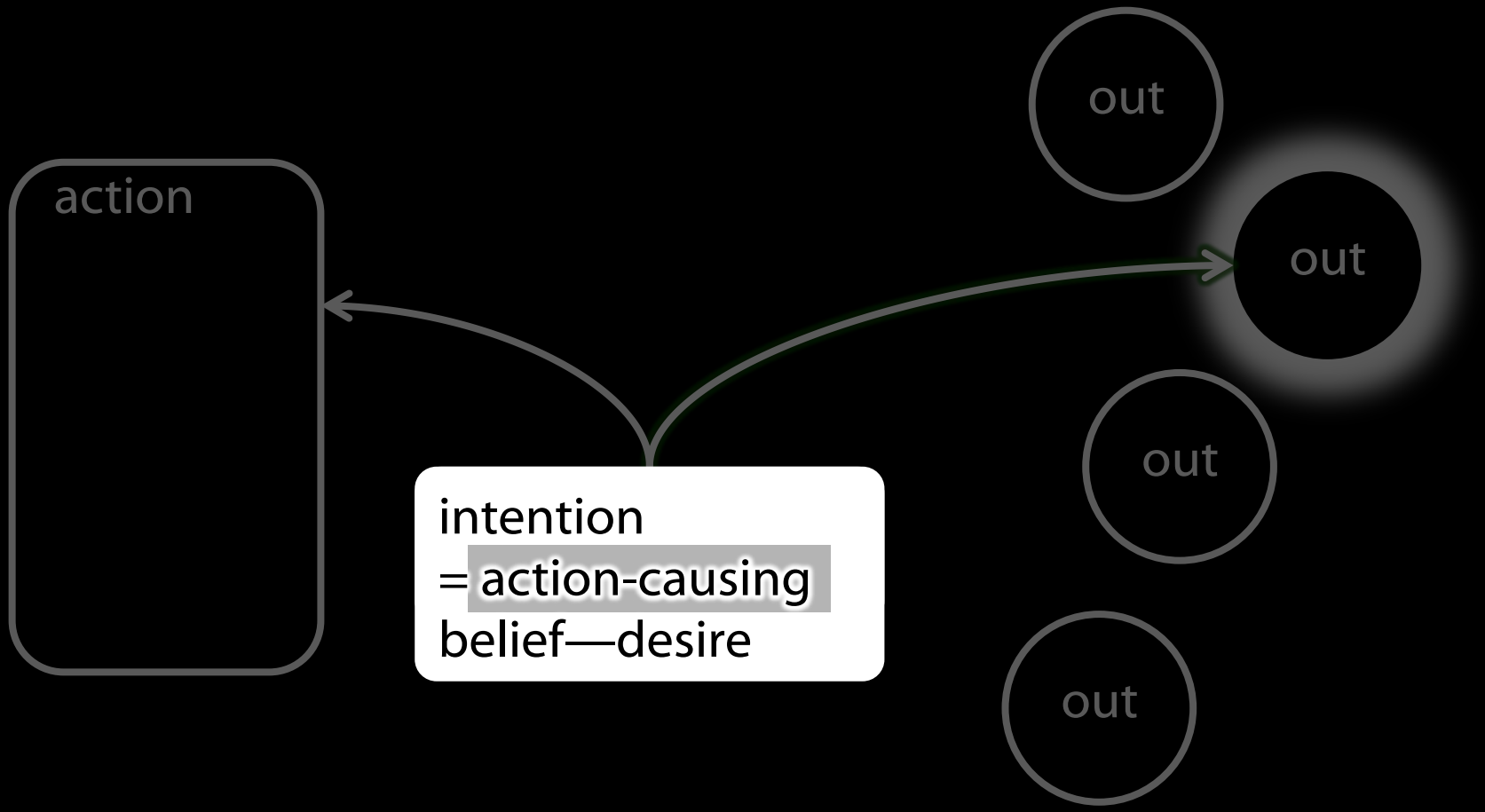
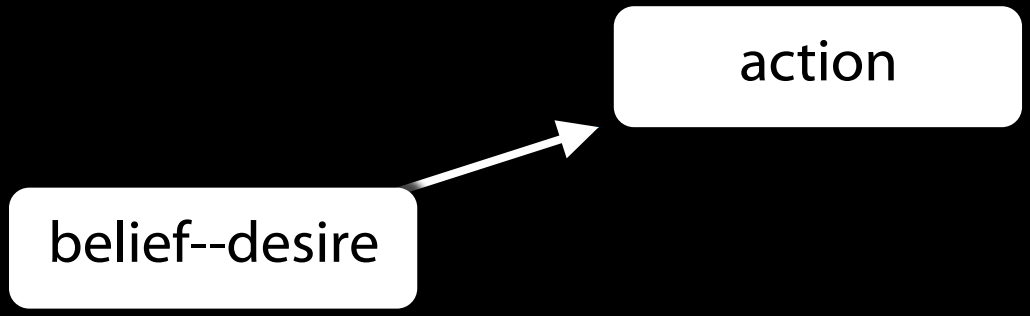
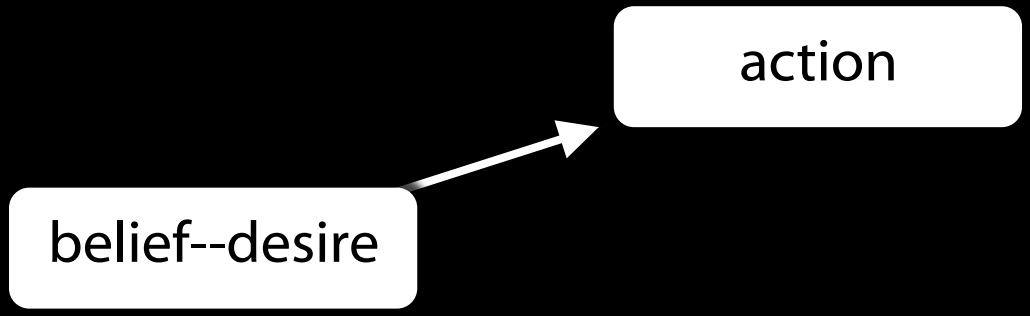




Desire: to nurture squirrels

Belief: I can nurture squirrels by building a squirrel house.

Action: I build a squirrel house.



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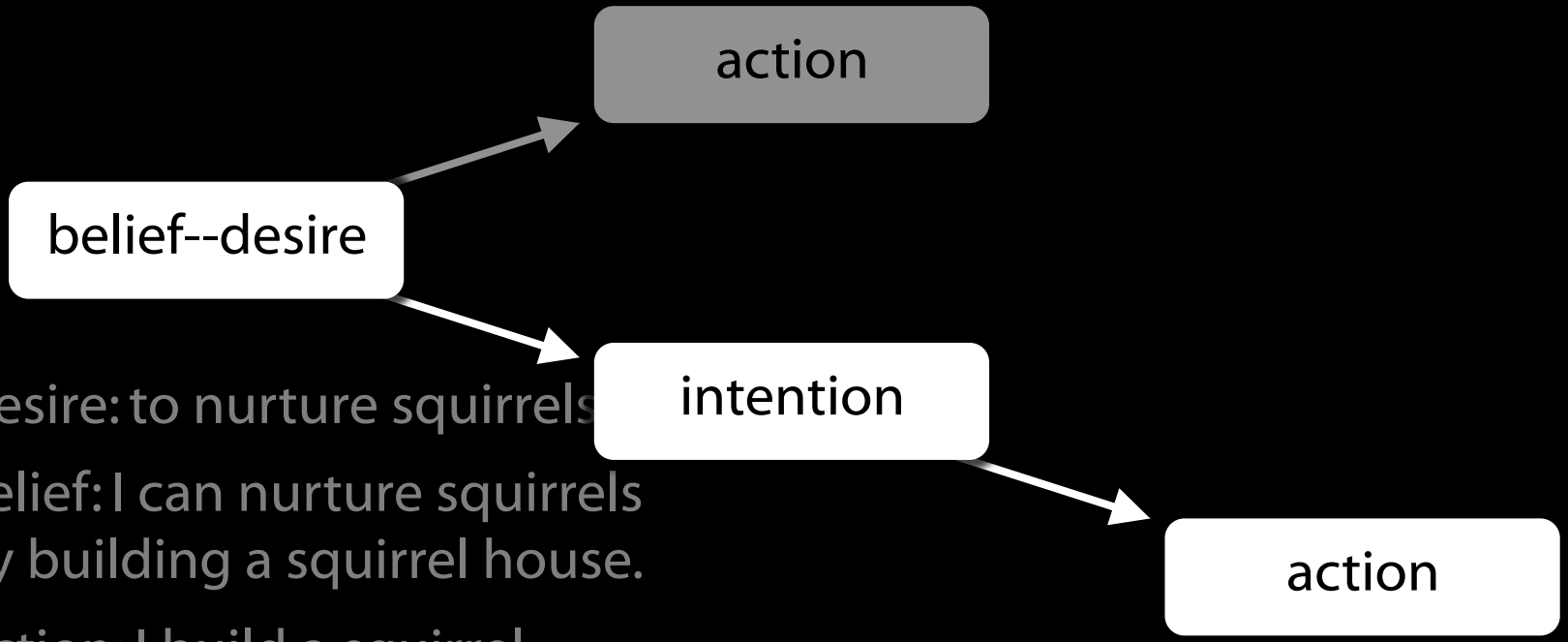
Belief: I can nurture squirrels by building a squirrel house.

Intention: that I build a squirrel house.



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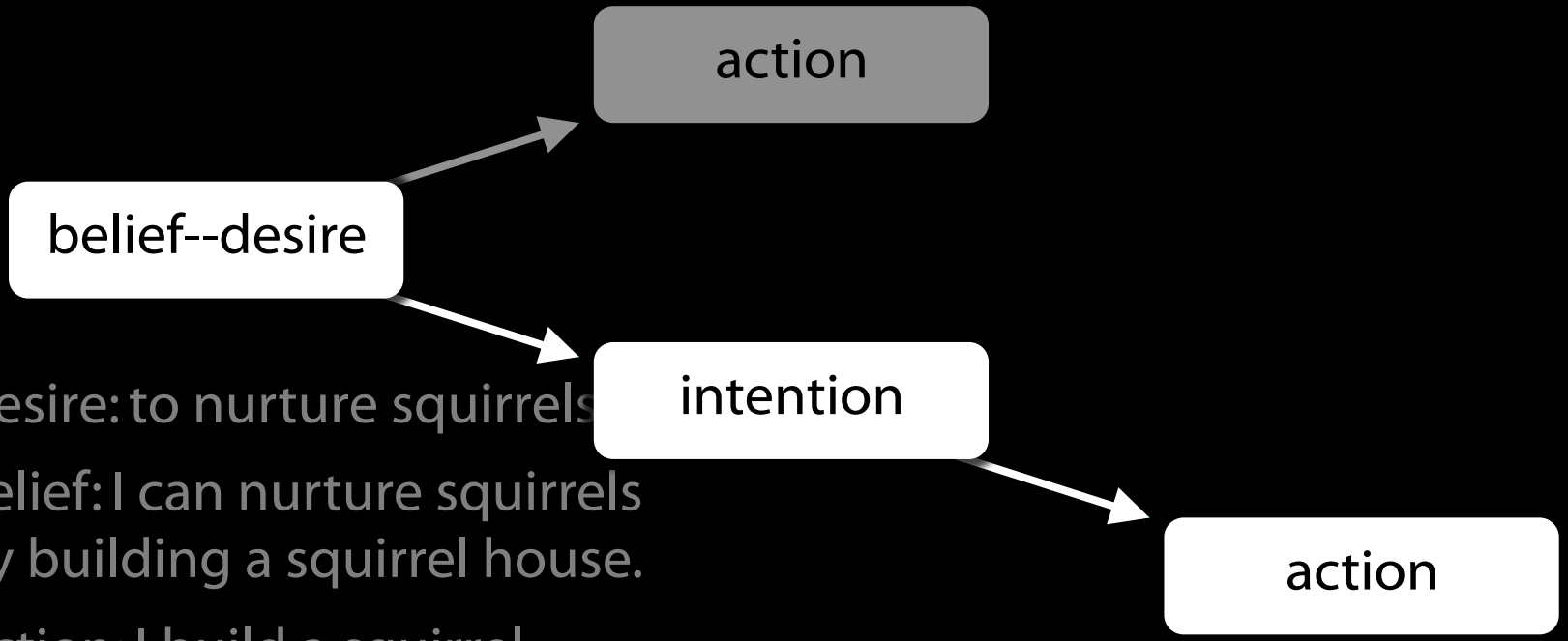

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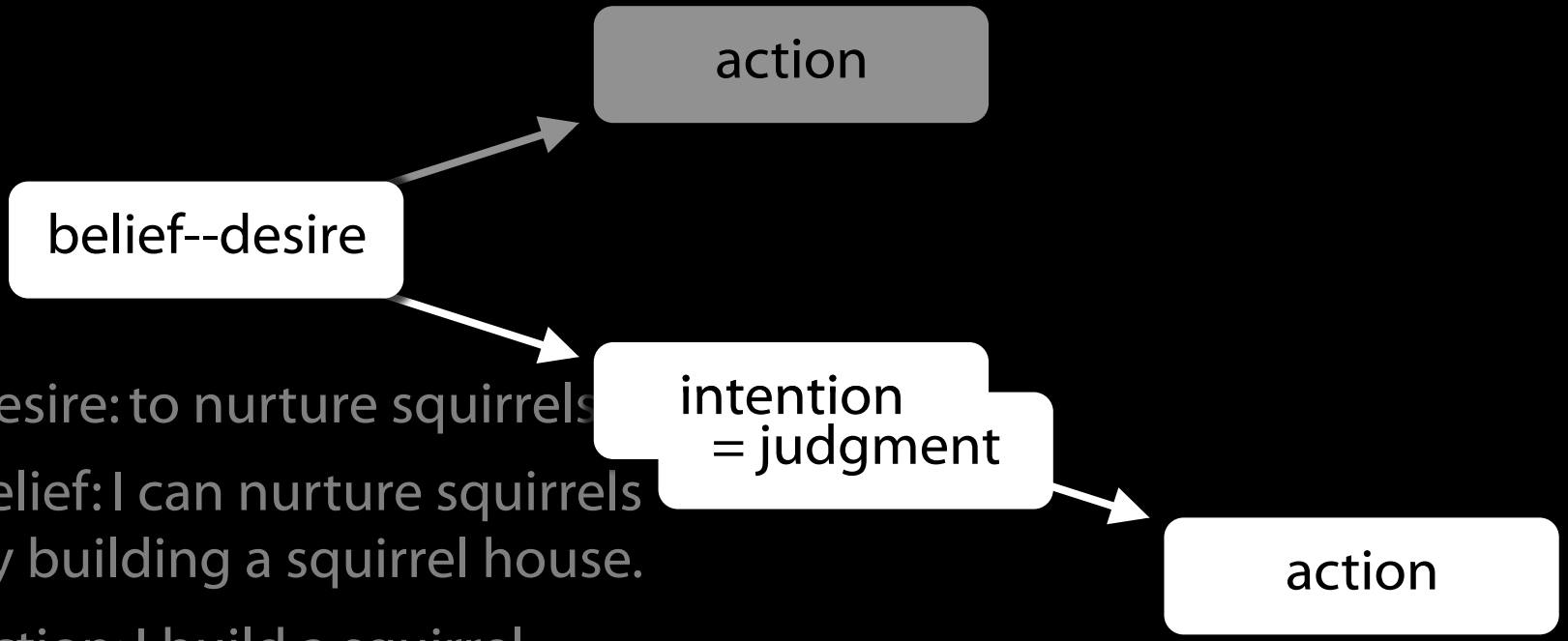
P1. I desire to nurture squirrels

P2. I can nurture squirrels by building a squirrel house.

C. My building a squirrel house would be desirable.



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Intention: that I build a squirrel house.

P1. I desire to nurture squirrels

P2. I can nurture squirrels by building a squirrel house.

C. My building a squirrel house would be desirable.

desire: to earn more money

belief: I can earn more money by getting a new job.

judgement: My getting a new job would be desirable.

desire: to take it easy today

belief: I can take it easy today by not getting a new job today.

judgement: My not getting a new job today would be desirable.

desire: to earn more money

belief: I can earn more money by getting a new job.

judgement: My getting a new job would be desirable.

intention: That I get a new job.

desire: to take it easy today

belief: I can take it easy today by not getting a new job today.

judgement: My not getting a new job today would be desirable.

intention: That I do not get a new job today.

intention

≠ goal

≠ action-causing belief—desire pair

≠ judgment that it would be desirable

intention

≠ goal

≠ action-causing belief—desire pair

≠ judgment that it would be desirable

So what are intentions?

desire: to earn more money

belief: I can earn more money by getting a new job.

judgement: My getting a new job would be desirable.

intention: That I get a new job.

desire: to take it easy today

belief: I can take it easy today by not getting a new job today.

judgement: My not getting a new job today would be desirable.

intention: That I do not get a new job today.

judgement: My getting a new job would be desirable.

intention: That I get a new job.

today.

judgement: My not getting a new job today would be desirable.

agglomeration

intention: That I do not get a new job today.

judgement: My getting a new job would be desirable.

today.

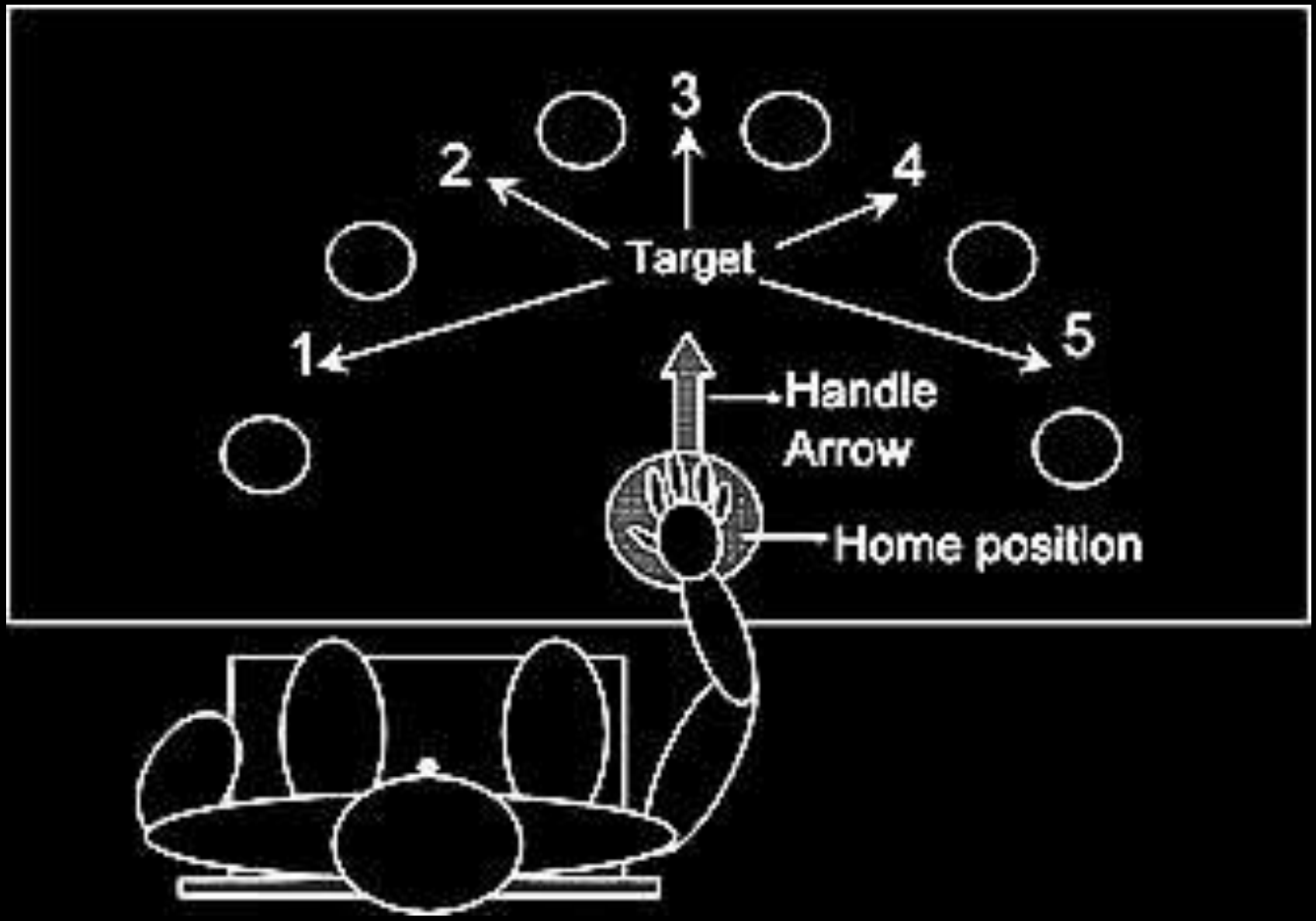
judgement: My not getting a new job today would be desirable.

agglomeration

intention: That I get a new job.

intention: That I do not get a new job today.

What are intentions for?



(Zhang and Rosenbaum 2007)

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judgement: My not getting a new job today would be desirable.

intention: That I do not get a new job today

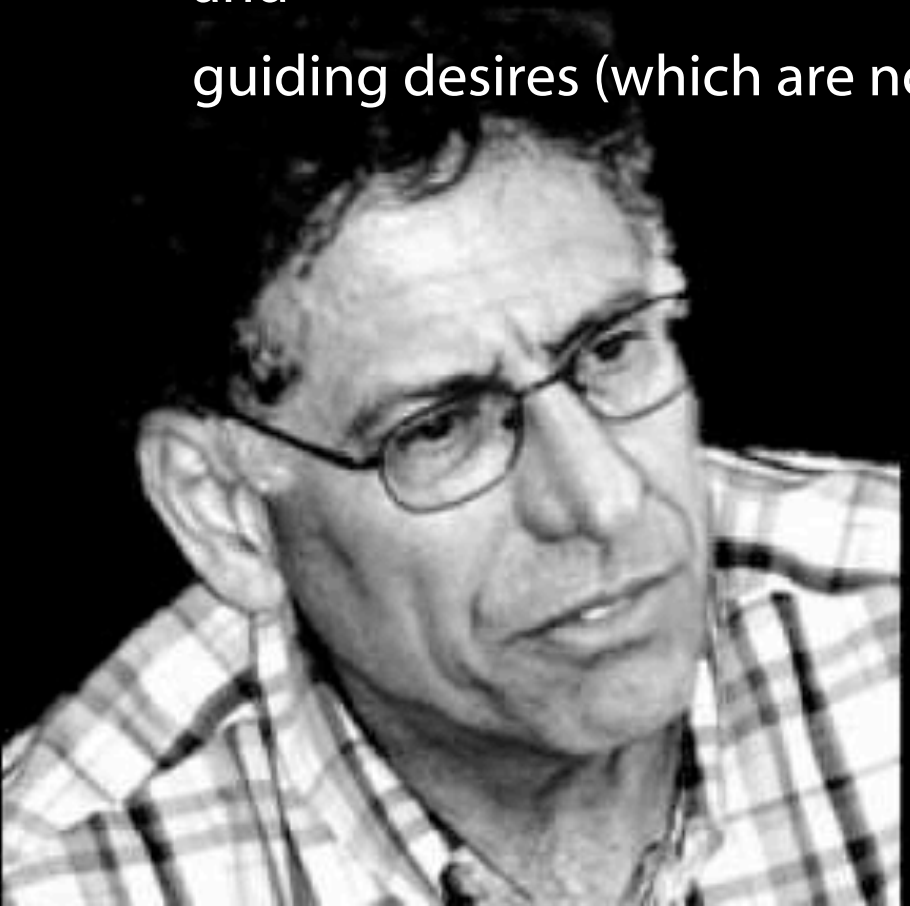
‘why should rational agents like us have the capacity to have both

ordinary intentions (subject to demands for consistency and agglomeration)

and

guiding desires (which are not subject to these demands)?’

(Bratman 1987, pp. 137–8)



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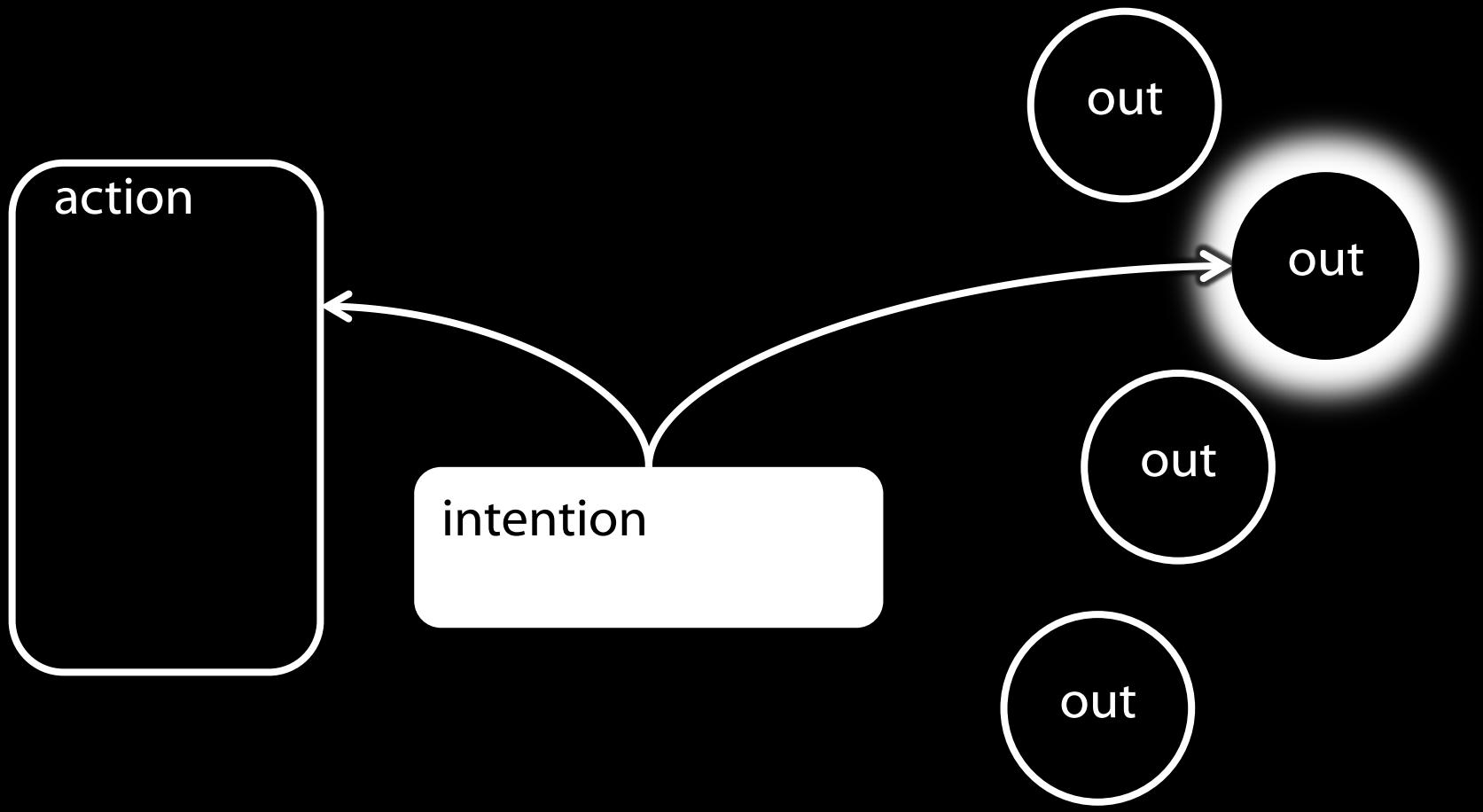

"chimpanzees understand … intentions … perception and knowledge … Moreover, they understand how these psychological states work together to produce intentional action"

(Call & Tomasello 2008:191)

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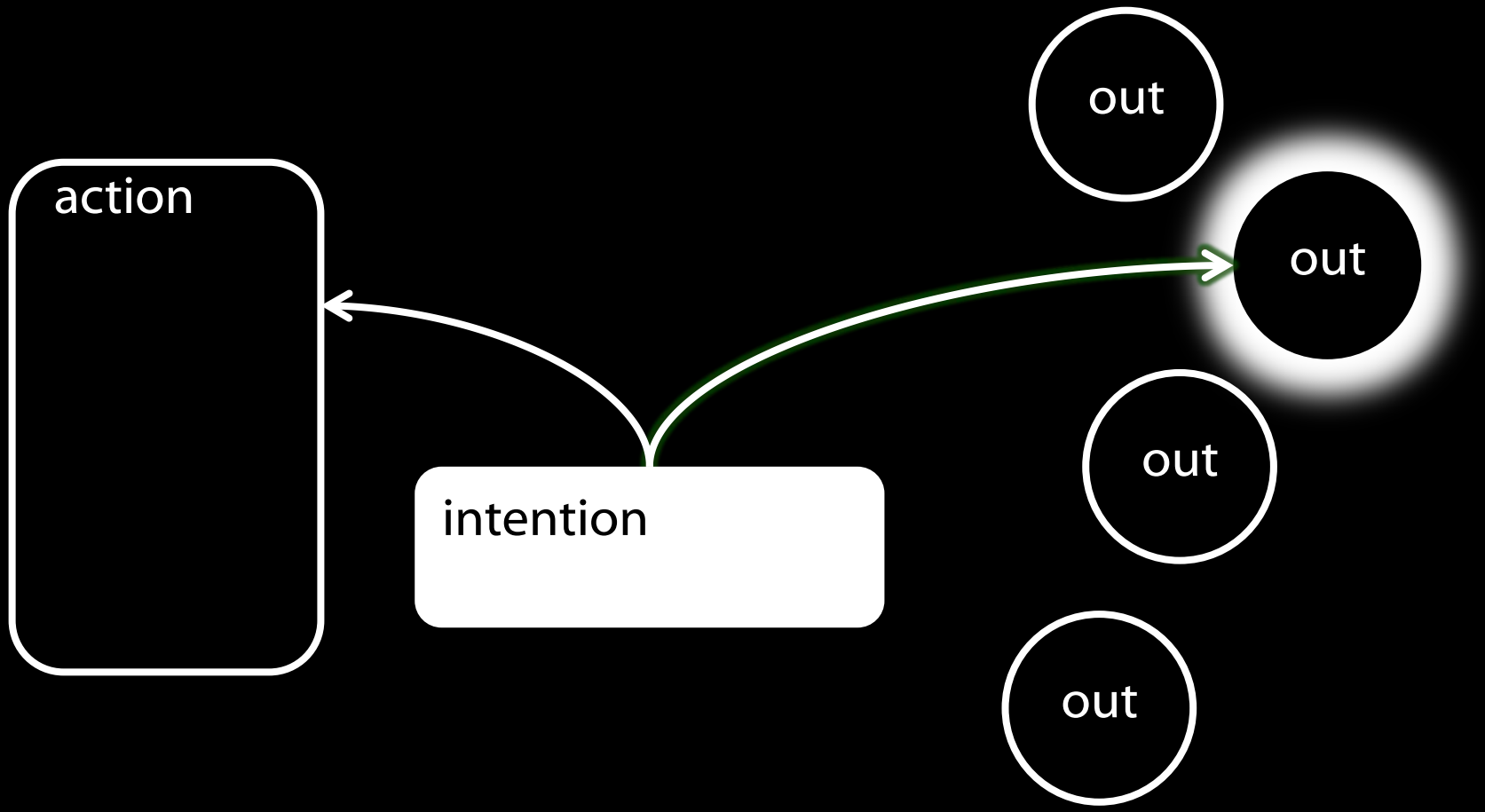

Some motor representations carry information about outcomes.

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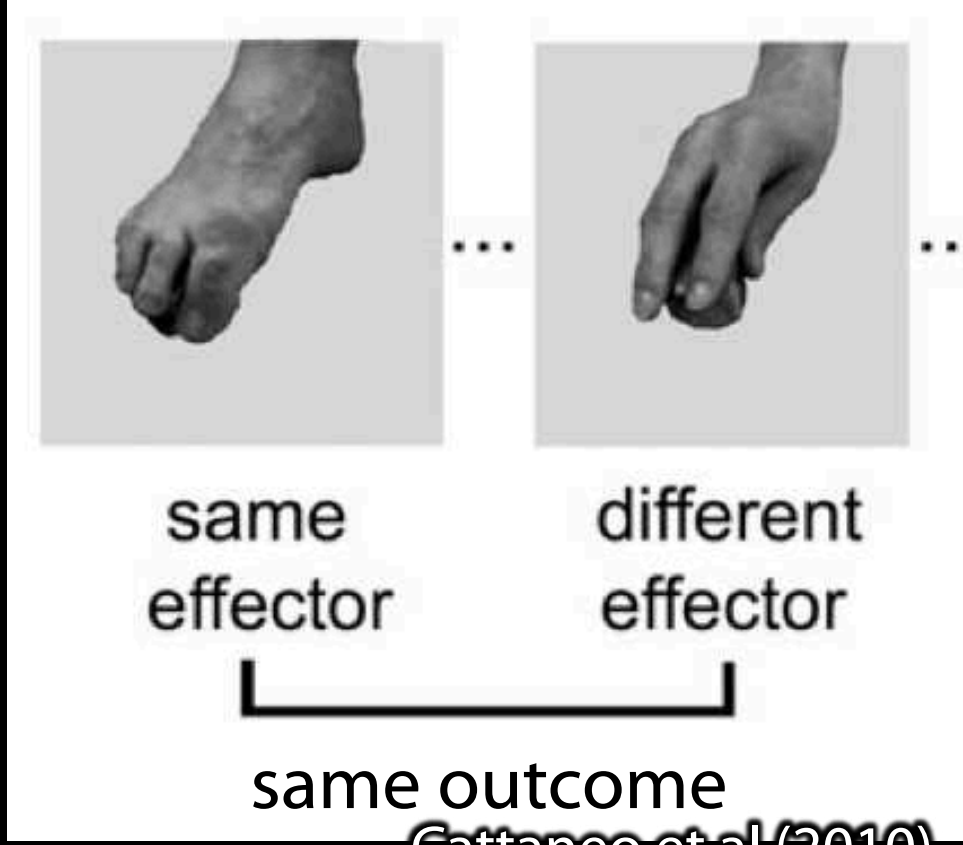

Cattaneo et al (2010)

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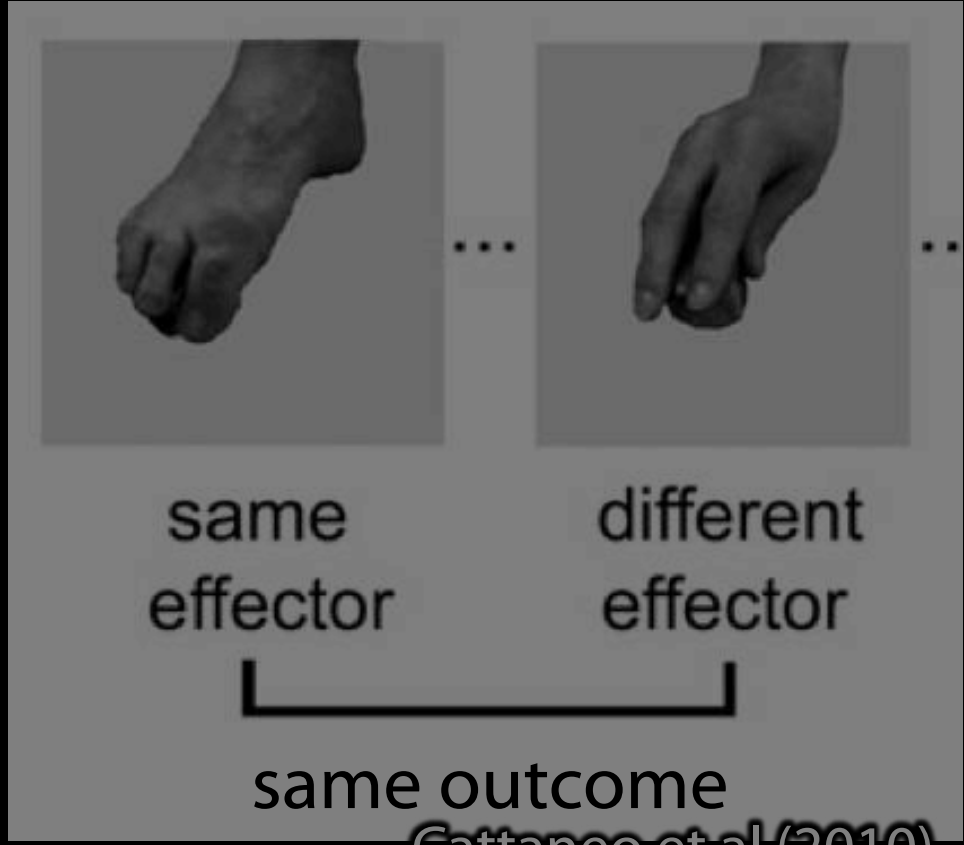

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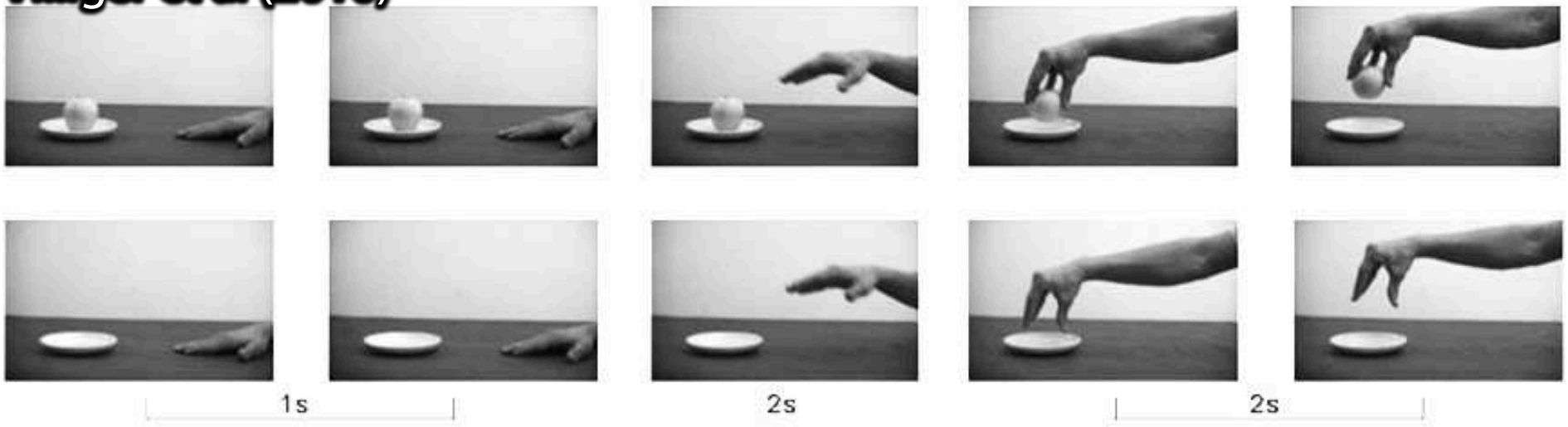

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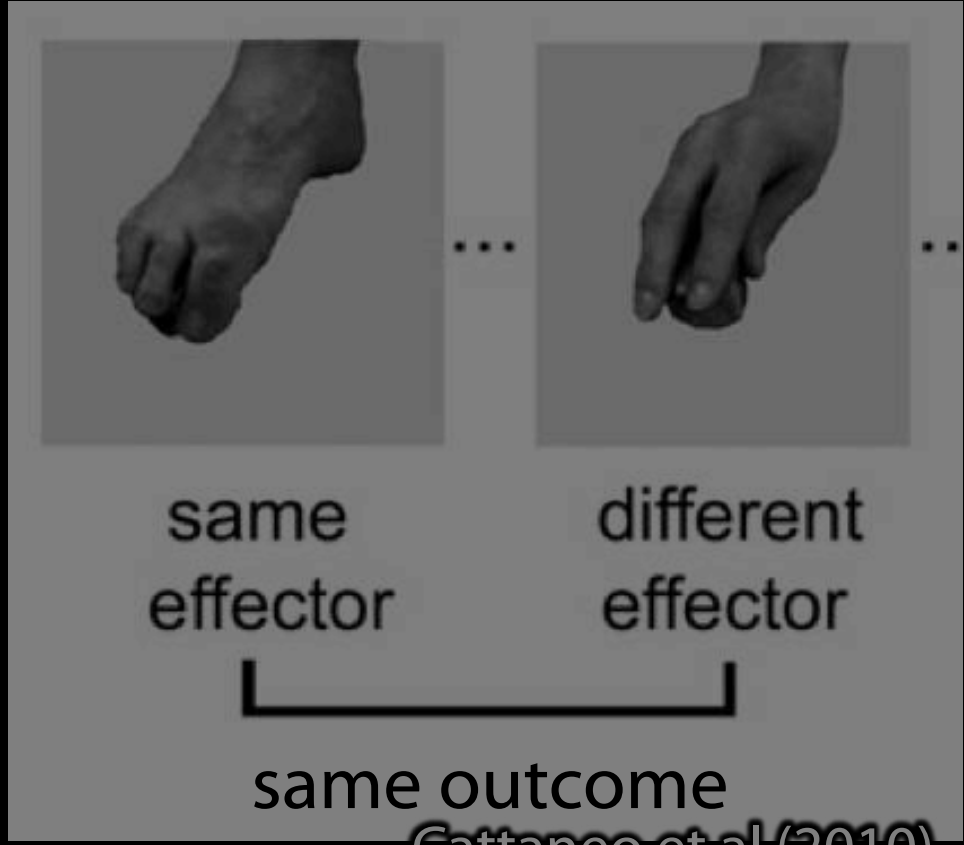

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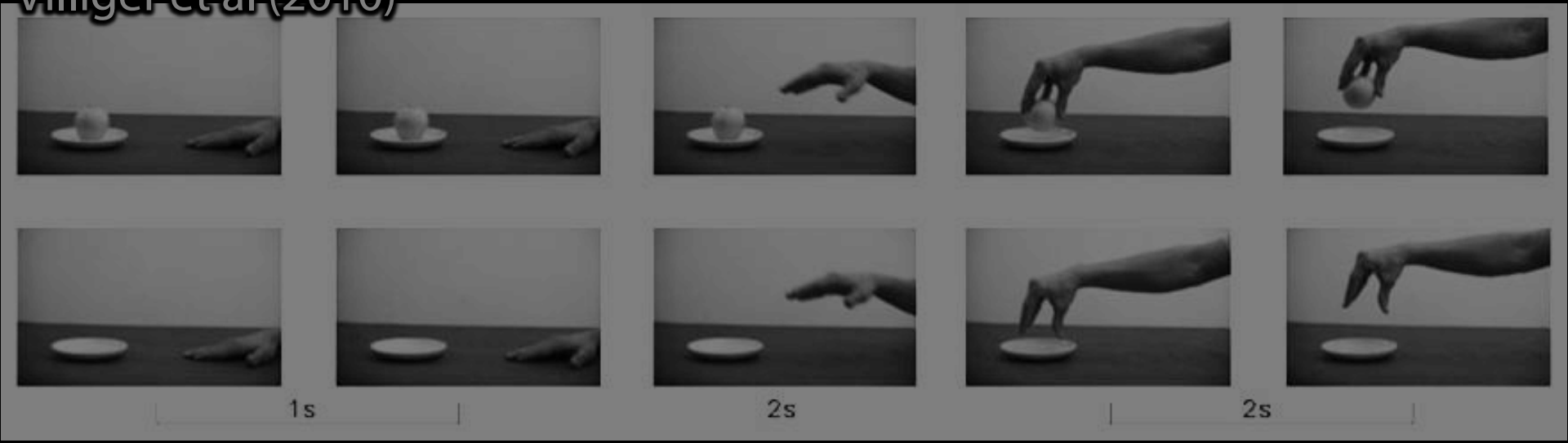

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Information about outcomes guides planning.

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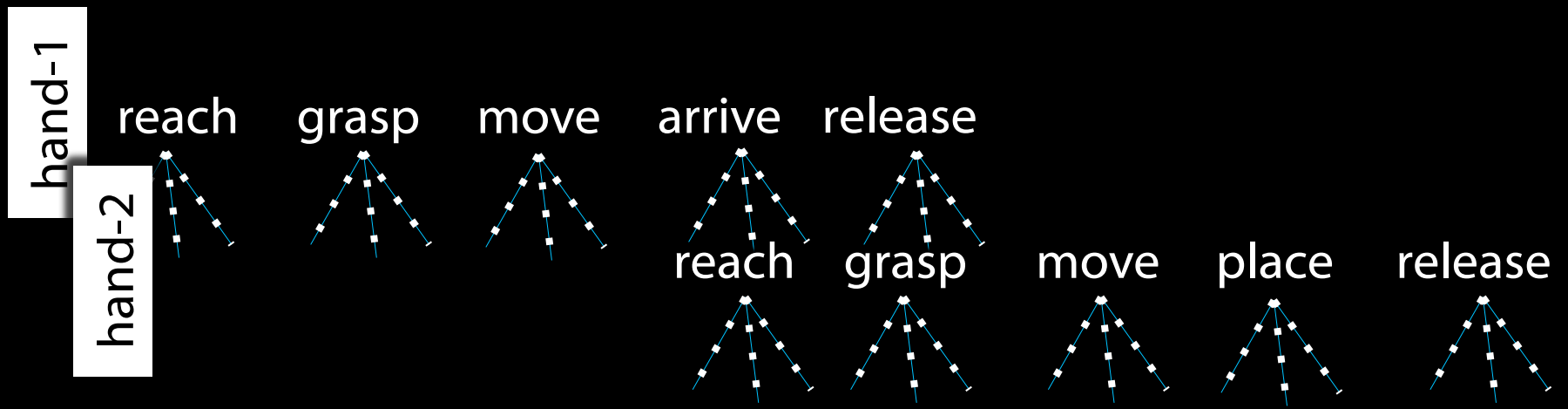

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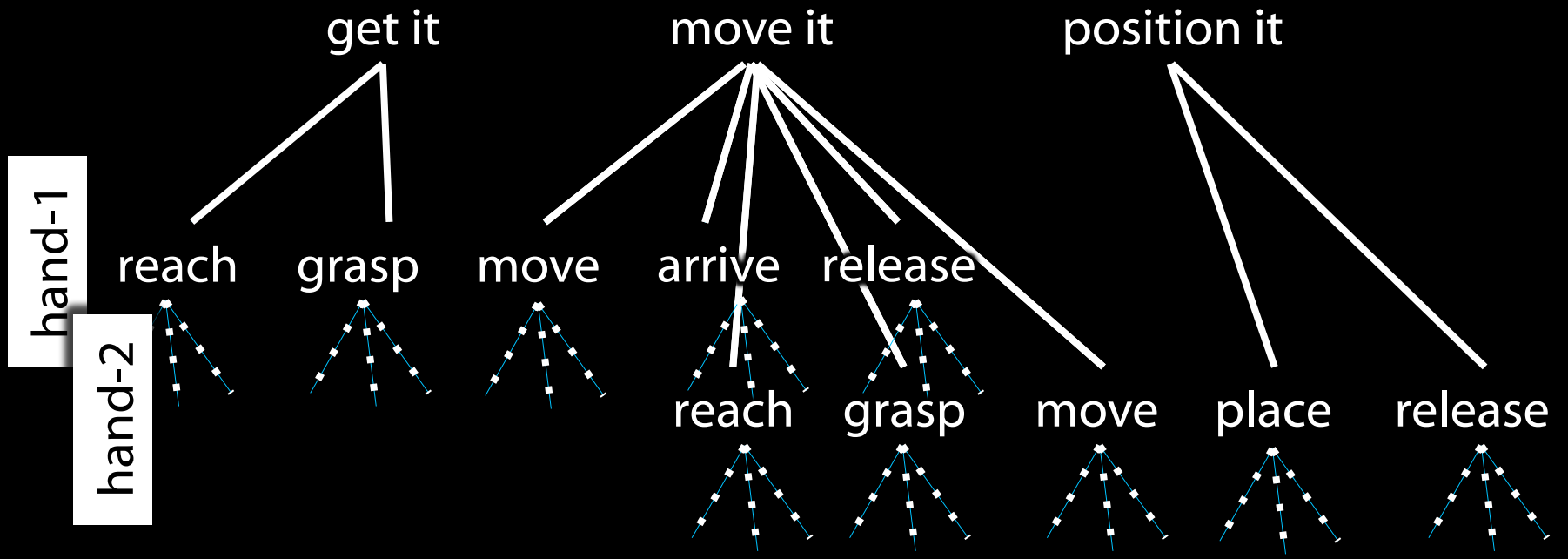

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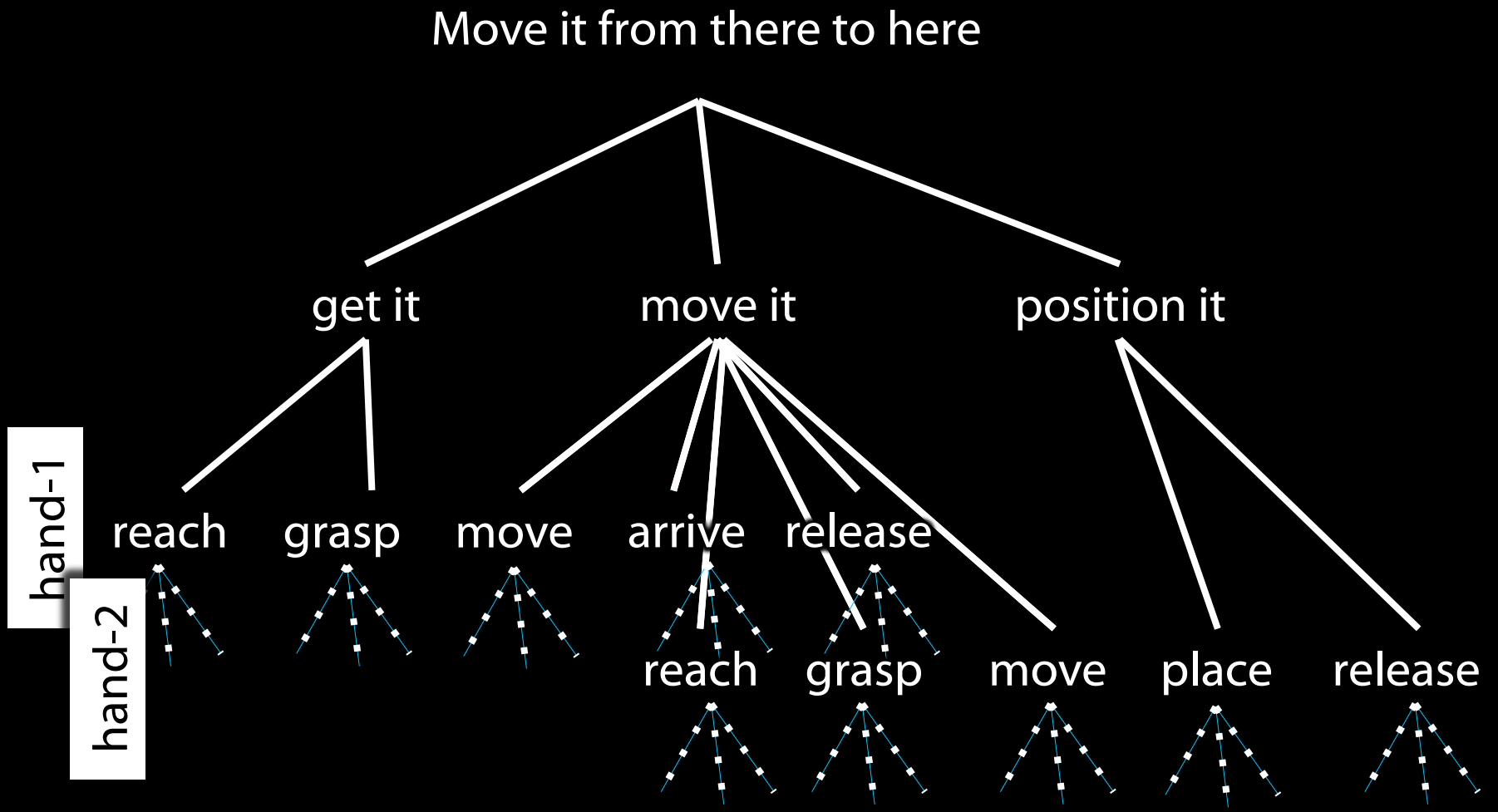

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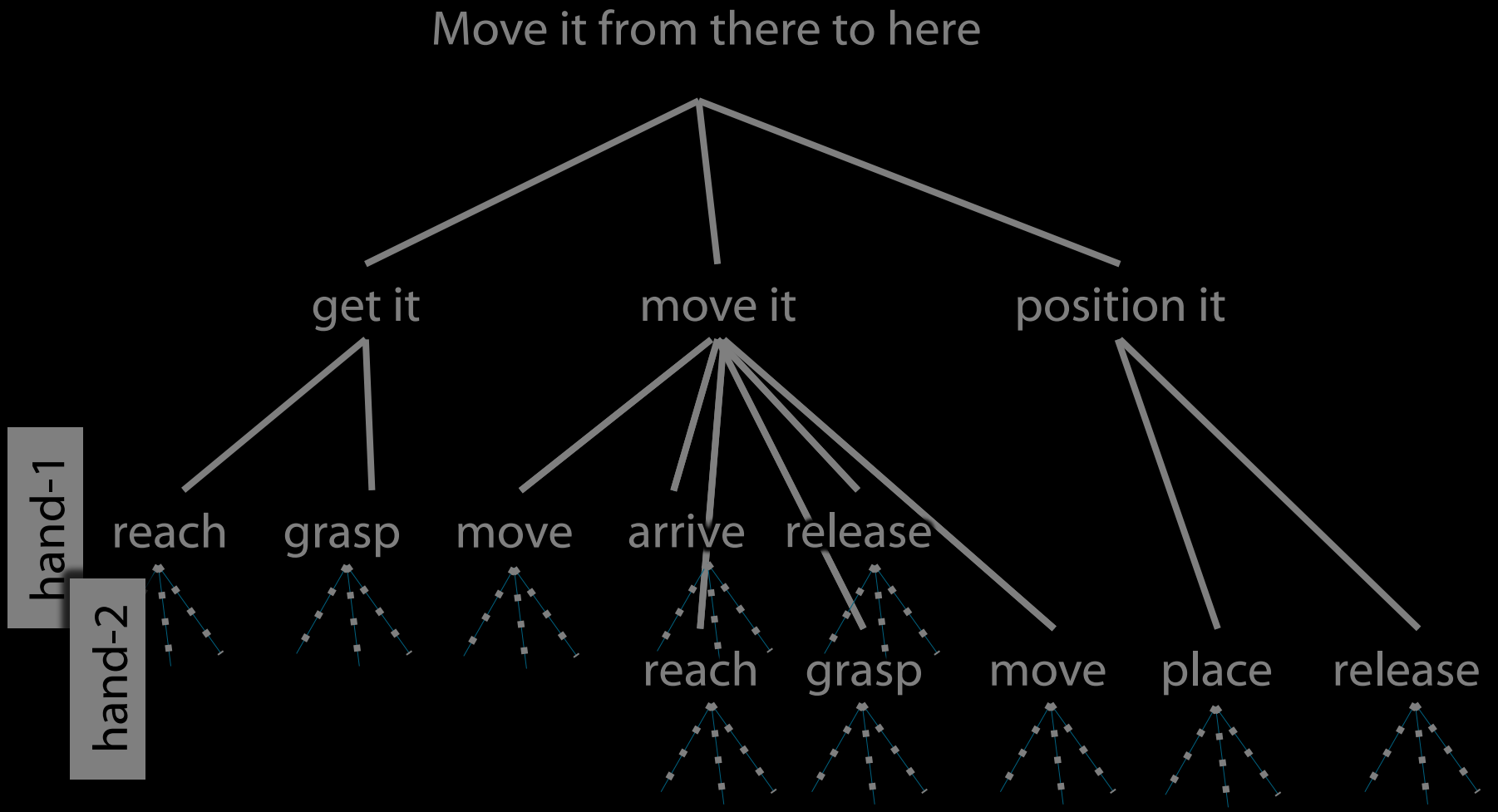

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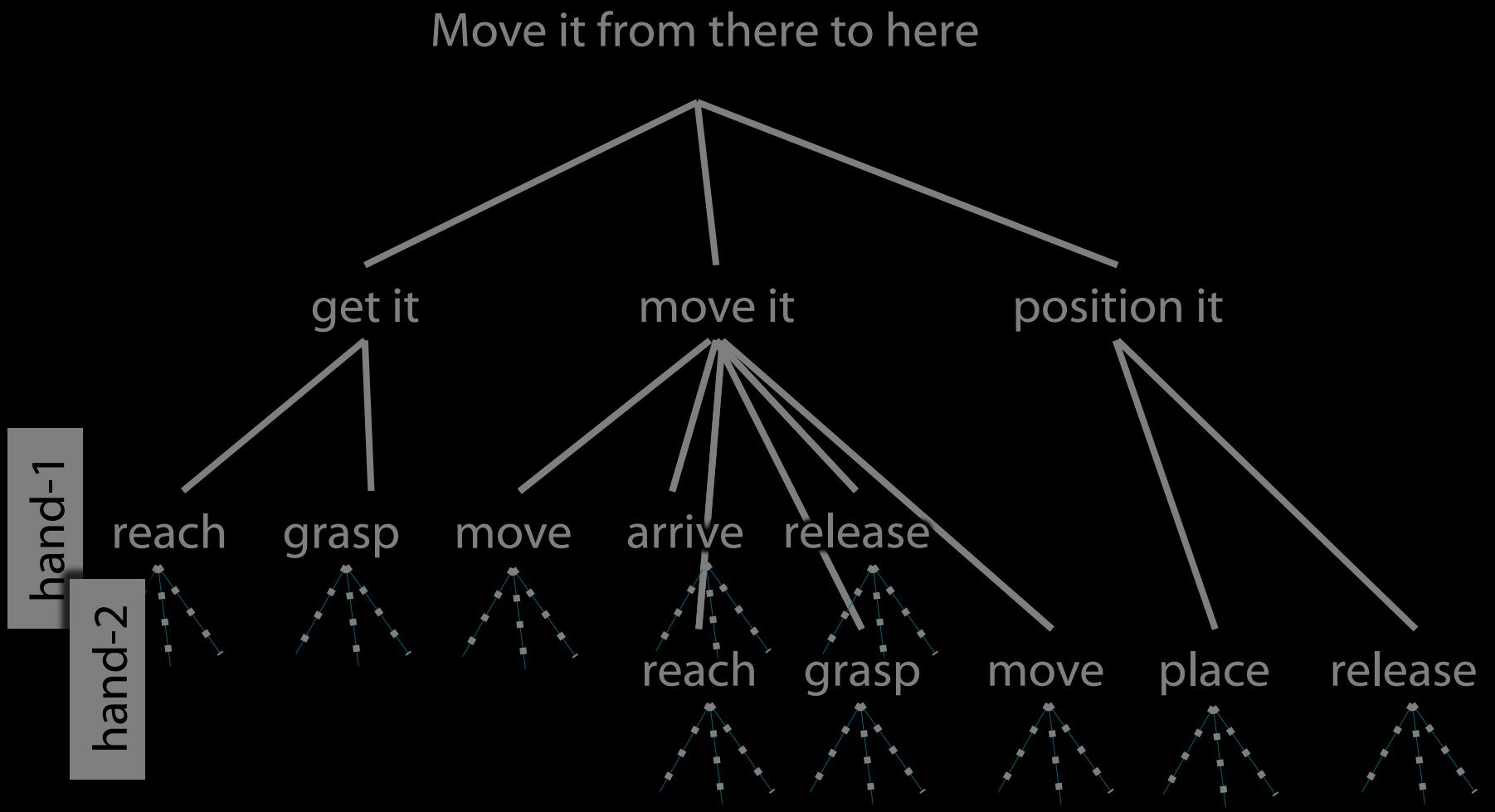
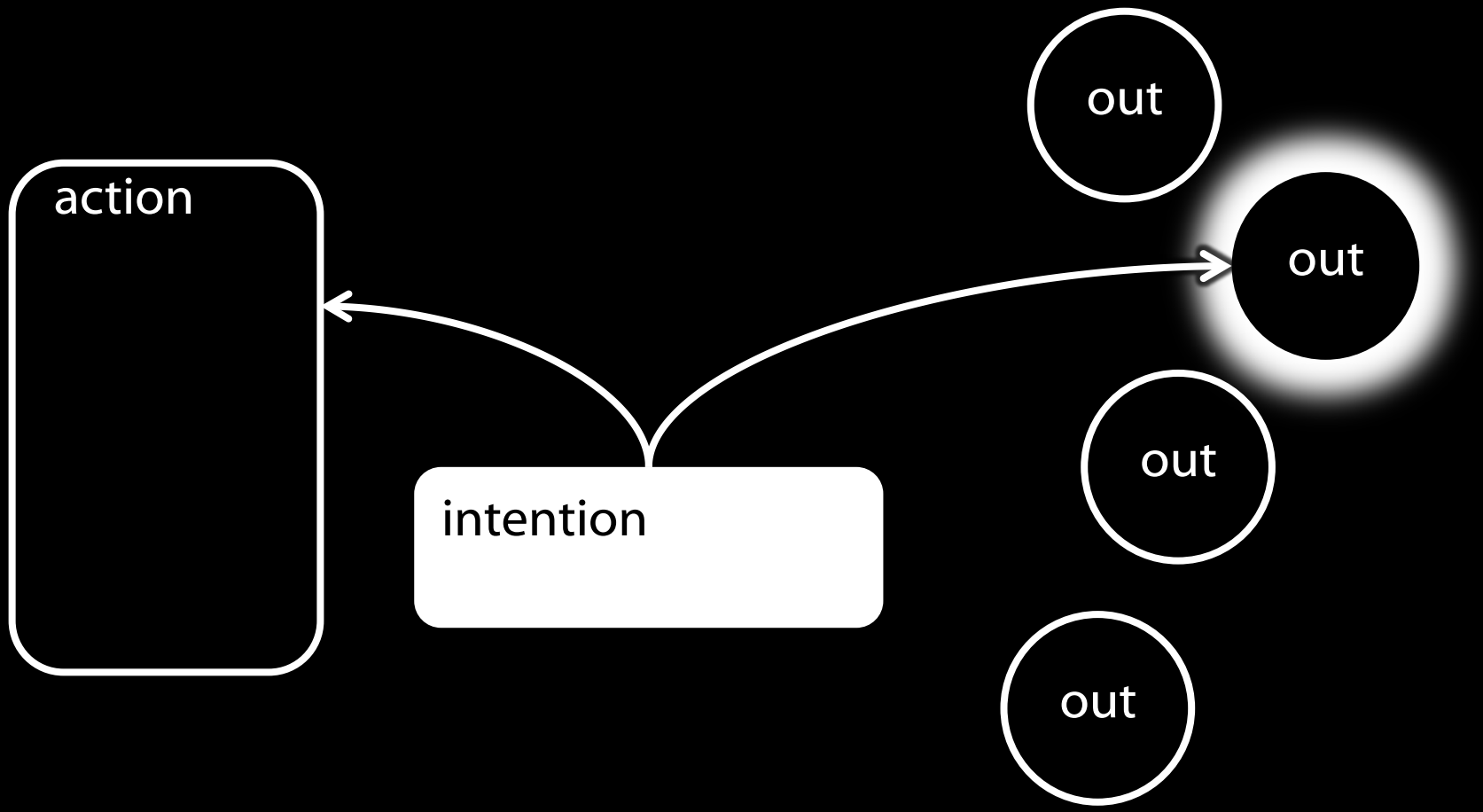
Some motor representations represent outcomes



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



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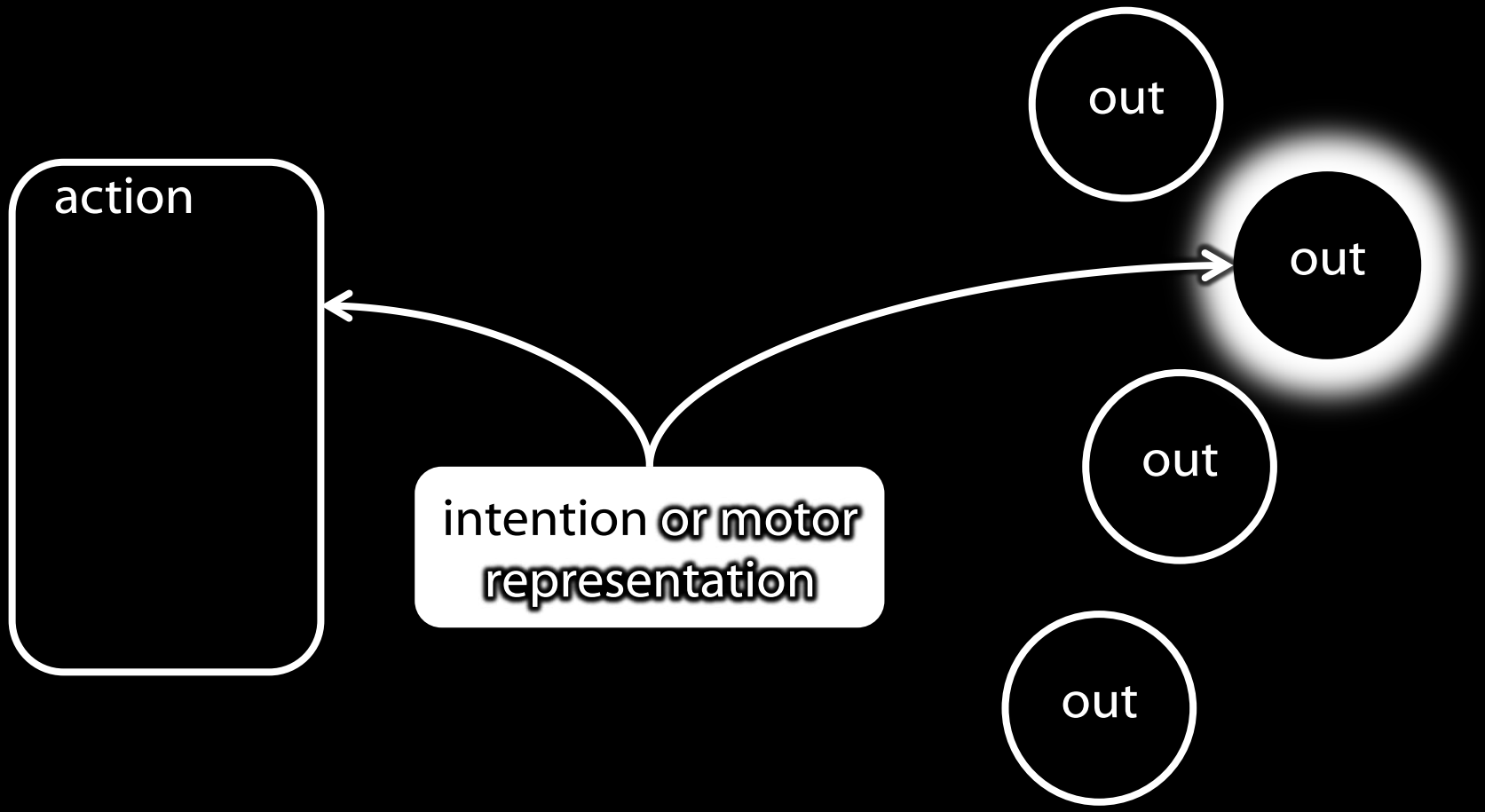


motor representation = intention ?

motor representation = intention ? No !

< different content >

< different content >

< different format >

Head down 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.

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

=

?

< different format >

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

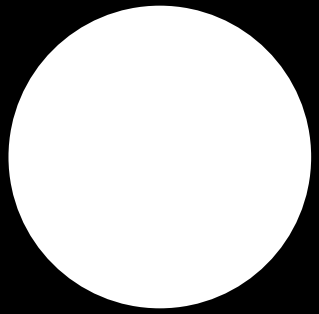
e.g. rapid identification of key landmarks; slow translation into compass directions

Rapid identification of direction of start from end (projection-dependent)

< different performance>

imagine

seeing



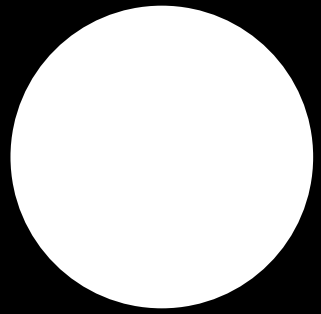
imagine

actually

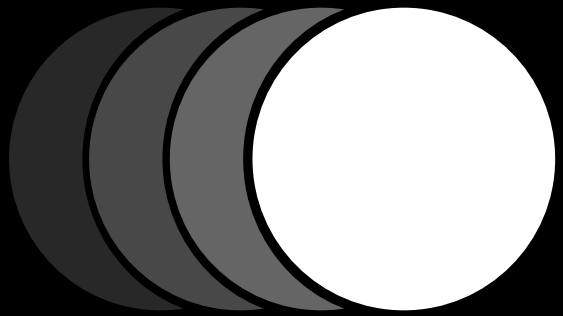
seeing

seeing

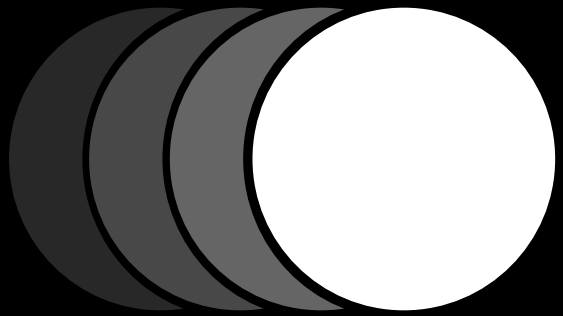
1



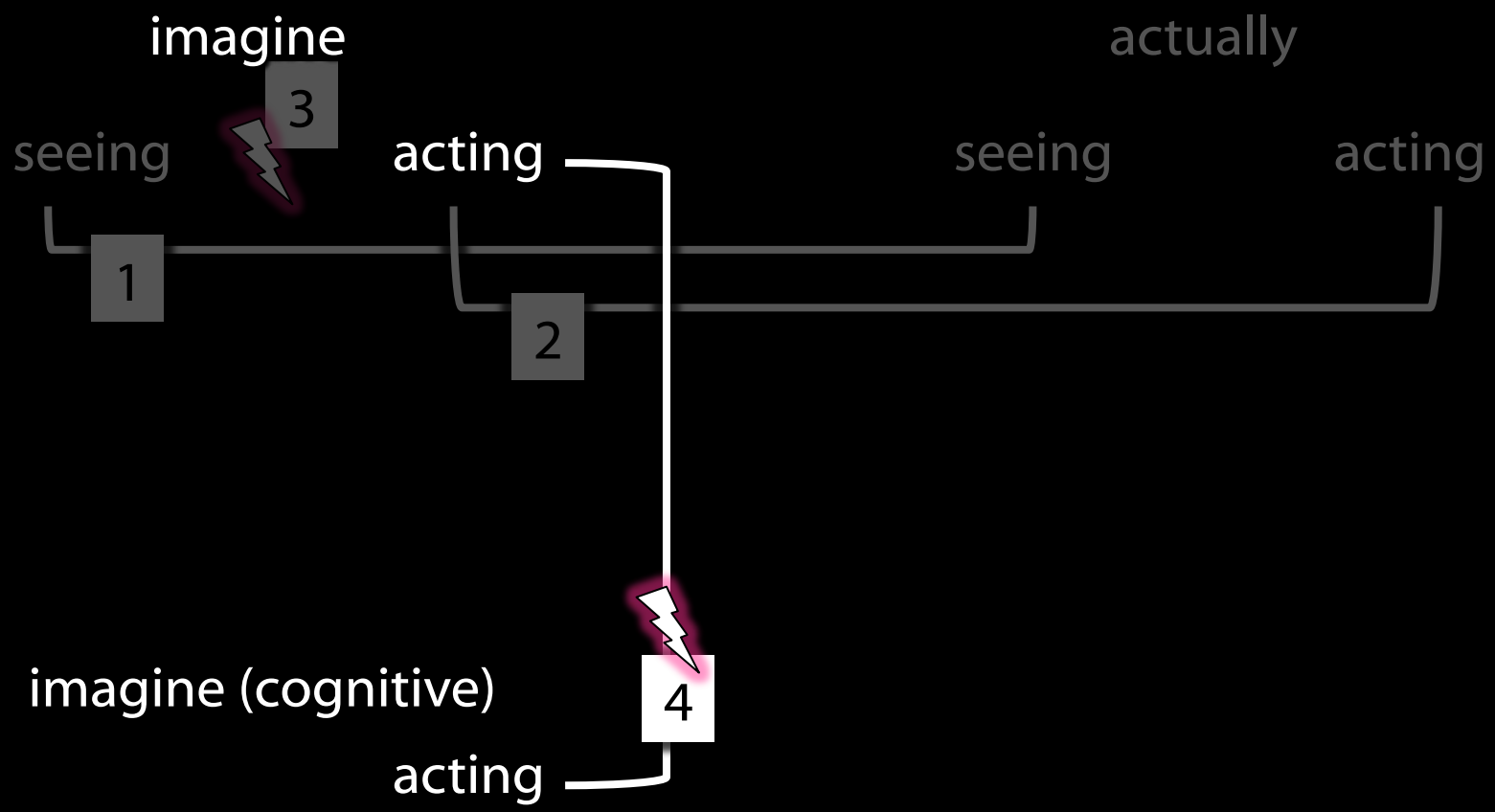
imagine
actually
seeing
acting
seeing
acting
1
2



imagine
actually
3
seeing
acting
seeing
acting
1
2



Fiori et al (submitted)


imagine
actually
3
seeing
acting
seeing
acting
1
2
imagine (cognitive)
4
acting

No motor representations are propositional attitudes.

Only representations with a common format can be inferentially integrated.

Any two intentions can be inferentially integrated in practical reasoning.

My intention that I visit Glasgow on Monday is a propositional attitude.

No motor representations are propositional attitudes.

Only representations with a common format can be inferentially integrated.

Any two intentions can be inferentially integrated in practical reasoning.

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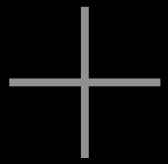

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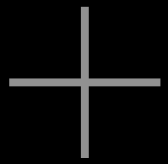

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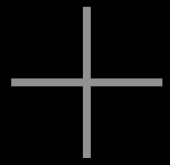

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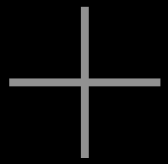

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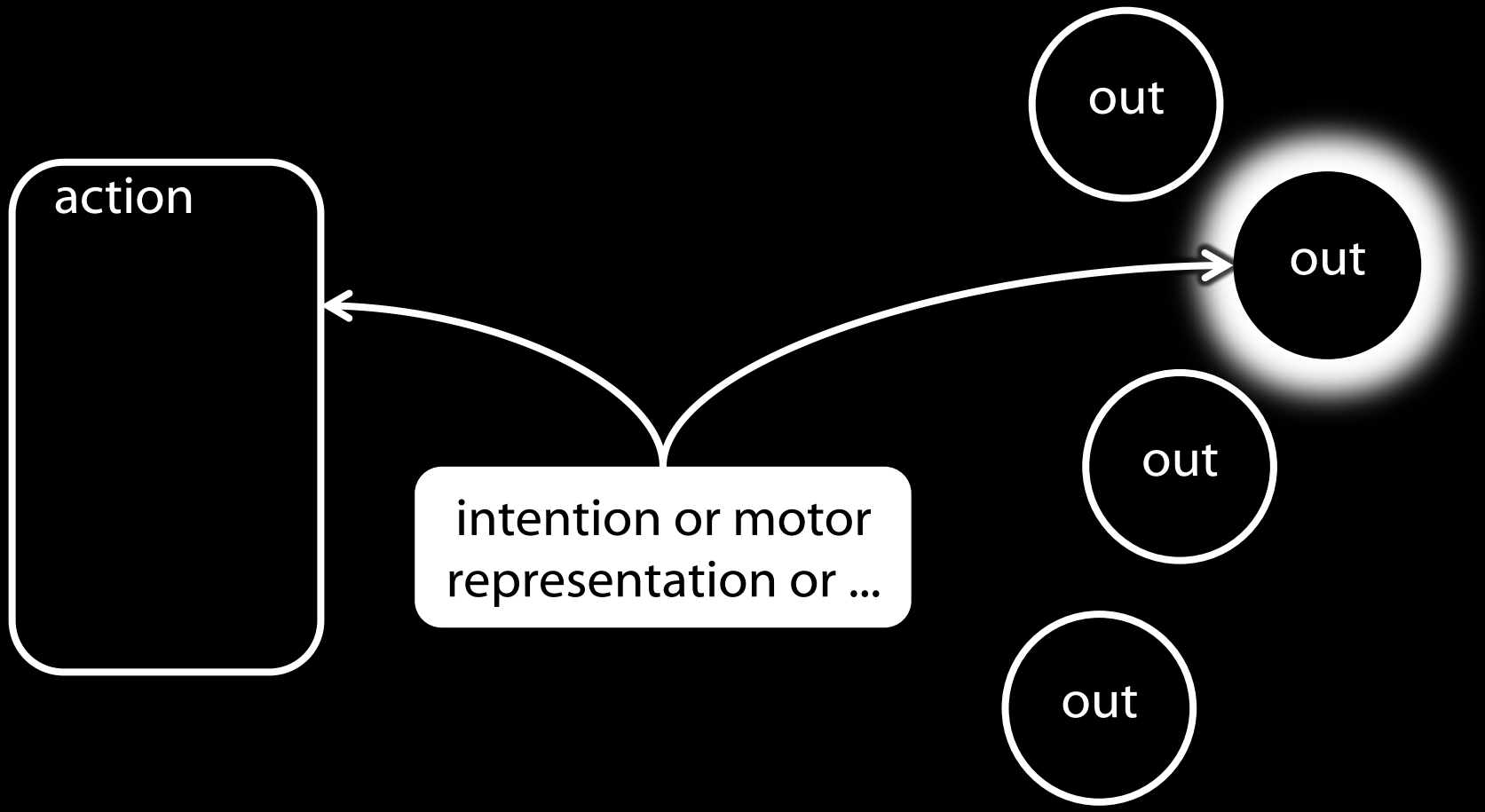
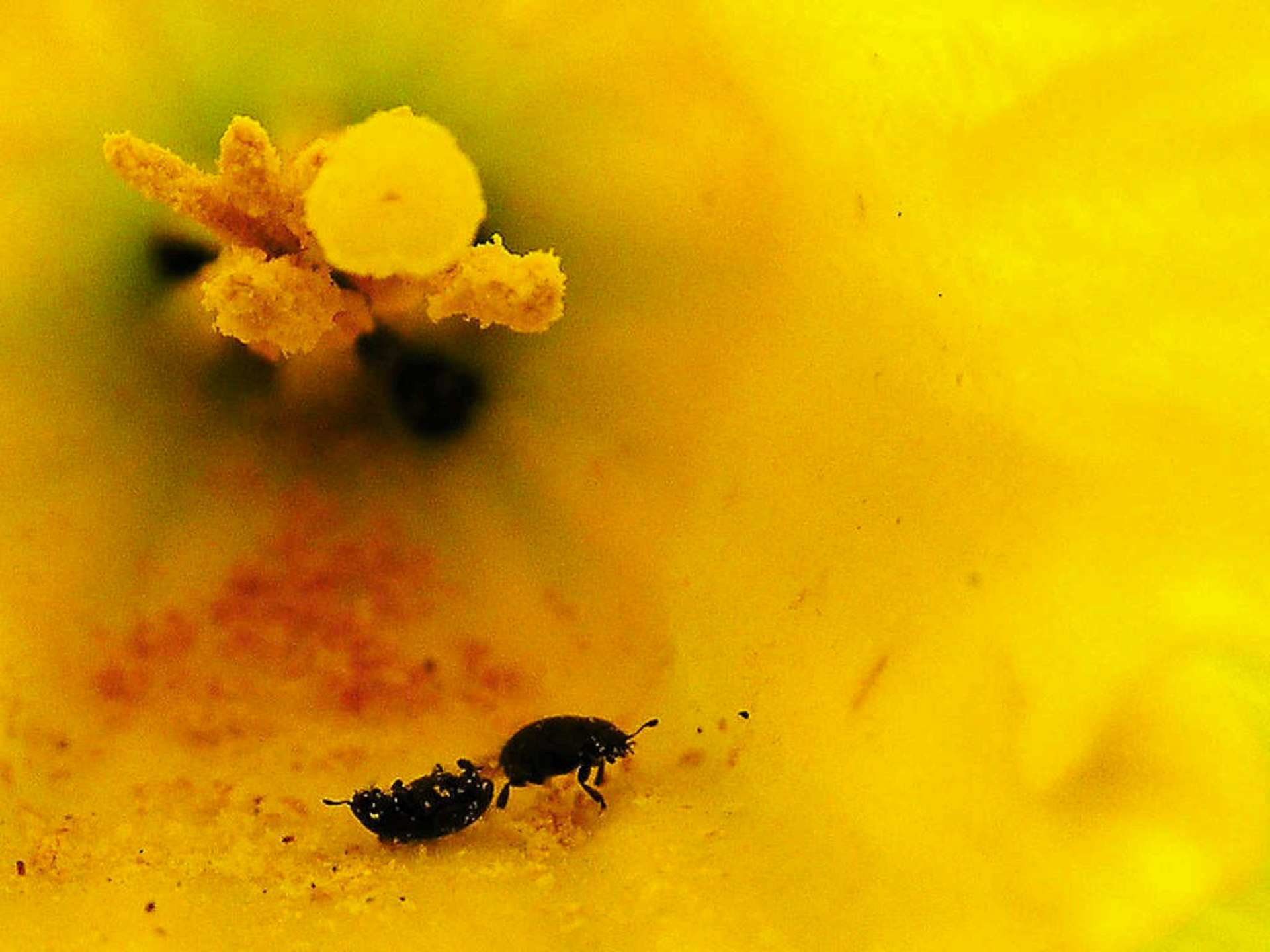
What is the relation between a purposive action and the outcome or outcomes to which it is directed?





The Interface Problem

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Some actions involve both intention and motor representation

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motor representations:

i. represent outcomes;

ii. ground the purposiveness of some actions

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Some actions involve both intention and motor representation

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

=

?

Follow *that* route

=

?

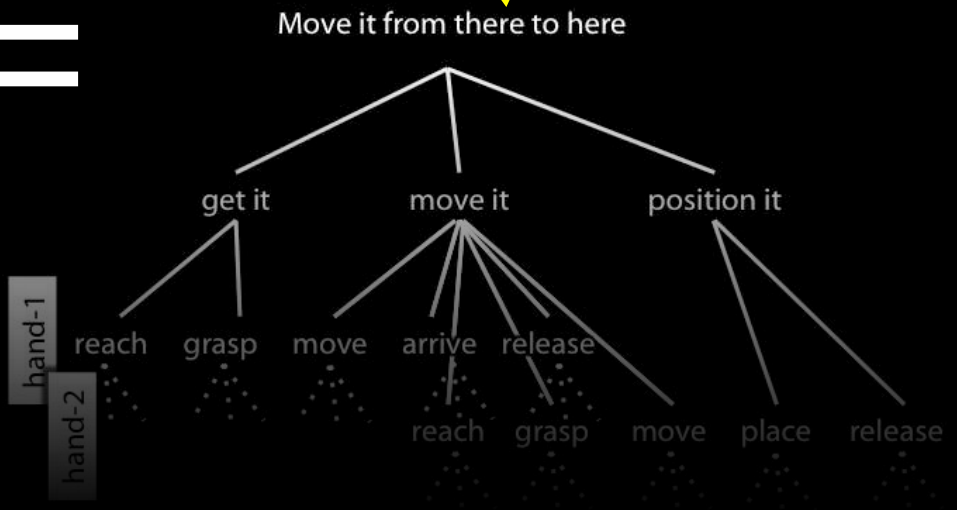
Follow *that* route

=

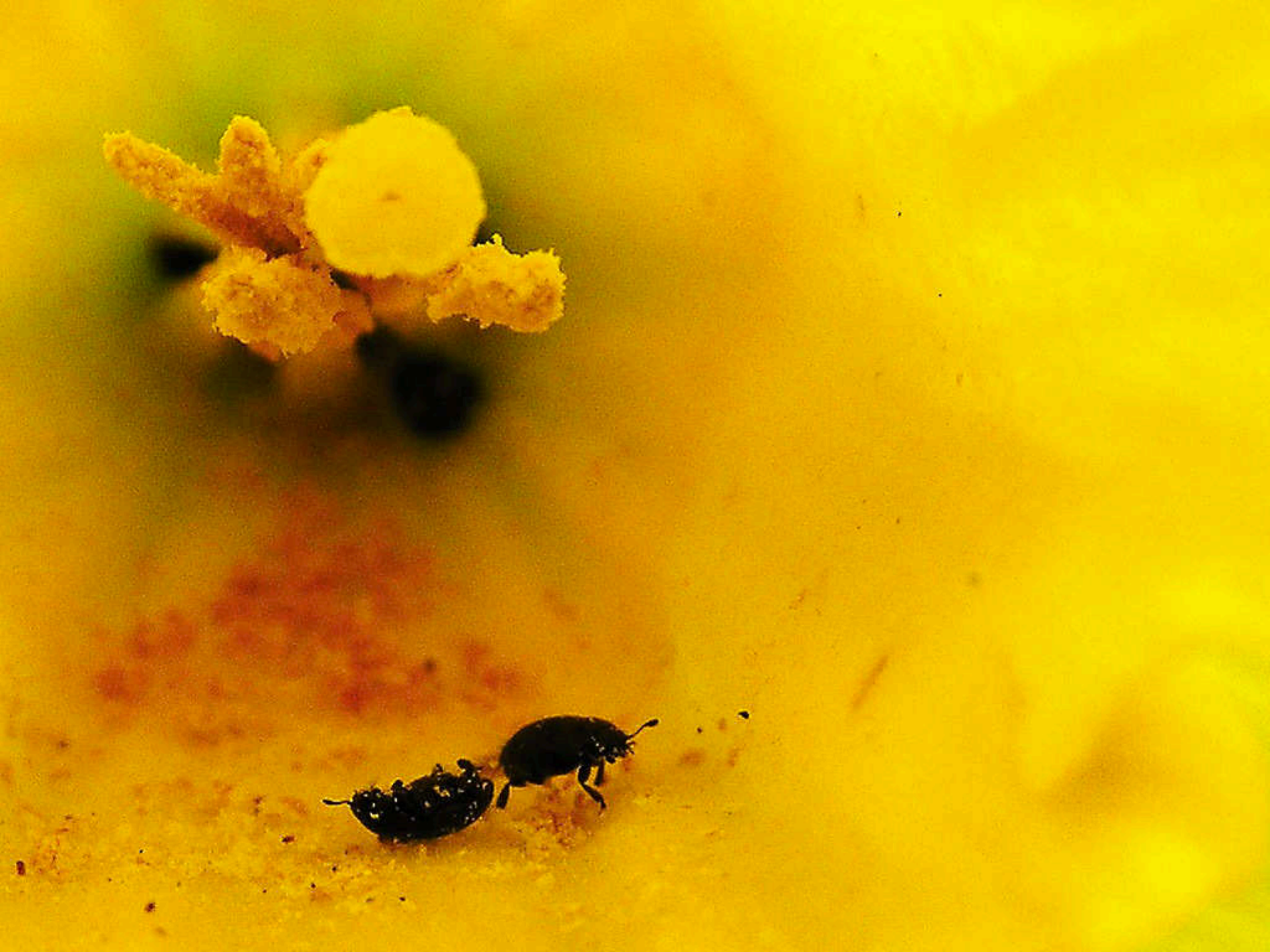
?

Do *that*

=


Move it from there to here
get it
move it
position it
hand-1
hand-2
reach
grasp
move
arrive
release
reach
grasp
move
place
release

?

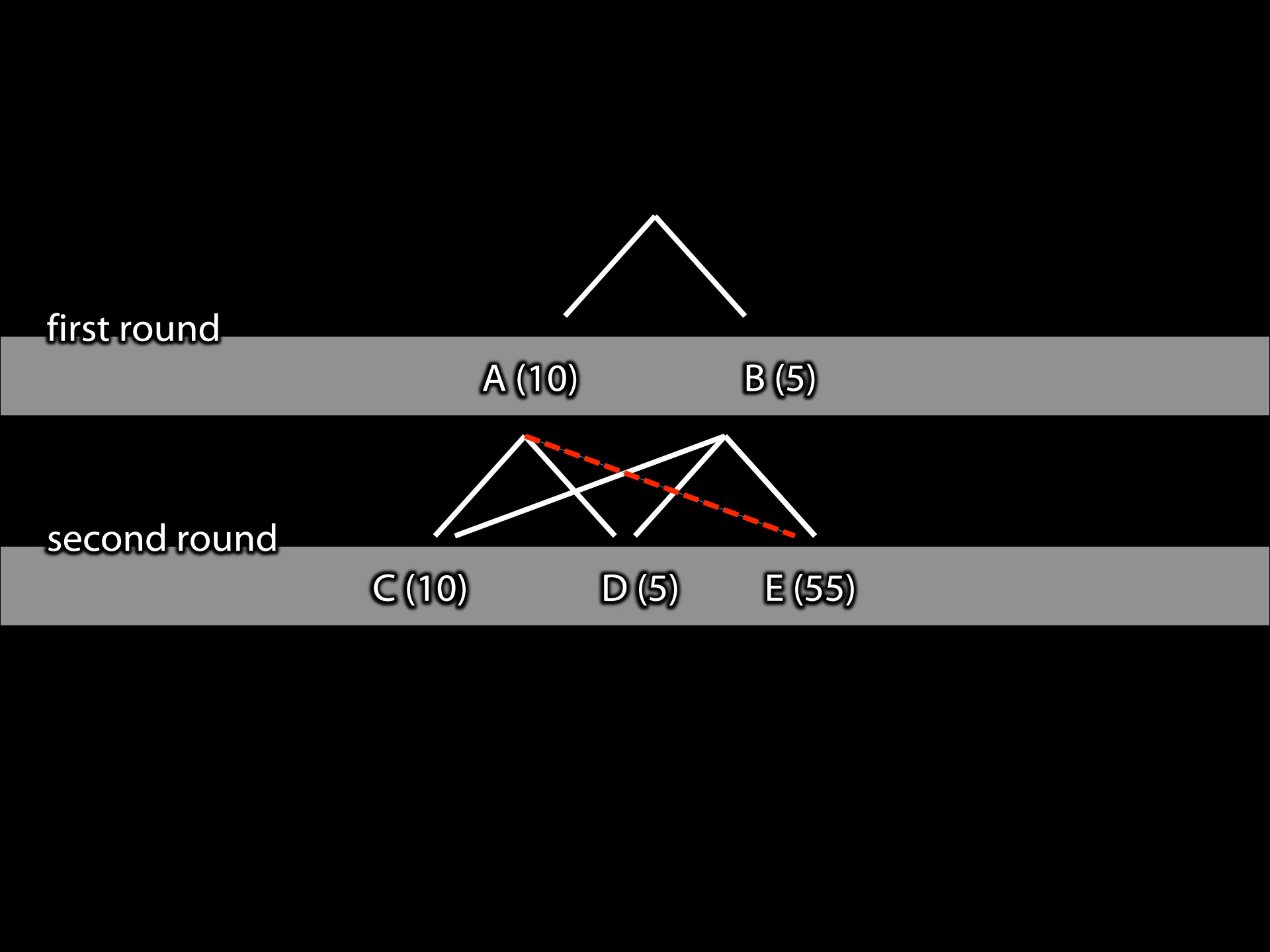


first round

A (10) B (5)

second round

C (10) D (5) E (55)


first round
A (10)
B (5)
second round
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“What events in the life of a person reveal agency;
what are his deeds and his doings in contrast to
mere happenings in his history;
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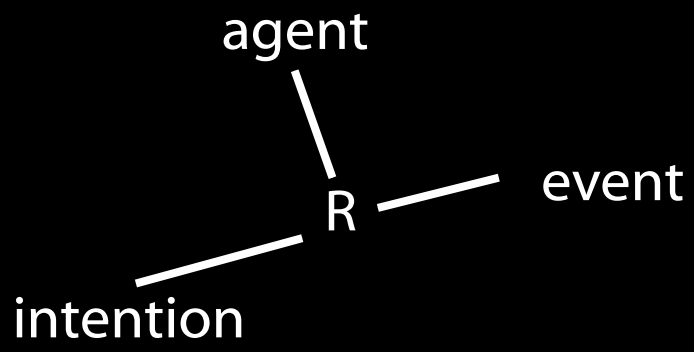
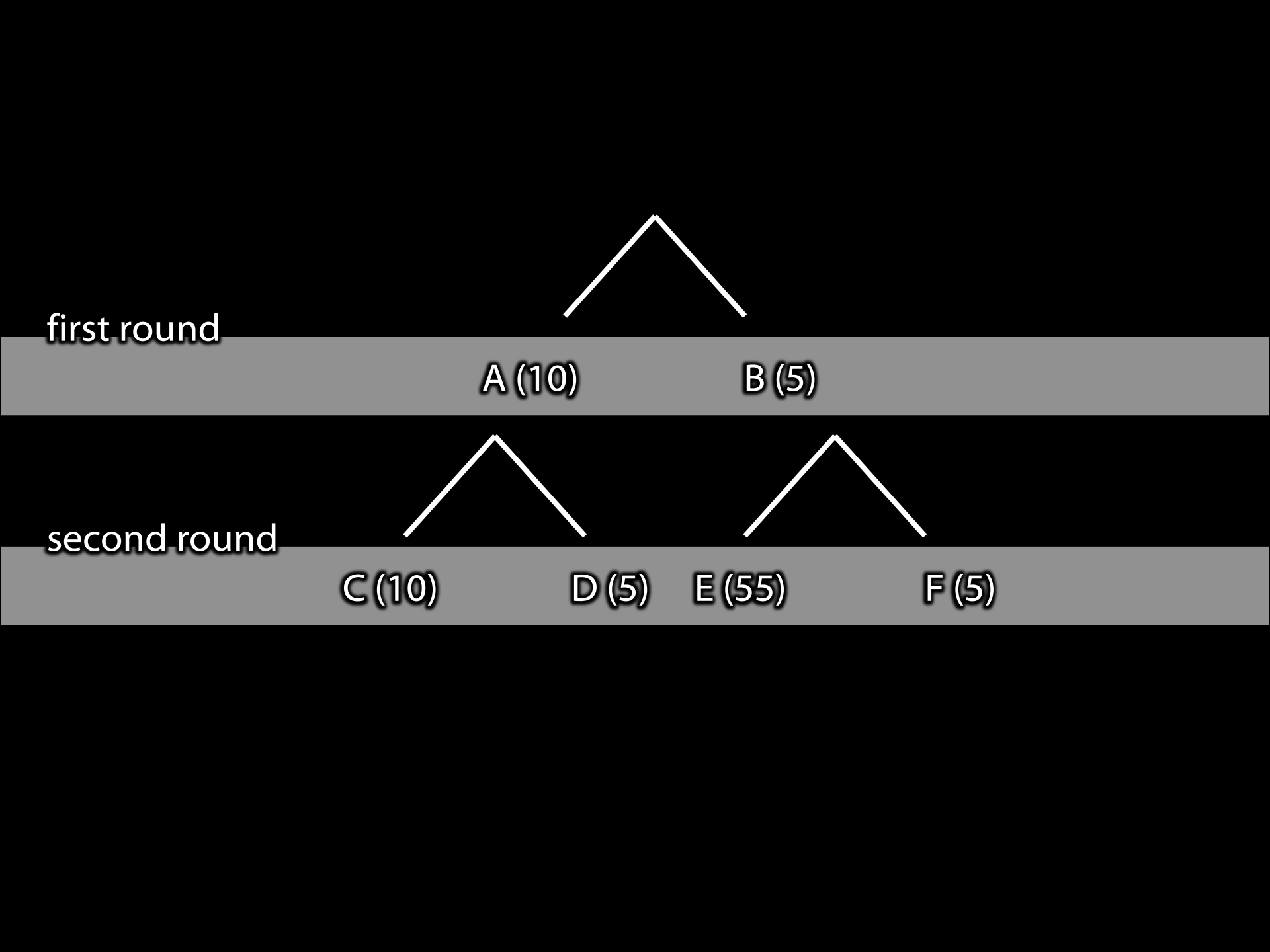


"What events in the life of a person reveal agency;
what are his deeds and his doings in contrast to
mere happenings in his history;
what is the mark that distinguishes his actions?"

"a person is the agent of an event if and only if
there is a description of what he did that makes
true a sentence that says he did it intentionally"

(Davidson 1971: 46)


first round
A (10)
B (5)
second round
C (10)
D (5)
E (55)
F (5)

One night in Budapest

[A] My having dinner at ___ would be desirable.

[B] My visiting the theatre would be desirable.

[C] My shopping at ___ would be desirable.

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Alternative frame

[A] & [B]

[A] & [C]

[B] & [C]