Mindreading & Joint Action
3. Tracking, Measuring and Representing Beliefs
butterfillS@ceu.hu

What could someone represent that would enable her to track, at least within limits, others' perceptions, knowledge states and beliefs including false beliefs?

1. There are subjects who can pass A-tasks but cannot pass B-tasks.

2. These subjects' success on A-tasks is explained by the fact that they **can** represent (false) beliefs

3. These subjects' failure on B-tasks is explained by the fact that they **cannot** represent (false) beliefs

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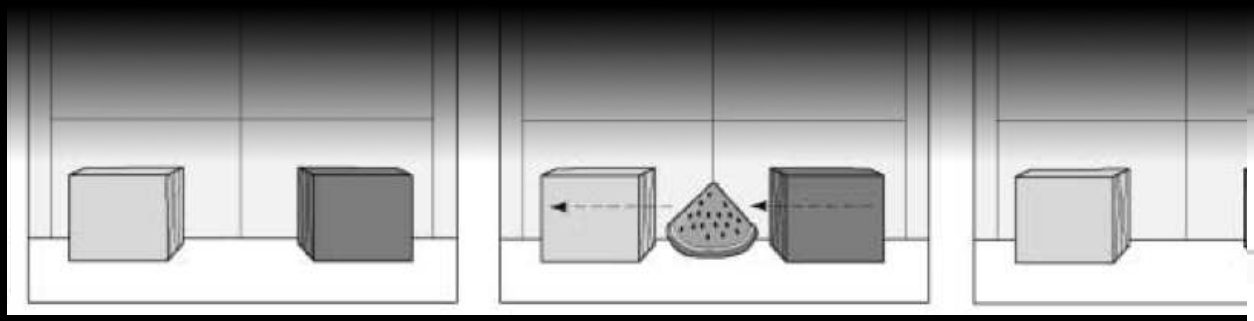

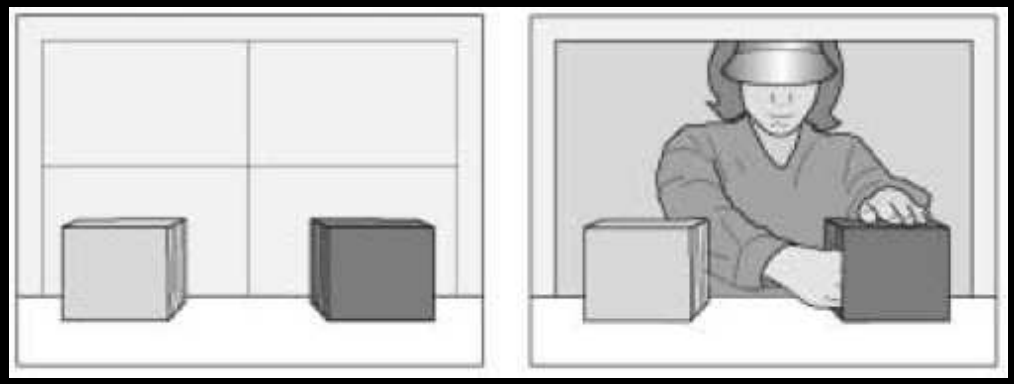

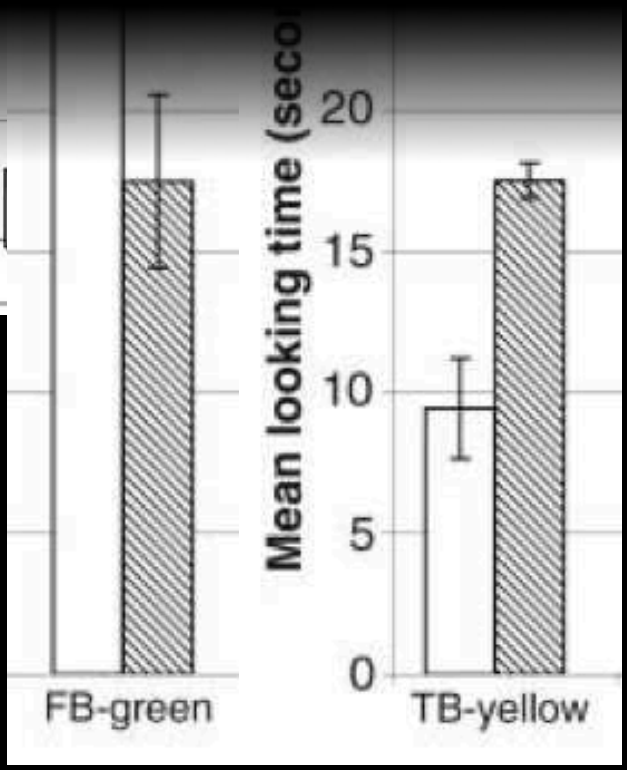

Onishi & Baillargeon (2005)

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source: Kessler

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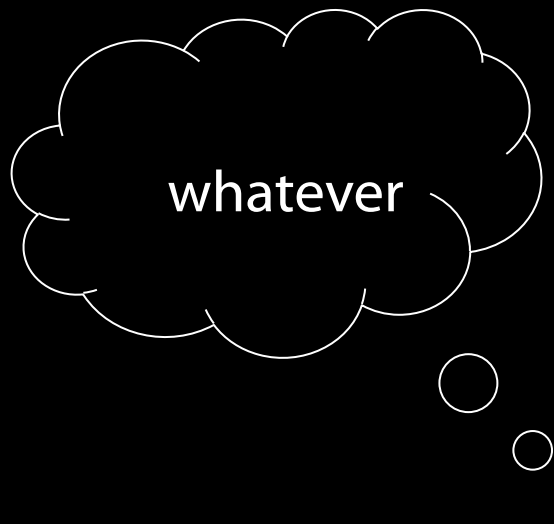
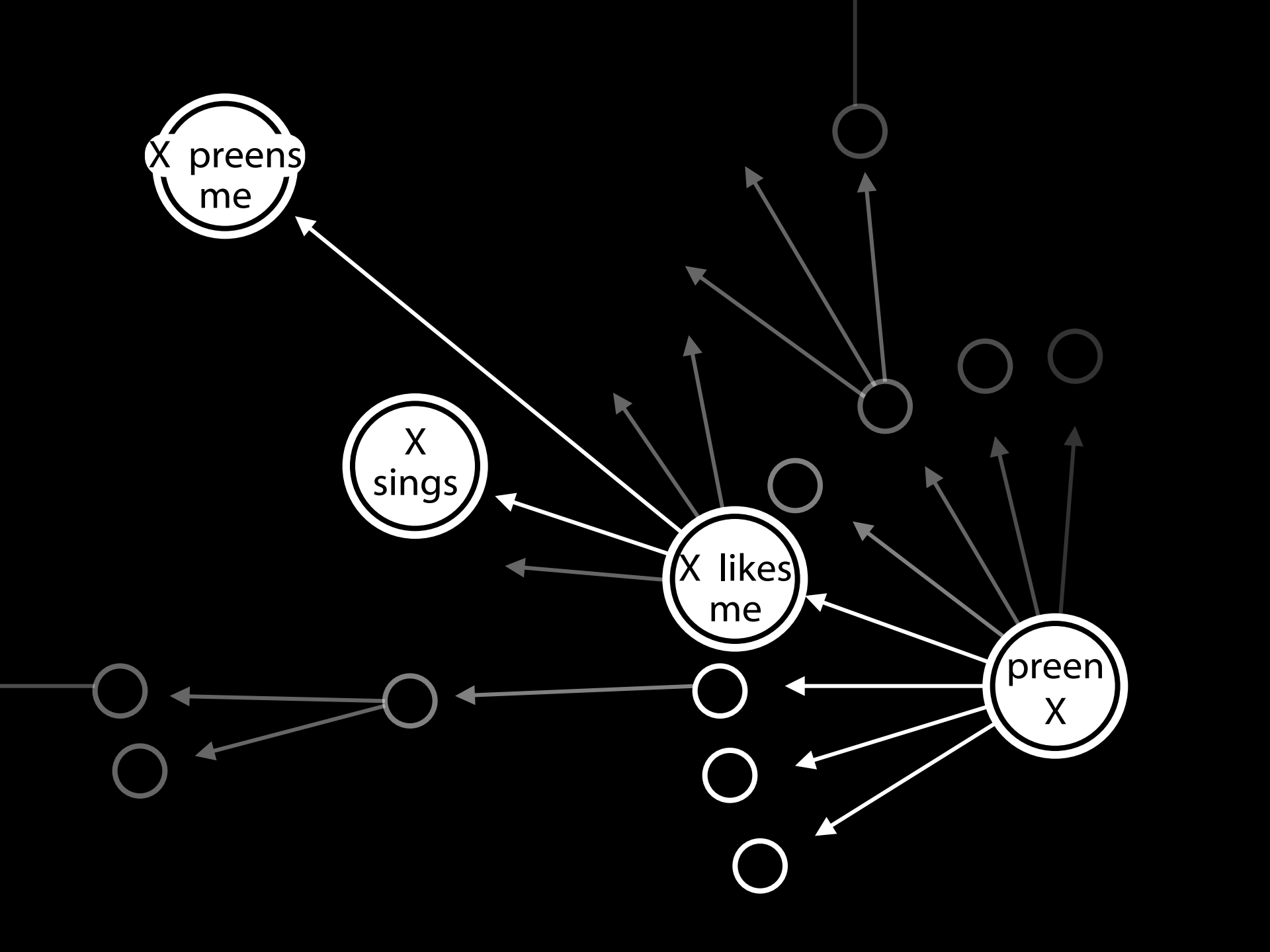
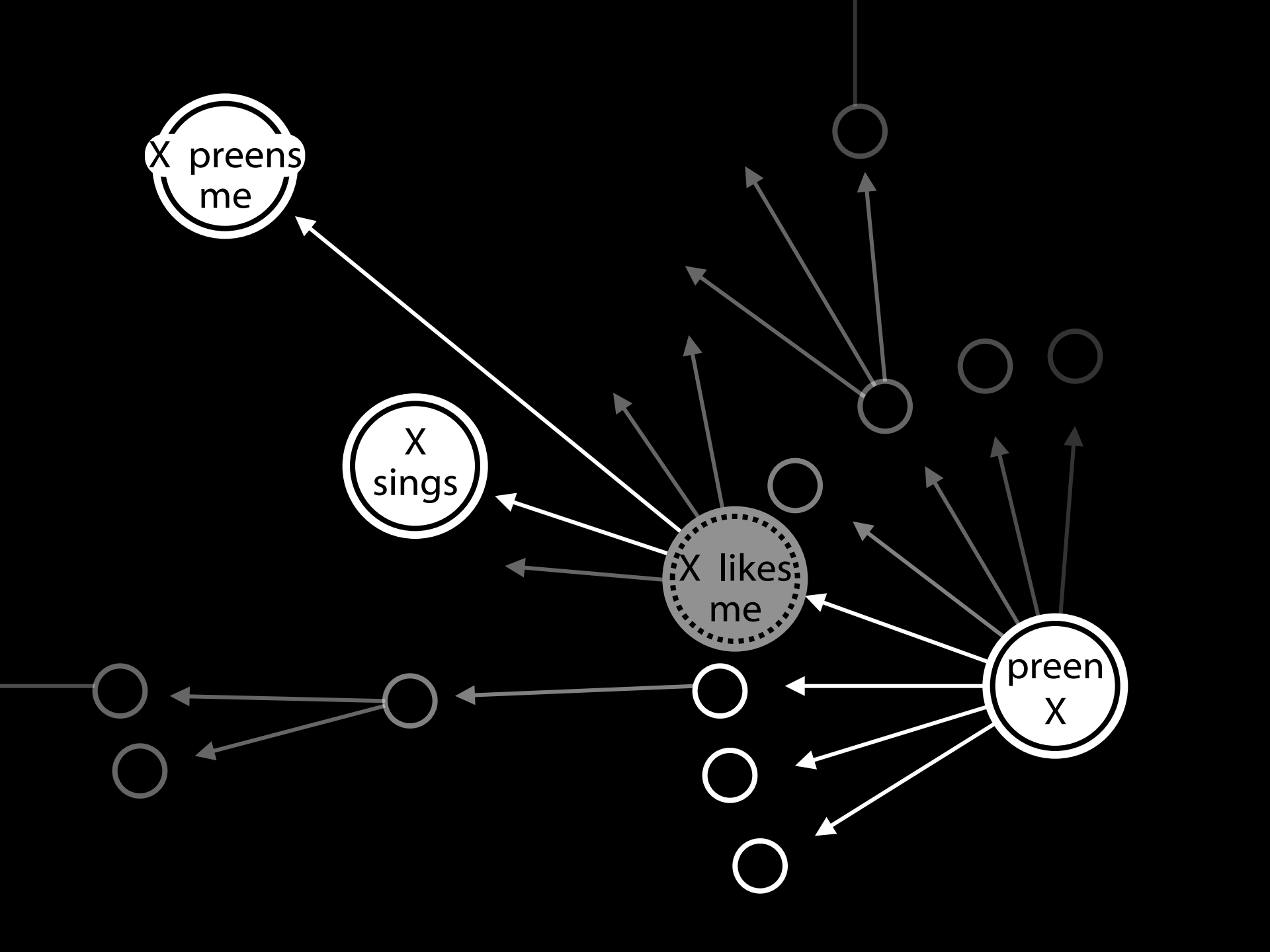
But that ain’t belief

But that ain't { force / belief / temperature }

But that ain't
force
belief
temperature


whatever


X preens me
X sings
X likes me
preen X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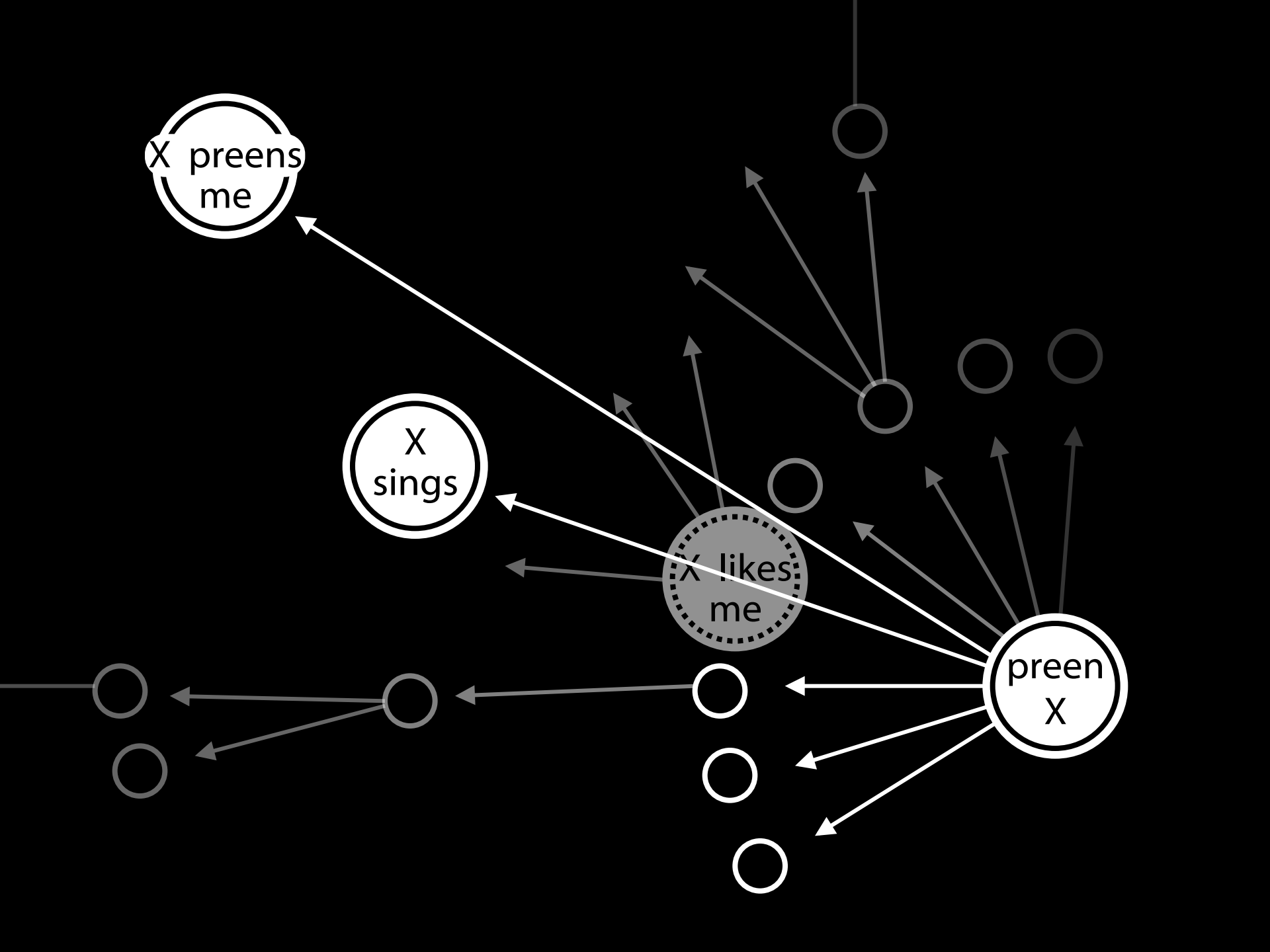
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micro

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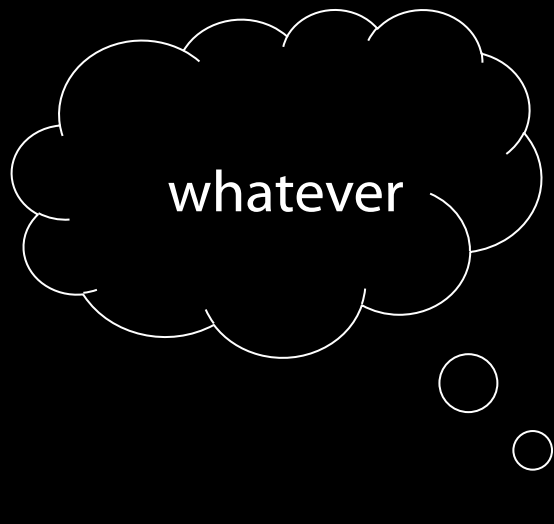
whatever

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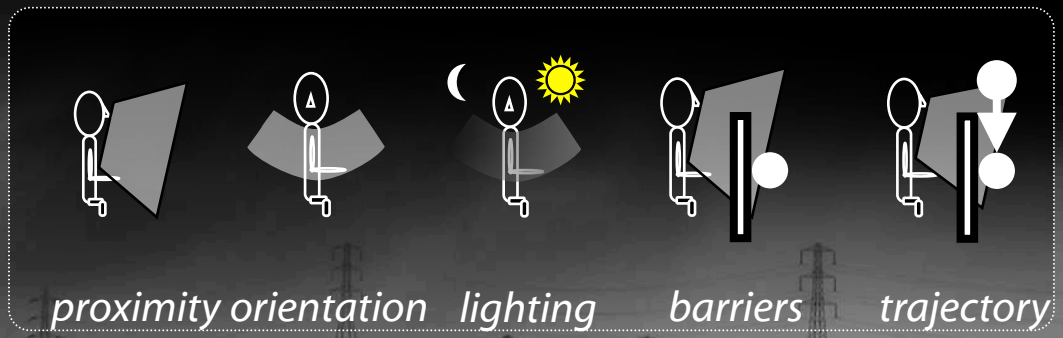

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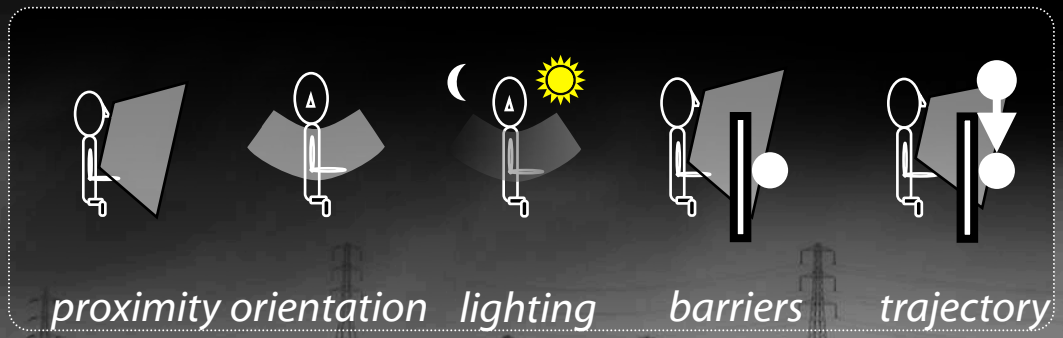
You *encounter* an object = it is in your field



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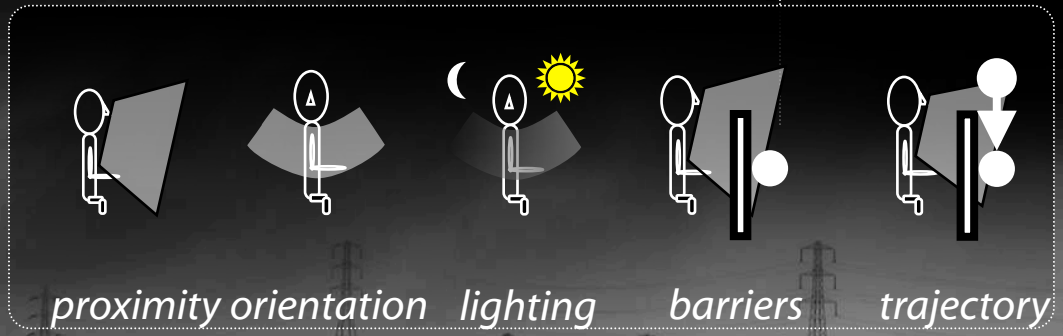

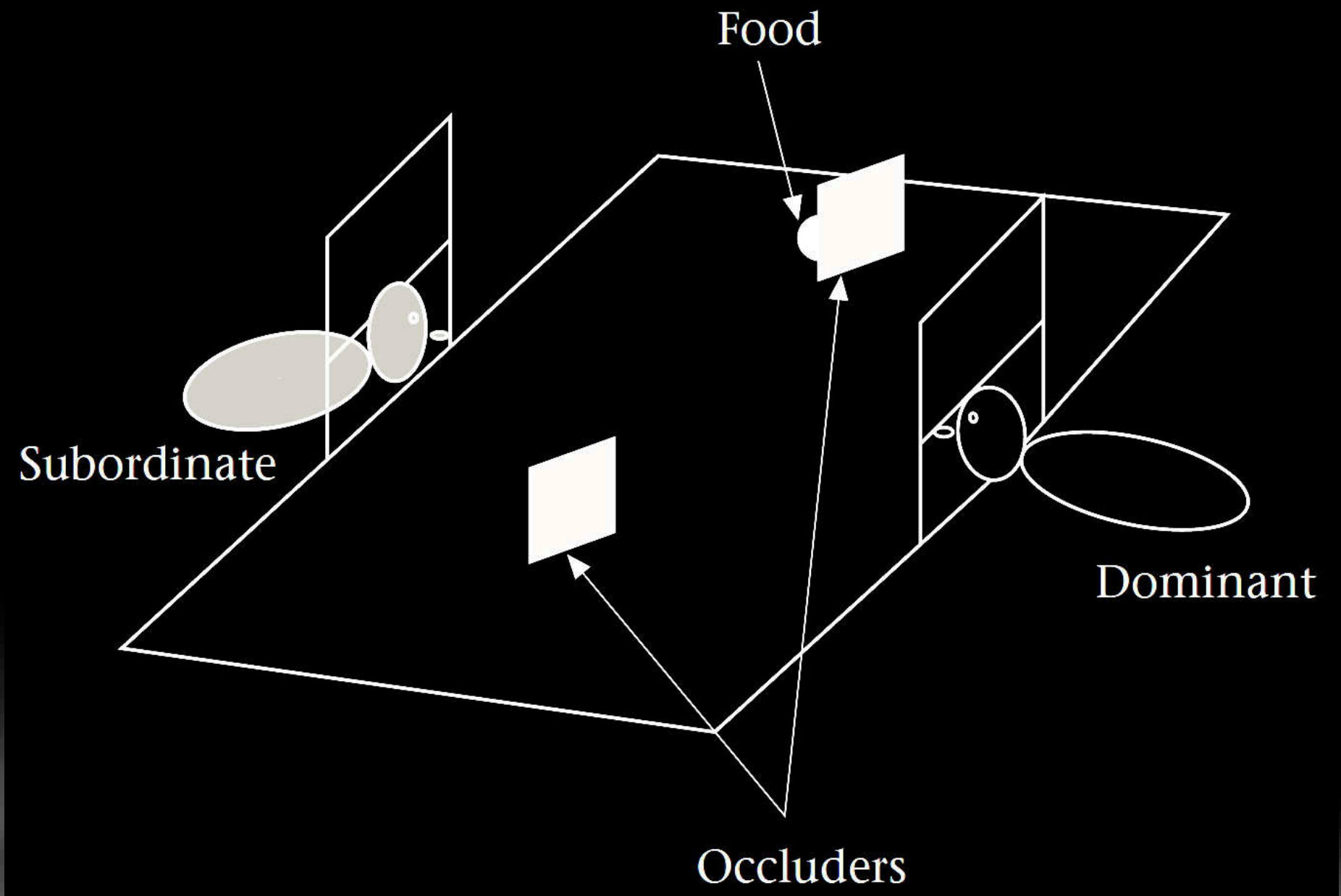
Food
Subordinate
Dominant
Occluders

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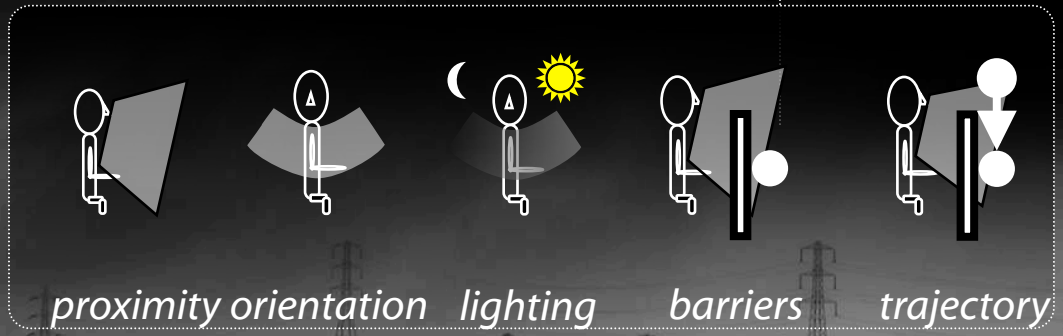

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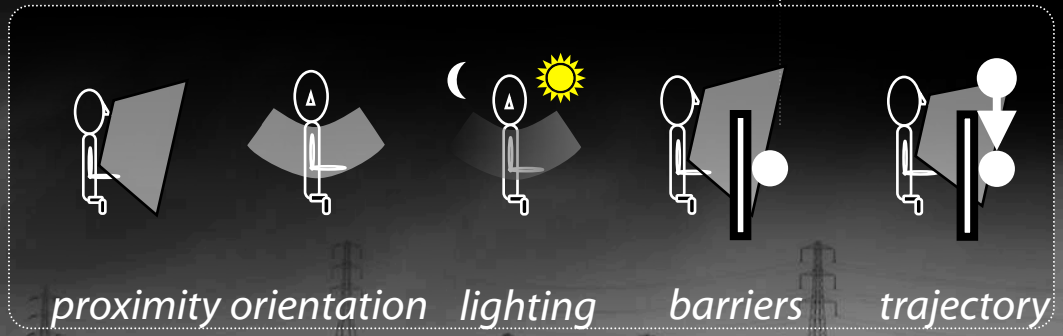

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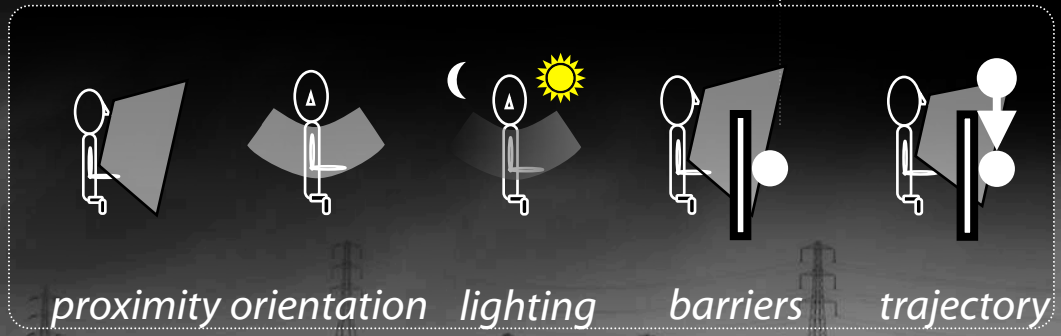

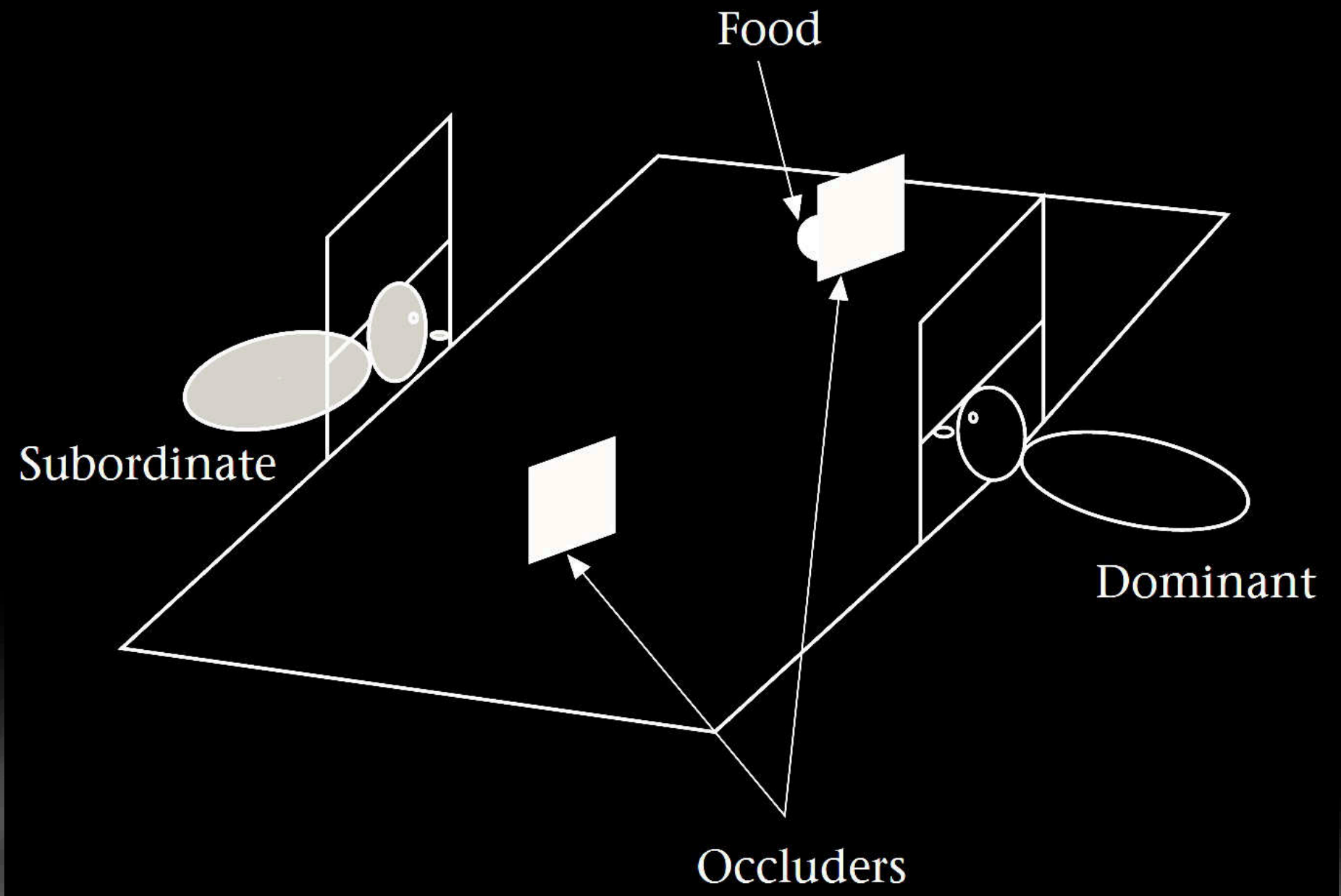
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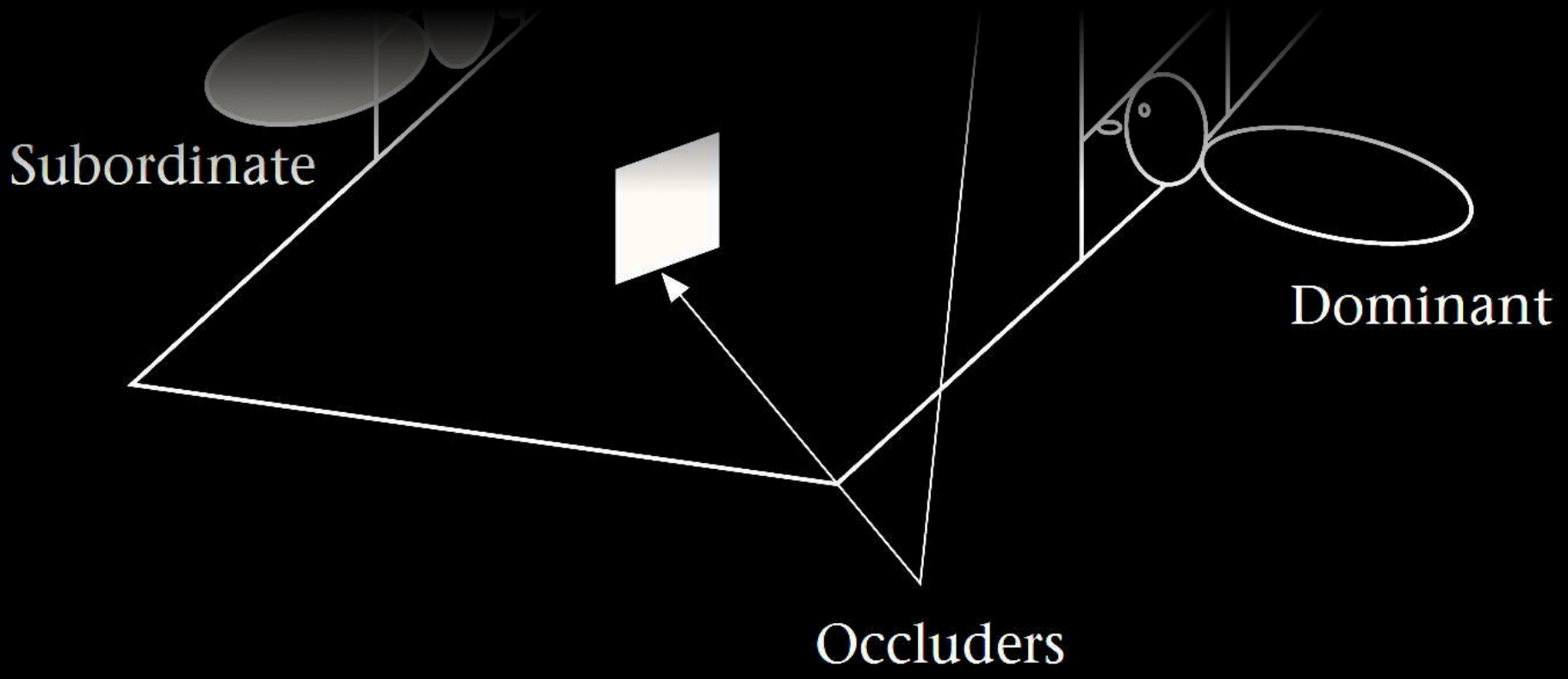
"chimpanzees understand … intentions … perception and knowledge … Moreover, they understand how these psychological states work together to produce intentional action"

(Call & Tomasello 2008:191)



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"our [typical adult humans'] fundamental conception of what it is to know that P is itself an explanatory conception […] we think of S's knowledge that P as something that can properly be explained by reference to what S has perceived or remembered or proved or ..."
(Cassam 2007: 356)

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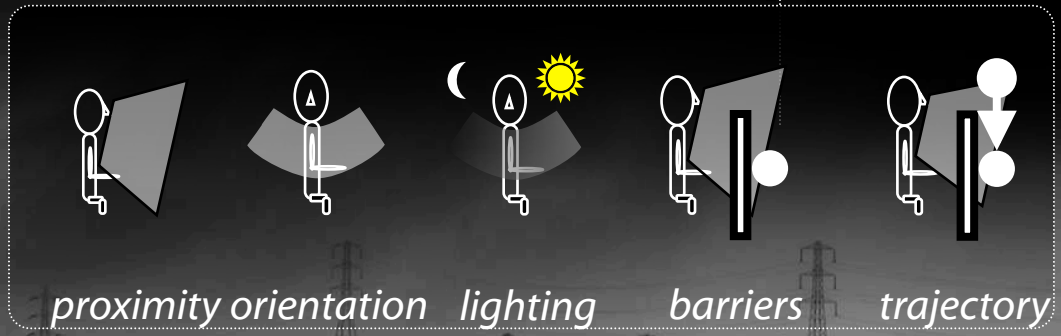

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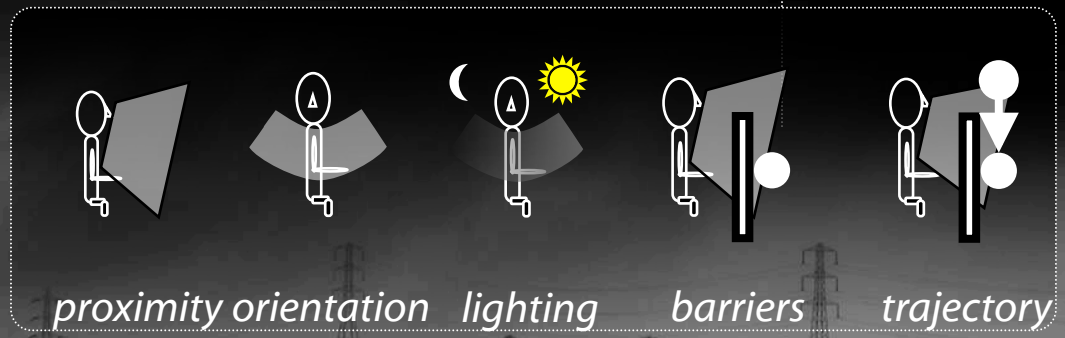

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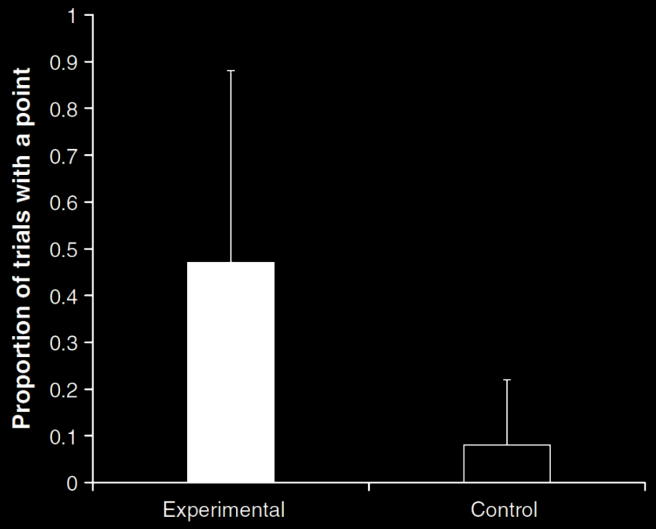

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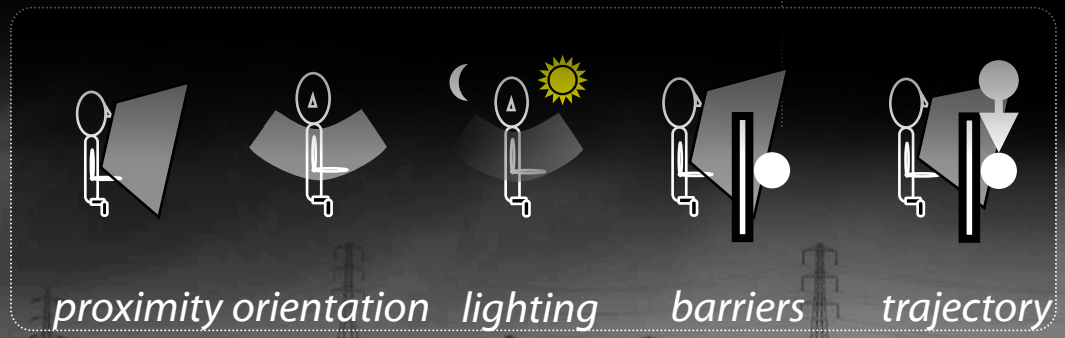
"Helping by informing inextricably involves … an understanding of others' goals and … of others' ignorance."
(Liszkowski, Carpenter & Tomasello 2008: 738-9)



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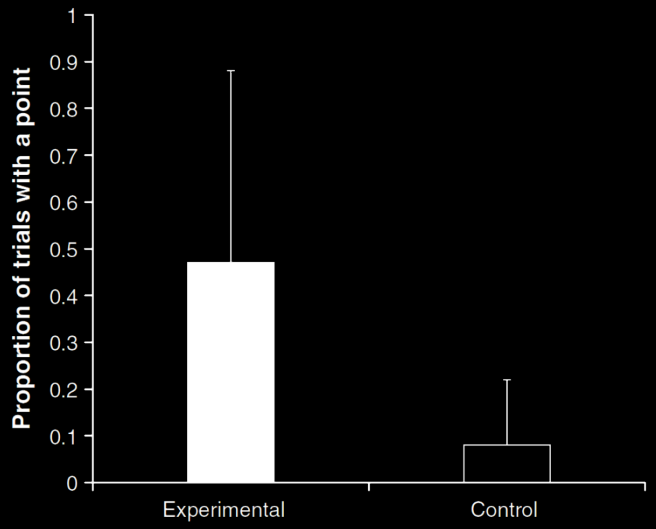

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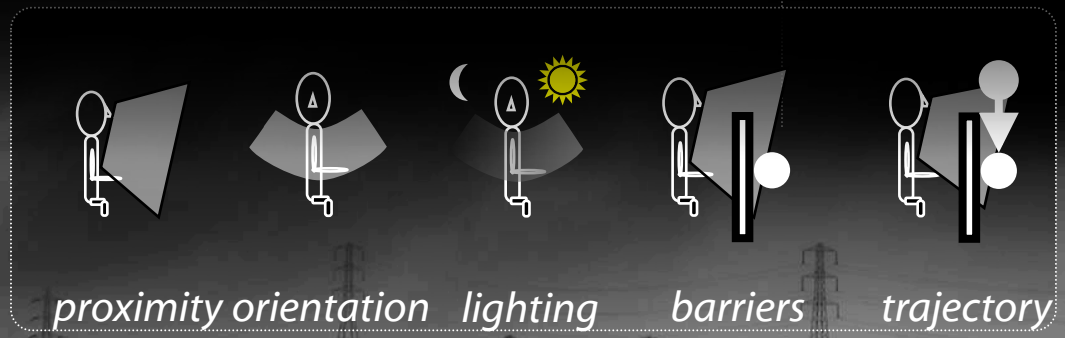

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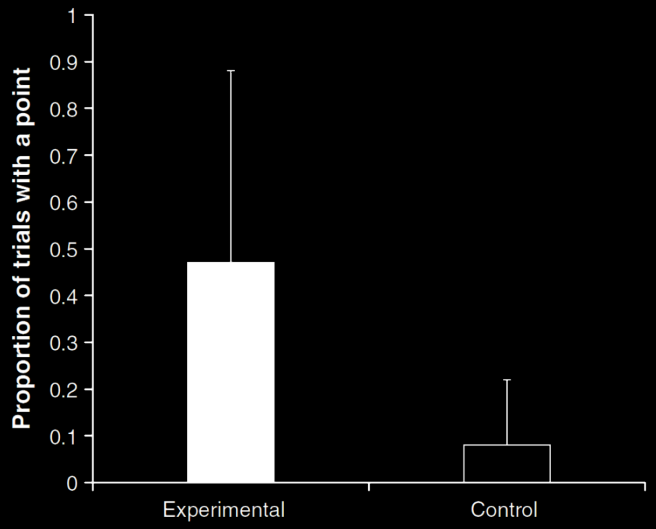

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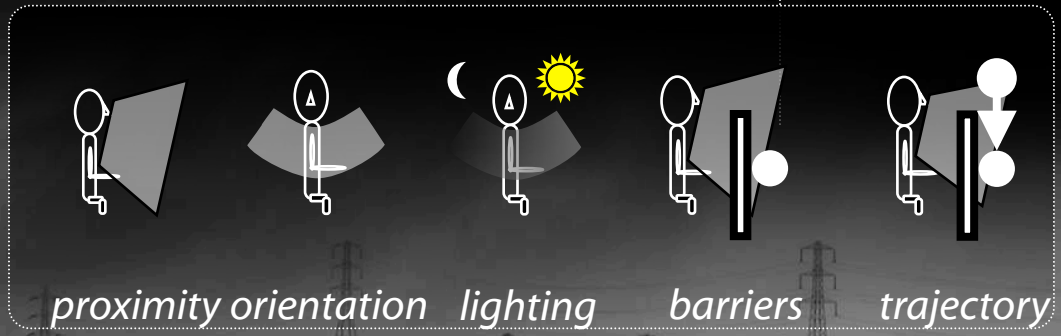

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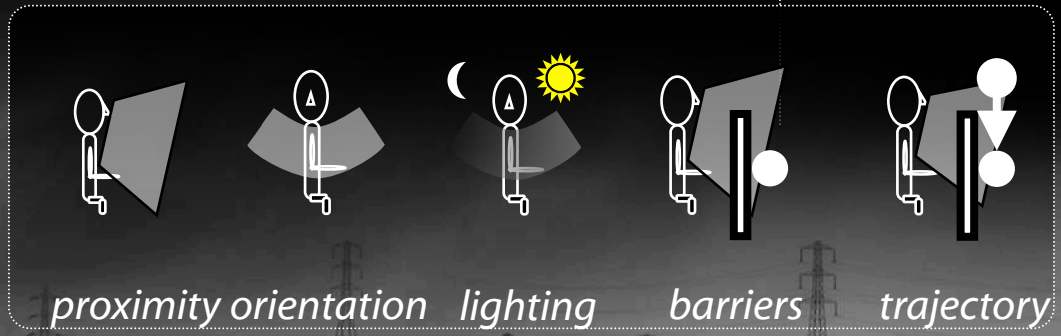
Principle 3



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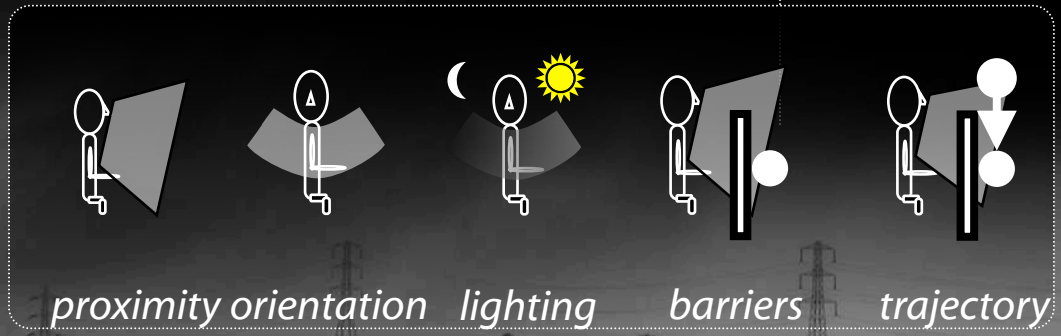
Principle 3: when an agent performs a goal-directed action and the goal specifies an object, the agent will act as if the object were actually in the location she registers it at.



signature limits

1. There are subjects who can pass A-tasks but cannot pass B-tasks.

2. These subjects' success on A-tasks is explained by the fact that they **can** represent (false) beliefs *using a simple measure*

3. These subjects' failure on B-tasks is explained by the fact that they **cannot** represent (false) beliefs *using a sophisticated measure*

signature limits

1. Charly is Samantha

2. Mitch believes that Charly is in Baltimore

3. Mitch believes that Samantha is in Baltimore

(1) & (2) $\not\Rightarrow$ (3)

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(1) & (2) $\not\Rightarrow$ (3)

4. Mitch registers <Charly, Baltimore>

5. Mitch registers <Samantha, Baltimore>

(1) & (4) $\Rightarrow$ (5)

	False belief about location	False belief about identity
Subjects represent registration	*pass*	*fail*
Subjects represent beliefs	*pass*	*pass*

Rubio, Richardson & Butterfill

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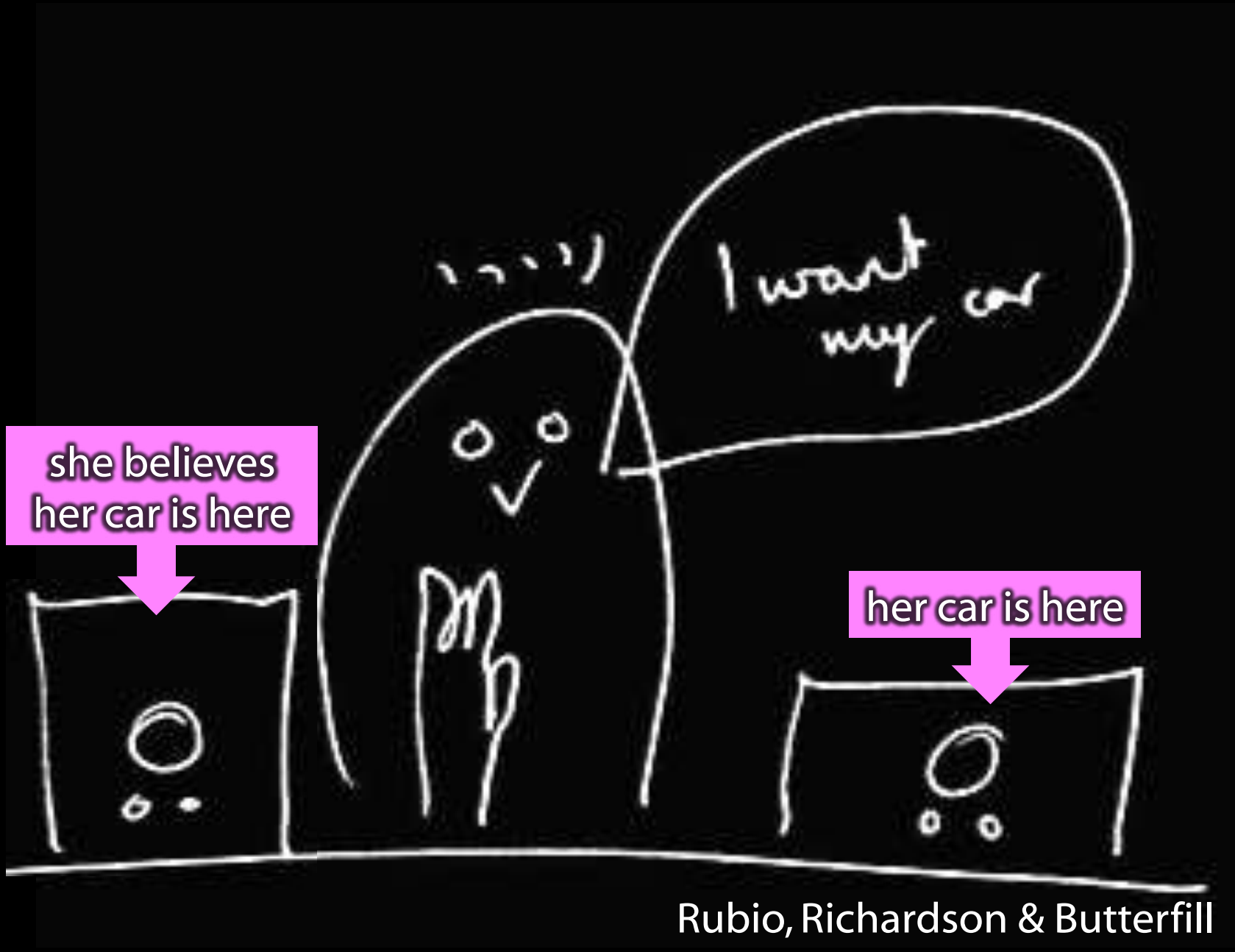
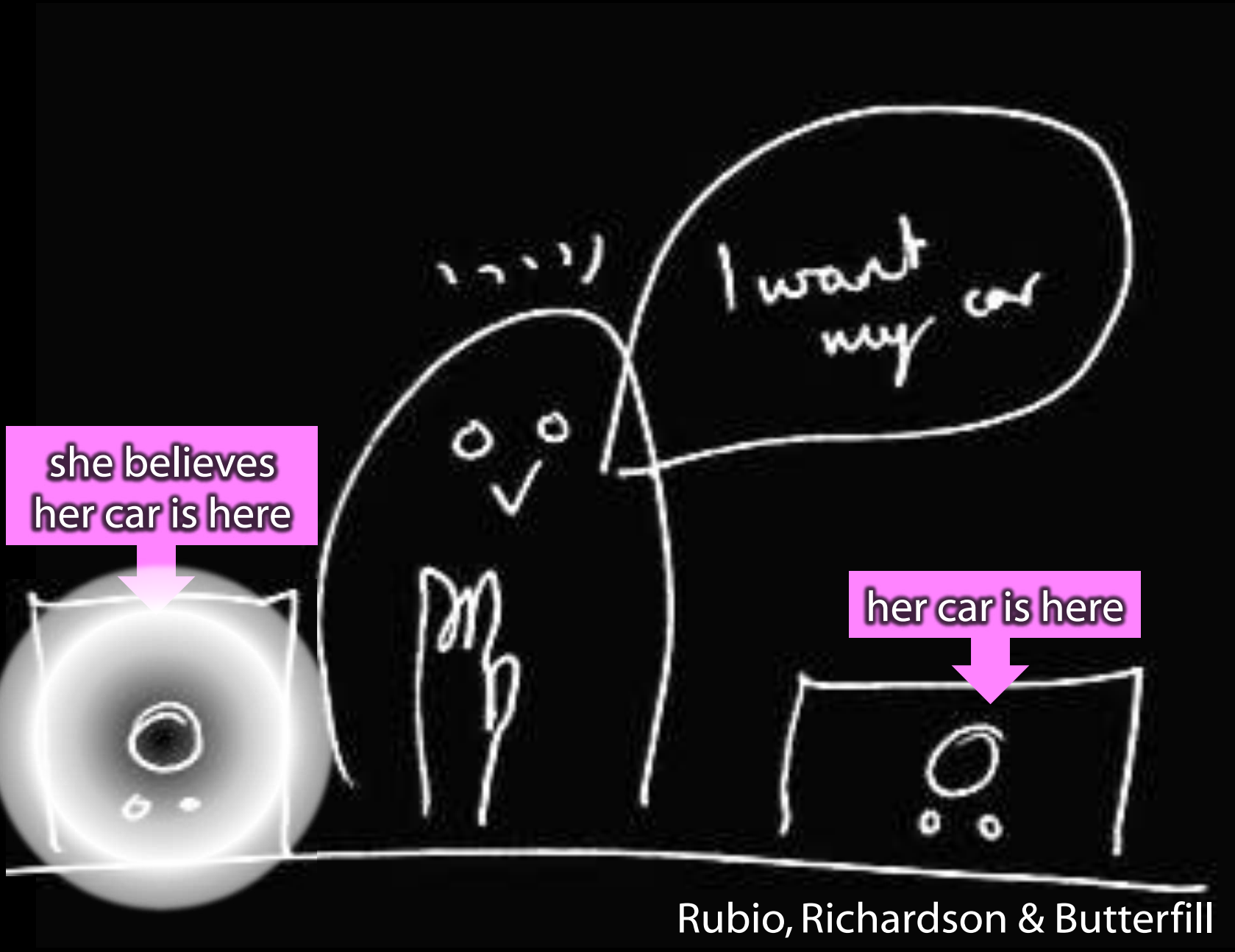

I want my car
she believes her car is here
her car is here
Rubio, Richardson & Butterfill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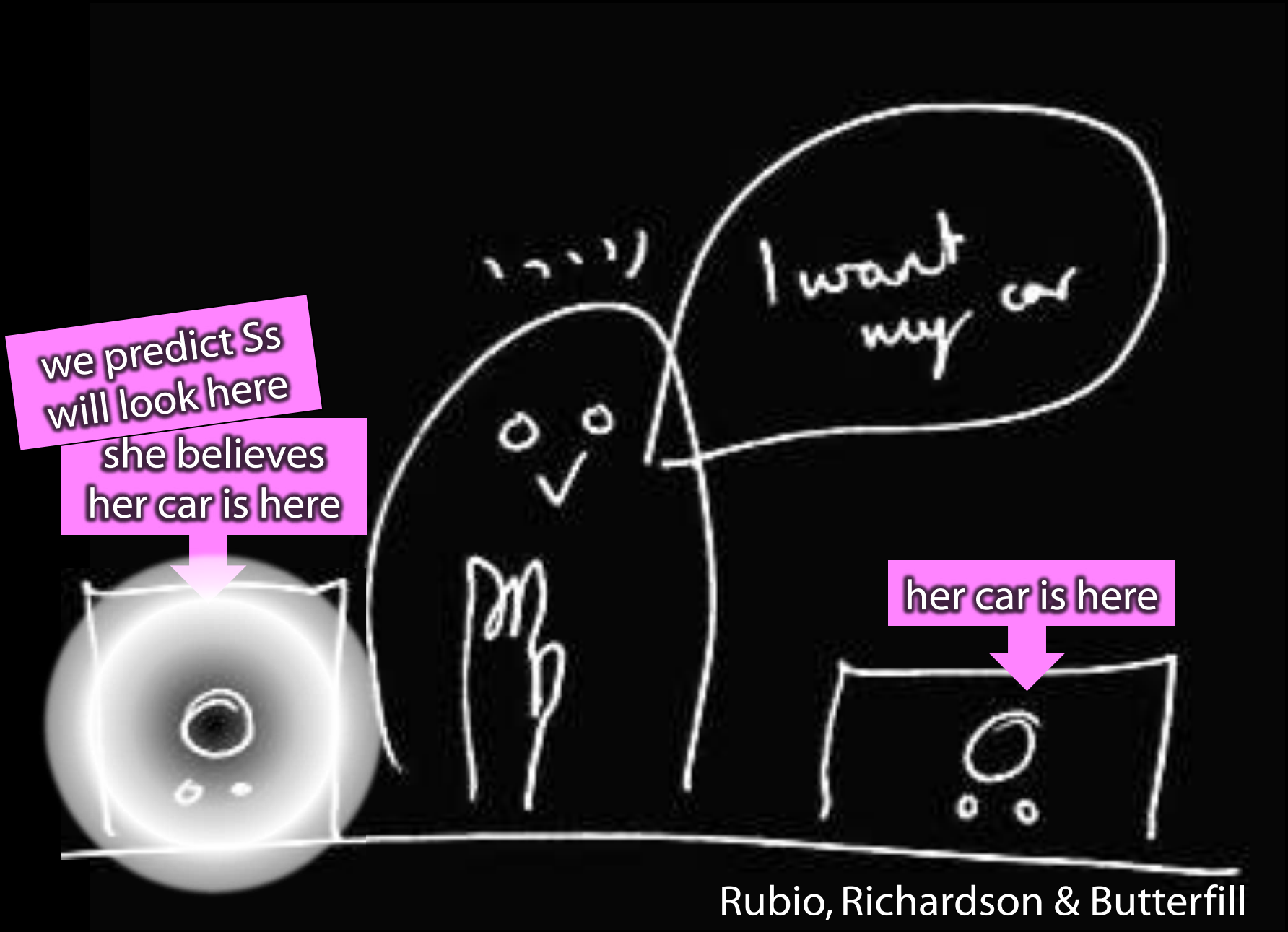
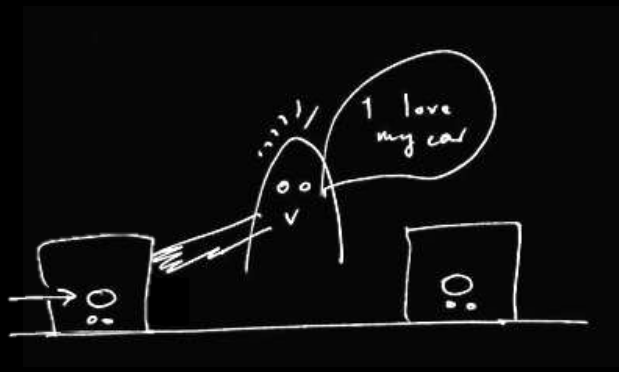
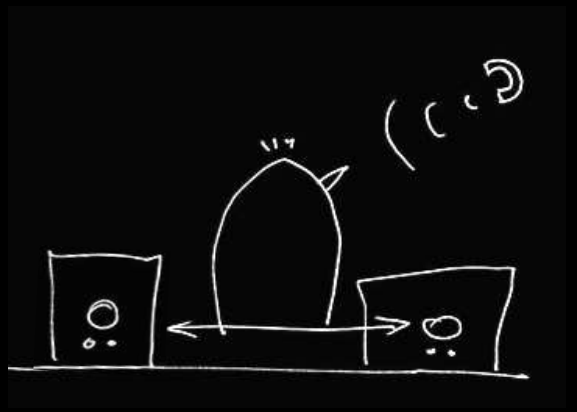

we predict Ss will look here
she believes her car is here
I want my car
her car is here
Rubio, Richardson & Butterfill





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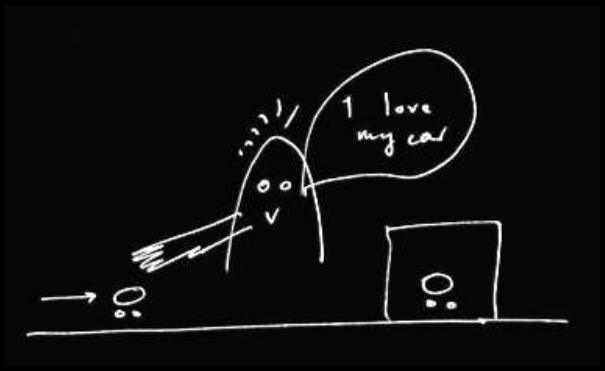
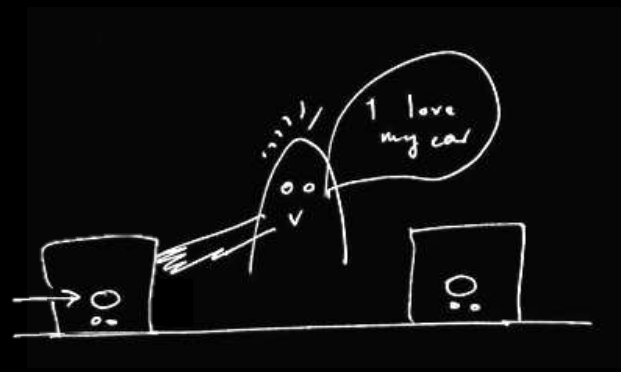
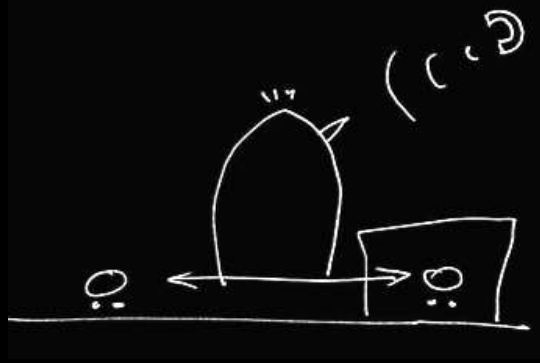
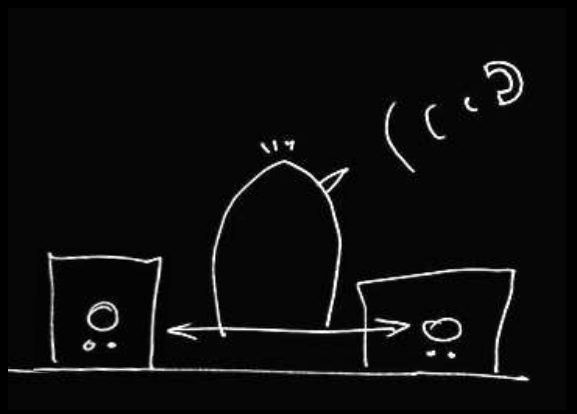


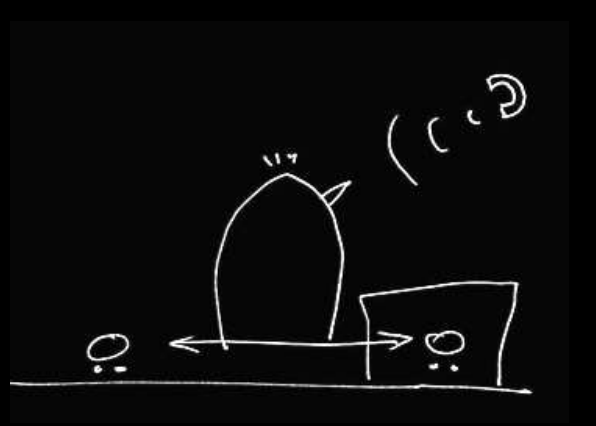






Rubio, Richardson & Butterfill

2



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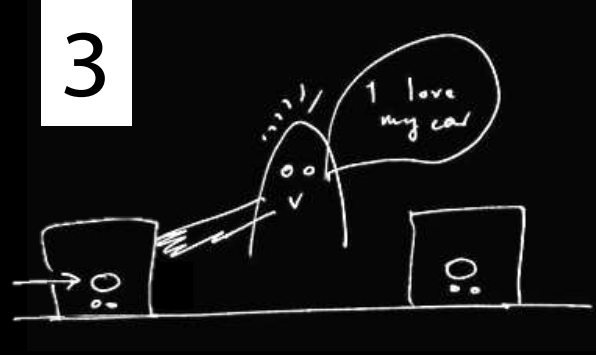
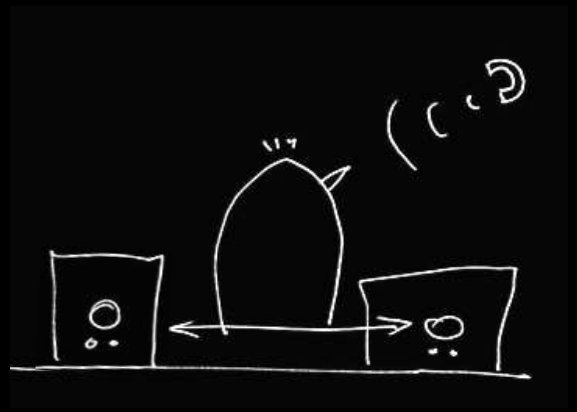
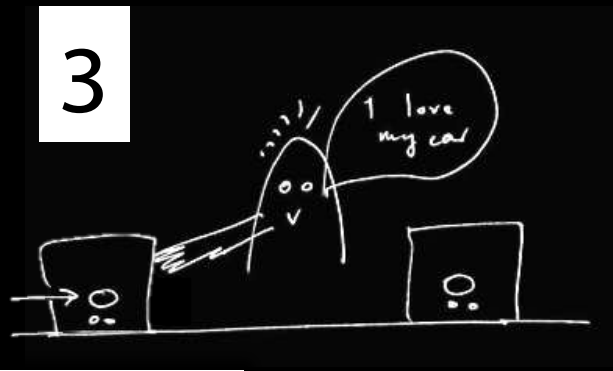




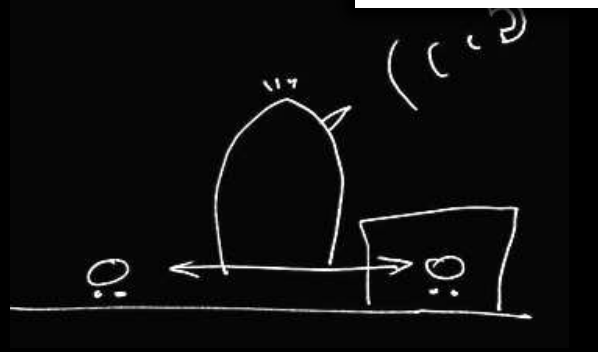
Rubio, Richardson & Butterfill

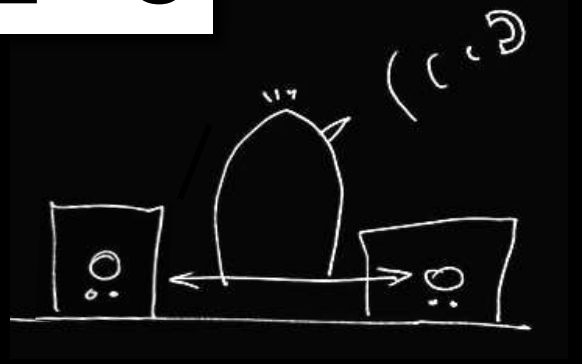
2

3



belief: 2 ≈ 3



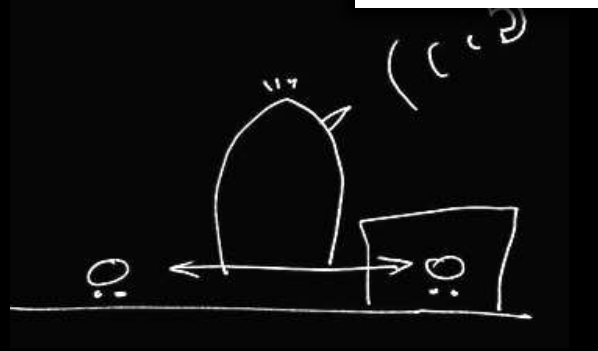


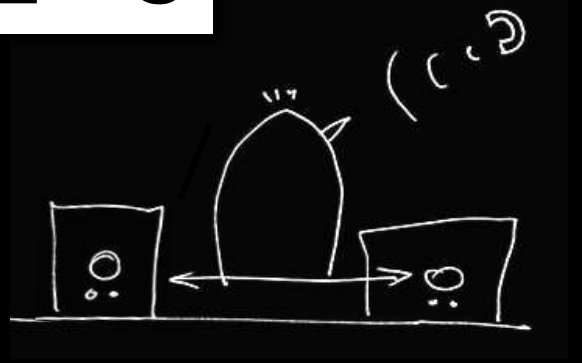
Rubio, Richardson & Butterfill

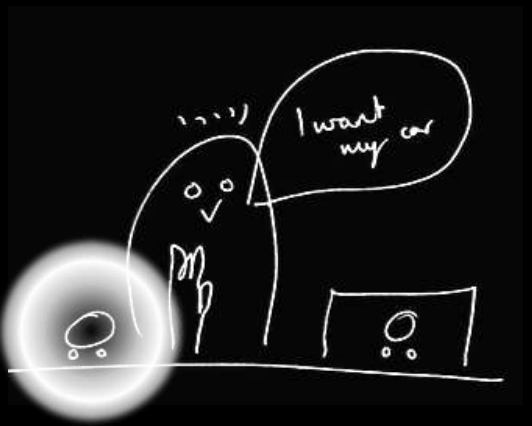
2

3

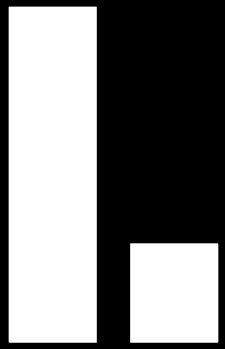
belief: 2 ≈ 3





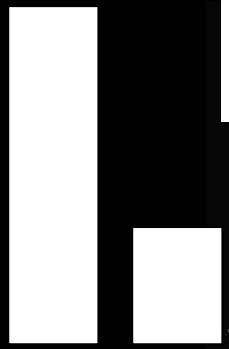


Rubio, Richardson & Butterfill



left right

2



left right

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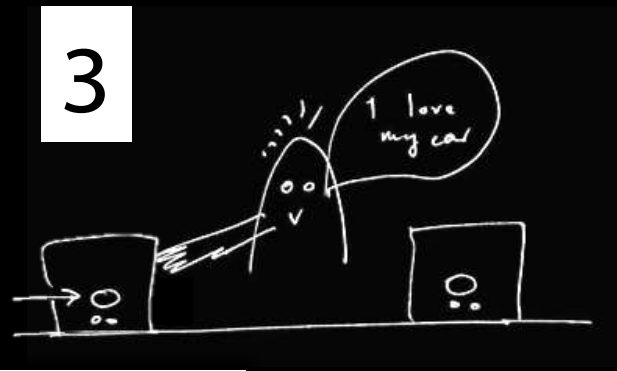
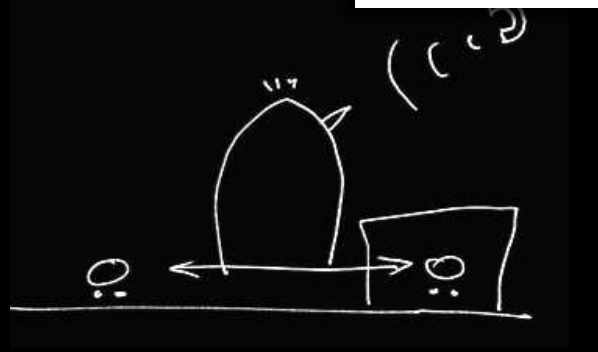
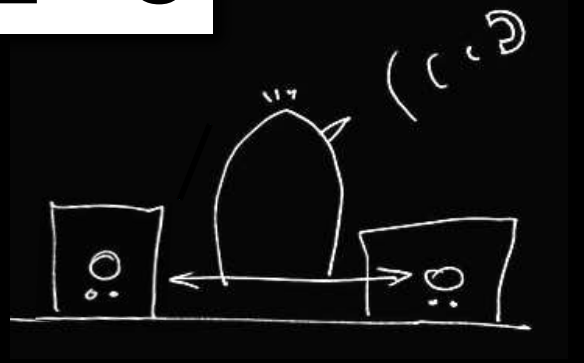
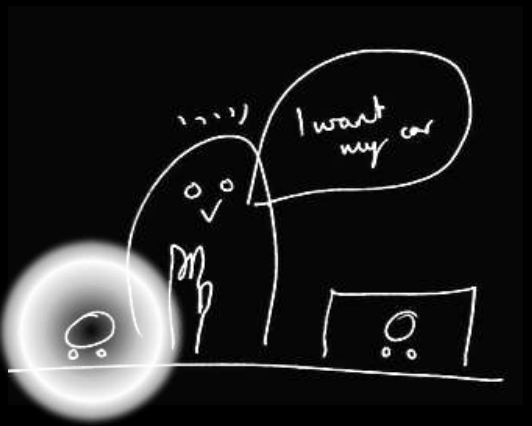


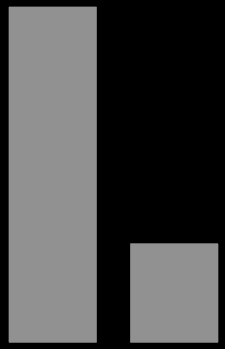
belief: $2 \approx 3$







Rubio, Richardson & Butterfill

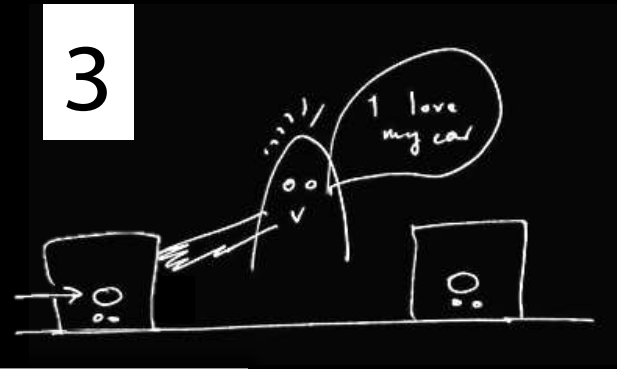


left right

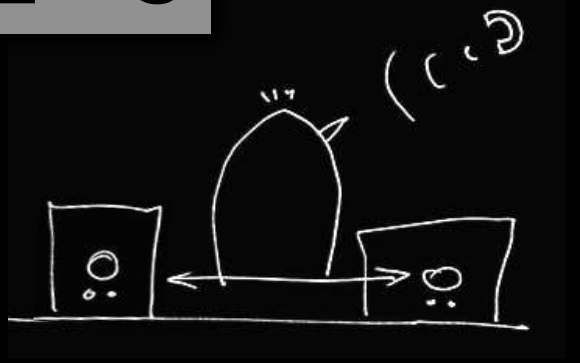
2

left right

3

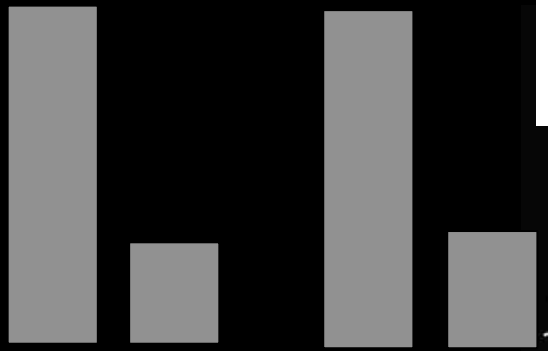


belief: $2 \approx 3$



registration: $2 \not\approx 3$

Rubio, Richardson & Butterfill

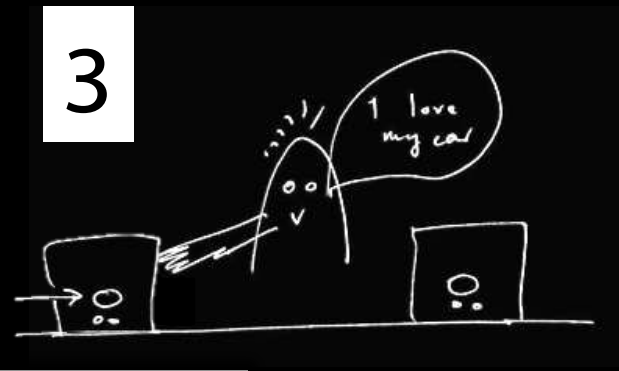


left right

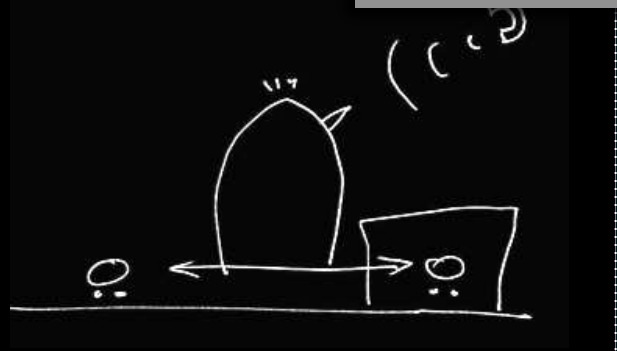
2

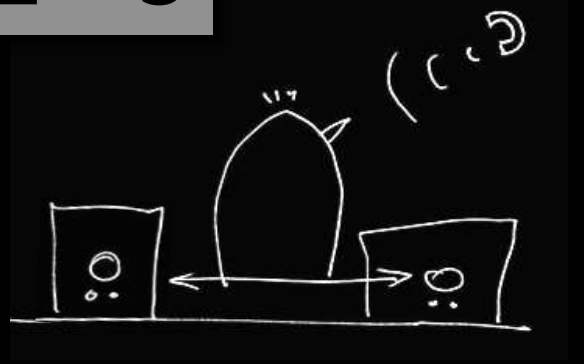
left right

3



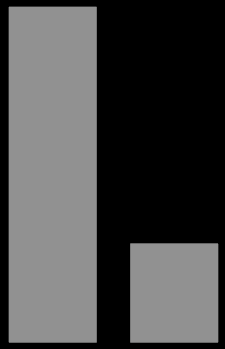
belief: $2 \approx 3$





registration: $2 \not\approx 3$

Rubio, Richardson & Butterfill



left right

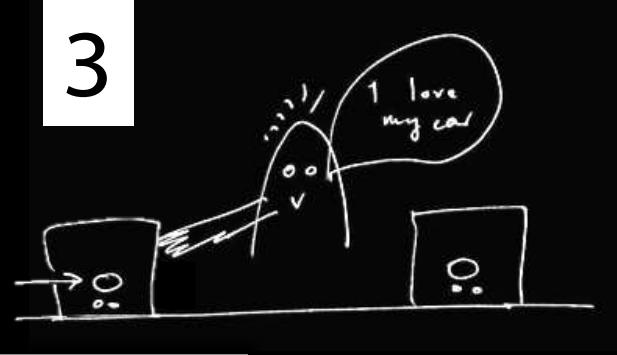
2

left right

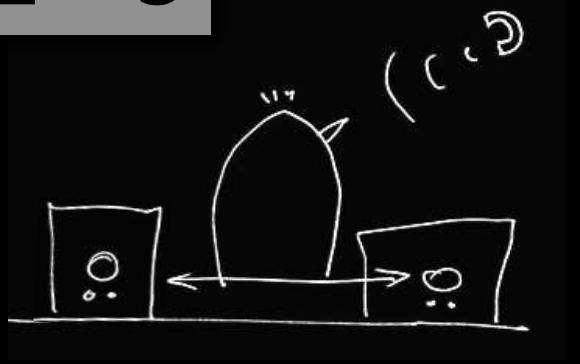
3

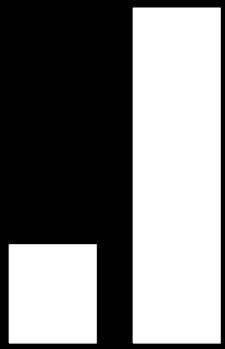
2

3



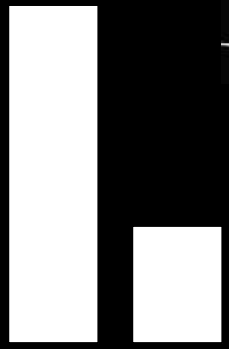
belief: $2 \approx 3$





left right

2

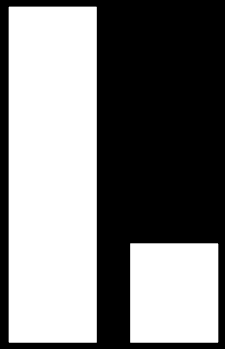


left right

3

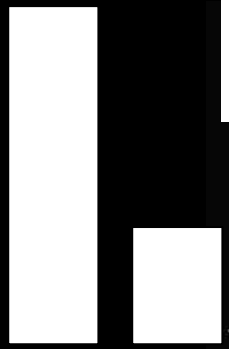
registration: $2 \not\approx 3$

Rubio, Richardson & Butterfill



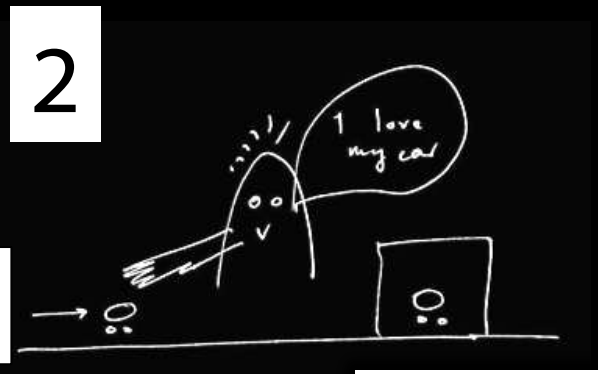
left right

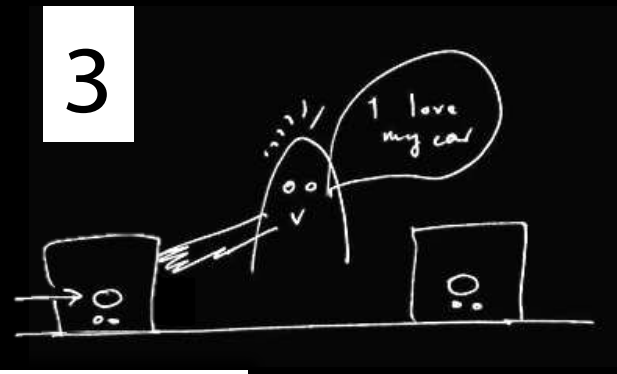
2



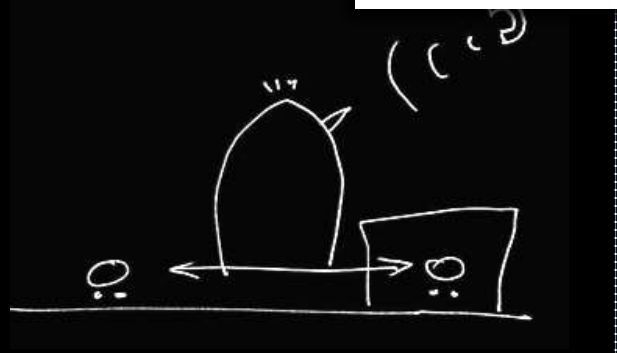
left right

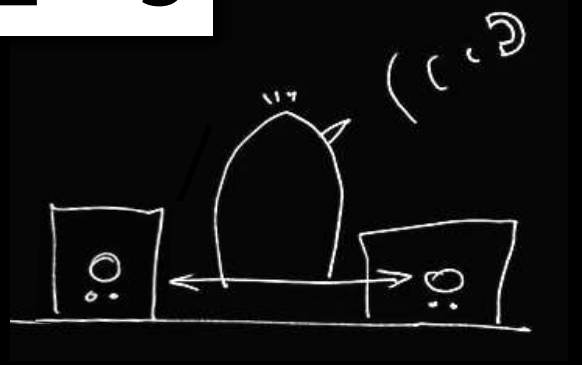
3

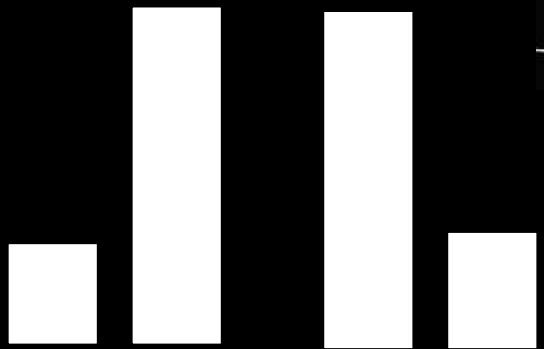




belief: $2 \approx 3$







left right

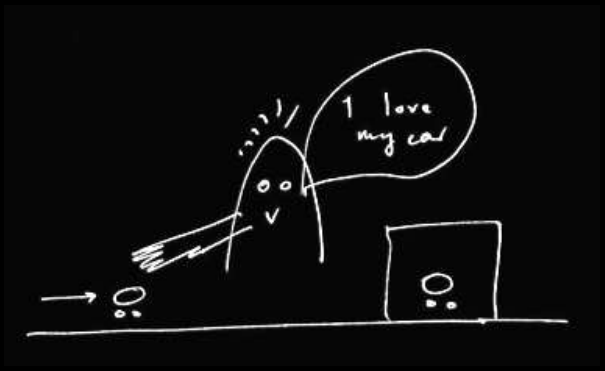
2

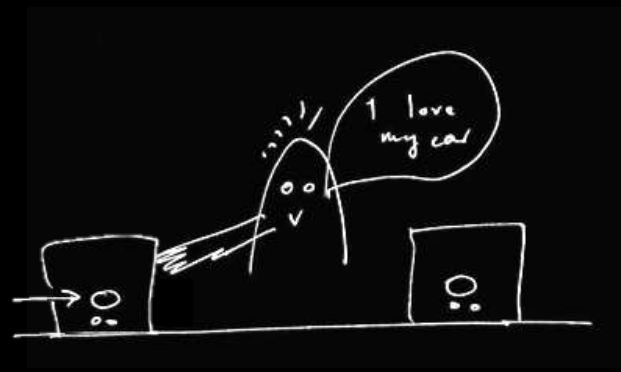
left right

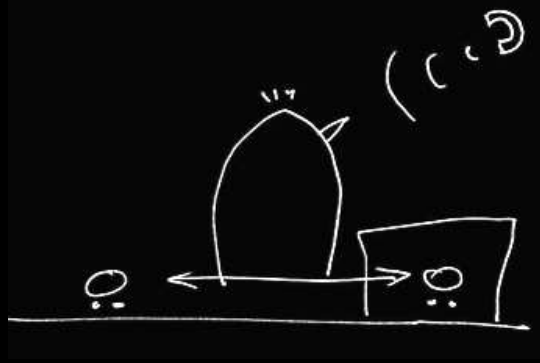
3

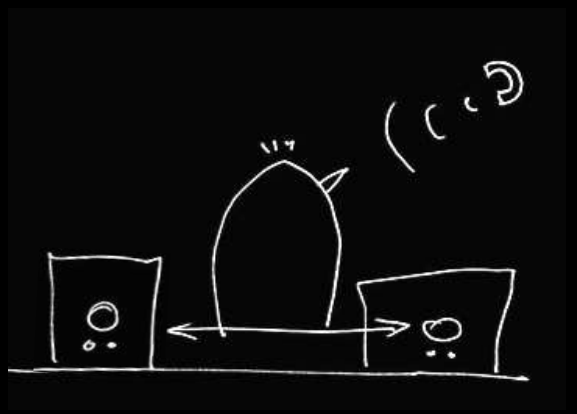
registration: $2 \not\approx 3$

Rubio, Richardson & Butterfill

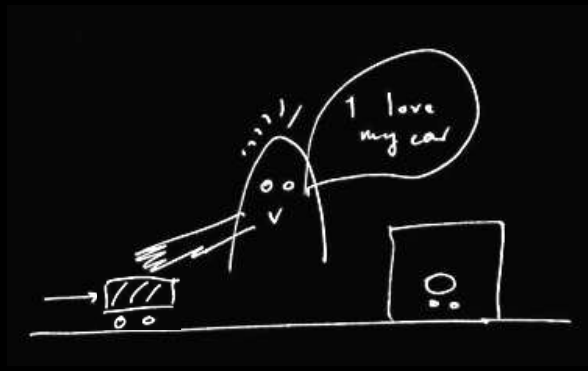


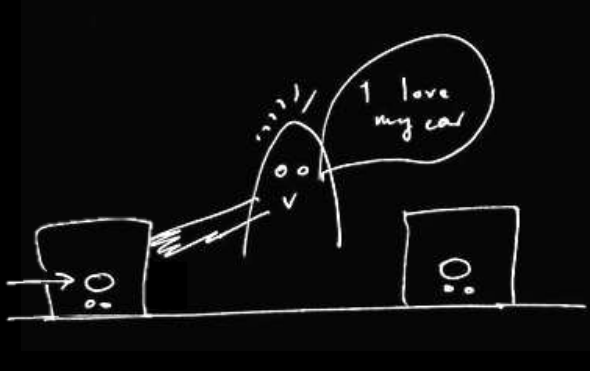


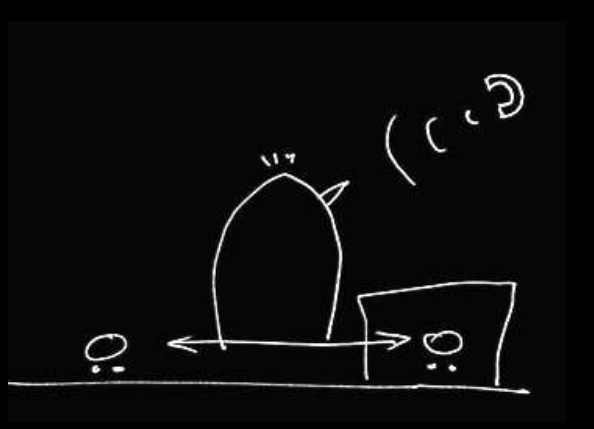


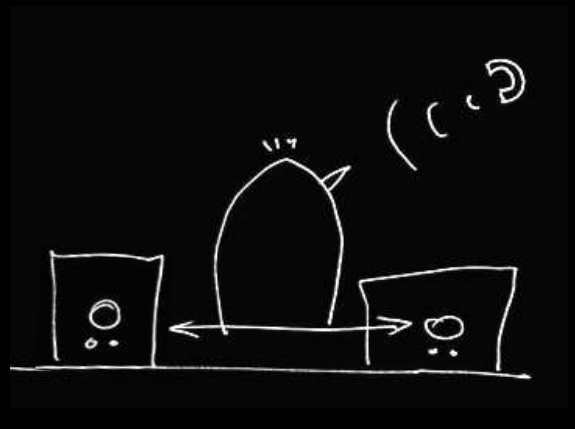


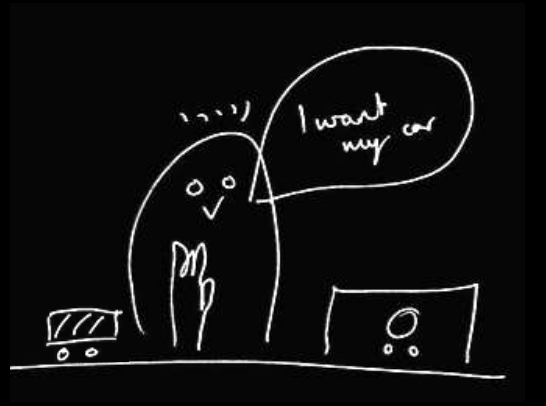
Rubio, Richardson & Butterfill



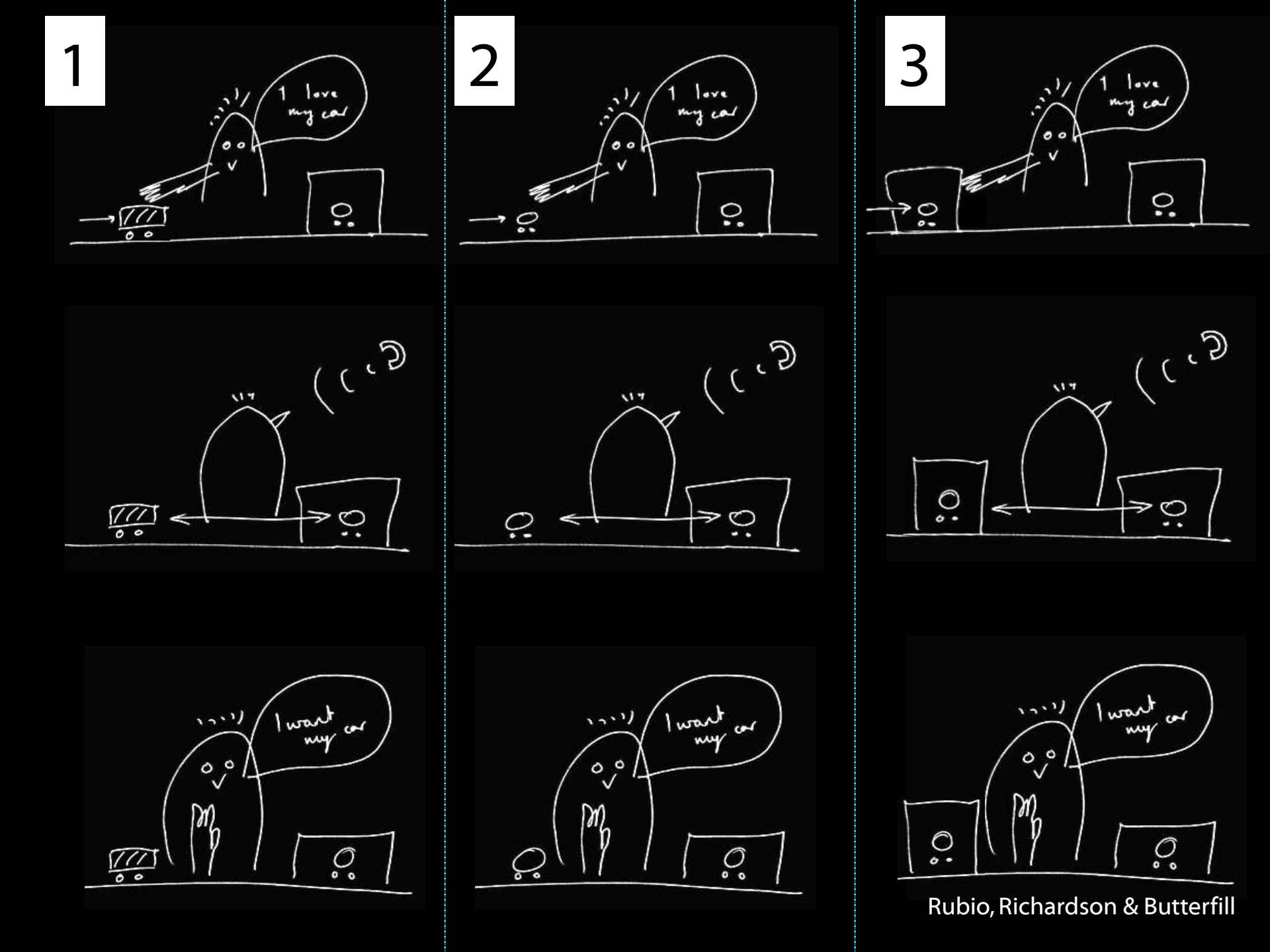




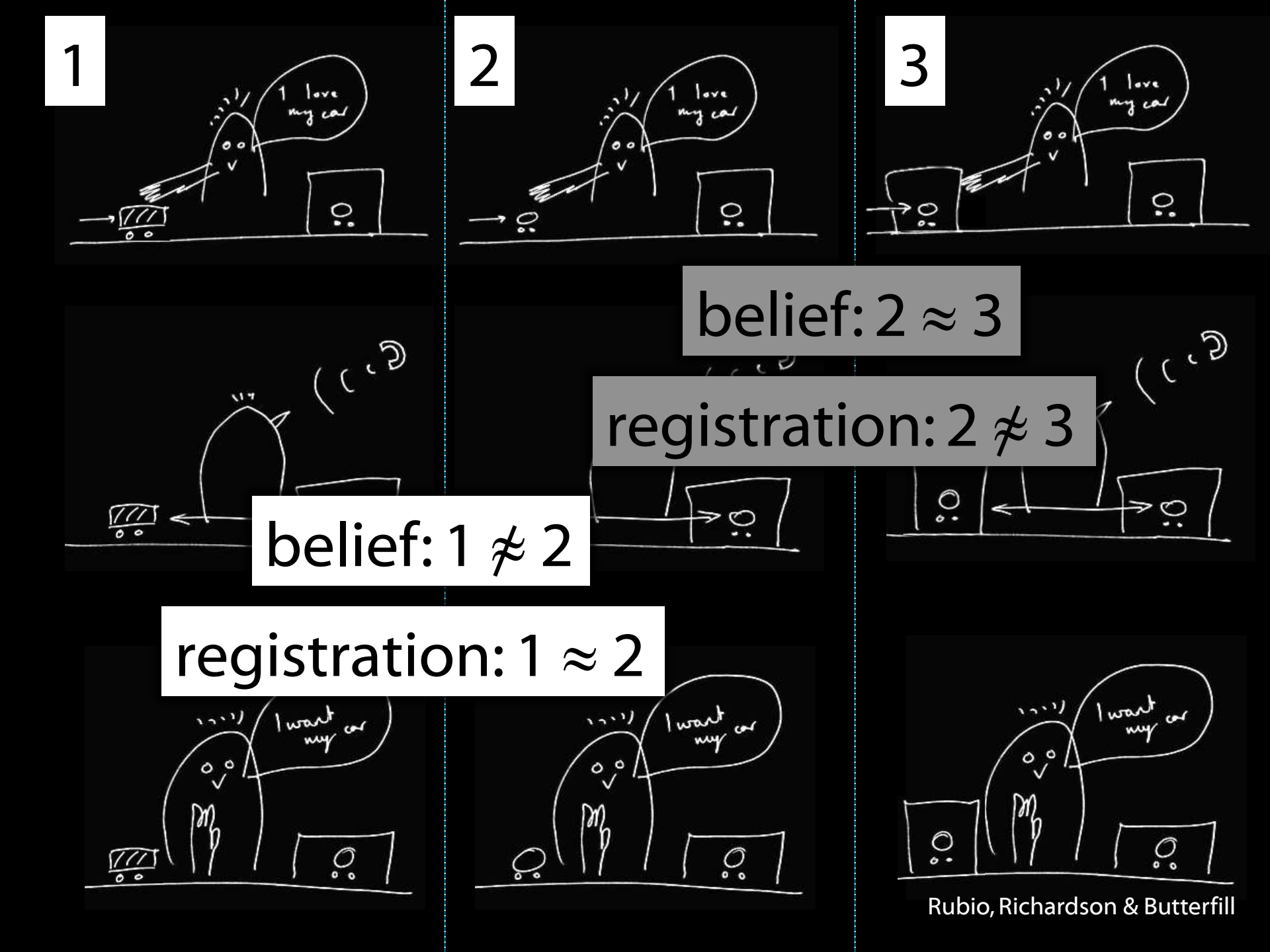




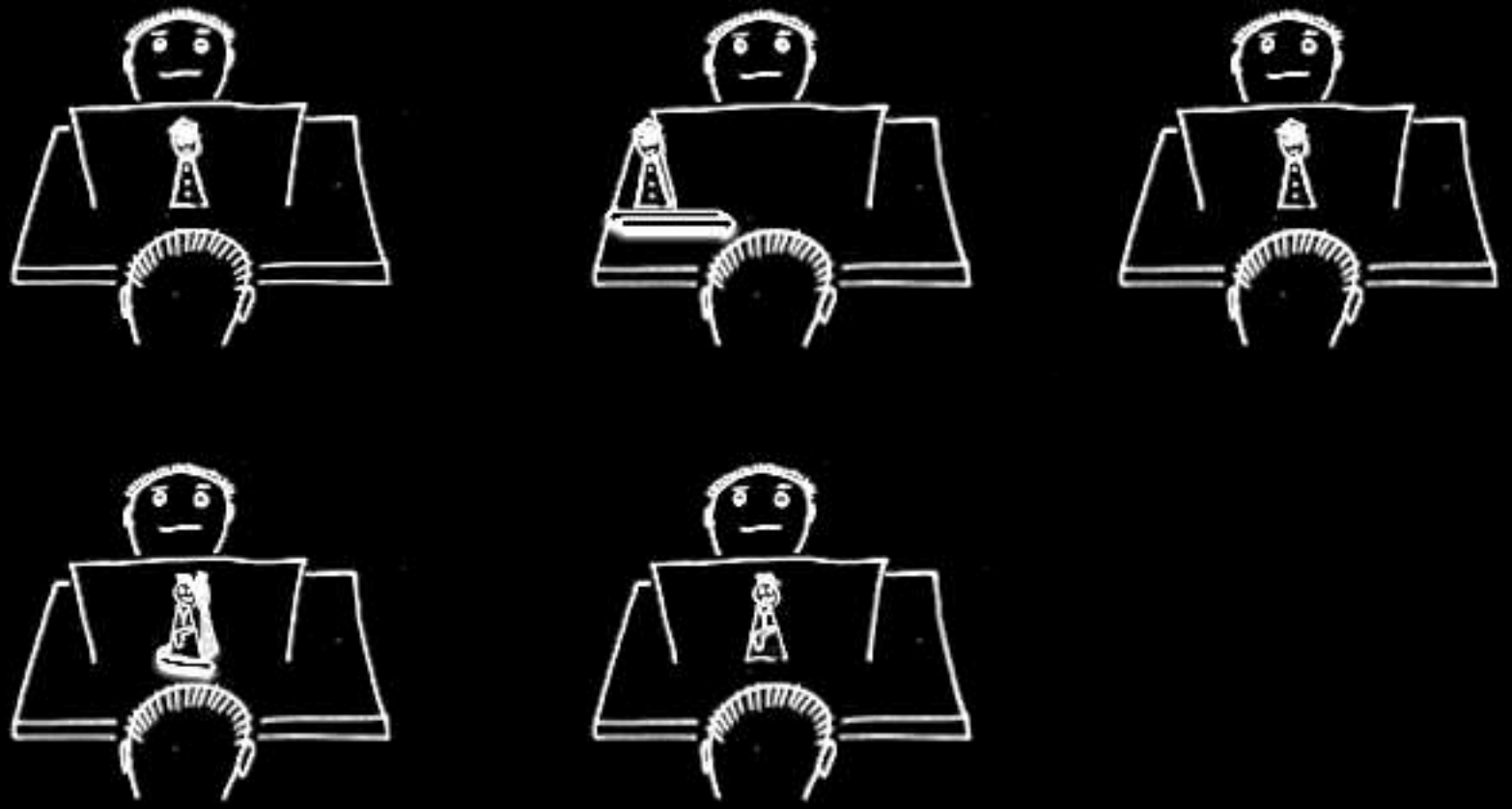
Rubio, Richardson & Butterfill

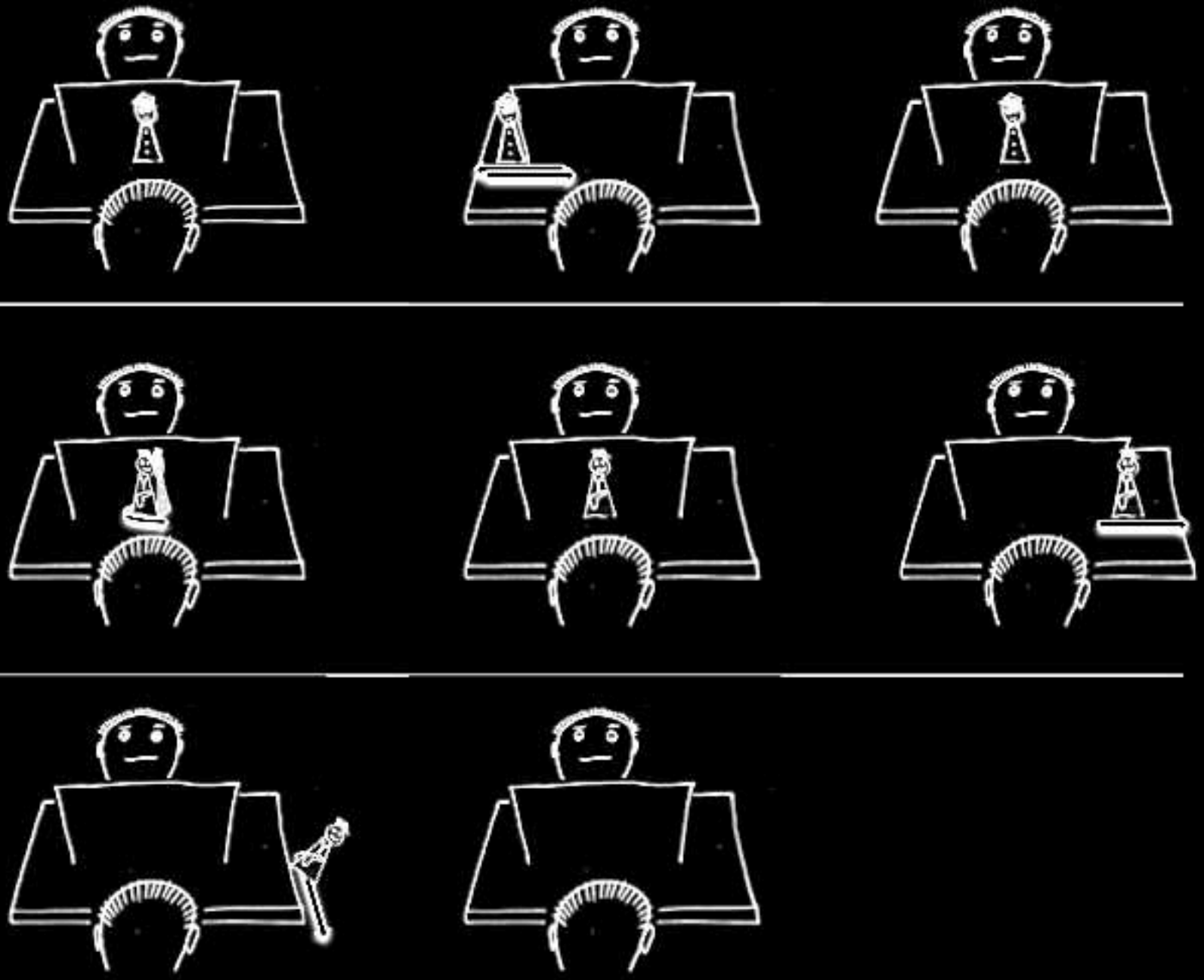


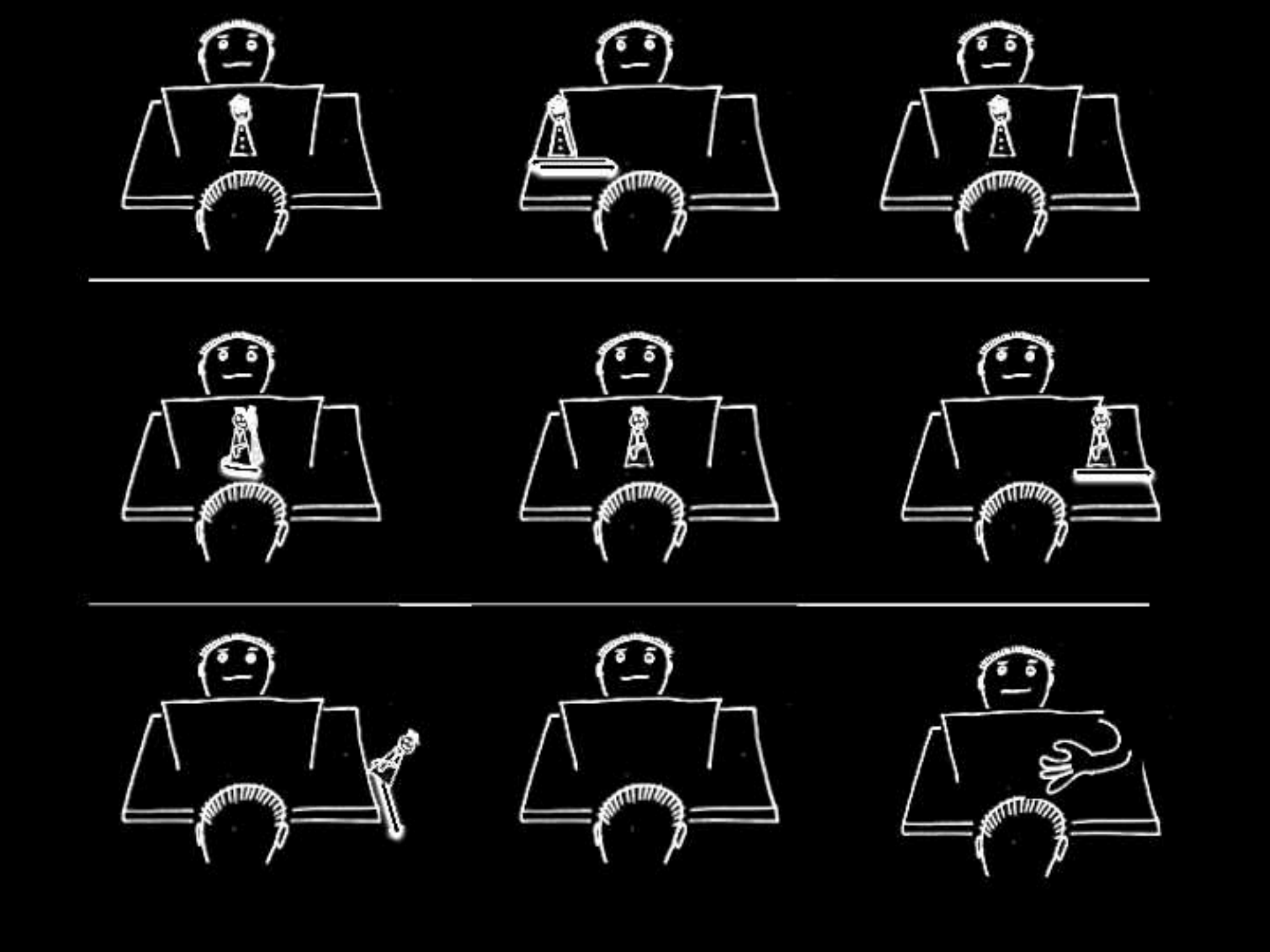
Rubio, Richardson & Butterfill


1
I love my car
2
I love my car
3
I love my car
belief: 2 ≈ 3
registration: 2 ≉ 3
belief: 1 ≉ 2
registration: 1 ≈ 2
I want my car
I want my car
I want my car
Rubio, Richardson & Butterfill

	False belief about location	False belief about identity
Subjects represent registration	*pass*	*fail*
Subjects represent beliefs	*pass*	*pass*







1. There are subjects who can pass A-tasks but cannot pass B-tasks.

2. These subjects' success on A-tasks is explained by the fact that they **can** represent (false) beliefs *using a simple measure*

3. These subjects' failure on B-tasks is explained by the fact that they **cannot** represent (false) beliefs *using a sophisticated measure*

1. There are subjects who can pass A-tasks but cannot pass B-tasks.

2. These subjects' success on A-tasks is explained by the fact that they **can** represent (false) beliefs *using a simple measure in a modular process*

3. These subjects' failure on B-tasks is explained by the fact that they **cannot** represent (false) beliefs *using a sophisticated measure in a non-modular process*