13: Twin Interface Problems

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1.   An Interface Problem

Background assumptions

1. Motor representations specify goals.

2. Intentions specify goals.

3. Some actions involve both intention and motor representation.

4. Intention and motor representation are not inferentially integrated (because representational format?).

Interface problem: How does it come about that intentions and motor representations ever specify outcomes that non-accidentally match?
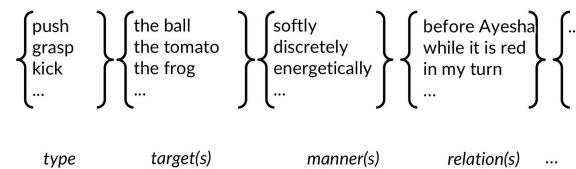
Two collections of outcomes, A and B, *match* in a particular context just if, in that context, either the occurrence of the A-outcomes would normally constitute or cause, at least partially, the occurrence of the B-outcomes or vice versa. To illustrate, one way of matching is for the B-outcomes to be the A-outcomes. Another way of matching is for the B-outcomes to stand to the A-outcomes as elements of a more detailed plan stand to those of a less detailed one.

'both mundane cases of action slips and pathological conditions, such as apraxia or anarchic hand syndrome (AHS), illustrate the existence of an interface problem' (Mylopoulos & Pacherie 2016, p. 7).

2.   Five Complications

Complication 1: outcomes have a complex anatomy comprising manipulation, target, form and more.

push grasp kick ...	the ball the tomato the frog ...	softly discretely energetically ...	before Ayesha while it is red in my turn ...	...
type	*target(s)*	*manner(s)*	*relation(s)*	*...*

Anatomy of a Goal

Complication 2: we can't think of the interface problem merely as a way of intentions setting problems to be solved by motor representations: instead, there may be multiple intentions at different scales, and in some cases an intention may operate at a smaller scale than a motor representation.

Complication 3: It's 'not just how motor representations are triggered by intentions, but how motor representations' sometimes nonaccidentally continue to match intentions as circumstances change in unforeseen ways 'throughout skill execution' (Fridland 2016, p. 19).

Complication 4: there is a related developmental problem: What is the process by which humans acquire abilities to ensure that their intentions and motor representations sometimes nonaccidentally match?

Complication 5: Imagination: intentions and motor representations can nonaccidentally match not only when we are acting but also when we are merely imagining acting.

3.   Mylopoulos and Pacherie's Proposal

'As defined by Tutiya et al., an executable concept of a type of movement is a representation, that could guide the formation of a volition, itself the proximal cause of a corresponding movement. Possession of an executable concept of a type of movement thus implies a capacity to form volitions that cause the production of movements that are instances of that type.' (Pacherie 2011, p. 7)

4.   A Puzzle about Thought, Experience and the Motoric

1.   In action observation, motor representations of outcomes underpin goal-tracking, and sometimes facilitate the identification of goals in thought.

2.   So where motor representations influence a thought about an action being directed to a particular outcome, there is normally a motor repre-

sentation of this outcome, or of a matching outcome.

3. But how could motor representations have content-respecting influences on thoughts given their inferential isolation?

5. The Twin Interface Problems

Interface Problem 1: intention -> motor representation

> How could intentions have content-respecting influences on motor representations given their inferential isolation?

Interface Problem 2: motor representation -> judgement

> How could motor representations have content-respecting influences on thoughts given their inferential isolation?

References

Fridland, E. (2016). Skill and motor control: Intelligence all the way down. *Philosophical Studies*, *174*(6), 1539–1560.

Mylopoulos, M. & Pacherie, E. (2016). Intentions and Motor Representations: The Interface Challenge. *Review of Philosophy and Psychology*, *forthcoming*, 1–20.

Pacherie, E. (2011). Nonconceptual Representations for Action and the Limits of Intentional Control. *Social Psychology*, *42*(1), 67–73.