

Mind: Architectures, Models, Formalisms

3. What language does the mind 'speak'? The Language of Thought Hypothesis (Fodor, 1975; 2000)

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The computational theory of mind (CTM)

- “[M]y goal in this book is not to *demonstrate* that psychological processes are computational, but to work out the consequences of assuming that they are.”
Fodor, J. A. (1975). *The language of thought*. Cambridge, MA: MIT Press, p. 39.
- The LOTH is seen as part of a larger theory on the workings of the mind known as **computationalism**, or CTM, according to which thoughts and thinking are Turing-like states/processes realized in the physical system that is the brain. The CTM is
 - a **representational** (realist) theory: propositional attitudes (e.g., S believes / thinks / desires / wills / ... (that) P) are relations between subjects and mental representations
 - a **causal-syntactic** theory: mental processes are (i) causal processes; they are (ii) defined over the syntax of mental representations
 - a theory that thought and thinking are **linguistic** or **language-like**, taking place in a language of thought (LOT) or Mentalese

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Mentalese (Fodor, 1975)

- An **internal medium** for thinking
- **Innate** (i.e., it "is known, but not learned"): a genetic base/disposition, perhaps species-unspecific
- **Semantically complete**, i.e., a semantic base containing all the conceptual resources (e.g., predicates) required for the learning of any natural language and the comprehension of any proposition that can be grasped by a human
- **Not a natural language**, but 'similarly' structured, i.e., it is propositional(-like) in essence: "Mentalese words" express concepts and can compose "Mentalese sentences" expressing propositions (which can be true or false)
- **Private**, in the sense that it does not follow public conventions, i.e., it is not a language to communicate with / for the expression of communicative intentions
- **Inaccessible to introspection**, i.e., the thinking agent can neither consciously access (represent) the LOT as such (as one can, say, access the grammar of a language, or parts of it) nor instances/tokens of it (e.g., mental 'sentences' in LOT)
- **Causally efficacious** – otherwise, we would have no justification for why we think at all; in other words, we think to act in the world (i.e., behave, at large) – and sometimes even rationally, for that matter

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"Thoughts are sentences in the head"

LOTH claims that mental states and processes (i.e., mental representations; thoughts) are essentially characterized by two attributes that are linguistic or language-like:

- Combinatorial syntax
- Compositional semantics

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Quantification and propositional attitudes

- What does it taste like?
- It tastes like strawberry. [I think / believe / ... it tastes like strawberry.]

tastes_like(x,y)

$\exists x \exists y (T(x,y))$

$\forall x \exists y (T(x,y))$

- What taste does it like?
- It likes vanilla taste. [I think / believe / am sure / ... it likes vanilla taste.]

likes_taste(x,y)

$\exists x \exists y (L(x,y))$

$\exists x \forall y (L(x,y))$

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The LOTH – arguments for

Fodor, 1975

- It's the only game in town. [Huh?]
- The only plausible psychological models presuppose linguistically structured mental representations. Why?
- **Productivity, systematicity, and inferential coherence** as aspects of human thought and thinking require it, i.e., they cannot be explained otherwise.
- Also, **natural language acquisition** must be 'supported' by a previous, innate, inner language or language-like function or set of functions. Namely, **learning concepts/lexical items** requires previously existing concepts.
- The latter, together with **decision making** and **perception**, requires the ability to make **inductive inferences**. Because "the only available models for ... these phenomena treat [them] as computational ... [they] presuppose that the organism has access to a language in which the computations are carried through" (Fodor, 1975, p. 51).

Fodor, 2000

- **Abduction**, i.e., the inference for the best explanation, appears to be the essential characteristic of human thought and thinking. [However, it is not (explicitly) stated how this requires an LOTH.]

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Fodor, 2000: A criticism of the New Synthesis

Turing's idea that mental processes are computations (i.e., that they are syntactically driven), together with Chomsky's idea that poverty of the stimulus arguments set a lower bound to the information a mind must have innately, are half of the New Synthesis. The rest is the "massive modularity" thesis and the claim that cognitive architecture is a Darwinian adaptation.

Fodor, J. A. (2000). *The mind doesn't work that way*. Cambridge, MA: MIT Press. p. 23

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Food for thought: Some (very) loose ends

- 1) For Fodor, perception, and thought/cognition at large, appear to be intimately connected to **logical inference**. In Fodor (1975), **induction** is invoked as a reason why an account of human thought/cognition requires the LOTH. In Fodor (2000), induction has been replaced with **abduction**; the LOTH is still OK, but computationalism at large is in trouble: computational processes are local processes, but abduction entails that thought /thinking is a global affair. However, how the LOTH remains OK is not elaborated on.
- 2) Although Fodor (2000) accepts that thought might be **modular** to a point, **information encapsulation** is rejected. So is **massive modularity**. This has obvious implications regarding the assumed globality of thought and thinking. It is not said how this impacts on the LOTH.
- 3) In sum, the LOTH, a major (if not the central) theory of the CTM, appears to be basically ignored in Fodor (2000). It actually is if Fodor isolates (causal) '**syntax**' and '**logical form**' with respect to computation, as he seems to do. But are not (causal) syntax and logical form essential(ly) attributes of an LOT?

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