



# Entanglement HCI

The next wave?

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Ergonomics

Cognition

Situated  
Embodied  
Affective

Entangled

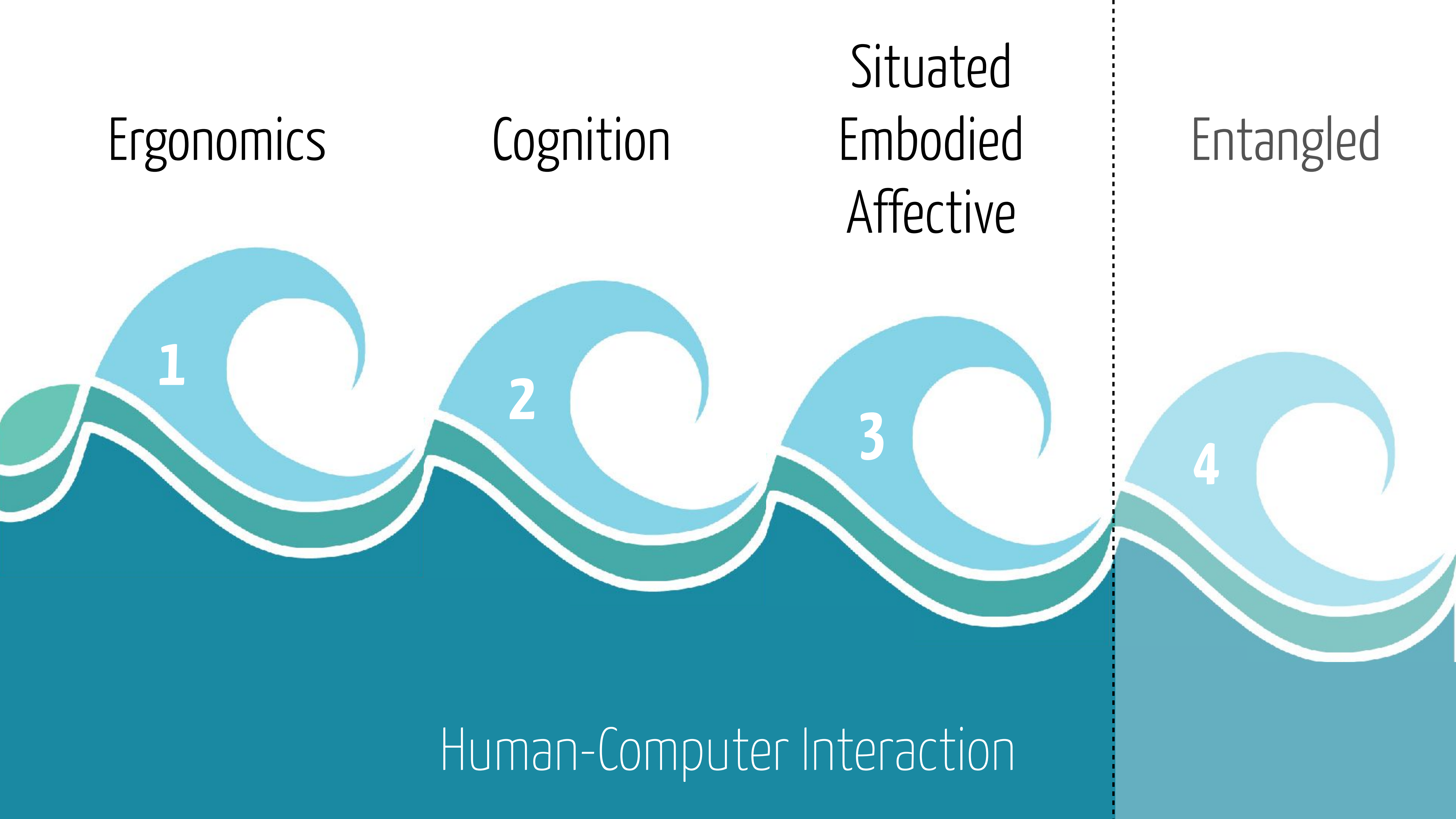
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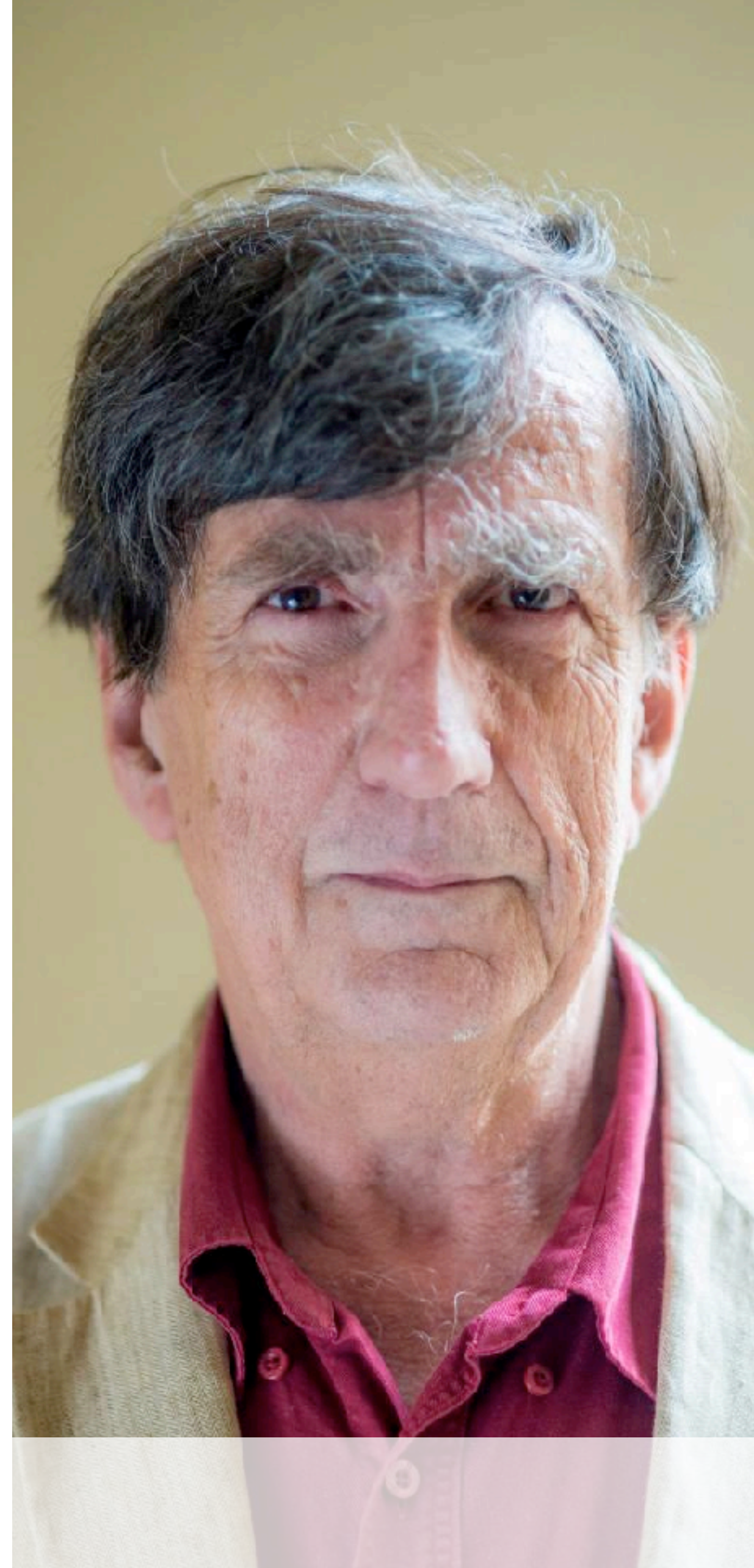
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Human-Computer Interaction



# Entanglement Theories



Actor Network Theory | Postphenomenology | Agential Realism



# No social aspects

... of otherwise asocial things.

There is no magic, hidden social force.  
Everything **is** social.



# Associations

Sociology is the only science »without object«

Rejecting a sociology of the social - towards a  
**sociology of associations**

Latour, B. (2005). *Reassembling the social: an introduction to actor-network-theory*. Oxford; New York: Oxford University Press.



# People & Things

- a) things are a mere backdrop for the social stage
- b) things reflect social structures (critical sociology)
- c) things determine social relations (Marx)

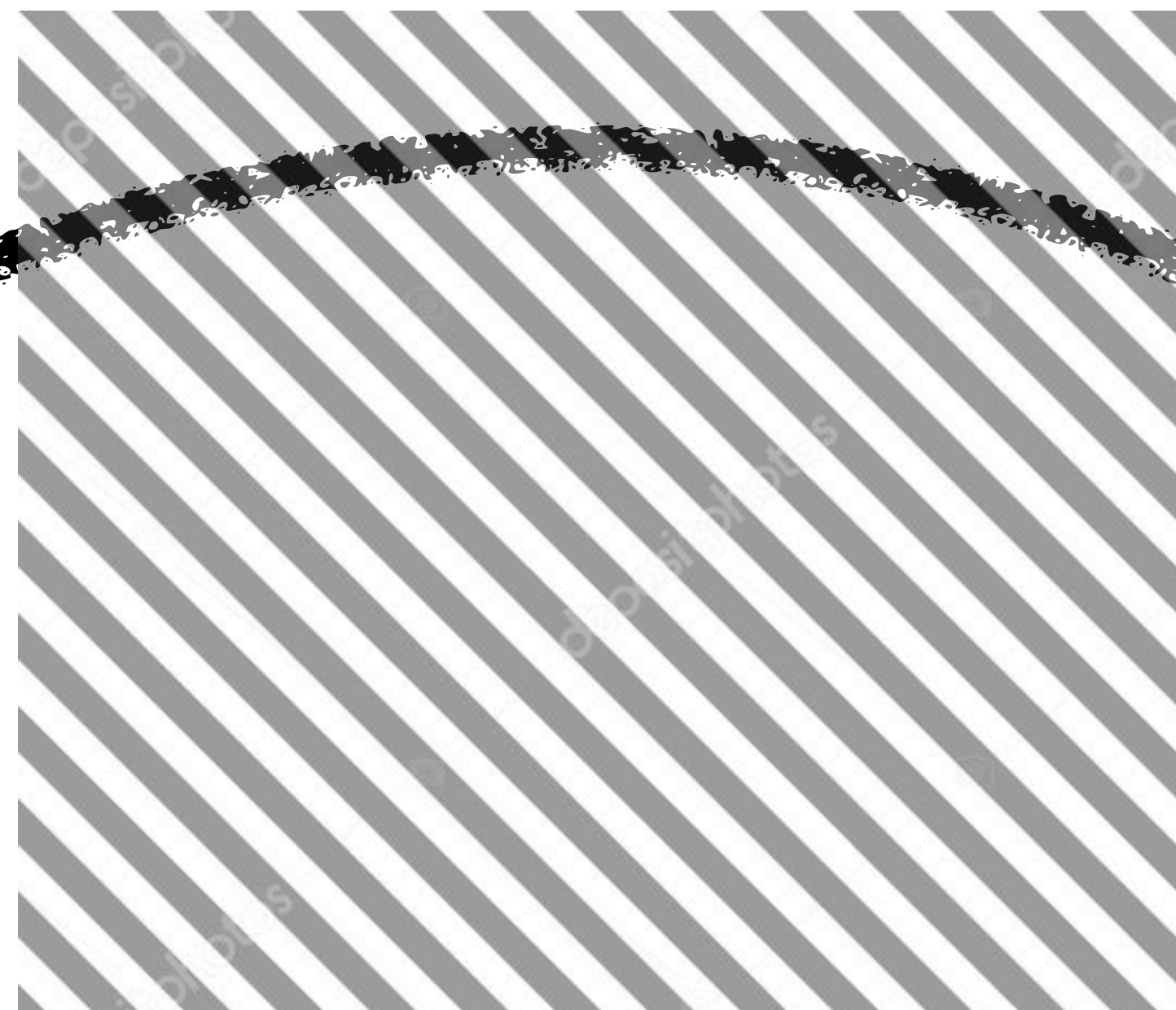
»many **metaphysical shades** between full causality and sheer inexistence«



# People & Things

**ZERO**

Backdrop for /  
reflection of  
the social



**FULL**

Determining  
social order



# Actors & Networks

- a) Humans and Non-humans are **ontologically inseparable** from the start - actors
- b) Actors are organised in a **networky style**
- c) Agency is a **network effect**  
... and things enact agency too.





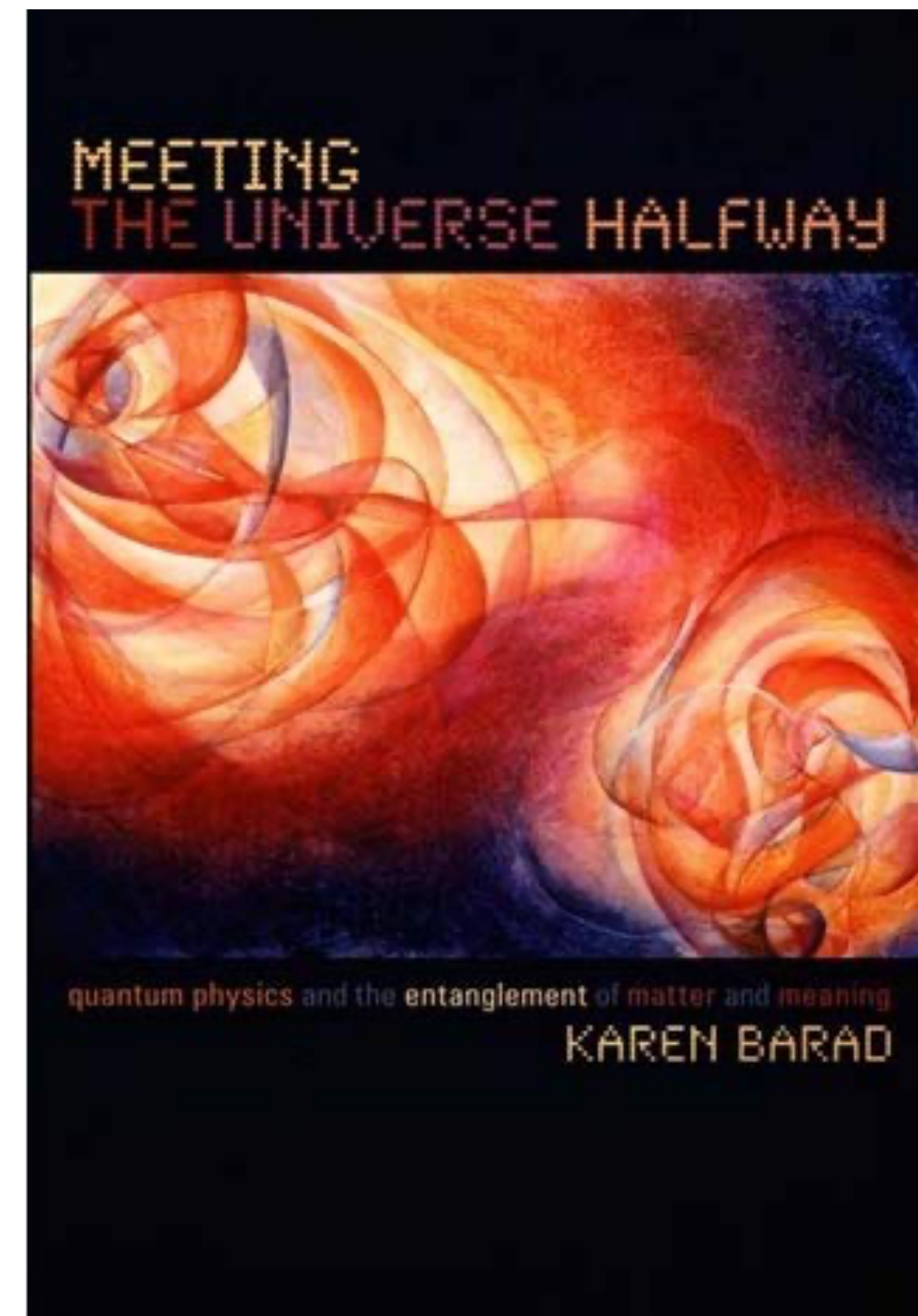
# Mediation

<b>Embodied</b> Relations	(I-Technology)-World
<b>Hermeneutic</b> Relations	I - (Technology-World)
<b>Alterity</b> Relations	I - Technology - (-World)
<b>Fusion</b> Relation	(I/Technology) - World
<b>Immersion</b> Relation	I <> Technology/World
<b>Augmented</b> Relation	



# Bohr & Butler

Combines the epistemology of Niels Bohr with the concept of **performativity** of Judith Butler



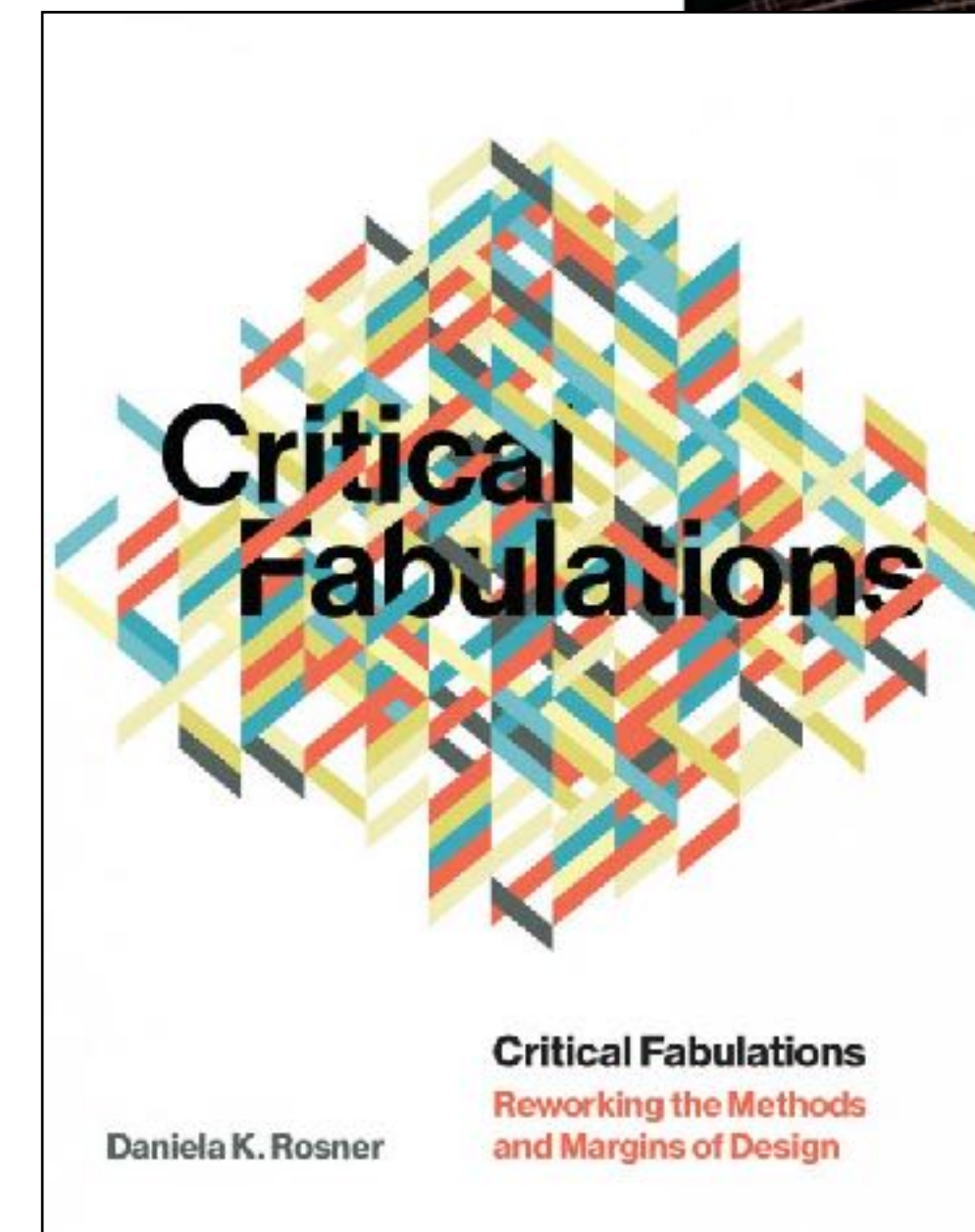
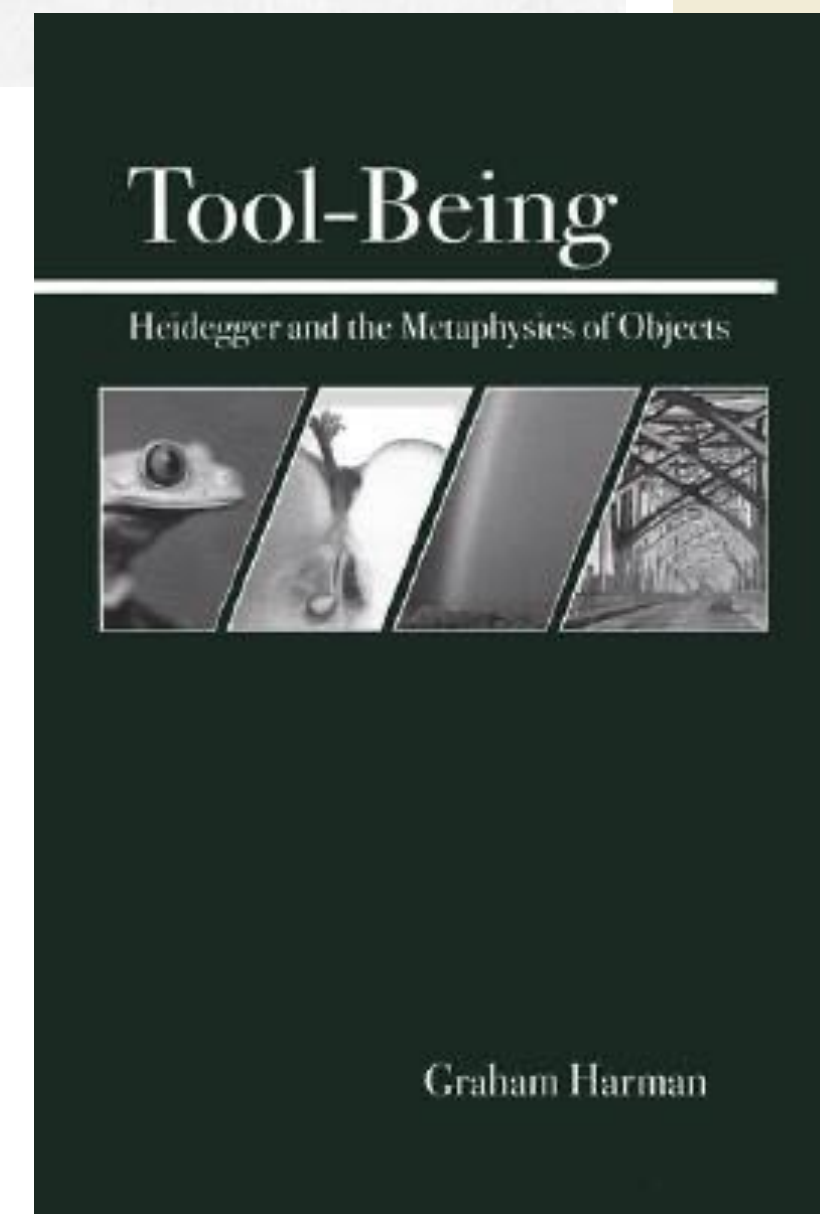
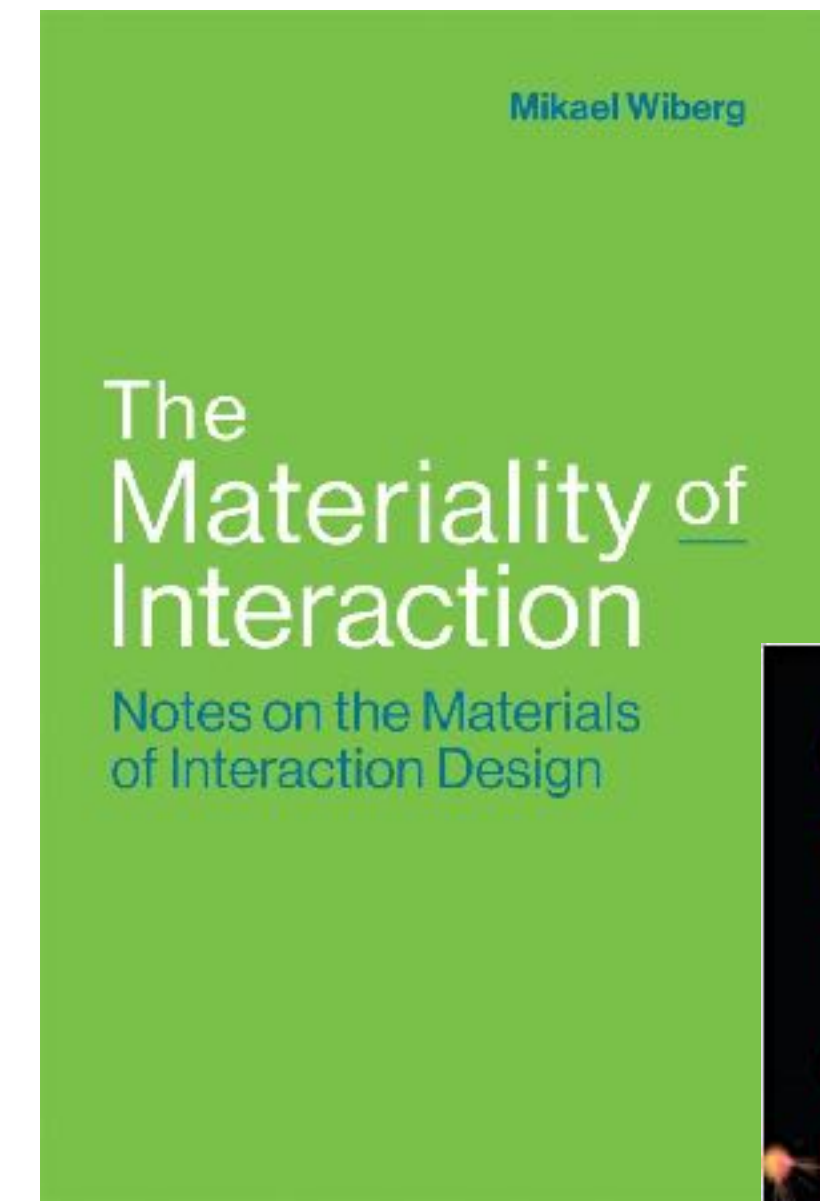
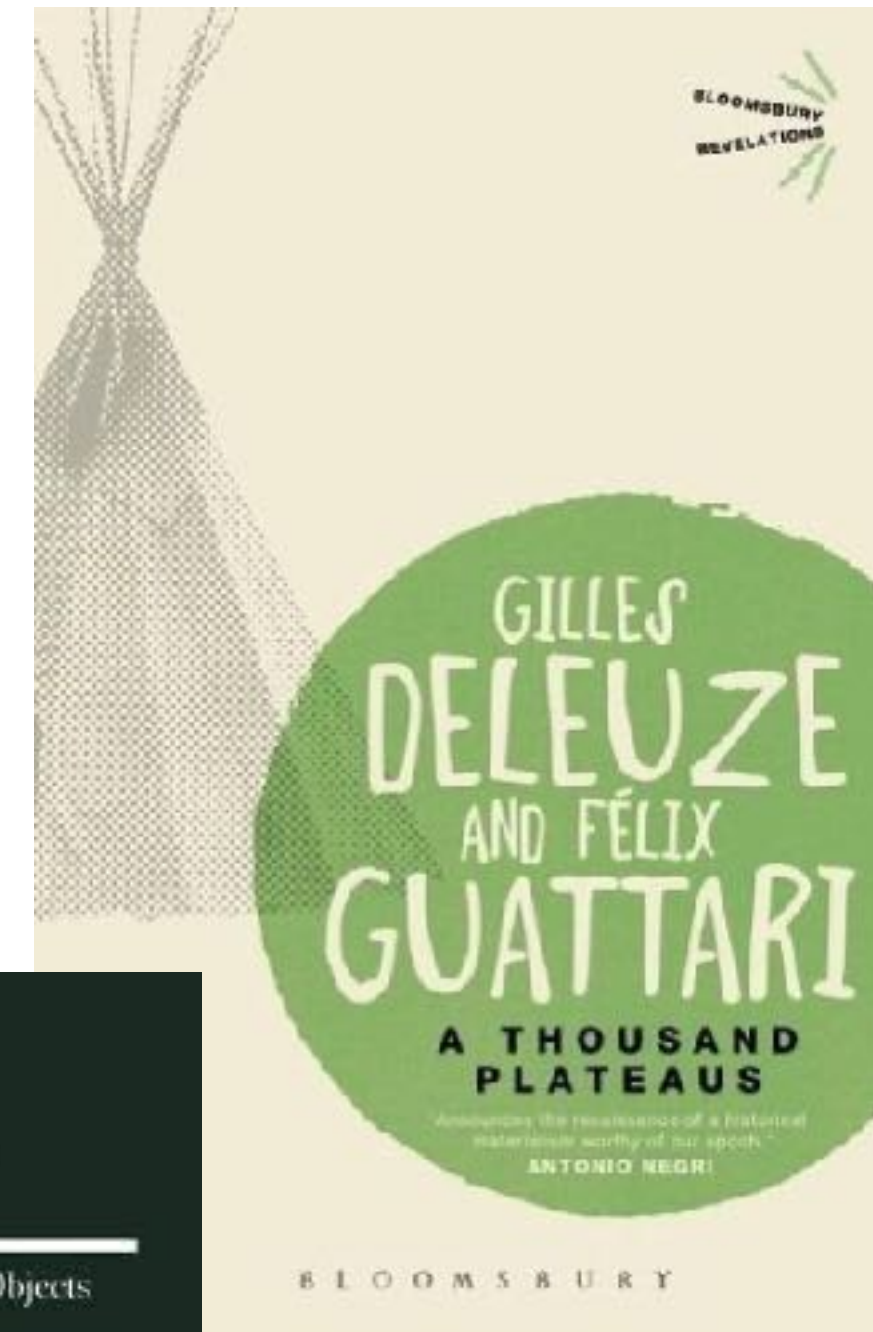
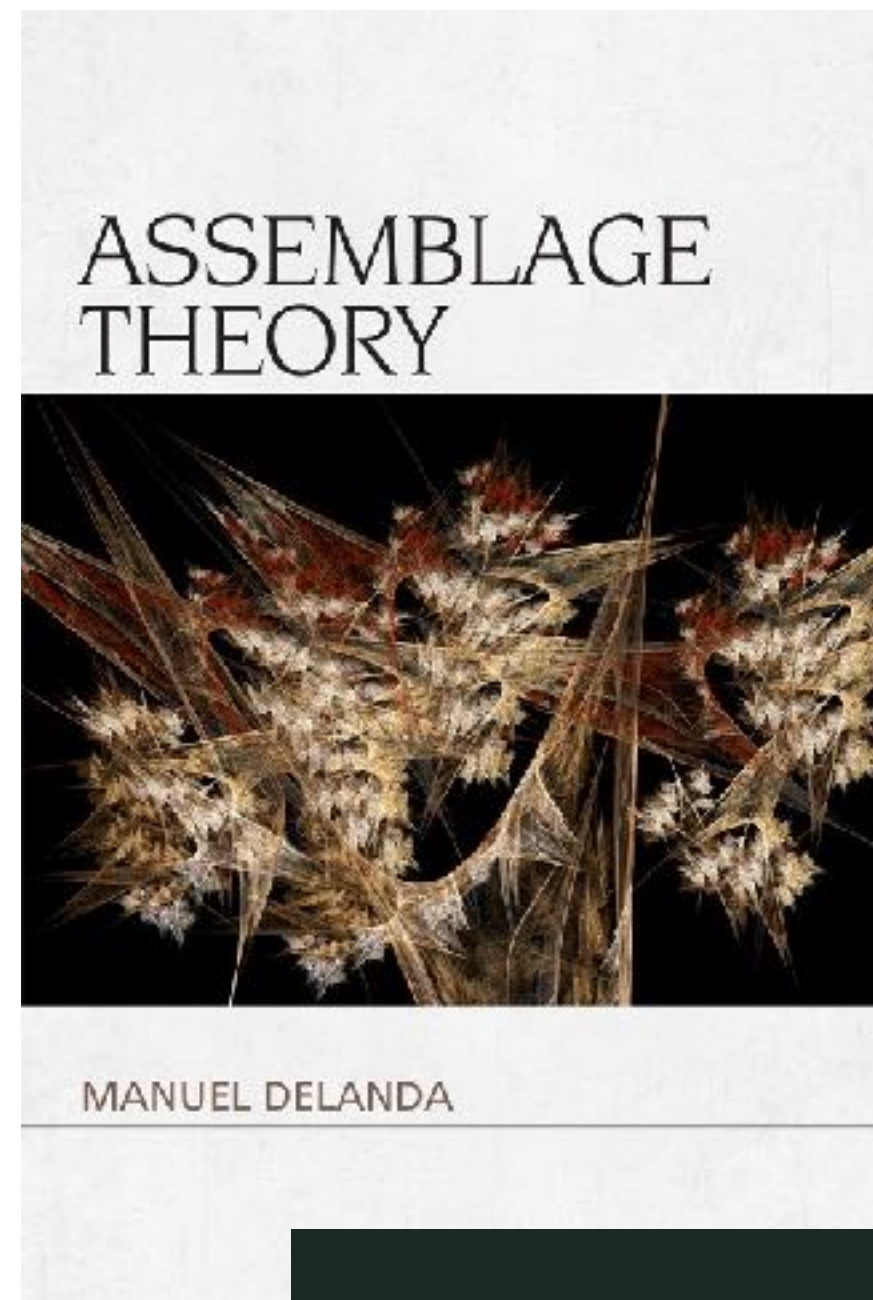


# Intra-Action

Agency is the result of the intra-action between humans and matter.

Humans and matter in fact are **mutually constituted** by this intra-action.

Many more...



# Implications

We cannot just design things, we always **(re-)configure** networks of associations in which **agency** is enacted over time. Humans and technology are ontologically entangled, they are **mutually constitutive**.



# Who we are

We are not designing things or interactions, we **(re-)configure** networks of associations which enact phenomena - situated & fluid, but not random.

Humans and technology are ontologically entangled, they are **mutually constitutive**. Who we are is shaped by the tools we create for us.



# Many Ways of Knowing

Knowledge production is a materially discursive practice of understanding enacted **phenomena** and identifying causal relationships in **configurations**.

The problem with **intermediary knowledge**...

**Rigour** is careful engagement with configurations and differences.



# Ethics & Responsibility

In **tracing** the associations through the **disclosive analysis** of phenomena and by making the agential cuts **visible**, our responsibility in re-configuring the socio-technical assemblages that make up our lives becomes clear. Our choices matter, quite literally.

Does the technology we design make us **who we want to be**? Moving beyond anthropocentrism.





# Designing, Making, Mattering

Beyond users and user-centred design,  
towards designing for all actors

**Meaningful Design** encompasses the political mattering of things through which we make sense of us in the world

**Participatory Speculation** and mattering of future socio-technical configurations



# Conclusion

An **ethico-onto-epistemological** perspective

Is it a *new wave*?

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