

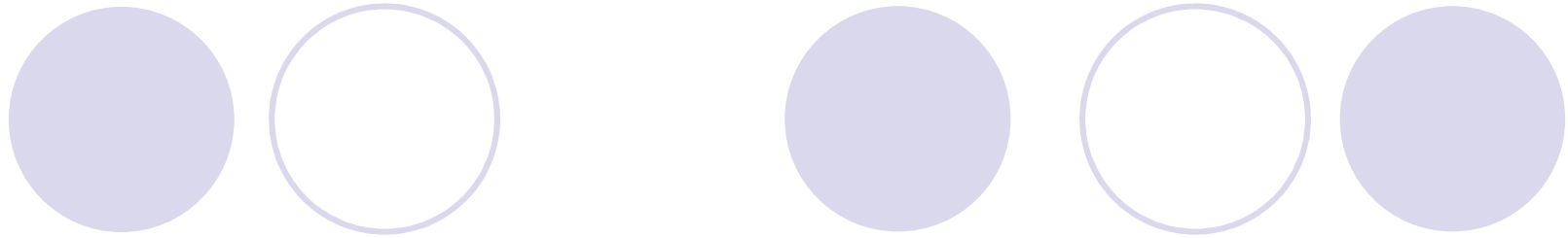


Difference and Robustness

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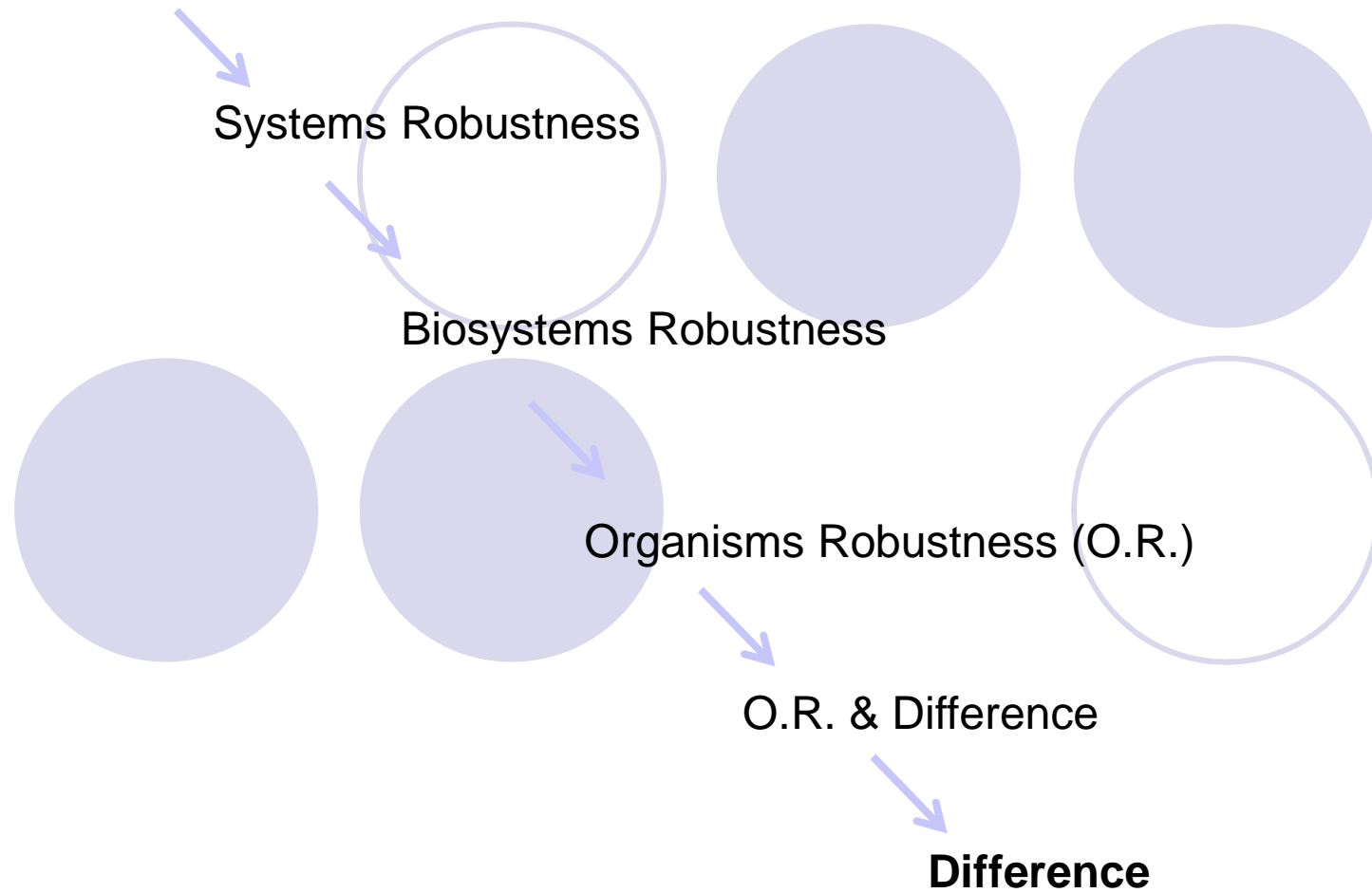
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- 1. Introduction: from robustness to difference
- 2. The ontology of difference
- 3. Conclusions: the difference as the ontological basis of organisms robustness

1. Introduction: from robustness to difference

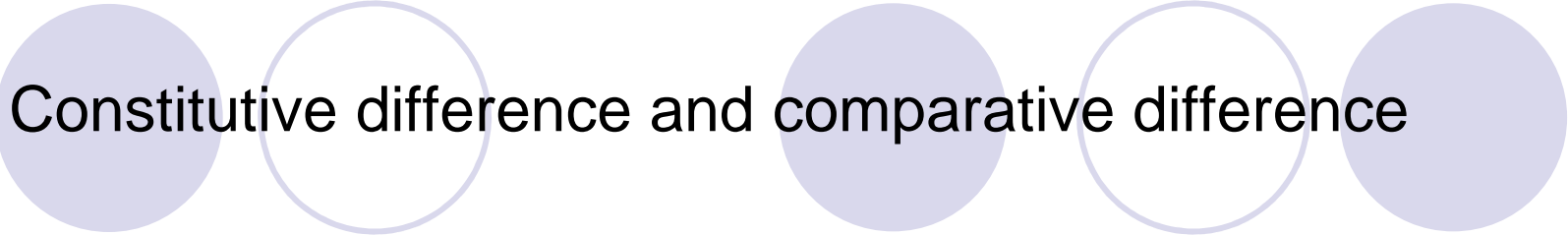
Robustness





2. The Ontology of Difference

- 2.1. Constitutive difference and comparative difference
- 2.2. The unity of differences in the final difference
- 2.3. The intelligibility of the final difference



2.1. Constitutive difference and comparative difference

- Aristotle's Biology: a biology of differences
- Comparative differences: logical (*logikos*), static; it distinguishes, separates, compares, classifies; "A differs from B in this or that trait"
- Constitutive difference: physical (*physikos*), dynamic; it constitutes, develops, produces ontogenesis; "A differentiates itself", "A follows a process of differentiation"
- Comparative differences are a byproduct of the constitutive
- But, an organism, constituted by differences, in plural, can still be a unique organism? There exists a final and unique difference?



2.2. The unity of differences in the final difference

- “The difference is the form in the matter” (Aristotle, *On the Parts of Animals*, 643a 24)
- Unity of matter and form (*Metaphysics*, VIII, 6; *On the Soul*, II, 1; *PA*, I)
- The constitutive difference is the organism itself
- But, could we know this individual form we call constitutive difference? Which is the relationship between *physis* and *logos*, i.e. between the constitutive difference and our concepts?

2.3. The intelligibility of the final difference

- A bridge from *physis* to *logos*?
- First attempt: The (failed) reform of definition
 - 1. Genera to one genus; 2. genus to species; 3. species to differences; 4. differences to the final difference
 - Dividing by the difference of the difference is impossible in real biological research
- Second attempt: Another way of knowing (*alle gnosis*)
 - Formal aspect of the constitutive difference
 - Difference/identity: mutual belonging (Heidegger: *Identity & Difference*)
 - Pluralistic approach (Sandra Mitchell's Integrative Pluralism... and more)
 - Analogy, metaphor, prudence, practical truth, top-down causation, teleological stance... (Thomas Nagel: *Mind and Cosmos*)

3. Conclusions

- Organism development as a paradigmatic case of robustness (canalization)
- Organism develops its identity by means of a process of differentiation
- Difference/identity as the ontological basis for organism's robustness
- Intelligibility of constitutive difference requires a pluralistic approach