

Categorising Plasticity

What are the options?

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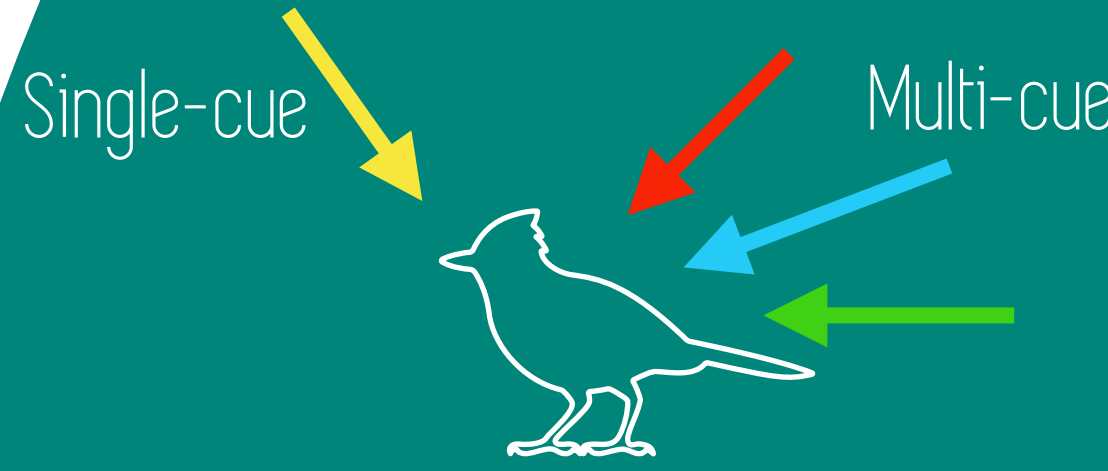
Phenotypic

plasticity covers a broad array of mechanisms, traits and types - but as yet, most classifications rely on simple dichotomies and have limited scope. A general system of classification could encourage collaboration between the many sub-disciplines studying plasticity - and provide insight into specific evolutionary dynamics and patterns within subtypes of plasticity.

Classification by Mechanism

Inducing mechanism

What does the trait respond to?



- Reactive
Cue = selection pressure
- Predictive
Cue → future selection pressure
- Correlative
Cue ≠ selection pressure

Cue type



Biotic



Abiotic



Genetic



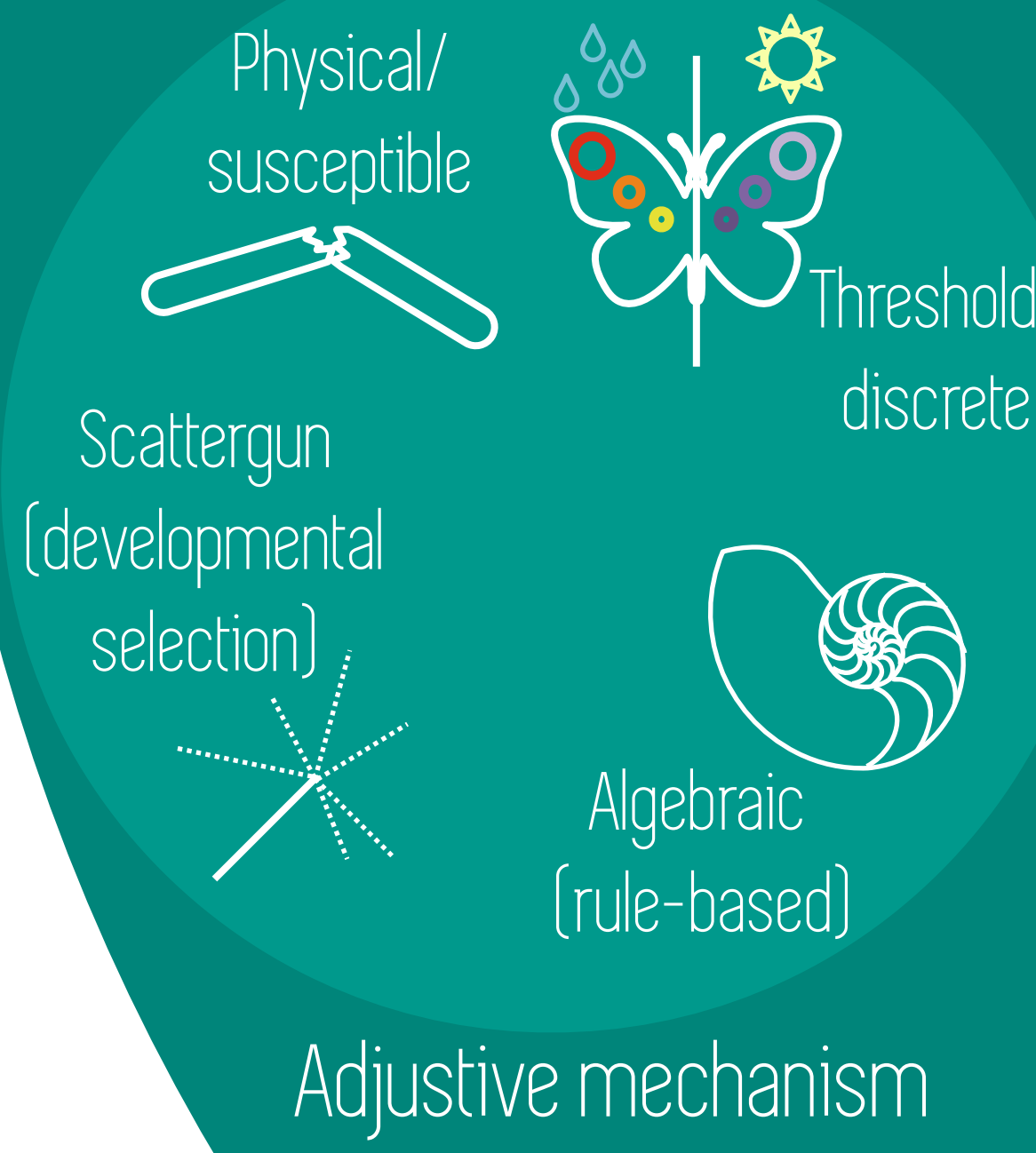
Complex



Internal

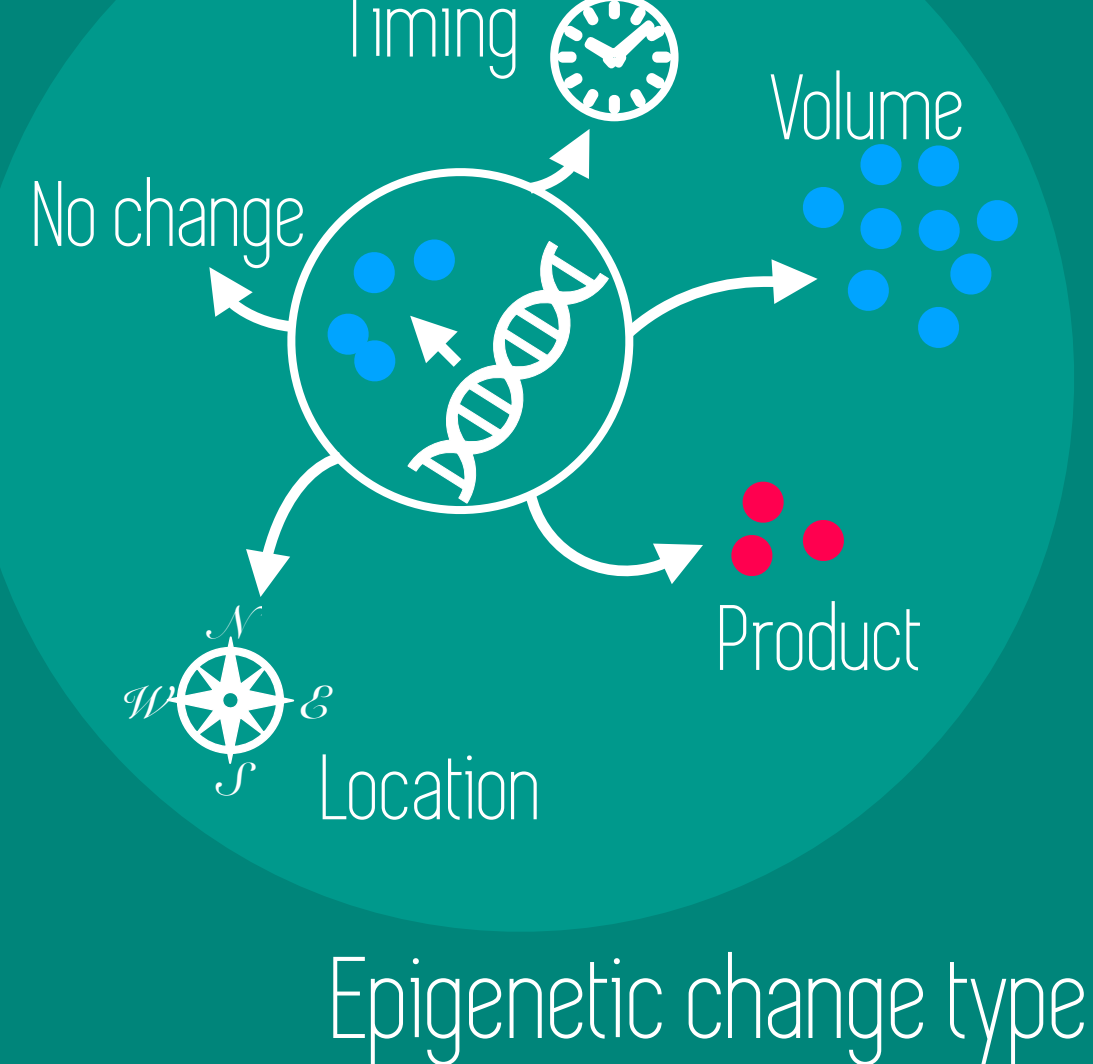
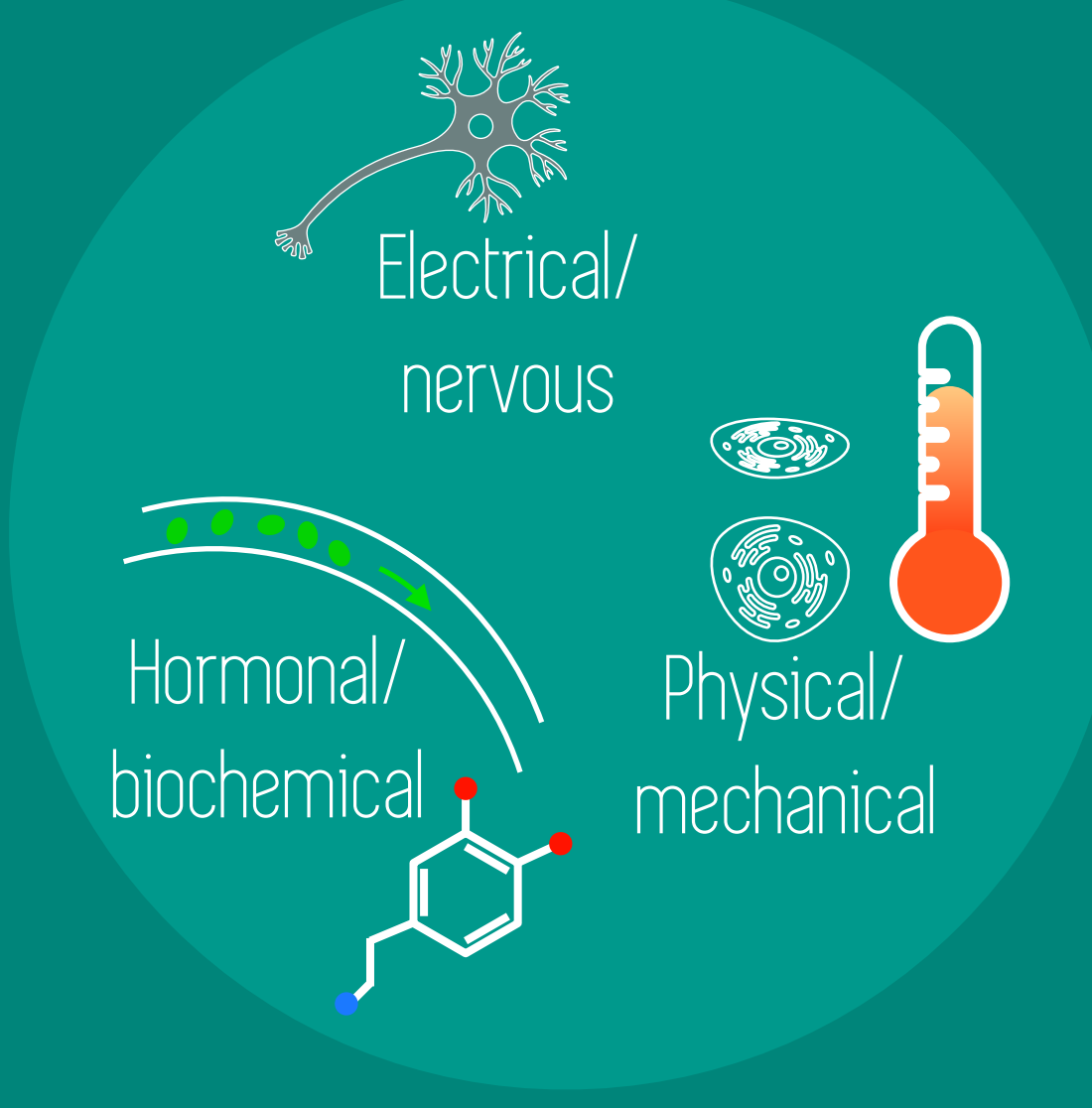
Generation mechanism

How is the plastic aspect of the trait developed?



Adjustive mechanism

Signal transduction mechanism



Epigenetic change type

Integrative mechanism

How does the trait interact with overall phenotype and fitness?



Adaptive



Neutral

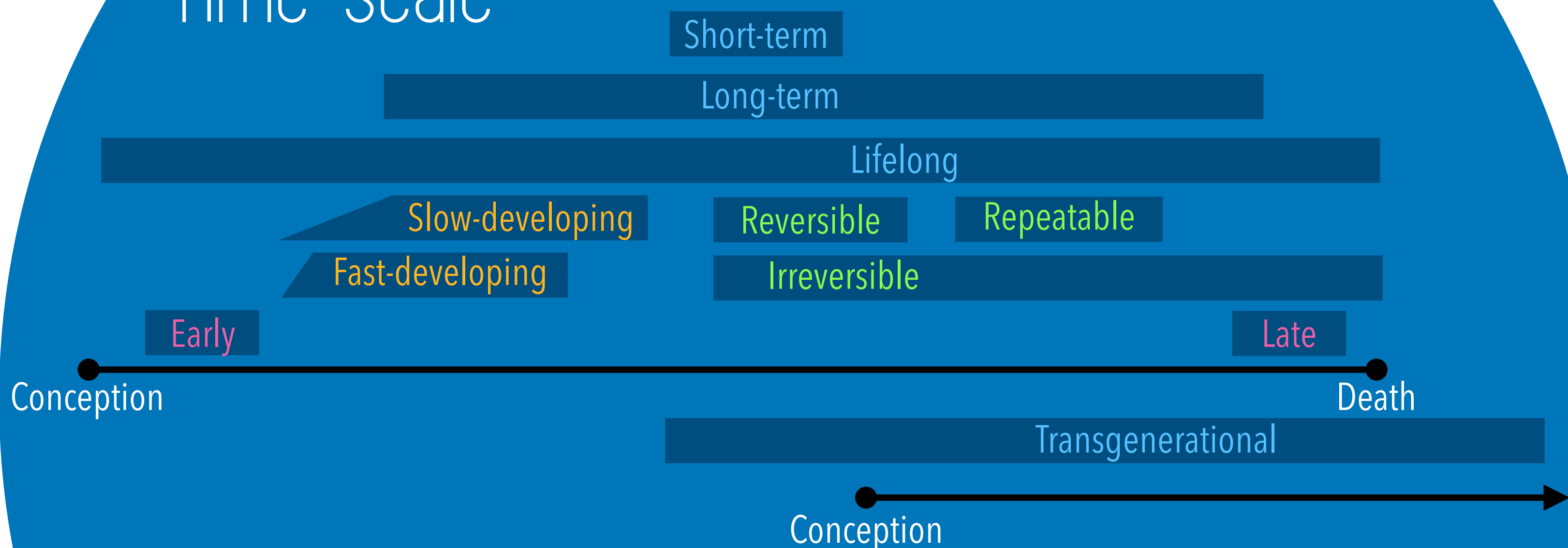


Mal-adaptive

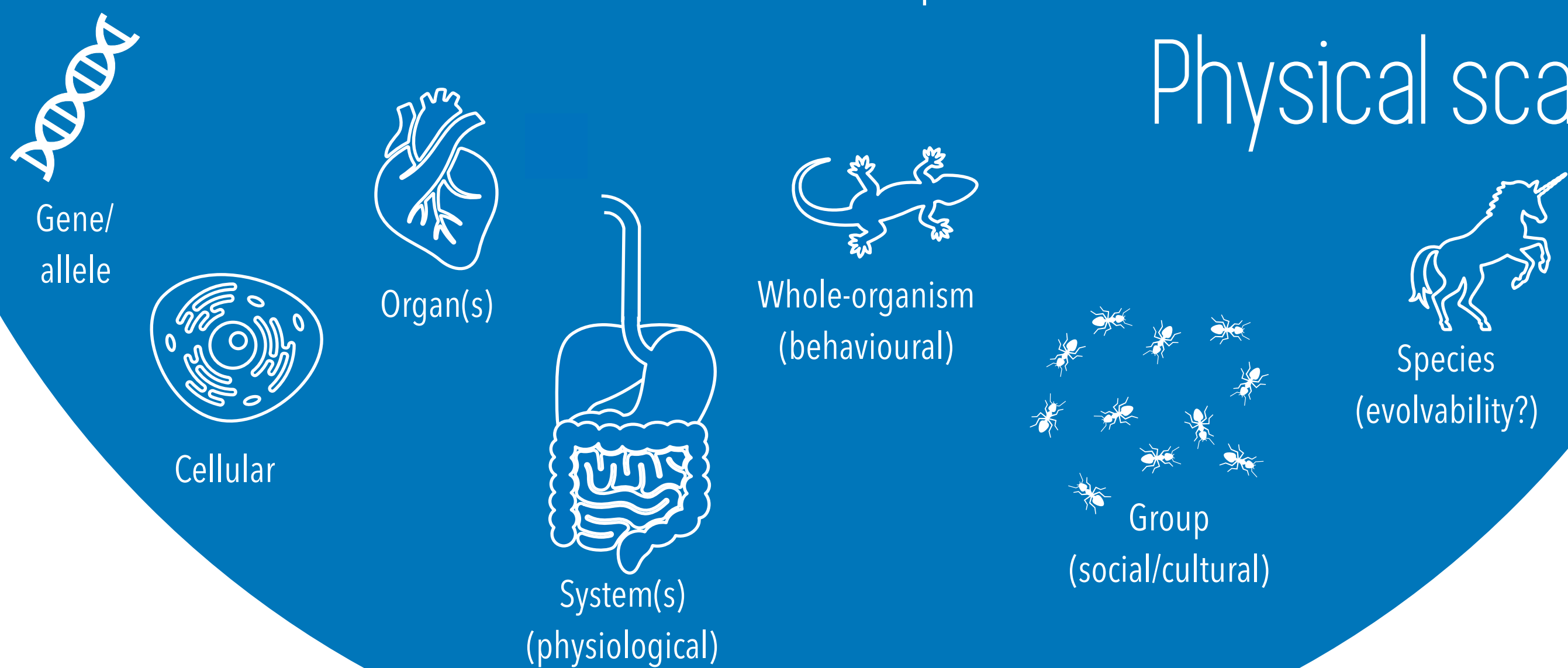
Pleiotropic/epistatic interactions

Classification by Scale

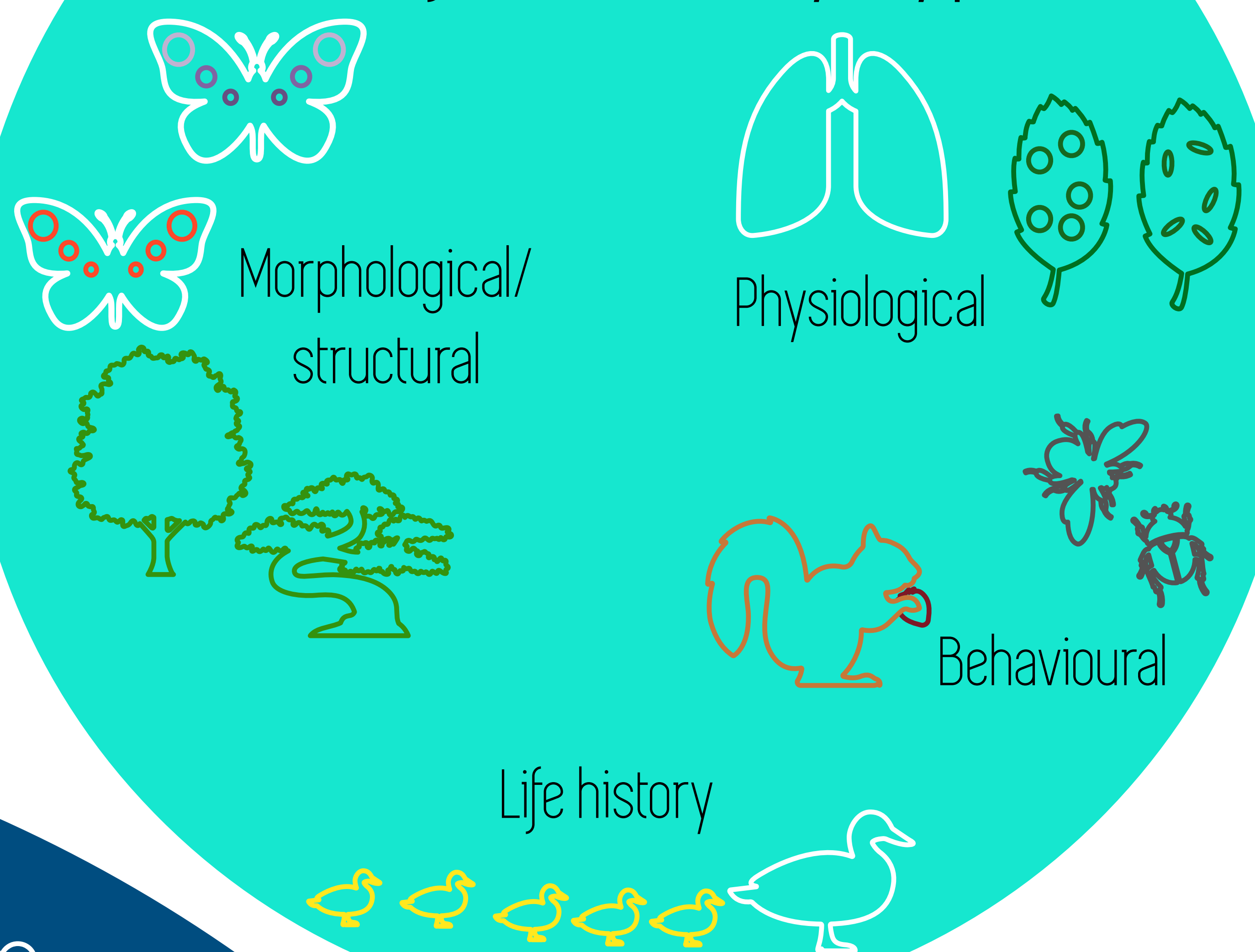
Time-scale



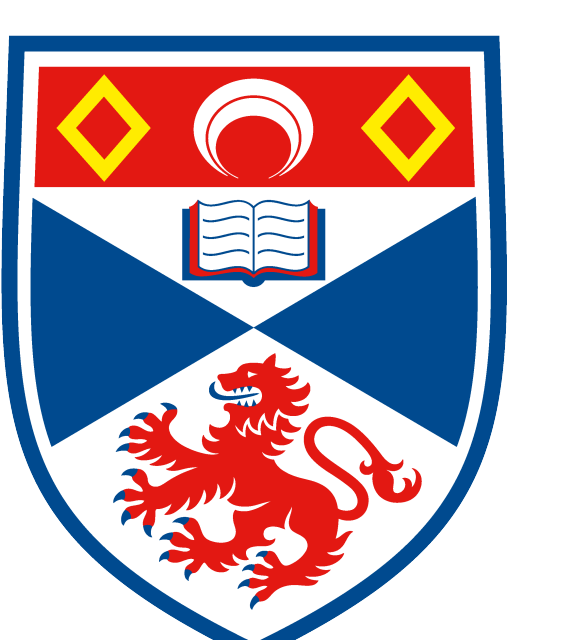
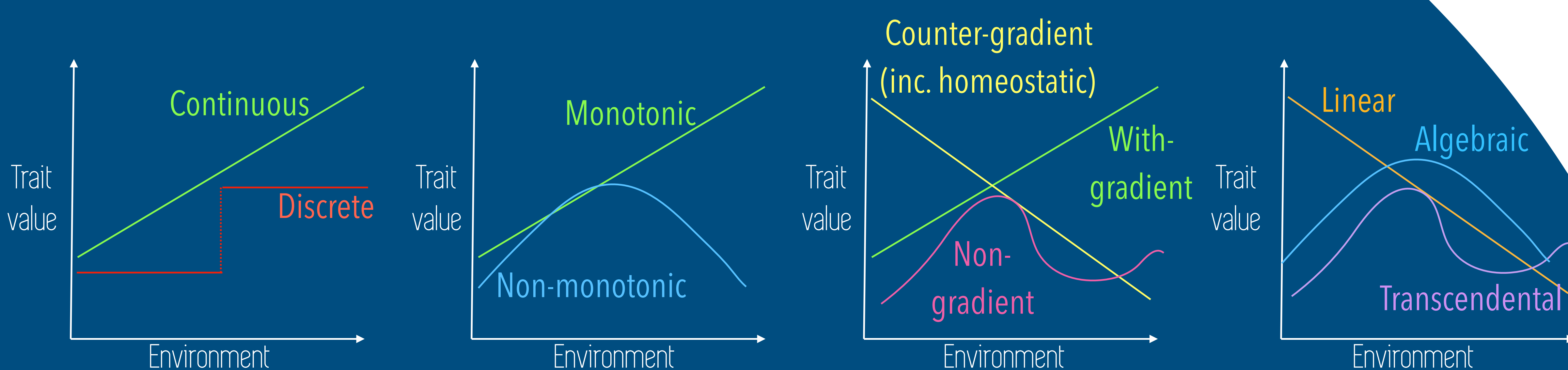
Physical scale



Classification by Type



Classification by Reaction Norm



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