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# Laws of Nature without Regularities of Succession

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- Describe what there. Use evidence also in metaphysics (not ontological commitment). Balance parsimony against explanatory power.

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- Directednesses that are based on the same soa. are ‘the same’.

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- Two directednesses are conflicting if they are towards incompatible soas. Then a new one is formed (superposition).
- Many directednesses are not realised because they are counteracted. They could be counteracted by whatever exists: physical things, ghosts, souls, God, demons.

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- No event necessitates a later one! All processes are stoppable. Hobbes and Kant were wrong.

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- Hypothesis: *A (causal) laws of nature says that in situations of a certain type there are is a directedness of a certain type.* (The Directedness Theory of Laws, DTL)
- J.S. Mill: ‘All laws of causation, in consequence of their liability to be counteracted, require to be stated in words affirmative of tendencies only, and not of actual results.’ (Mill 1843, 3.10.5, p. 319)

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- A law entails *conditional* regularities and predictions: *Every x-event causes a y-event if nothing else is acting on what follows x.*

# Example: Newtonian forces

- $F = G \frac{m_1 m_2}{d^2}$
- A Newtonian force is a directedness concerning position.
- DTL captures superposition and counteraction.
- DTL is compatible with non-locality and probabilistic processes.



# Directednesses are the mechanism of persistence and causation

- The mechanism of all carrying on, of all passage of time. E.g. things carry on to exist; continuous processes (moving planets); processes leading to explosions.
- ‘Cause’ is used in manifold ways and does not have a standard definition.
- Alternative view: Persisting is different from causing.
- Roman Ingarden: All passage of time is persisting, not causing. Causing is simultaneous.

# Against dispositions and powers

- They exist but are not fundamental. They consist in directednesses.
- They are associated with substances. But not all properties of a thing as well as other properties are relevant to a causing and are referred to by laws.
- Our universe does not consist of traditional substances. The bodies do not have an infima species. They do not have objective diachronic identity (unlike souls). Much or all is more field-like.
- Suggests that the causing is done by the bodies, rather than by local qualities anywhere and non-locally.

