Four Conflated 'Chance'-Like Concepts
in Evolutionary Theory

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An Argument in Two Parts

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- Two goals:
  1. Distinguish four concepts in the vicinity of 'chance' that are clearly distinct despite differences in interpretations of chance or probability
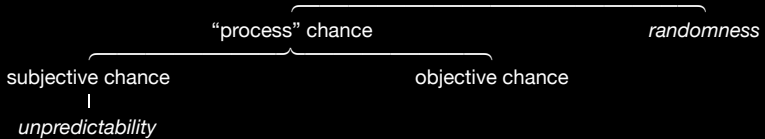 2. Show that conflation of these causes real problems in arguments

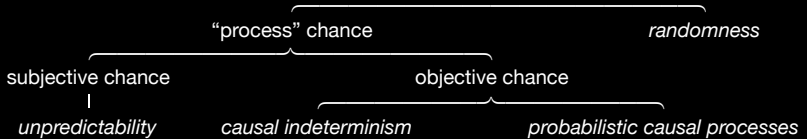# Four 'Chance'-Like Concepts

"process" chance   *randomness*

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subjective chance   objective chance

unpredictability

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unpredictability   *causal indeterminism*   *probabilistic causal processes*

Four 'Chance'-Like Concepts

- randomness
- unpredictability
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- probabilistic causal processes

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- randomness
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- Not the only four!

- "The Indeterministic Character of Evolutionary Theory" (1996)

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- "drift clearly is a stochastic or probabilistic or indeterministic phenomenon" (324)
- "if one is a realist...then one should conclude that [evolutionary theory] is fundamentally indeterministic" (336)

But then...

- "the inferences we can make" about drift (322)
- what drift "can predict" or "cannot predict" (323)

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- Response: Graves, Horan, & Rosenberg (1999)

- What about probabilistic causation?

A Reinterpretation

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- Brandon's causal reading of drift

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- What about probabilistic causation?
- Brandon's causal reading of drift
- Back to hidden variables

Conclusions

- Conflations of 'chance':
    - B&C conflate at least three 'chance'-like concepts (unpredictability, causal indeterminism, probabilistic causal processes)
    - Only on one of these does their argument go through
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- Arguments fail to engage
- But the distinctions are well-known!

Questions?

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