

Why Simulating Creativity Matters

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Some Social Psychology

- Implicit Theories of Intelligence
(Dweck, et al.)
- Judgment and Decision-Making
(Kahneman and Tversky, et al.)
- Power of Beliefs
- Normative Theory
- What are the implications of different beliefs about creativity?
- What would enable us to say whether these beliefs are normative?

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As ~~as possible, so long as~~
Novel ~~and~~ Appropriate

Highly creative ideas are highly novel

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*The way to achieve creative outcomes is
to seek out novelty while creating*

What happens when “as novel as possible, so long as appropriate” is applied during the creative process?

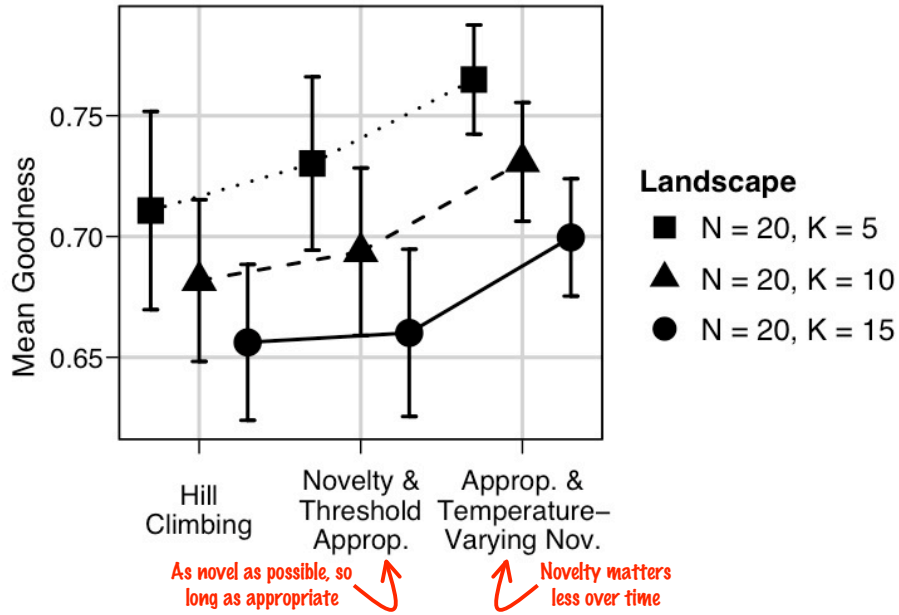
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Modeling the Creative Process

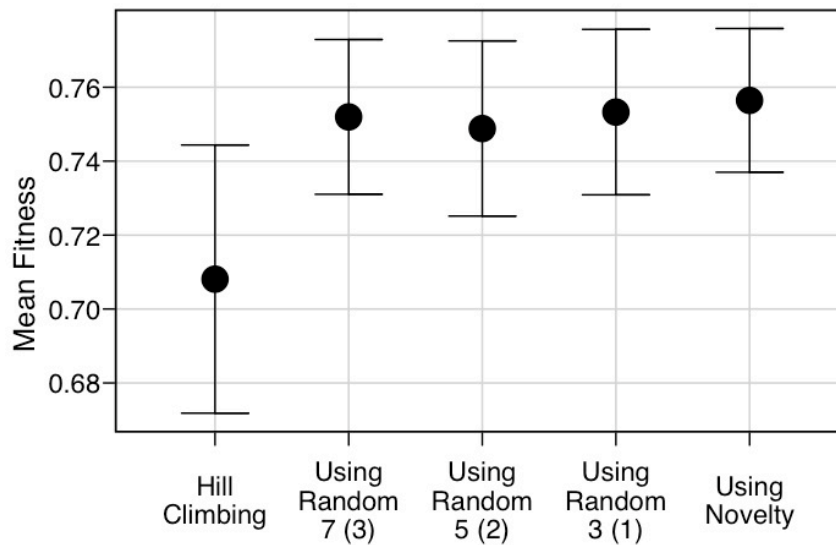
- Ideas are points in a space with an associated goodness
- Creation happens by blind variation and selective retention
 - Variation: random, single-bit mutations
 - Selection: different interpretations of novel and appropriate
 - Novelty is decaying Hamming distance
 - Appropriateness is goodness

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How well does as novel as possible, so long as appropriate work?



Is novelty any better than pure randomness?



Research Conclusions

- Novelty introduces assiduous randomness, which must be managed carefully

Appropriately
Novel and Appropriate

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Broader Conclusions

- Power of Beliefs
- Normative Theory
- Beliefs about creativity matter
- Metaheuristic optimization
- Simulation generates hypotheses
- Simulation forces precision

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