

PRLab-Presentation # 2

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The Autodidactic Universe

I.I.D. Assumption

- Lex Friedman Podcast-Sara Walker (On Origin of Life)
- Statement:"The Universal laws depend on the current state of the universe!"

The Autodidactic Universe ¹

- An interestingly lengthy paper...
- Deep Physics that is gibberish to me ...
- Tries to explain the origin of the physical laws

¹S. Alexander, W. J. Cunningham, J. Lanier, L. Smolin, S. Stanojevic, M. W. Toomey, and D. Wecker (2021). "The Autodidactic Universe". In: pp. 1–79.
arXiv: 2104.03902

The Autodidactic Universe ²

- Interesting remarks about learning
- Does it only occur with feedback?

This list is not exhaustive. For instance, we could speculate about a form of alien life which does not have a separate level of genes, but nonetheless undergoes variations randomly – and in which interpenetrating swarms of structures destabilize each other, causing a gradual emergence of more robust structures. This might have been what hap-

In one sense, learning is nothing special; it is a causal process, conveyed by physical interactions. And yet we need to consider learning as special to explain events that tran-

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Discussion Topics

- What is learning?
- Would you agree that randomness can evolve into a learning process?
- If the physical laws are not even i.i.d. how strong is that assumption?