

Bringing verbs into the language of economics

February 20 2023



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In the last 50 years, economic theory has come to be based almost solely on mathematics. This brings logical precision, but according to a new paper by SFI economist Brian Arthur, it restricts what economics can easily talk about.

Algebraic mathematics is "a language," Arthur writes, "that allows quantitative nouns only, but doesn't allow verbs—[actions](#)." So economics does very well with quantities, ratios, and prices but fails to properly deal with processes, formation, and creation.

With the advent of computers, new opportunities emerge to study that which cannot be contained in equations. Algorithmic models, Arthur points out, can easily include actions and processes, so the use of such tools can bring sorely needed verbs into the language of economics.

Such a process-based economics would fill gaps in our understanding and help answer poorly understood questions: how economic actors navigate (and change) a fundamentally uncertain shifting landscape, how innovation works, how novel institutions form, and how [economic development](#) works.

The paper is published in the *Journal of Economic Behavior & Organization*.

More information: W. Brian Arthur, Economics in nouns and verbs, *Journal of Economic Behavior & Organization* (2022). [DOI: 10.1016/j.jebo.2022.10.036](#)

Provided by Santa Fe Institute

Citation: Bringing verbs into the language of economics (2023, February 20) retrieved 10 May 2024 from <https://phys.org/news/2023-02-verbs-language-economics.html>

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