

SPECIAL VIEWPOINT



Complexity and the Economy

W. BRIAN ARTHUR [Authors Info & Affiliations](#)

SCIENCE • 2 Apr 1999 • Vol 284, Issue 5411 • pp. 107-109 • DOI: [10.1126/science.284.5411.107](https://doi.org/10.1126/science.284.5411.107)



CHECK ACCESS



Abstract

After two centuries of studying equilibria—static patterns that call for no further behavioral adjustments—economists are beginning to study the general emergence of structures and the unfolding of patterns in the economy. When viewed in out-of-equilibrium formation, economic patterns sometimes simplify into the simple static equilibria of standard economics. More often they are ever changing, showing perpetually novel behavior and emergent phenomena. Complexity portrays the economy not as deterministic, predictable, and mechanistic, but as process dependent, organic, and always evolving.

Access the full article

View all access options to continue reading this article.

CHECK ACCESS

ALREADY A SUBSCRIBER OR AAAS MEMBER? SIGN IN AS AN [INDIVIDUAL](#) OR VIA YOUR [INSTITUTION](#)

REFERENCES AND NOTES

1

P. Anderson, K. J. Arrow, D. Pines, Eds., *The Economy As an Evolving Complex System* (Addison-Wesley, Reading, MA, 1988).

[GOOGLE SCHOLAR](#)

2

W. B. Arthur, S. N. Durlauf, D. A. Lane, Eds., *The Economy As an Evolving Complex System II* (Addison-Wesley, Reading, MA, 1997).

[GOOGLE SCHOLAR](#)

3

Arthur W. B., *Sci. Am.* **262**, 92 (1990).

[GOOGLE SCHOLAR](#)

4

___, *Increasing Returns and Path Dependence in the Economy* (Univ. of Michigan Press, Ann Arbor, MI, 1994).

[GOOGLE SCHOLAR](#)

ScienceAdviser

Get Science's award-winning newsletter with the latest news, commentary, and research, free to your inbox daily.

We use cookies to improve your experience and enable functionality and security of this site. Data may be shared with third parties. Further detail is available in our [Privacy Policy](#). By accepting all cookies, you consent to our use of cookies and use of data.

MANAGE COOKIE PREFERENCES

ACCEPT ALL COOKIES



eLetters is a forum for ongoing peer review. eLetters are not edited, proofread, or indexed, but they are screened. eLetters should provide substantive and scholarly commentary on the article. Neither embedded figures nor equations with special characters can be submitted, and we discourage the use of figures and equations within eLetters in general. If a figure or equation is essential, please include within the text of the eLetter a link to the figure, equation, or full text with special characters at a public repository with versioning, such as Zenodo. Please read our [Terms of Service](#) before submitting an eLetter.

LOG IN TO SUBMIT A RESPONSE

No eLetters have been published for this article yet.

CURRENT ISSUE



[More extreme Indian monsoon rainfall in El Niño summers](#)
BY SPENCER A. HILL, DESTINY ZAMIR MEYERS, ET AL.

[The contrast between monovalent and multivalent metal battery anodes](#)
BY YUANJIAN LI, SONAL KUMAR, ET AL.

[Climate rather than overgrazing explains most rangeland primary productivity change in Mongolia](#)
BY AVRALT-OD PUREVJAV, TUMENKHUSEL AVIRMED, ET AL.

TABLE OF CONTENTS >

ADVERTISEMENT

Sign up for ScienceAdviser
Get Science’s award-winning newsletter with the latest news, commentary, and research, free to your inbox daily.

SUBSCRIBE >

LATEST NEWS

NEWS | 23 SEP 2025
[Trump’s autism initiative embraces little-tested vitamin as a treatment](#)

SCIENCEINSIDER | 23 SEP 2025
[U.S. court orders NIH to restore killed grants to California researchers](#)

SCIENCEINSIDER | 23 SEP 2025
[Trump visa policy requires universities to pay huge fee to hire foreign scholars](#)

NEWS | 23 SEP 2025
[Ethicists flirt with AI to review human research](#)

SCIENCEINSIDER | 23 SEP 2025
[Whose papers have an edge at Science? In unusual study, journal looks in the mirror](#)

NEWS | 22 SEP 2025
[Even subzero parts of the Arctic are thawing. Ancient salt is the culprit](#)

ADVERTISEMENT

ADVERTISEMENT

FOLLOW US



GET OUR NEWSLETTER

NEWS

- [All News](#)
- [ScienceInsider](#)
- [News Features](#)
- [Subscribe to News from Science](#)
- [News from Science FAQ](#)
- [About News from Science](#)
- [Donate to News](#)

LIBRARIANS

- [Manage Your Institutional Subscription](#)
- [Library Admin Portal](#)
- [Request a Quote](#)
- [Librarian FAQs](#)

CAREERS

- [Careers Articles](#)
- [Find Jobs](#)
- [Employer Hubs](#)

ADVERTISERS

- [Advertising Kits](#)
- [Custom Publishing Info](#)
- [Post a Job](#)

COMMENTARY

- [Opinion](#)
- [Analysis](#)
- [Blogs](#)

RELATED SITES

- [AAAS.org](#)
- [AAAS Communities](#)
- [EurekAlert!](#)
- [Science in the Classroom](#)

JOURNALS

- [Science](#)
- [Science Advances](#)
- [Science Immunology](#)
- [Science Robotics](#)
- [Science Signaling](#)
- [Science Translational Medicine](#)
- [Science Partner Journals](#)

ABOUT US

- [Leadership](#)
- [Work at AAAS](#)
- [Prizes and Awards](#)

AUTHORS & REVIEWERS

- [Information for Authors](#)
- [Information for Reviewers](#)

HELP

- [FAQs](#)
- [Access and Subscriptions](#)
- [Order a Single Issue](#)
- [Reprints and Permissions](#)
- [TOC Alerts and RSS Feeds](#)
- [Contact Us](#)



© 2025 American Association for the Advancement of Science. All rights reserved. AAAS is a partner of HINARI, AGORA, OARE, CHORUS, CLOCKSS, CrossRef and COUNTER. Science ISSN 0036-8075.