

Nonlinear Dynamics, Psychology, and Life Sciences

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CALL FOR REVIEW ARTICLES

NDPLS is looking for a few good review articles on applications of nonlinear dynamics to psychology and the life and social sciences. Successful articles should include summaries of problems, research strategies and results, and original insights regarding possible directions for nonlinear science. They should also be attentive to the roles of attractors, bifurcations, chaos, self-organization, and related nonlinear formalisms as defined in the journal's purview (www.societyforchaostheory.org/ndpls) Review manuscripts should be prepared in the APA/NDPLS style; instructions for authors appear on the journal web site.

Topic choices should be primarily substantive rather than methodological. Critiques of methodologies, if warranted, are important facets of review articles, however. When composing the review, authors should be mindful of reviews or special issues published already in NDPLS (and possibly other journals), relevant book chapters, and various special issues of NDPLS (see list on the journal's web site).

Reviews of any application area of nonlinear dynamics within the journal's purview are welcome, although we have a couple suggestions. It is possible that some of the following suggestions could withstand more than one review that focus on different aspects of the phenomena.

1. *The optimum variability principle*: It is now well known that healthy heart rate variability is chaotic and not rigidly oscillating. The principle of healthy variability has extended to other biomedical and psychological phenomena. What is the status of the research in any of the application areas?

2. *"Emergence"* has become a popular concept both inside and outside of the sphere of nonlinear dynamical systems (NDS) research. How many different processes for emergence have been proposed (e.g. phase shifts, power laws, boundary dynamics)? How does one conduct empirical research with any of them to support a conclusion regarding what has emerged and how? Has anyone successfully separated bottom-up and top-down portions of the process empirically? What are the statuses of these research areas?

3. *Related to suggestion #2 above*, some researchers have suggested that multi-level modeling, which is based on a distinctively linear form of analysis, is necessary to assess instances of emergence or the impact of emergent events on group or collective behaviors. Has this strategy, recommendation, or approach produced any results of interest to nonlinear science? If so, what formal dynamics were expressed or implied by the source research? How could nonlinear experimental designs and analyses move the state of the science forward?

4. Network theory has blossomed in the last decade, although its roots can be traced to mathematical social psychology from the early 1950s. There are some important nonlinear constructs involved in some of the work, although a good deal of what has been written seems to have taken on a life of its own. The potential review question is what nonlinear principles are in evidence, and how has the combination of network and NDS constructs enlightened our understanding of (pick one) neuroscience, market behavior, political behavior, or economics?

If you are interested in writing a review, please send an e-mail to the Editor in Chief with an abstract of what you plan to write, and an estimated time of arrival for the first reviewable draft. Based on the responses we receive, we can gauge whether it would be more advantageous to the authors, readers, and journal planning to publish the reviews individually or aggregate material into one or more special issues.

As always, NDPLS invites all the empirical, methodological, and theoretical studies that fall within our purview year round. We look forward to hearing from you at your soonest opportunity.

Best regards,

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