

Response to Gunderson and Folke. 2009. “Lumpy Information”

## Lumpy Information May Lead to Better Science

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In proposing that *Ecology and Society*, and its contents, are purveyors of lumpy information, Gunderson and Folke are tipping science back from the edge of the “splitting” abyss that seems to dominate these days. The pendulum of lumping and splitting does indeed swing back and forth, and I find it amusing to see when, and under what circumstances it does so.

If one turns to the gray literature, and most notably to books on science topics published for general consumption, one finds that lumpers are still quite common as authors. Mooney and Kirschenbaum (2009), however, note that within scientific publications, and more specifically science journals, specialization has been the rule for decades. They estimate that there are over 100 000 scientific journals published a year, where there may have been as few as 5000 in the years immediately following World War Two.

Likewise, if you ask those of us in our thirties who the world’s most famous scientist is, you will hear Carl Sagan mentioned more often than not. While Sagan was well published in the peer-reviewed literature describing his astronomical research, he only wrote a handful of popular books, *Cosmos* being the most well known. Similarly, outside of certain physics circles, Stephen Hawking will be best remembered for *A Brief History of Time*, not for his voluminous publishing in peer-reviewed journals.

What these examples have in common is that they are lumped or aggregated publications. They draw data from a vast number of sources, and weave them into a narrative that seeks to answer broad, general science questions. Today’s hyperspecialization

often prevents that and, therefore, significantly hinders the kind of pattern recognition and random reordering of conclusions that can lead to “ah-ha” moments. Put another way, if you split the scientific endeavor too finely, you run the risk of missing the endpoint of discovery entirely.

Yet all is not lost. With the continued growth of science blogging, aggregation sites, and online journals like *Ecology and Society* or *PLoS ONE*, scientists can once again place their work in the context of other scientists. No longer do we have to search through dusty library stacks to see if a particle physicist is hunting for motion at a level that will explain our particular ocean phenomena. Instead, we can benefit from the lumping done for us and, in turn, drive the “market” for such actions by reading and using the products of that lumping. This, then, is one of the 21<sup>st</sup> century’s “ah-ha” moments, and one I sincerely hope will be built upon.

Responses to this article can be read online at:  
<http://www.ecologyandsociety.org/vol14/iss2/resp2/responses/>

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### LITERATURE CITED

Mooney, C., and S. Kirschenbaum. 2009. *Unscientific America—how scientific illiteracy threatens our future*. Basic Books, New York, New York, USA.

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<sup>1</sup>National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce