

Editorial: “Chaos in the Brickyard” Revisited: What if Forscher Were a Butcher?

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When I began my doctoral program at The Pennsylvania State University in 1979, one of the papers we discussed at our first motor behavior lab seminar was Bernard Forscher’s (1963) “Chaos in the Brickyard.” This thoughtful little letter to the editor of *Science* drew an analogy between scientific research and construction work. The goal of scientific research was to discover explanations or laws, but the people engaged in this work were actually builders who constructed wonderful edifices. Edifices were constructed by assembling bricks; scientific explanations and laws were constructed by assembling facts, or data. Early in the history of construction, bricks were carefully made and, because brick making was painstaking, only those required for the edifice at hand were produced. But over time, things changed. The builders realized that delays hampered their efforts in obtaining bricks. Brick making became an end in itself, and, probably due to technological advances, it became easy to make bricks. Eventually, the land was flooded with bricks, many of them random and useless; it was difficult for builders to find the proper bricks for a task, because they had to search through so many. There was, indeed, chaos in the brickyard. Forscher concluded with, “And, saddest of all, sometimes no effort was made even to maintain the distinction between a pile of bricks and a true edifice” (p. 339).

The parallels between building edifices and doing scientific research are striking. And, if things were this chaotic in 1963, one wonders what Forscher would think about the current state of affairs. I have wondered, “What if Forscher were a butcher?” He might hear a customer say, “I’d like a pound of salami, sliced as thin as possible.” By slicing the salami very thinly, we might be able to get more sandwiches from it. *Do we do this with our research?* Do we slice a research project into the smallest publishable units

so we can get more publications from it? Absolutely! And by doing so, we might impress a promotion and tenure committee that simply counts numbers, with little regard for quality (see Day & Gastel, 2006). If I may paraphrase Forscher: *no effort is made even to maintain the distinction between a pile of publications and a true scientific contribution.* The end result is increased chaos in the scientific brickyard.

The American Psychological Association (APA) defines *piecemeal publication* as “the unnecessary splitting of the findings from one research effort into multiple articles” (APA, 2010, p. 13). The APA frowns on piecemeal publication, stating:

Data that can be meaningfully combined within a single publication should be presented together to enhance effective communication. Piecemeal, or fragmented, publication of research findings can be misleading if multiple reports appear to represent independent instances of data collection or analyses; distortion of the scientific literature, especially in reviews or meta-analyses, may result. Piecemeal publication of several reports of the results from a single study is therefore undesirable unless there is a clear benefit to scientific communication. It may be quite difficult to determine whether such a benefit exists when multiple dependent variables that were observed in the same sample and at the same time are reported in separate manuscripts (p. 14).

The *Research Quarterly for Exercise and Sport (RQES)* editorial board wholeheartedly supports this position. But how does one determine whether the publication of several papers based on the same, or closely related, research

constitutes “salami science?” How does one distinguish between fragmented publication as opposed to a systematic, focused line of inquiry in one’s research area? Often, it is a matter of editorial judgment. However, I believe it is also a matter of intent: Did the author intend to divide his or her research excessively for publication, thereby increasing the vitae length in the hope of impressing a hiring committee or promotion and tenure committee? This problem can be solved, but it may require a cultural change in academia. “Publish or perish” is still the mantra of the academic community, and the more publications the better. We need researchers who respect the integrity of their work and do not divide it excessively for publication. We also need good promotion and tenure committees that evaluate publication *content*, rather than only the quantity. Such committees would not be fooled by salami science (Day & Gastel, 2006).

I realize that all journals, including *RQES*, have page constraints that may inhibit authors from submitting

longer manuscripts. However, the *RQES* has always been open to longer papers that report multiple experiments, literature reviews, meta-analyses, qualitative studies, and historical/sociocultural studies. And we will continue to operate this way. So, I encourage authors to continue sending your best work to *RQES*—but without slicing it too thinly. The end result, I believe, will be less chaos in the brickyard and in the butcher shop.

References

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