

Periodic Recertification: Vanquishing the Zombie Theory

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The scientific record has been exploding for some time, and there is nothing that will stop that explosion. And why should there be? It is a great thing for smart people to expand the boundaries of knowledge.

But smart people also make mistakes. To explain what I mean, I have to introduce a bad guy in this story: the zombie theory.

I am a theorist, and if I see a bad theory my blood starts boiling. One would think scientific consensus could quickly kill a bad theory, but in my experience it does not. Some scientists remain sure the theory is dead, while others believe the same theory is alive.

As a result, the theory becomes a zombie. Just like a human zombie, it can multiply (citations keep increasing) and kill (some referees do not like theories that are different from the zombie theory, so new ideas go into the circular file drawer). Zombie theories are used as foundations for new research and taught to students. They muddle the scientific record.

There should be a way to apply some Clorox. The Clorox I am proposing is periodic self-recertification.

The scientific community would benefit were research journals to periodically request that their authors recertify the validity of published papers. Papers with high numbers of citations that have the highest probability of influencing the scientific record should be recertified often. If all the authors are unavailable, an editor can call in an expert team to perform the recertification.

Such a recertification process would present the authors with a face-saving way to correct the record, a way to fine-tune the content if some of the information in the paper is correct and some of it is not, and a way to ensure that a valid paper is still useful.

I know that one of my own articles is incorrect and could use a reevaluation. In Tarnow (2010), I propose that the U shape of the free-recall curve comes about because the decay rate of short-term memory is faster if the presentation rate is increased. The other day I realized that the decay rate I had calculated from a cued recall experiment (Tarnow, 2012), in which the items were presented very quickly, was slow. Consequently, Tarnow (2010) was wrong.

A self-recertification process would remind me to write an erratum explaining why the 2010 paper was incorrect and whether there is anything in it worth saving.

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References

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