

## **A Commentary on Mumpsimus, Sumpsimus and the Mpemba Effect**

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A priest of legend incorrectly pronounced sumpsimus as mumpsimus for 30 years. When corrected, he said, "I'm not going to change my mumpsimus for your new sumpsimus!" His mumpsimus made him the first mumpsimus.

*Rare Words* by Jan and Hallie Leighton (2004)

Sumpsimus: adherence to or persistence in using a strictly correct term, holding to a precise practice, etc., as a rejection of an erroneous but more common form (opposed to mumpsimus).

*Random House Unabridged Dictionary* (2006)

It was both a pleasure and a privilege to deliver the keynote address at the recent hypnosis meeting in Dallas, Texas. This historic occasion was a double honor because the conference drew on the joint audiences of both the American Society of Clinical Hypnosis and the Society for Clinical and Experimental Hypnosis. Including the esoteric words mumpsimus and sumpsimus in the title of my address was intentional and metaphoric. Multiple individuals have independently approached me after the talk asking that its key points be available in manuscript form. Given that these requests kept coming in, my colleagues and I figured that it might be worthwhile to put together a brief commentary and recapitulate on a few points from my address. This commentary is my attempt to do just that in a way that would complement my original address, yet stand as an autonomous piece.

My talk emphasized the importance of good, reliable data. Hypnotic phenomena are extraordinary. To paraphrase Carl Sagan, however, extraordinary claims require extraordinary evidence. Do we have extraordinary evidence to support our claims? Scientists are typically conservative and we need to be careful about our claims and the evidence we put forward to support them. It is better to

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underpromise and overdeliver than to overpromise and underdeliver because science endeavors to evaluate claims on the basis of objective facts. Rhetoric and case studies are interesting, important and insightful, but are often insufficient.

Looking over the literature, it is clear that reports on hypnotic phenomena could benefit from more hard data. In this regard it may be helpful to encourage the publication of more data-based reports and reserve brief “thought-piece” accounts to special occasions such as discussion of overarching themes, tectonic integrations and issues of great theoretical merit. In this special issue, for example, I contributed both a data-based report and a brief integrative account. Sans supporting scientific evidence, it is inappropriate to theorize about the extraordinary behavioral phenomena hypnosis offers. Furthermore, more and more reports devoid of meticulous experimental data run the field into theoretical realms that tend to be less substantiated than they should be.

On the other hand, it would be unwise to disparage the value of theory. Theory is important and the life of the scientific theoretician is nothing but easy. Experiments are inexorable evaluators of one’s work. These unfriendly judges never say “Yes” to a theory; instead, in the great majority of cases they elicit a flat “No,” whereas in the most favorable of situations they suggest a “Perhaps.” In other words, if the results of an experiment agree with a theory it indicates that perhaps the theory may be right, while if they do not it means that the theory is wrong. It is likely that most, if not every theory, will ultimately experience its “No.” Indeed, most theories often experience this rejection soon after conception. Nonetheless, as we try to come up with a good theory to explain our collective results, we should remember what Karl Popper taught us: a theory is scientific if it permits the possibility of being shown false – the falsifiability criterion. It is important to realize that at least a few of the theories we sometimes so passionately discuss are not falsifiable.

Here too comes a caveat. The history of science shows that many theories were not initially falsifiable, not because they were not sufficiently well operationalized in terms of measurable variables, but because they were nascent, exploratory, and not fully developed. Such theories, although not falsifiable in the Popperian sense, may still serve a valuable heuristic purpose that advances the field. It is our responsibility to identify and label non-falsifiable theories as such, in order to reduce confusion and avoid the trap of pseudoscientific reasoning.

Another point concerns the direction of our efforts. We can create a small little world for ourselves and feel miraculously great and important therein. However, it may be akin to a mole in its self-dug hole. In addition to researching, reporting and sharing our findings within our professional circles, it is our responsibility to communicate our results and pass them on to the community at large, both scientific and lay. Professionals from medicine, psychology and other relevant disciplines are eager to listen to, learn about and discuss our findings. We must engage them with our most compelling data sets and articulate our arguments eloquently and judiciously in a carefully crafted manner that is true to the spirit of science, i.e. highly skeptical, demanding, rigorous standards of evidence. In this regard, the public’s insatiable curiosity with hypnosis can be used to our advantage. In addressing a wide audience, however, we must draw upon proficient and respectable professionals who can communicate responsibly and persuasively using the appropriate vernacular.

We have to make sure that perfection of parochial issues and confusion of aims do not characterize the current trend both within and between the hypnosis communities. Insistence on stubborn archaisms is a sure recipe for stagnation. I have seen, and even

personally experienced, some of the tension associated with rival camps within the hypnosis community. This state of affairs is unnecessary and comprises a major impediment to progress. It certainly hinders wider acceptance of our efforts by the larger scientific community. It may be a good idea to remind ourselves, as Albert Einstein noted, that “we are all two-legged animals descended from the apes” and that “people are like the ocean: sometimes smooth and friendly, at others stormy and full of malice. The important thing to remember is that they too are mostly made of water.”

Scientific investigation is largely motivated by an irresistible longing to understand the secrets of nature. Other sentiments, including the striving to contribute toward the improvement of human conditions, are usually independent. For example, a little known physical effect is named after a Tanzanian high school student, Erasto B. Mpemba, who serendipitously stumbled upon it and avidly pursued its investigation despite ridicule from the establishment. The Mpemba Effect purports a special phenomenon where hot water freezes faster than cold water. It demonstrates that while it is right to be skeptical of unusual, counterintuitive results, we should neither mock the simple question nor dismiss the unexpected answer. It is still difficult to fully reconcile the Mpemba Effect with the laws of thermodynamics, but it is now being studied by some of the best minds. Wouldn't it be great if hypnosis elicited the same sense of mission from the scientific community?

As we begin to unravel the neural correlates and unlock the biological and genetic substrates of hypnosis, new concepts come to light. Acknowledging the seductive and even misleading allure of neuroscientific explanations (Skolnick-Weisberg, Keil, Goodstein, Rawson, & Gray, in press), it is important to realize that compelling data are not enough to change minds; time is also necessary. Mumpsimus is the persistence in an erroneous belief out of habit or obstinacy. It also refers to a bigot; one who adheres to a tenet or custom regardless of evidence to the contrary. As we increasingly gather more evidence, let's replace old mumpsimus for new sumpsimus in the clinical science of hypnosis.

### Reference

Skolnick-Weisberg, D., Keil, F. C., Goodstein, J., Rawson, E., & Gray, J. R. (in press). The seductive allure of neuroscience explanations. *Journal of Cognitive Neuroscience*.