Theoretical science: thinking before acting

Undoubtedly, science grows as a function of empiricism. Science as we now know it was constructed from Galileo’s principles, which postulate that scientific research is based in observation, experimentation, and mathematical (or statistical) analysis. In last instance, these principles resulted in the rise of evidence-based science and evidence-based medicine in the last decades. I will not disagree on the importance of experimental science and I hope no wise man would do so. No concept, idea, or hypothesis becomes clinically applicable unless it has been properly tested. However, what is the importance of the theory behind the results?

Disregarding serendipity, fortune or hypothesis-generating studies (such as those conducted with microarrays), all good research is rooted in a well-designed theory or hypothesis. In other words, there is no good experimental science without a good theoretical background. Indeed, according to Yun(1), the more the empiricism is recognized, more important theoretical science becomes.

Acknowledging the relevance of theoretical investigation, Sleep Science is inaugurating two new article types: Theoretical essays and Correspondences. Theoretical essays encompass several kinds of non-experimental articles, such as perspectives, hypotheses, and opinions. In these articles, the goal is to clearly report authors’ point of view regarding a specific field of research. These articles will be published in a less formal fashion than currently published reviews and overviews. Correspondences are intended to promote scientific debate. This specific and brief kind article will be an opportunity to comment, criticize, or highlight papers that were already published in Sleep Science.

Sleep Science is not going against empiricism and evidence-based science. As aforementioned, we indeed believe that there is no science without experimentation. However, we agree that theoretical research and the features that surround it — intuition, inspiration, and abstraction — should also be stressed. Lastly, we intend to promote scientific transparency, to stimulate the academic debate and to encourage the ability of sleep researchers to think before acting. For more information, please check the Guide for Authors.

REFERENCES


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