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EDITORIAL

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Acta Neurochirugica, the official journal of the EANS, is doing well. We receive and publish an increasing number of novel manuscripts from all continents. Our impact factor is steadily rising. The quality of manuscripts received is increasing. Our papers are judged for scientific merit—and we have a clear policy of what we consider "scientific quality."

"Scientific quality" is in line with a long tradition of history and philosophy of science. We think of "scientific truth" as correspondence with an objective reality and "science" as a process to get closer to scientific truth through observation, modeling of theories, and testing of hypotheses. Since enlightenment, we think of science in terms of induction and deduction. Induction and deduction are combined in the "hypothetic-deductive model" of science. We observe phenomena and use induction to formulate a theory that describes causes and effects. We then derive hypotheses that follow from the theory. These are tested to refute or corroborate our theory. We believe that the relevant test depends on the hypothesis and scientific relevance that depends on the correspondence between method and hypotheses. The *method* does not have an independent scientific value. It is sometimes argued, with misguided use of evidence-based medicine, that only certain kinds of trials, primarily RCTs, provide scientific evidence. We disagree: scientific quality is never an independent quality of scientific methods. It is necessary to evaluate whether selected methods allow testing of relevant hypotheses independently for each study. First, the scientific context is considered: the theories, possible controversies, gaps of knowledge, and the aim. Second, the optimal scientific method is selected: it could be an RCT, but it could also be a case report, a qualitative study, an observational study, or an experimental study of fundamental mechanisms in basic science.

Scientific data frequently comprise organic growth, but accumulation of information is not the hallmark of novel science. In medicine, we have experienced that duodenal ulcers developed into infectious diseases and that neurons became renewable and we treat patients with aneurysmal subarachnoid hemorrhage with early occlusion of aneurysms. In these situations, science developed by *change* of paradigms. In the context of change, scientific debate is fundamental: true scientific controversy prevails when observations fail to corroborate prevailing theories and new developments are imminent.

Hence, the mission of *Acta Neurochirugica* remains "publication of good articles". We consider whether a relevant gap of knowledge is explicitly identified, whether a specific hypothesis is formulated, and whether the methods allow critical testing of the hypothesis. Relevant novel data should be explicitly stated and discussed with a critical analysis of reliability, relevance, and implications. A critical analysis is more valuable than a persuasive story.

Our explicit view of neurosurgical science, relevance, and quality depend on highly professional and knowledgeable reviewers. Their profound knowledge of the topics is necessary to evaluate relevance of methods and hypotheses. We wish to serve all researchers and authors with our strong editorial board to provide rapid, accurate reviews and comments to write and publish high-quality papers in 2019 and beyond.

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