
LETTER TO THE EDITOR

Improving Scientific Publications and Public Trust by Data Access

There has been mounting public and professional concern whether the fiduciary responsibility of peer reviewed scientific journals, to produce from objective data correctly derived even handed conclusions, has been corrupted by self-serving personal or corporate interests. Such data distortion takes two forms: sins of commission and omission. Therefore, Dr. DeAngelis et al. (2001) initiate JAMA editorial policies requiring financial disclosures and an authorial affirmation of unbiased data analyses to help "ensure the integrity of medical science" and "convince readers about the integrity of the data and analyses presented."

However, this may be insufficient to accomplish these goals. My personal view is that all raw data underlying submitted analyses and conclusions should be made Internet-available to peer reviewers and, when published (Klein and Ross 1993), to the public. This simply parallels the requirement that in scientific publications, experimental methods must be sufficiently detailed to allow independent replication. Concealing key methods is scientific misconduct.

Current reliance on descriptive statistics as raw data surrogates is only an outdated practical response to space limitations, rather than an ethically principled decision to limit data access. Similarly, descriptive statistics should allow independent recalculation of inferential statistics. This is usually impossible for anything more complex than a chi-square or *t*-test. The Internet can enhance error detection by both peer reviewer and reader.

Intellectual property is the central problematic issue. Currently, data developers are entitled to continue analyses, prepare papers, write relevant grants, etc., justifying

academic and career advancement, rather than making a free gift of their hard work to competitors.

The most difficult ethical decisions arise when two positive goals collide. Compromises that reward individual initiative and effort but still foster social gains, as is the case with patent law, are the goals of democratic legislative process.

One possible compromise would establish that independent re-analyses, only made possible by this data access, are restricted to examining the conclusions' bases.

Analyses that address other issues or detect new findings without the participation of the original authors would be debarred from publication, patent applications, etc, for a defined time period (perhaps three years).

There are still substantial problems. Commercial intellectual properties are trade secrets, and that is not being challenged. However, publishing conclusions supposedly based on valid data should amount to ceding any claim to secrecy about these data.

Such data availability may lead to self-serving contradictory analyses by competitors. However, this already occurs. The increase in transparency provided by ready raw data access should facilitate better, more accurate, judgments of competing views.

Such raw data access promotes scientific integrity and public confidence by factual demonstration of the absence of data distortions. Private interests are safeguarded. This seems better than relying on weak inferences, based on income sources or authorial testimonials, to allay the increasing suspicious doubt that erodes public confidence and support for research. I hope this suggestion fosters needed open debate about this extremely important public issue.

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