

The Number Needed to Inform - What we talk about when we talk of science journalism

Science values detail, precision, the impersonal, the technical, the lasting, facts, numbers and being right. Journalism values brevity, approximation, the personal, the colloquial, the immediate, stories, words and being right now. There are going to be tensions.
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The role and the quality of science journalism – and particularly health journalism – are often debated in peer-reviewed research, along with their direct and indirect consequences on science, science policy, the public understanding of science and of course public health. Researchers have been trying to apply their methods to a discipline which differs very much from their own, for instance proposing an evaluation grid similar to those used for the critical appraisal of the medical literature [1]. Those attempts do not satisfy most specialised science and health reporters, who do their best to keep up with high professional standards while producing appealing, entertaining and easy to read news, knowing well that in the current media market everything is just «Two clicks away from Britney Spears», as a headline of the BMJ put it [2].

According to the typical vision, as soon as a scientific study is published the journalists rush to transform the cautiously expressed results into a headline full of hype, betraying the original message. This is often true, but anecdotal evidence shows that the cause of this phenomenon might be quite complex, and its perception by the scientific community

might be distorted, because of a mixture of self-forgiveness and selection bias.

IN THE SAME BOAT, WITH DIFFERENT ROLES

Take a very recent example: cardiovascular diseases and macular degeneration are certainly relevant public health issues, so it should be of no surprise that an observational study published on *Jama Internal Medicine*, reporting that almost 25% of regular aspirin users develop wet macular degeneration [3], got covered in the press.

«Of 2 389 participants, 257 individuals (10.8 percent) were regular aspirin users» read the embargoed press-release distributed by the American Medical Association [4]. «After the 15-year follow-up, 63 individuals (24.5 percent) developed incident neovascular AMD, according to the results».

With such a big increase in risk, many journalists worldwide were ready to blow the horn: «Think about that» later commented US health reporter Brenda Goodman on the blog of the Association of Health Care Journalists

[5]. «If it were true, that would mean the study found that nearly 1 in 4 regular aspirin users developed the blinding eye condition. Observational study or not» she added «a statistic like that could lead plenty of people to rethink a daily aspirin regimen».

But Goodman's rather basic journalistic investigation (she e-mailed the authors) revealed that the percentage reported in the study was wrong, and was probably added by a journal editor: «The 24.5% figure is incorrect and is a post-acceptance editorial addition which we did not pick up in the proof. Thank you for pointing it out» lead study author Jie Jin Wang wrote back to the reporter. She alerted the journal, and the error was promptly removed. Alas the editors didn't think about leaving a trace of the correction in the journal itself. So physicians and researchers now wondering where the wrong figure comes from would probably end up putting all the blame on the media, instead of praising the role a scrupulous health reporter had in spotting a troubling mistake, or on the press-officers who wrote the release.

THE MEDIA WORK IN THE INTEREST OF THE AUDIENCE, NOT OF SCIENCE OR SCIENTISTS

The aspirin study represents an interesting case-study also for a related issue raised by Reuters Health Executive Editor Ivan Oransky, who exposed in his blog "EmbargoWatch" what he proposed to call the "scientific embargo version of insider trading" [6]. It is standard practice for many publishers to distribute to accredited journalists advance copies of studies in publication, with the explicit agreement not to publish anything before a set date. This is meant to provide reporters with more time to write on complex and delicate issues.

With the aspirin study, right after receiving the embargoed press-release from the journal, Oransky was offered by a public relations firm the opportunity to get a comment on that study from an independent expert. The reporter perceived that "offer of help" as an attempt at influencing his coverage, to get some visibility in the media. According to standard practice with embargoes – he writes – neither the physician nor the public relations firm (supposedly paid by someone to increase the visibility of

the expert and the expert's institution) are supposed to have a legitimate reason to access that privileged advance information.

A PLEA FOR MULTIDISCIPLINARY RESEARCH: HELPING EACH OTHER TO SERVE THE PUBLIC INTEREST

In recent years many different actors offered to help the media. But in response to the fears of undue influence, more and more voices have started recognising that independent science journalism – as opposed to communication – deserves more attention. This is especially relevant since traditional media are weakening, and perceive to be "under threat": «In the face of this changing media landscape, journalism and science organizations need to explore better ways to train reporters, scientists, and other communicators around the world in the substance and process of science writing» wrote science writer Cristine Russell in an editorial on Science magazine in 2009. «In doing so, it is crucial that the old-fashioned virtues of good journalism – accurate information, multiple sources, context over controversy, and editorial independence – not be lost in the enthusiasm for communicating content in novel ways [7]. Or as a Nature editorial from the same year put it: «Society needs to see science scrutinized as well as regurgitated if it is to give science its trust, and journalists are an essential part of that process» [8].

Similarly the international community of pharmacovigilance summarised the concept in a statement: «The media and professional communicators have an important role, not only as safety partners, but also in scrutinising the performance of drug safety systems. New ways to cooperate with the media as professional equals must be explored to help in the provision of balanced, comprehensible, trustworthy and interesting safety information to the public on a regular basis, apart from specific announcements or reports of problems or crises» [9].

The concept of "professional equal" still needs to find a practical application for science journalism - especially in countries in which journalism is considered a profession mostly learned on the job - but science journalists and their organisations are willing to help craft it. For instance, the preliminary results

of an international survey conducted among science journalists in 2012 («Know Thyself, Science Writer!», promoted by the professional association Science Writers in Italy, with 407 respondents from all continents) show that most journalists would like not only to be involved in continuing education but also in research projects organised by or with science journalists (see Supplementary Materials).

ANSWERING THE QUESTION: «SIGNIFICANT» TO WHOM?

This new section of Epidemiology, Biostatistics and Public Health will try and reflect on what we may call “The healing power of the media” by bringing in the perspective of media professionals – call them science writers and editors, health reporters, health care journalists – who have been investigating on the factors that contribute in a practical way to the ideal of «quality in journalism». The starting assumption – according to the title of the next World Conference of Science Journalists planned in Helsinki for next June – is that the focus of Science Journalism should be, quite simply, «Critical Questioning in the Public Sphere» [10].

In this context, the role of specialised

journalists might be seen as similar to the role of epidemiologists who look at the wider picture through the lens of statistics and systematic reviews. While the general assignment reporters focus mostly on the facts in front of them – like the physician facing an individual patient – the specialised journalists try to evaluate the same facts in the wider context of evidence-based medicine and public health.

In doing so, science journalists are constantly reminded that journalism is different from science, because most readers (ie: ordinary people) will always interpret very subjectively the meaning of words like «evidence», «risk» and «benefit», not to mention expressions like «statistically significant» as opposed to «clinically significant» or just significant.

Citizens need «simply significant» news, and one of the most difficult challenges science journalists face is finding a way to make «newsworthy» what they think is more significant for them and their audience. In simple words.

Which is not a simple task.

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