



## How can we ensure a future of quality science reporting in the UK?

Submission to the Leveson Inquiry: Culture, Ethics and Practice of the Press

Dr Chris Chambers

Dr Petroc Sumner

Dr Fred Boy

Cardiff University Brain Research Imaging Centre (CUBRIC)  
School of Psychology  
Cardiff University  
CF10 3AT

Author contact details:

Dr Chris Chambers

Web: <http://psych.cf.ac.uk/chambers>

Dr Petroc Sumner

Web: <http://psych.cf.ac.uk/sumner>

Dr Fred Boy

Web: <http://psych.cf.ac.uk/boy>

## **Overview**

In their critically acclaimed book, *The Elements of Journalism*, Kovach and Rosenstiel identified ten principles of journalism. Foremost was the responsibility to ensure accuracy, or in their words: “*Journalism’s first obligation is to the truth*”<sup>1</sup>.

The Leveson Inquiry gives us pause to ask: is this principle being upheld in the UK media? And is it being maintained in the crucial domain of science reporting?

Based on existing evidence, including our own personal experience with journalists, we believe that several areas of the press routinely ignore their primary obligation to accuracy, either by deliberately distorting scientific evidence in the name of a predetermined narrative, or by failing to equip journalists with adequate knowledge and training in scientific principles.

This situation is unacceptable. The media plays a vital role in science, and scientists are increasingly recognising that forming productive media relationships is an important aspect of their professional lives. Our main contention is that major changes in culture and practice must take place if we are to safeguard the future of British science reporting and the scientist/journalist relationship. As we outline below, these changes include a more thorough fact-checking system for science journalists, a Press Complaints Commission with robust statutory powers, a system of incentives for science journalists to value accuracy in reporting, and increased dialogue between scientists and journalists.

## **Background**

A recent study reported that over a one-week period of British health news stories, 70% of claims by journalists were based on insufficient evidence<sup>2</sup>. Among the sample of selected outlets, tabloid newspapers were the worst offenders. This research followed a number of similar findings in the USA, Canada and Australia<sup>2</sup>. The propagation of inaccurate and confusing messages in science news has been highlighted elsewhere to dramatic<sup>3</sup> and comedic<sup>4</sup> effect.

At the same time, a recent survey commissioned by the Department of Business, Innovations and Skills<sup>5</sup> reported that 82% of the public agreed that “*science is such a big part of our lives that we should all take an interest*”, while 88% also agreed that “*scientists make a valuable contribution to society*”. However, 56% felt they were not adequately informed about science, and less than 50% trusted information they were told about science.

This research paints the picture of a literate British public that values science and is hungry for science news, but which is starved of clear and accurate content.

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<sup>1</sup> <http://www.journalism.org/node/72>

<sup>2</sup> Cooper et al. (2011). The quality of the evidence for dietary advice given in UK national newspapers. *Public Understanding of Science*, DOI: 10.1177/0963662511401782, <http://pus.sagepub.com/content/early/2011/04/08/0963662511401782.abstract>

<sup>3</sup> <http://kill-or-cure.herokuapp.com/>

<sup>4</sup> <http://www.youtube.com/watch?v=gtrIIQ87wCg>

<sup>5</sup> <http://www.ipsos-mori.com/Assets/Docs/Polls/sri-pas-2011-main-report.pdf>

### **Specific problems**

We believe that the current state of science news reporting in the UK stems mainly from four institutionalised problems:

(1) A culture of sensationalistic reporting – particularly in the tabloids – that routinely distorts scientific evidence to support predetermined narratives, as we have seen first-hand in the reporting of our own research.

(2) A more general ignorance of basic scientific principles in many corners of the media that otherwise act in good faith; one of the most common of these misunderstandings is the confusion between correlation and causation.

(3) A Press Complaints Commission that has insufficient powers to act as a reasonable deterrent to news outlets that deliberately distort science or do not take sufficient care in checking facts.

(4) The vicious cycle of a public readership that, due to being continually misinformed, cannot distinguish the ‘wheat from the chaff’ and so does not demand change through consumer choice or direct complaints.

We have written several articles in the media focusing on these threats<sup>6,7,8</sup>, one of which<sup>8</sup> generated significant debate and was referred to in a recent article by the Minister of State for Universities and Science, Mr David Willetts<sup>9</sup>.

### **Specific Solutions**

For many scientists, the obvious solution to the problem of inaccuracy in news reporting would be for scientists to be routinely consulted to check final copy. The question of whether this should be allowed is contentious because it threatens press independence and is perceived (understandably) as insulting to professional journalists. For these reasons, and also due to practical limitations, we do not believe it is realistic or beneficial for *a priori* copy checking to become a mainstay of UK science reporting. That said, we disagree with the argument proposed by some journalists that scientists should *never* be allowed to copy-check articles<sup>10</sup>. We regard this as a self-serving position that elevates journalistic pride above the need to ensure accuracy.

We believe that the four problems outlined above could be addressed through the following measures.

#### **(1) A kite-marking scheme for science news reporting**

Earlier this year, we published a study showing that impulsive individuals tend to have lower levels of a specific chemical in the brain. Two news outlets, including the *Press Association* and *Daily Mail*, then ran stories stating a causal link between this

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<sup>6</sup> <http://www.guardian.co.uk/science/blog/2011/feb/16/thinking-caps-pseudoscience-neuroscience>

<sup>7</sup> <http://www.guardian.co.uk/science/blog/2011/aug/22/riot-control-newspapers-distorting-science>

<sup>8</sup> <http://www.guardian.co.uk/science/blog/2011/oct/11/scientists-check-stories-before-publication>

<sup>9</sup> <http://www.guardian.co.uk/science/blog/2011/oct/27/science-writing-future>

<sup>10</sup> <http://www.guardian.co.uk/science/blog/2011/sep/29/scientists-copy-check-stories>

brain chemical and the summer riots, while the *Sun* claimed that we were developing a ‘nasal spray’ to treat alcohol-fuelled violence<sup>7</sup>. The outlets that published these false claims attract millions of British readers, few of whom would be in a position to realise that the claims were untrue.

We have since filed and won PCC complaints against the *Press Association*, the *Daily Mail*, and the *Sun* in relation to their coverage of our research. The newspapers attempted to defend their position by justifying the necessary use of “*robust and thought-provoking language*”, while another argued that the spurious link between our research and the riots was a “*genuine attempt to make the research more accessible and topical*”. Yet, in each case, the PCC ruled that these outlets violated one or more tenets of Clause 1 of the Editor’s Code of Practice (Accuracy).

Our case shows that the PCC is a crucial mechanism in media regulation. Yet the PCC currently operates on a *post hoc* basis and can never undo the widespread damage caused by misreporting. For this reason we believe that preventative steps should be taken to help ensure accuracy of science reporting. We therefore propose a *kite-marking* scheme that would increase engagement between scientists and journalists, and in doing so would provide the public with a greater assurance in factual accuracy.

Our proposed kite-marking scheme would offer a PCC-accredited stamp of approval for science news reports, providing some or all of following conditions are met:

**(a)** that the news report was written following direct communication with the original scientists, as opposed to being extracted second-hand from other news sources, i.e. the highly questionable practice of ‘churnalism’;

**(b)** that the main conclusions of the science, and any quotes, were checked with the source for accuracy prior to their inclusion (comment and critique would not have to be checked, but must be distinguished clearly from statements made by the source);

**(c)** that the news story provides a web-link to the press release or original research paper (where possible), allowing the public to directly assess the accuracy of the story;

**(d)** that within a short period following publication of the news story, the original scientists are afforded the opportunity to comment on the article, with this comment appearing alongside the published article, and distinguished clearly from the general comments by readers that many online newspapers now allow.

Importantly, the nature of PCC-accreditation could be graded according to the number of above conditions met by a particular news report. We propose the following grading system:

(a) story follows direct communication with source	(b) story is fact-checked with source*	(c) story contains link to press-release and/or original research paper	(d) scientist's comment permitted alongside story	PCC-accredited kite-mark
✗	✗	✗	✗	Unaccredited
✓	✗	✗	✗	★☆☆☆ 1-star
✗	✗	✓	✗	★☆☆☆ 1-star
✗	✗	✗	✓	★☆☆☆ 1-star
✓	✓	✗	✗	★★☆☆ 2-star
✗	✗	✓	✓	★★☆☆ 2-star
✓	✗	✓	✗	★★☆☆ 2-star
✓	✓	✓	✗	★★★☆☆ 3-star
✓	✗	✓	✓	★★★☆☆ 3-star
✓	✓	✓	✓	★★★★☆ 4-star

\* Nb. Condition (b) is a subset of condition (a). Thus if (b) is met then (a) must also be met.

We believe this scheme would provide the public with a direct and rapid gauge as to the veracity of science news reports, while also ensuring full press independence.

Existing evidence suggests that the public would support such an initiative. In the recent survey of attitudes to science by the Department of Business, Innovations and Skills (discussed above), over 50% of respondents reported they would be more likely to trust scientific findings *if they knew other scientists had formally reviewed them*<sup>5</sup>.

Naturally this kite-marking mechanism could not be mandatory. However, if quality outlets freely adopted the kite-marking system, it would quickly isolate those media organizations that refuse to engage. This simple contrast between outlets would instantly provide readers with a ‘trust meter’.

**(2) Increased powers for the Press Complaints Commission (PCC)**

We believe the PCC has insufficient powers to deter news outlets from deliberately or carelessly distorting science – otherwise UK tabloids, in particular, would not be awash with inaccurate science reporting.

We therefore recommend three key changes to the PCC:

- (a) the granting of statutory powers that permit the PPC to impose fines on news outlets for deliberate falsification of facts, with the magnitude of the fine determined by the frequency and severity of incidents;
- (b) the mandatory publication of all corrections with ‘greater prominence’ rather than the inadequate ‘due prominence’ that is currently required<sup>11</sup>;

<sup>11</sup> [http://www.pcc.org.uk/faqs.html#faq1\\_6](http://www.pcc.org.uk/faqs.html#faq1_6)

(c) in each case of inaccuracy, a public statement from the news outlet outlining what steps will be taken to ensure that such incidents are not repeated – with failure to implement such steps met with increased punitive action following future violations of the Code of Practice.

We would also echo the call of the Science Media Centre, in its Leveson Inquiry submission, for the PCC to allow complaints to be filed from scientists other than those named in original articles.

### **(3) Increased engagement between scientists and journalists, and increased public education**

We believe scientists have an important responsibility not only to make and communicate new discoveries, but also to help educate journalists and the public about basic scientific principles. In our experience, many cases of poor science reporting arise not because of deliberate fabrication, but because a journalist has inadequate knowledge about the philosophy of science. A common example seen in health reporting is the confusion between correlation and causation, or the nature of statistical reasoning and interpretation of relative risks. Since journalists are the primary conduits for public dissemination of science, this ignorance then feeds directly to the media consumer.

Importantly, however, we do not wish to imply that the role of science journalism is merely to convey science from scientist to public. Although many scientists may see it that way, it is clear from the debate that arose following our most recent *Guardian* article<sup>8</sup> that many journalists view their role differently. This gap in understanding the demands of each other's profession clearly poses a challenge in the relationship between scientists and journalists.

There is much that can be done to address these problems by increasing the interaction between scientists and journalists. We also believe the government has an important role to play in ensuring that primary and secondary education empowers children with the ability to critically evaluate evidence.

Finally, as we have noted previously<sup>6</sup>, scientists themselves have an ethical responsibility to ensure that they do not 'oversell' their research in the media. This includes the preparation of press releases, which should be written judiciously, and always given final approval by the scientists if altered in any way by university press offices. Following extensive discussions with science journalists, we recommend that scientific press releases be written carefully to identify not only what is new and exciting about the research, but also highlighting its limitations and caveats. In particular, we suggest the routine inclusion of a section: "What this study does not show". Scientists should also be careful to help journalists avoid logical fallacies. For instance, if a study reports a correlation between two measures, then the press release should explicitly note that the results do not imply a *causal* relationship between them.

#### **(4) Incentives for accuracy**

We support the call by the Science and the Media Interest Group<sup>12</sup> for an official government prize for excellence in science journalism, with a focus on stories that are both accurate (as assessed by a panel of expert scientists) and engaging (as assessed by readers). In addition, we would propose separate prizes for tabloid and broadsheet news formats, due to different requirements and formatting restrictions of these modes.

#### **(5) Recommendations of the Science Media Centre (SMC)**

In addition to the changes noted above, we endorse all recommendations for change proposed by the SMC in its submission to the Leveson Inquiry.

#### **Conclusions**

In this submission we identify the problems we perceive, and have experienced, as scientists interacting with the British media. As noted at the outset, we believe science journalism must make major changes if we are to evolve beyond the current limitations. Existing evidence suggests that the British media consumer is literate and enthusiastic about science, but disappointed in the quality of information that is conveyed. As scientists, we wholeheartedly agree.

It is important to stress that despite the critical need for improvement, there is much excellent and world-leading science reporting in the UK. As psychologists and neuroscientists, we particularly admire and appreciate the generally accurate and engaging coverage of our field by the *BBC* and the *Guardian*, by a host of professional science writers, and more specialist agencies such as *Nature News*.

Unfortunately, however, the majority of media consumers are not exposed to this excellent science journalism. This is why we believe that improving the system at a grass roots level is neither a luxury nor a futile indulgence; it is an obligation shared by scientists, the media, and government.

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<sup>12</sup> <http://interactive.bis.gov.uk/scienceandsociety/site/media/>



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