

Bad Science



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1 **W**hen I am finally assassinated by an axe-wielding electrosensitive homeopathic antivaccine campaigner – and that day surely cannot be far off now – I should like to be remembered, primarily, for my childishness and immaturity. Occasionally, however, I like to write about serious issues. And I don't just mean the increase in mumps cases from 94 people in 1996 to 43,322 in 2005. No.

2 One thing we cover regularly in Bad Science is the way that only certain stories get media coverage. Scares about mercury fillings get double page spreads and Panorama documentaries; the subsequent research, suggesting they are safe, is ignored. Unpublished research on the dangers of the MMR vaccine gets multiple headlines; published research suggesting it is safe somehow gets missed. This all seems quite normal to us now.

3 Strangely, the very same thing happens in the academic scientific literature, and you catch us right in the

middle of doing almost nothing about it. Publication bias is the phenomenon where positive trials are more likely to get published than negative ones, and it can happen for a huge number of reasons, sinister and otherwise.

4 Major academic journals aren't falling over themselves to publish studies about new drugs that don't work. Likewise, researchers get round to writing up ground-breaking discoveries before diligently documenting the bland, negative findings, which sometimes sit forever in that third drawer down in the filing cabinet in the corridor that nobody uses any more.

5 But it gets worse. If you do a trial for a drug company, they might – rarely – resort to the crude tactic of simply making you sit on negative results which they don't like, and over the past few years there have been numerous systematic reviews showing that studies funded by the pharmaceutical industry are several times more likely to show favourable results than studies funded by independent sources. Most of this discrepancy will be down to cunning study design – asking the right questions for your drug – but some will be owing to Pinochet-style disappearings of unfavourable data.

6 Moreover, trials are often spread across many locations, so if the results are good, companies can publish different results, from different centres, at different times, in different journals. Suddenly there are lots of positive papers about their drug. Then, sometimes, results from different centres can be combined in different permutations, so the data from a single trial could get published in two

different studies, twice over: more good news!

7 This kind of tomfoolery is hard to spot unless you are looking for it, and if you look hard you find more surprises. An elegant paper reviewing studies of the drug Ondansetron showed not just that patients were double and treble counted; more than that, when this double counting was removed from the data, the apparent efficacy of the drug went down. Apparently the patients who did better were more likely to be double counted. Interesting.

8 The first paper describing these shenanigans was in 1959. That's 15 years before I was born. And there is a very simple and widely accepted solution: a compulsory international trials register. Give every trial a number, so that double counting is too embarrassingly obvious to bother with, so that trials can't go missing in action, so that researchers can make sure they don't needlessly duplicate, and much more. It's not a wildly popular idea with drug companies.

9 **M**eanwhile the system is such a mess that almost nobody knows exactly what it is. The

US has its own register, but only for US trials, and specifically not for clinical trials in the developing world (I leave you to imagine why companies might do their trials in Africa). The EU has a sort of register, but most people aren't allowed to look at it, for some reason. The Medical Research Council has its own. Some companies have their own. Some research charities do too. The best register is probably Current Controlled Trials, and that's a completely voluntary one set up by some academics a few years ago. I have a modest prize for the person with the longest list of different clinical trial registers.

10 And why is this news? Because people have been calling for a compulsory register for 20 years, and this month, after years of consulting, the World Health Organisation proudly announced a voluntary code, and a directory of other people's directories of clinical trials. If it's beyond the wit of humankind to make a compulsory register for all published trials, then we truly are lame.

The Guardian, 2006

Tekst 6 Bad science

- 1p 19 Which of the following can be concluded about the writer's intentions from paragraph 1?
- 1 He will not shy away from offering controversial views.
 - 2 He is going to focus on something he considers of real importance.
- A Only 1 is right.
B Only 2 is right.
C Both 1 and 2 are right.
D Neither 1 nor 2 is right.
- 1p 20 What is the point made in paragraph 2?
- A Press stories on health risks only stimulate people's belief in alternative medicine.
B The average person will stick to unhealthy habits in spite of all the negative media reports.
C The general public has become immune to health scares in the media.
D The media do not follow up sensational bits of news with the actual facts.
- 1p 21 What is the function of paragraph 4?
- A It comments critically on the point made in paragraph 3.
B It illustrates the point made in paragraph 3.
C It introduces the subject matter of paragraph 5.
D It states the causes for the situation described in paragraph 3.
- 1p 22 Which of the following statements agrees with the point made in paragraph 5?
- A Pharmaceutical companies are generally insensitive to complaints about the side effects of the drugs they sell.
B Research can be conducted in such a way that it actually meets the wishes of pharmaceutical companies.
C Scientists are reluctant to inform their sponsors of unfavourable research results.
D Scientists favour those drug companies that give them generous funding.
- 1p 23 Which of the following is the subject matter of paragraph 6?
- A How far drug companies have to go to get favourable test results published.
B How little attention is given to unfavourable research results.
C The elaborate care drug companies take to conduct their research properly.
D The manipulation of positive research results by drug companies.

- 1p **24** “Interesting.” (at the end of paragraph 7)
From whose point of view?
From the point of view of those
A doing research for the production of new drugs.
B involved in manipulating test results.
C seeking to expose the malpractices of drug companies.
D who profited from the drug Ondansetron.
- 2p **25** Geef van elk van de volgende citaten uit de alinea’s 8 en 9 aan of hierin wel of niet sprake is van een ironische ondertoon.
1 “Give every ... bother with” (alinea 8)
2 “It’s not ... drug companies.” (alinea 8)
3 “I have ... trial registers.” (alinea 9)
Noteer het nummer van elk citaat, gevolgd door “wel” of “niet”.
- 1p **26** Waarom is de schrijver ontevreden over de aankondiging van de World Health Organisation zoals beschreven in de laatste alinea?

Bronvermelding

Een opsomming van de in dit examen gebruikte bronnen, zoals teksten en afbeeldingen, is te vinden in het bij dit examen behorende correctievoorschrift, dat na afloop van het examen wordt gepubliceerd.