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## **WHAT'S WRONG WITH PSYCHOLOGY?**

*This paper first appeared in the Autumn edition of the 'Skeptical Intelligencer', 2015, pp 1-2.*

Recently I attended a lecture at the University of Sheffield by Marcus Munafò, Professor of Biological Psychology at the University of Bristol. The lecture was entitled 'Reproducibility: What is the scale of the problem?' Professor Munafò reviewed quite a number of papers that have appeared over the last 10 years that raise anxieties about the reproducibility of scientific research, particularly that conducted on human subjects.

There is a range of factors that can influence the validity and hence the replicability of research findings. When I was studying Psychology in the late 1960s the discovery of the extent of 'the experimenter effect' in psychological experiments had caused concerns about the validity of many previously published papers. The experimenter effect is the tendency for researchers to unwittingly influence the results of their experiments in the expected or desired direction. This extends to research assistants who are aware of their supervisor's predictions about the behaviour of their experimental subjects, namely laboratory rats.

More recently other sources of error and unreliability have been publicised. One is sheer dishonesty: the results have been deliberately distorted or even fabricated. This of course has the potential to occur in any field of science and psychologists themselves have not been immune to this egregious practice. Another is publication bias or the 'file drawer effect': positive findings are much more likely to be published in journals than negative findings (i.e. no significant result). This bias will tend to increase the presence of false positive results in the published literature. The bias is made worse by the reluctance of journal editors to publish research papers in which the null hypothesis was upheld. In fact, published experimental research in psychology and social sciences tends to have more positive outcomes than in other branches of science. Small sample sizes and the overestimation of the power of the statistical analyses employed are other reasons for spurious positive outcomes. The list goes on.

Not all of this lamentable state of affairs is due to laziness, incompetence or lack of technical knowledge. A major driving factor is the pressure in academia for each person to have his or her name regularly appearing on a sufficient number of research papers. At stake are one's status, access to resources, career prospects and even livelihood, not to mention one's favourite theory that has just been called into question by someone else's research. In other words, we have an industry driven by the self-interest of the suppliers over the demands of the consumer or the need to expand the knowledge base. As a result, over the years we have seen a steady growth in the number of academic journals and academic papers (which now includes online publications) yet estimates of how many people actually read the articles and how often they are cited remain derisively low (try a Google search). The same is true of Doctoral and Master's dissertations. And as sure as night follows day there will be fabrication, cheating, corner-cutting and other malign practices, as well as the pursuit of trivial research goals that no one else finds of the slightest relevance.

Psychology, I regret to say (having been a psychologist all my working life) presents itself as a severe case of this malaise. One of thing that determines what research goals academic psychologists pursue, and how they set about it, is what is most convenient for them. Thus, research goals that can be most easily addressed by experiments on mice, rats, pigeons and university students have always proved extremely popular, as have observations (dependent variables) that are easily measured (rate of lever pressing or pecking, reaction times, scores on a test or questionnaire, etc.).

Even for the purposes of exploring more ambitious questions about human nature, the above experimental subjects and measures often prove remarkably adaptable. For example, a really ambitious research project might be the exploration of empathy in psychopaths. This would be a hot topic for scientific study and no trivial matter. Good luck to anyone researching this! It would involve a great deal of work recruiting participants, designing the study, obtaining reliable measurements, and so on.

Recently I read about a piece of research that some academic psychologists had conducted in this field (I'm not going to cite the reference – it can be easily found on the internet). But the researchers did not use psychopaths; they use students from their university and got them to complete a questionnaire that measures psychopathic traits.

The other key measurement was change in frequency of the participant's yawning when other people yawned. The results indicated a negative correlation between this and psychopathy scores.

I'm not saying that the research was a waste of time; also, it would be reasonable to say that it was an investigation into the determinants of contagious yawning rather than into psychopathy. My point is that one major reason why psychologists do this kind of research is that it ticks all the boxes for convenience (and gets a paper published for the researchers) whereas more difficult but pressing research may not be given due priority. Also, experiments like this habitually spawn yet more experiments to test competing theories until the whole business has more to do with what goes on in the psychological laboratory than the real world.

The failings of modern psychology are the subject of a recent book by Tomasz Witkowski and Maciej Zatonoski entitled *Psychology Gone Wrong: The Dark Sides of Science and Therapy* (Boca Raton FL: BrownWalker Press, 2015). The authors are founding members of the Polish Skeptics Club. Dr Witkowski is a psychologist, and Dr Zatonoski is a surgeon working in the UK. In their book they review the history of fraudulent research and questionable research practices; the willingness of many psychologists to embrace pseudoscientific ideas and practices (psychoanalysis, recovered memory therapy, projective testing, NLP, etc.); exaggerated claims for the efficacy of psychological interventions; and so on. In each case the authors support their thesis with abundant references.

Some readers may find the authors' style rather uncompromising and without balance (e.g. in their account of 'the Burt affair' which was discussed in the *Skeptical Adversaria*, 2012 (2); Burt does have his defenders). Also, quite a number of the frauds that the authors describe are from disciplines other than psychology and it may be argued that the authors' complaints are characteristic of science generally (though I think there is a strong case for looking at psychology for particularly instructive examples of 'science gone wrong'). Readers will wish that the authors included an index, and I would advise that when the second edition is in preparation, a good proofreader is employed (the authors should be congratulated on producing an easy-to-read book but even the most forgiving of readers will not excuse the number of errors in the text).

For professional psychologists, students and anyone who needs a working knowledge of academic and applied psychology (which includes all skeptics) this is an important book and I thoroughly recommend it.