

## **Why ‘finding nothing’ matters for good science and policy: a response to Hemenway (2009)**

*Authors’ note:*

This short piece was submitted to the *Journal of Public Health Policy* in 2009.

It was submitted as a ‘right of reply,’ to correct factually inaccurate assertions about our work that had been published in an earlier article (Hemenway, 2009).

The Editors of the *Journal of Public Health Policy* [refused to publish our reply](#) and the incorrect statements made by Hemenway (2009) continue to be repeated by anti-gun lobbyists.

Why 'finding nothing' matters for good science and policy: a response to Hemenway (2009)

Samara McPhedran and Jeanine Baker

International Coalition for Women in Shooting and Hunting (WiSH)

PO Box 393

Glebe, New South Wales, Australia, 2037

Running title: Why 'finding nothing' matters

Keywords: firearms, legislation, policy, evidence

Word count (incl. references): 924

### **Abstract**

Hemenway's (2009) selective literature search, repetition of factually incorrect assertions about our work (Baker & McPhedran, 2006) and emotive rhetoric ignores the increasing weight of evidence that Australia's 1996 National Firearms Agreement (NFA) did not produce tangible results in the ten years following its introduction. Contrary to Hemenway's (2009) claims, hypothesis testing is not about assuming that an intervention has an effect unless proven otherwise, or about trying to find evidence for an assumed effect. Rigorous science is about assuming that there is 'no effect' unless there emerges a significant body of convincing evidence to the contrary. This has not occurred in relation to Australian firearms legislation, where a growing body of evidence from multiple sources accords instead with the hypothesis of 'no effect', or, 'finding nothing'. This has important implications for policy development.

Hemenway's (2009) selective literature search, emotive rhetoric and repetition of factually incorrect assertions about Baker and McPhedran (2006, see McPhedran and Baker, 2008a; McPhedran and Baker, 2008b) demonstrates the polarised nature of debate over the benefits or otherwise of increasingly stringent gun laws, or even whether civilian ownership of guns can be countenanced. Sadly, it appears Hemenway (2009) has ignored the importance of having a firm theoretical and practical understanding of hypothesis testing and its application to policy settings.

By singling out and criticizing Baker and McPhedran (2006) on the basis of our affiliation with what he terms the 'pro-gun' lobby (p. 262), Hemenway disregards the increasing weight of evidence replicating our finding that Australia's 1996 National Firearms Agreement (NFA) did not produce tangible results in the ten years following its introduction. Hemenway (2009) suggests our decision to not examine Australian data from 1915 onwards (a period containing two World Wars and other conflicts, significant social change, and alternating periods of economic prosperity and recession) led to insufficient strength of evidence to show that the NFA had no effect.

We find it odd that Hemenway (2009) failed to recognise the implications of Lee and Suardi's (2008) work. As per Hemenway's (2009) recommendations, this paper uses data from 1915 onwards and draws an identical conclusion to Baker and McPhedran (2006); the evidence shows no tangible impact of the NFA on Australian firearm deaths, despite the extremely high expenditure incurred to fund the 1996 gun 'buyback'. Despite describing Lee and Suardi's (2008) statistical methods as "sophisticated", Hemenway (2009) glibly dismisses their findings as arising from a test that "can easily miss the effect" (p.267).

This reveals a fundamental flaw in Hemenway's (2009) understanding of hypothesis testing. Hypothesis testing is not about assuming that an intervention has an effect unless proven otherwise, or about trying to find evidence for an assumed effect. Rather, rigorous science is about assuming 'no effect' unless there emerges a significant body of convincing evidence to the contrary. This has not occurred in relation to Australian firearms legislation, where a growing body of evidence from multiple sources accords instead with the hypothesis of 'no effect'...or, 'finding nothing'.

Instead of adopting a rigorous approach, it appears Hemenway (2009) is clinging to his preconceived, often expressed view that reducing the stockpile of licitly held civilian firearms

and increasing restrictions on private firearms ownership will result in reductions in firearm and/or overall sudden death rates. This ignores mounting evidence from Australia (and elsewhere) that developing successful policy to reduce gun deaths is far more complex than the simplistic measure of increasing restrictions on legal owners (e.g., De Leo et al., 2002, De Leo et al., 2003; Hahn et al., 2005; Klieve et al., 2009).

Unsurprisingly, policy based on poor evidence is generally ineffective, which eventually leads to the foundations of that policy coming under serious scrutiny as well as increasing public scepticism of both science and evidence-based policy. In the instance of firearms legislation, proponents of increasingly restrictive legislation have made a concerted effort to dismiss evidence that contradicts their viewpoint, and to produce more of the ‘poor science’ that generates ineffective policy (McPhedran and Baker, 2009). This approach leads not to progress, but rather to a ‘regress’ of knowledge.

We agree entirely with Hemenway’s (2009) observation that “Hypothesis testing can be misused and misinterpreted in various ways.” (p.260). For this reason, we continue to recommend that firearms policy development be based on empirical data, and careful evaluation of accumulated empirical study (Baker and McPhedran 2004), rather than outdated assumptions that are proving increasingly unfounded.

### **References**

- Baker, J., and McPhedran, S. (2004). Inside or Outside the Law? Tightening Legislation and the Principles of Firearms Ownership’. Presented at the Crime and International Connections Conference convened by the Australian Institute of Criminology, Melbourne, 2004.
- Baker, J., and McPhedran, S. (2006) Gun laws and sudden death: Did the Australian firearm legislation of 1996 make a difference? *British Journal of Criminology* 47: 455–469, (published online on 18 October 2006).
- De Leo, D., Dwyer, J., Firman, D., and Neulinger, K. (2003). Trends in hanging and firearm suicide rates in Australia: Substitution of method? *Suicide and Life-Threatening Behaviour*, 33, 151-164.

- De Leo, D., Evans, R., and Neulinger, K. (2002), Hanging, Firearm, and Non-Domestic Gas Suicides among Males: A Comparative Study, *Australian and New Zealand Journal of Psychiatry*, 36, 183–189.
- Hahn, R.A., Bilukha, O., Crosby, A., Fullilove, M.T., Liberman, A., Moscicki, E., Snyder, S., Tuma, F., and Briss, P.A. (2005). Firearms laws and the reduction of violence. *American Journal of Preventive Medicine*, 28(2S1), 40-72.
- Hemenway, D. (2009). How to find nothing. *Journal of Public Health Policy*, 30(3): 260-268.
- Klieve, H., Barnes, M., and De Leo, D. (2009). Controlling firearms use in Australia: Has the 1996 gun law reform produced the decrease in rates of suicide with this method? *Social Psychiatry and Psychiatric Epidemiology*, 44: 285-292.
- Lee, W-S., and Suardi, S. (2008). The Australian Firearms Buyback and Its Effect on Gun Deaths. Melbourne Institute Working Paper No. 17/08. Melbourne Institute of Applied Economic and Social Research, The University of Melbourne.
- McPhedran, S., and Baker, J. (2008a). The impact of Australia's 1996 firearms legislation: a research review with emphasis on data selection, methodological issues, and statistical outcomes. *Justice Policy Journal*, 5(1): 1-18.
- McPhedran, S., and Baker, J. (2008b). Enhancing evidence-based policy: Principles and practice from a case study of Australian firearms legislation. *Current Issues in Criminal Justice*, 20(2): 163-172.
- McPhedran, S., and Baker, J. (2009). A Submission to the Senate Community Affairs References Committee Inquiry into Suicide in Australia. Available from: [http://www.ic-wish.org/McPhedran%20Baker%20Suicide%20in%20Australia%20Senate%20Submission\\_Nov%2009.pdf](http://www.ic-wish.org/McPhedran%20Baker%20Suicide%20in%20Australia%20Senate%20Submission_Nov%2009.pdf)