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Marginalising homœopathy: an Australian case study

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ABSTRACT

Homœopathy, once an accepted form of medicine, is currently under attack in Australia, so much so that its very existence is threatened. To illustrate techniques of marginalisation of homœopathy in Australia, the Australian National Health and Medical Research Council's (NHMRC) report of 2015 is examined. As there is no standard framework or classification of marginalisation techniques, boundary work ideas were used to suggest techniques used in the process of marginalisation. To condemn homœopathy, the NHMRC used at least eight techniques: authority, asserting protection of autonomy, exclusion, double standards, normalisation, denigration, censorship, expansion and diversion. The NHMRC report is a revealing example of how biomedicine uses various tactics to marginalise alternative therapies, thereby maintaining biomedicine's dominant position.

Introduction

A recent report – *NHMRC Information Paper – Evidence on the Effectiveness of Homeopathy for Treating Health Conditions* – published by Australia's National Health and Medical Research Council (NHMRC, 2015a), finds that homœopathy has 'no reliable evidence of effectiveness.' This is in stark contrast to the time when homœopathy was recognised as a mainstream form of scientific medicine. Haller (2005, p.15) notes that those who supported the principle of Samuel Hahnemann, the founder of homœopathy, regarded it as 'equal in stature to Newton's Law of Gravity, Harvey's demonstration of the circulation of the blood and the non-existence of air in the arteries, and Jenner's principle of vaccination.' Paul Starr (1982, p.97) makes the point that, 'because homœopathy was simultaneously philosophical and experimental, it seemed to many people to be more rather than less scientific than orthodox medicine.' In contrast, homœopathy is now considered in the United Kingdom, the United States, Australia, some parts of Europe and other countries as an unscientific, marginal, alternative therapy (Smith, 2012). This view is also articulated in *Nature* (Giles, 2007).

In the past, homœopathy achieved prodigious popularity throughout Europe and the United States and more recently Asia, where it was favoured by royalty, entrepreneurs, literary giants and religious leaders. Baer (2009, p.16) explains that, as in North America and Europe, 'Homœopathic physicians, particularly if they were registered medical practitioners,

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enjoyed relatively high status in nineteenth century Australia' (p.16). Hahnemann (1755–1843), who trained as an orthodox medical doctor, deviated from the common medical practices of his time, deeming them to be unscientific (Hahnemann, 1970, 2009). While homœopathy is a long-established practice and is still widely used throughout the world, in Australia and other countries it has failed to maintain a position of influence in medicine and has become a marginalised, alternative therapy, widely attacked, criticised, discredited and cast out. In this context, it is interesting to examine the NHMRC report to discover some of the ways in which homœopathy has been marginalised in Australia today.

There is no standard framework or classification of strategies in the study of marginalisation (Jasper, 2006) and so this study will borrow the techniques of boundary work. Although boundary work is about defining the boundary and marginalisation about pushing something beyond the boundary and not necessarily creating a boundary, there are many commonalities useful for this study. Boundary work is a concept that was developed by Thomas Gieryn (1983, 1999) to study the rhetorical construction of differences between science and non-science; boundary theories have been further developed since then and are now used in various disciplines to focus on a range of topics where there has been a construction of boundaries to establish power, domination, monopoly, authenticity or marginalisation (Fisher, 1990; Åkerström, 2002; Lamont and Molnár, 2002; Howard, 2004; Derkatch, 2008).

The term 'biomedicine,' a more modern and popular name for orthodox medicine, emphasises strong biological and therefore scientific orientation (Willis, 1989; Baer, 2009). Biomedicine dominates health practices in Australia economically, politically, socially and intellectually (Willis, 1989). Most relevant to this study is biomedicine's autonomy and authority, enforced using intentions similar to and including boundary work tactics to protect professional independence from outside influences (Lamont and Molnár, 2002). This leads to another boundary work strategy, monopolisation (Howard, 2004). Monopolisation gives medicine the right to deny the legitimacy of outside evaluation of its own practices, but it also gives biomedicine authority over other health modalities (Willis, 1989).

Those who think that biomedicine is the only real therapeutic approach oppose homœopathy. This paper investigates how jurisdiction in one area of knowledge can marginalise another area. From the point of view of biomedicine, homœopathy involves significant deviation from traditional theory and practice. Indeed, Hahnemann was looking for a new medicine when he conceptualised homœopathy. This paper will explore techniques opposing this form of innovation. The NHMRC report is particularly appropriate because the NHMRC offers advice for the Australian community, health professionals and government, and provides advice on ethical behaviour in health care and in the conduct of health and medical research. The NHMRC also has authority over research funding, grants and development advice across all health modalities, including medical practitioners, nurses and allied health professionals, researchers, teaching and research institutions and alternative health practices.

This paper shows how the NHMRC used a wide variety of tactics to marginalise homœopathy in Australia. It is based on a close examination of the content of the NHMRC report in the light of research on homœopathy, as well as information about the writing of the report obtained through Freedom of Information requests submitted by the Australian Homœopathic Association and Complementary Medicines Australia. Identifying and analysing NHMRC claims contribute to understanding how the internal ordering of medicine

and the marginalisation of homœopathy are achieved. The findings are compatible with the view that the NHMRC report was an attempt to undermine and weaken homœopathy while strengthening the domination of biomedicine, rather than an accurate assessment of the evidence of the effectiveness of homœopathy. The paper is not concerned with whether homœopathy is effective, evidence-based or scientific, although some incidental discussion along these lines will be necessary to contextualise contra claims. Instead, the focus of the paper is on the techniques used to marginalise homœopathy in Australia.

Homœopathy emerged from biomedicine

Biomedicine claims to rely on evidence-based practices and a scientific approach to health care. Coulter (1999, 2000), examining the interaction of these two systems of health care, explains that at the time Hahnemann developed homœopathy, he was attempting to break away from the chaos in which medicine found itself, to return to first principles and rely on observation and experience. Hahnemann judged that, to be scientific, the medical art required thorough reform. He considered the scientific method to be a set of procedures for investigating nature to discover new knowledge, with three stages: (1) observation and testing of phenomena; (2) formulation of a hypothesis; and (3) experimental verification of the hypothesis. Following these guidelines, Hahnemann claimed homœopathy to be scientific (Hahnemann, 1970).

Originally an orthodox medical doctor, Hahnemann found that many of the practices of his time were not curative. To solve this problem, he sought examples of doctors who were known to have cured illness (including Hippocrates and Paracelsus) and found they described the principle of like substances. Hahnemann investigated the theory further and confirmed, through experiment, that administering a substance known to produce a set of symptoms in a healthy person cures that same set of symptoms in a sick person. This understanding became the basis of homœopathy and is known as the 'law of similars.' Originally, Hahnemann used the same medicines as his mainstream colleagues, but came to prescribe those medicines according to the law of similars, whereas colleagues continued to use the 'rational' method of opposites. Wanting to reduce side effects, he found, through repeated experiment, that he was able to achieve the same therapeutic effect by diluting the medicines, while reducing the toxic effects of the medications at the same time. The infinitesimal doses sometimes used in homœopathy are often considered implausible as a cure, but are a distraction from homœopathy's fundamental principle, the law of similars, that can involve doses of various sizes and concentrations.

Interestingly, despite being branded unscientific, homœopathy has some similarity with biomedicine. For example, homœopathy is analogous to vaccination. Vaccines are made from a killed, weakened, or partial version of a bacterium or virus. The bacterium or virus in the vaccine is a small dose of a substance known to cause a particular illness administered to an individual in order to prevent that same illness. Many orthodox health authorities believe that vaccination is the most successful public health intervention ever undertaken (Golden, 2010). Whereas homœopathy uses a small dose of a substance known to cause a set of symptoms to relieve that set of symptoms, vaccination uses a small dose of a substance known to cause a disease in order to prevent that disease. Hahnemann observed that homœopathic remedies not only cure illnesses, but also prevent them, as seen in the cases of scarlet fever, typhoid and cholera (Hahnemann, 1970).

Another shared therapeutic practice is the use of the medicinal substance digitalis. Orthodox doctors traditionally prescribe digitalis for congestive heart failure where the patient experiences heart arrhythmias and fluid retention. Toxicology reports show that when doses of digitalis are given to a healthy person (by accidental poisoning), the individual experiences a slow, feeble, irregular pulse and suppression of urine, causing fluid retention and then likely death. Following the law of similars, homœopaths administer digitalis to patients who experience heart arrhythmias, slow pulse and fluid retention to stabilise heart rhythm and function.

The proving of digitalis shows similar symptoms. In a homœopathic proving, clinically valid a priori assumptions can be made with regard to expectations of medicinal effect based on known actions. That is to say, homœopathic doctrine states that the symptoms repeatedly observed in a proving can be relied on as therapeutic indicators in the sick patient. Hahnemann's idea about provings is unique to homœopathy and has been accepted by the Australian Therapeutic Goods Administration (2011) as scientifically suitable evidence.

Science uses observation and experiment to understand the physical and natural world. Biomedicine considers randomised controlled trials (RCT) to be the gold standard, determining the efficacy of biomedical treatment and suggesting by their use that biomedicine is scientific. Since Hahnemann's time, homœopathy has used observation and experiment to determine the action (and therefore therapeutic benefit) of its medications, but only recently has homœopathy been able to cite conventional research findings demonstrating its action.[1] Dr. Robert Mathie has presented RCTs in homœopathy. Professor Jennifer Jacobs (2015), Dr. Iris Bell and Dr. Debora Olioso, to name but a few, have all produced trials showing homœopathy to be clinically viable (HRI website, accessed in May 2018). Stephen Cartwright's (2016) research with solvatochromic dyes produces evidence of consistent and reproducible changes caused by homœopathic potencies (that is, medicines after many dilutions) in the spectra of the dyes. Given the existence of such evidence, how can homœopathy be totally dismissed? Part of the answer lies in marginalisation techniques.

Boundary work – a history and exploration

Studies of boundary work are a useful place for identifying methods of marginalisation. Boundary work is an action taken to create or maintain boundaries. Building on the work of both Durkheim (1915) and Douglas (1966), Gieryn (1983) used the concept of boundary work to study the demarcation of science from non-science. Scientific boundary work occurs when scientists seek to distinguish their form of intellectual activity from other kinds they consider pseudo-scientific or non-scientific. Boundary work is not limited to the demarcation of science from non-science and has recently been used to describe any mode of practice, how this differs from another approach and what effect this has on both frames of reference (Jasanoff, 1995; Lamont and Molnár, 2002; Howard, 2004; Jacob, 2005; Swedlow, 2007; Derkatch, 2008). When Gieryn described boundary work, he referred to the various approaches or types of boundary as goals. In this paper, the concepts are used to describe methods to marginalise.

The demarcations between bodies of knowledge create boundaries (Gieryn, 1999; Lamont and Molnár, 2002; Howard, 2004). These boundaries establish a safe place where those within the circumference of separation can feel comfort and protection in their mode of practice. At the same time, those who do not fit within the boundary are excluded and

discredited. Kuhn (1962) describes 'universally recognised scientific achievements that, for a time, provide model problems and solutions for a community of researchers'; similarly, those who are part of a particular mode of practice participate in a community of thought. That is to say they have common characteristics of opinion or outlook and develop their ideas based on these teachings and experiences while those whose ideas differ are excluded or ridiculed.

To survive in the mainstream community, it is essential to follow the guidelines set by the community. This is beneficial for the group and maintains growth and connectivity (Gergen, 2009; Buhner, 2014). It also repels any thinking that does not fit within the demarcation of accepted practice. 'You must not extend your awareness further than your culture wants it to go' (Buhner, 2014, p.19) and 'There is no "thinking outside the box", without risking banishment from the box' (Gergen, 2009, p.210) ensure acquiescent members. Boundaries are created by group rules and divergence jeopardises future work, income, social status and authority, thereby reinforcing conformity. However, communities do not exist completely disconnected from all else and when demarcation brings about separation among disciplines, the validity of one school of thought becomes conflated with the power, authority and autonomy of the more dominant group. In a study of boundary organisations, Miller (2001, p.482) states that 'science is surely political – in the sense that its activities shape the distribution of power in modern societies' and Gieryn (1983) notes that there are powerful incentives for scientists to erect boundaries in arguing for their own autonomy. Similarly, Howard (2004) sees boundary work as an explicitly political activity in that it is often concerned with power relationships. Gieryn distinguishes four broad types of boundary work: monopolisation, expansion, expulsion and protection of autonomy. By accommodating monopolisation to protect autonomy (that is to say, by creating boundaries of what is considered science and what is not), demarcations are created that limit research, development and endorsement of potential alternatives, denying them mainstream acceptance.

Gieryn (1983, 1995, 1999) analyses boundary work demarcating science from non-science and claims that much boundary work occurs within and over a contested field. This understanding helps explain why biomedicine portrays itself as the only 'scientific' medicine and seeks to exclude homœopathy and other alternative therapies. Howard (2004) postulates that when someone from outside the scientific community proposes a controversial theory, the response is to construct a rigid boundary between the two doctrines of understanding. It is plausible that when someone within the profession takes a stand against their own faction, the boundary formed is even more impenetrable. Hahnemann (1970, 2009) created homœopathy from the framework of biomedicine and then spent the rest of his life undermining the medical practices he relinquished in advocating his new approach. In a form of counter-marginalisation, Hahnemann's criticism of biomedicine exacerbated the conflict between the two approaches.

Creating boundaries that separate one mode of thinking from another generates the perception of 'normal versus abnormal' (Lamont and Molnár, 2002; Derkatch, 2008). Those who do not fit in the normal camp are considered wrong. Bourdieu (1977, 1984, 1990) argues that power, prestige, honour and capital struggles relate to social position, and Clegg (1989) characterises power as a network of relationships which enables an individual or group to mobilise resources to achieve clearly defined goals. Peeter Selg (2016) describes power as a self-acting entity and also as formed by interaction. He explains how in a self-actionalist framework one has to consider only the attributes of the powerful to decide who is the most

powerful. However, in the inter-actionalist framework, one has to consider the attributes of both parties, implying that power is gained from the response of the powerless. An historical tendency to divorce itself from its own doctrine to fit in with the medical scientific model may be a case of homœopathy marginalising itself and thereby reducing its power (Coulter, 1999). This is work for further study.

Another approach in creating demarcation between two different frames of reference is through the media. Haran (2007, p.194) notes that 'the quantity, and indeed prominence, of representations in the mass media have been shown to have an "agenda setting" function.' Although not talking about boundary work as a strategy, Haran explains how the media uses 'framing' of any representation through 'tone, emphasis, narrative, structure language and images' to shape how people understand and respond to an issue. Some of the hallmarks of poor reporting practices are evident in misleading headlines or one-sided reports. Such stories contribute to biased perceptions and the denigrated groups encountering difficulties procuring research grants and being published in respectable journals. The rhetorical expulsion of homœopaths from the domain of science means that homœopathy is described as unscientific, inefficacious and unsafe.

Demarcations marginalise. Gieryn (1983, p.781) defines demarcation as the question of 'how to identify unique and essential characteristics of science that distinguish it from other kinds of intellectual activities.' He also notes that these categories are flexible. This paper's analysis of the NHMRC's tactics might be considered a type of counter-boundary work. If so, many studies of boundary work could also be classified as counter-boundary work. Gieryn (1999, p.23) states that 'it is not whether science is pure or impure or both, but rather how its borders and territories are flexibly and discursively mapped out in pursuit of some observed or inferred ambition – and with what consequences and for whom?' The NHMRC report brings to light the ambition behind the marginalisation of homœopathy.

The next section will investigate, through the lens of the NHMRC report, techniques used to marginalise homœopathy. It will look at techniques inspired by boundary work goals and methods as described by Gieryn and other authors. The categories below are used in boundary work studies, though not always in the way they are used in this study:

- assertion of authority
- monopolisation
- protection of autonomy
- expulsion
- expansion
- double standards
- normalisation
- denigration
- censorship
- diversion

Gieryn talks about authority as a boundary work tactic. In this paper, *assertion of authority* seems to be common. Looking at the world of astronomy, Howard (2004, p.13) describes the boundary work strategy of authority as 'legitimate domination' involving 'the power to influence others based on recognised knowledge and expertise, and especially the power to influence those responsible for decision-making.' Gieryn also notes that 'the stakes – authority, jobs, fame, influence, nature – create big incentives for some cultural cartographer to

(re)draw the boundaries of science one way, just as others then have good reason to counter with maps of their own' (Gieryn, 1999, p.15). In the struggle for credibility, those creating the boundaries seek to attach epistemic authority to their claims (Gieryn, 1999, p.22).

'When the goal is *monopolisation* of professional authority and resources, boundary work excludes rivals from within by defining them as outsiders with labels such as "pseudo, deviant, or amateur"' (Gieryn, 1983, p.792). As will become clear in the next section, the NHMRC describes homœopathy in derogatory terms (such as 'pseudo-science'), to separate homœopathy from orthodoxy. As a marginalisation tactic, monopolisation is used to take ownership of an intellectual body.

Protection of autonomy is a tactic which aims to protect those within the camp. Gieryn (1983, p.792) explains that when 'the goal is autonomy over professional activities, boundary work exempts members from responsibility for consequences of their work by putting the blame on scapegoats from outside.' Derkatch (2012, p.217) describes how the autonomy tactic is used to 'attain and maintain a position of privilege in a profession to distinguish itself both from the public it serves and, perhaps more importantly, from the "ordinary occupations"'. The marginalisation tactic of protection of autonomy is used in the NHMRC report in proclaiming biomedicine as evidence-based and scientific – and labeling homœopathy as neither. Such autonomy empowers biomedicine to self-govern and expand its authority. It is a fundamental boundary, reinforced by followers of biomedicine coming to expect autonomy as of right.

Expulsion refers to the exclusion of fields from the domain of science. It is a tactic that linguistically places homœopathy outside science. Gieryn emphasises its use in his comment and reply to the *Science in American Life* exhibition at the Smithsonian when he protests:

> I get, well, pissed off when members of the advisory board play silly boundary games: this is science (chemistry, physics) but this is not (sociology and anthropology). It is politics and only politics … that makes the exclusion or minimization of social science even discussable in the context of this exhibit. (Gieryn, 1996, p.110)

Gieryn (1999, p.16) explains that expulsion 'defines a contest between rival authorities, of whom each claims to be scientific.' As a marginalisation tactic, expulsion is a method of getting rid of a framework of knowledge from the mainstream school of thought.

The tactic of *expansion* involves inflating the dominant authority or expertise. Boundary work heightens the contrast between rivals in ways flattering the dominant side, facilitating research, development and growth, and large grants. 'The boundary work of expansion takes place when two or more rival epistemic authorities square off for jurisdictional control over a contested contingent ontological domain' (Gieryn, 1999, p.16). Gieryn (1983, p.791) explains that 'when the goal is expansion of authority or expertise into domains claimed by other professions or occupations, boundary work heightens the contrast between rivals in ways flattering to the ideologist's side.' As a method of marginalisation, expansion emphasises a framework's context, bringing to light the absence of that reference system in another system.

Boundary work studies refer to an ambiguity resulting from naming something 'science' when it suits, and 'not science' when it does not suit, the degree of convenience depending on the scientist's pursuit of authority and material resources. This paper terms the practice *double standards*. It will show how the NHMRC created a research protocol not typically adopted in biomedical research, thus using the tactic of double standards to marginalise homœopathy.

Normalisation is a tactic that seeks to make something seem normal through constant usage. This is often associated with linguistic attack and denigration, effectively using wording to encourage the reader to form a particular opinion. Akerstrom (2002, p.521) examines the 'various linguistic ways nursing staff talk about incidents and patients as boundary work that involves a variety of down playing strategies.' Derkatch (2008, p.5) is referring to normalisation when she remarks that 'The editors' emphasis on peer review seems to serve normalising effects, reshaping the research on a potentially contentious topic as somewhat ordinary.'

In this paper, the boundary work method of linguistic attack is re-labelled as the marginalisation tactic of *denigration*. Denigrating statements about homœopathy are often found in the media and are published online by groups hostile to homœopathy, such as Friends of Science in Medicine. And they are to be found in reports, such as the NHMRC report, which declares homœopathy a 'pseudo-science.'

Censorship blocks something from being read, heard or seen. Howard (2004, p.59) discusses how 'NASA officials censored the astronomers' presentations out of the televised program on NASA's cable channel, leaving only the technical presentations' (p.59). Censorship is used throughout the NHMRC report and is an effective marginalisation tactic.

Diversion is not normally considered a boundary work goal, but is recognised here as a possible marginalisation tactic. A diversion tactic can be used to avoid focus on one's own weaknesses. Giving attention to one area to distract attention from another protects the shrouded area from scrutiny and hence from association with what is outside its boundary. This paper suggests that the NHMRC's conclusions, labelling homœopathy as unscientific and unsupported by evidence, are a smokescreen, a tactic to divert attention from its own problems, such as iatrogenic illness.

The NHMRC report – a case study

Here the writing and content of the NHMRC report on homœopathy are examined for techniques of marginalisation. Much of the information for this study was gathered from publicly available sources. However, most was obtained through Freedom of Information requests by Complementary Medicines Australia and the Australian Homœopathic Association (AHA); a large FOI request was made by another third party in 2014.[2]

The NHMRC is Australia's peak body for supporting health and medical research. As described on its website, its objectives include developing health advice for the Australian community, health professionals and governments; and providing advice on ethical behaviour in health care and in the conduct of health and medical research. The NHMRC has authority over research funding, grants and development advice across all health modalities. The mission statement of the NHMRC is 'Working to build a healthy Australia' (NHMRC, 2018). In October 2010, following a report on homœopathy from the House of Commons in the UK (Science and Technology Committee, 2010), Warwick Anderson, then chief executive of the NHMRC, instructed the NHMRC council to formulate a position statement on homœopathy based on the UK report.

The UK Science and Technology Committee report was initiated by Sense about Science UK, a sister group of Friends of Science in Medicine (FSM) in Australia. FSM is generally hostile to all alternatives to biomedicine. It investigated the effectiveness of homœopathy,

relying exclusively on a meta-analysis by Shang *et al.* (2005). A meta-analysis is a quantitative summary of the outcomes of two or more randomised controlled trials (RCTs) that have been carried out on the same topic. Although Shang and his colleagues had available to them a total of 110 placebo-controlled RCTs of homœopathy, they examined only eight trials, categorised as 'larger trials of higher methodological quality,' and discarded the rest (HRI, 2016a) without reference to the other (smaller) high-quality trials – an expulsion tactic. Shang *et al.* (2005, p.726) concluded that there was 'weak evidence for a specific effect of homœopathic remedies' and that their findings were 'compatible with the notion that the clinical effects of homœopathy are placebo effects.' The University of Berne later published a list of the 102 studies that Shang *et al.* had omitted from their study. According to Dendrinos (2016, p.2), the UK Science and Technology Committee report was 'part of a political, not scientific process whose recommendations the UK parliament had rejected in July 2010, in favour of supporting patients' rights to continue to access homœopathy and supporting further research into homœopathy.'

In its response to the report, the UK Department of Health made clear that government had no business pronouncing in the merits of homœopathy:

> … our continued position on the use of homeopathy within the NHS [National Health Service] is that local NHS and clinicians, rather than Whitehall, are best placed to make decisions on what treatment is appropriate for their patients – including complementary or alternative treatments such as homeopathy – and provide accordingly for those treatments. (Secretary of State for Health, 2010, para.8)

Despite the UK government's view and recommendations, NHMRC council members discussed the UK report and agreed that a synopsis plus an NHMRC statement be placed on the NHMRC website. These are the tactics of authority assertion and censorship. The decision can be traced back to the declaration in the NHMRC strategic plan for 2010–2012 to address major health issues, including the examination of alternative therapy claims. Marginalisation by assertion of authority was accomplished when the NHMRC council developed its position statement without critically evaluating the UK Science and Technology Committee report and without consulting the AHA or any other homœopathy stakeholder group or researchers for expert advice (Dendrinos, 2016).

During this period, Warwick Anderson published a paper in the *Medical Journal of Australia* in which he commented on the UK report:

> I find it disturbing that now, in the 21st century, there is an apparent retreat from reason in many Western societies, and often a retreat from science… . such as the widespread use of such alleged therapies as homeopathy, or the belief that crystals have magic healing powers'. (Anderson, 2010, p.680)

This is a clear instance of denigration; when repeated, denigration normalises a negative image. In adopting the findings of the UK Science and Technology Committee's report, 'the NHMRC did not acknowledge the report's political context, its bias or its exclusion of key evidence. Nor did the NHMRC critically evaluate the report, consult experts in the field or review the report's evidence independently' (Dendrinos, 2016).[3]

In December 2010, the NHMRC council approved a draft position statement on homœopathy for public release, subject only to administrative checks. The content was approved without any expert analysis. The Consumers Health Forum (CHF) was contacted to make the statement readable for the Australian community. At the time, the CHF

complementary medicine spokesperson was Ken Harvey, an anti-homœopathy lobbyist who has been known to wear a t-shirt declaring '10^{23} Homeopathy there is nothing in it' (Vic Skeptics, 2011).[4] Employing tactics of authority assertion, normalisation and denigration, the draft statement concluded:

> NHMRC's position is that it is unethical for health practitioners to treat patients using homeopathy, for the reason that homeopathy (as a medicine or procedure) has been shown not to be efficacious. … the prescription of placebos in this way is deceptive and raises ethical concern.

Following the leak of this draft statement to the media, there was a flood of complaints from the general public and expert stakeholders (Australian Register of Homœopaths, 2014). Consequently, a formal evidence review was inaugurated (Dendrinos, 2016).

Missing the opportunity to recognise bias and to step away from the process, the NHMRC council recommended the establishment of a Homeopathy Working Committee (HWC) to guide the development of a review of the literature on the effectiveness of homœopathy and to advise the Australian community on the safety and efficacy of homœopathy.

The NHMRC concealed that it had already conducted a review, completed in August 2012, before terminating the contract with its consultant and starting again. According to FOI documents, an HWC member provided expert feedback that the first review was good quality, as might have been expected when the lead author, Fred Mendelsohn, was co-author of NHMRC's own guidance document on writing such reviews.[5] Of the draft report, the HWC member wrote:

> I believe that the assessment of secondary literature has been performed very well with careful systematic analysis and the results are supported factually with strong supporting material. … I am impressed by the rigour, thoroughness and systematic approach given to this evaluation of the published reviews of efficacy and side effects of homeopathy.

Even so, NHMRC have refused to release a copy of the final draft report under FOI[6] claiming that:

> … an unfinished, incomplete draft was provided in August 2012. … The draft was not finalised by the contractor and consequently did not undergo NHMRC's quality assurance processes of: methodological review; expert review; consideration by the HWC; or consideration by NHMRC's Principal Committee and Council. (NHMRC cited Dendrinos, 2017, p.6)

The NHMRC has not explained why it terminated the contract of a reviewer that an HWC member said had produced a good quality report.

The first report was not published and the public was not informed of its existence. In correspondence, the NHMRC said that the new homœopathy review should be regarded as separate and unrelated to the previous process (Dendrinos, 2016). However, the claims made throughout the second review about the failings of homœopathy – for example, that patients may be misled, that there is no evidence of an effect beyond placebo, that homœopathy is not plausible, and that it is not evidence-based – mirror the claims made in the draft report. That these statements were made before any evidence review suggests a conclusion had been reached in advance.

Feedback received in 2013 from the NHMRC's independent external methodological reviewer, the Australasian Cochrane Centre, was also not disclosed (Dendrinos, 2016). The Cochrane Collaboration is an independent, not-for-profit organisation involving 130 countries. Its objective is to make the vast amounts of evidence generated through research useful and accessible:

> Cochrane produces trusted health information in the form of systematic reviews that are free from commercial sponsorship and other conflicts of interest. Our evidence underpins and informs the daily decisions of clinicians, patients and carers, researchers, policymakers and funding bodies. Our work is recognised as representing an international gold standard for high quality, trusted information.[7]

The Australian Government funds Cochrane Australia through the NHMRC. The NHMRC has a national subscription to the Cochrane Library, ensuring all Australians have free access to the best health evidence.

The NHMRC HWC came to the conclusion that there was no reliable evidence of the effectiveness of homœopathy (NHMRC, 2015a, p.6). The Cochrane Collaboration disagreed with the definitive nature of NHMRC's findings, noting that:

> If the intent is to provide general statements about the effectiveness of homeopathy, then 'no reliable evidence' may not adequately reflect the research. For example, when a substantial proportion of small (but good quality) studies show significant differences, ... 'no reliable evidence' does not seem an accurate reflection of the body of evidence [8]

The NHMRC ignored the advice and concealed it, reflecting the tactics of authority assertion and censorship.

The NHMRC HWC reviewed the scientific evidence on homœopathy in treating a variety of clinical conditions with the aim of providing Australians with reliable information about its use. It set itself the task of providing practitioners and patients with evidence-based health advice on the effectiveness of a number of complementary and alternative medicines (CAM). Homœopathy was the first CAM selected for investigation as it is commonly used, in Australia and around the world, despite (according to the NHMRC) its underlying premise not being consistent with the current understanding of the biological, physiological and pharmacological sciences (NHMRC, 2015a). Using authority assertion and protection of autonomy, the NHMRC claimed that orthodox medicine is grounded in science, and that anything deviating from orthodoxy must therefore be not scientific. This fundamental premise dominates the NHMRC report on homœopathy.

A formal investigation into the NHMRC's methods and procedures was conducted by the Australian Homoeopathic Association in collaboration with Complementary Medicine Australia and the Homoeopathic Research Institute. Eight members of a political lobby group, Friends of Science in Medicine (FSM), were identified in the NHMRC hierarchy as having some level of involvement in overseeing decision-making processes at various times. FSM was formed at the end of 2011 to emphasise the importance of having health care in Australia based upon evidence, scientifically sound research and established scientific knowledge (see Komesaroff, 2012; Myers, 2012; Flatt, 2013). The FSM's antipathy towards homœopathy is reflected in statements such as 'FSM opposes: the teaching of so-called "health courses" on topics such as homeopathy … in our universities and other tertiary institutions; this contradicts the commitment of these institutions to maintaining the highest educational and research standards,' (Friends of Science in Medicine, 2016). Warwick Anderson was in agreement:

> I guess it is one thing when people sell magic therapies to the worried well – that's mostly just a waste of money or expensive urine. Perhaps a little placebo effect, as well. But it's an entirely different matter when people are ill with a treatable illness are pushed therapies that don't work and, in fact, are often implausible, pushed by practitioners who we must assume either believe in magic or perhaps are just dishonest. Ill health has attracted charlatans since time immemorial. Snake oil merchants wanting to take your money by promising false hope. …

> It's distressing when unscrupulous people exploit the sick for their own personal gain, selling products that have no hope at all of helping the patient. (Anderson, 2015)

Before the review had commenced, the NHMRC's newly appointed chairman, Michael Good, revealed a bias against homœopathy: 'let me assure you that I am no supporter of homeopathy, as chairman of NHMRC I can also assure you that NHMRC does not support homeopathy' (Good, 2011). When Peter Brooks, an active FSM member, was appointed to the chair of the HWC, there was a major conflict of interest. Yet Brooks did not indicate any affiliation to any organisations opposed to homœopathy on the NHMRC disclosure form. When the conflict was discovered, the CEO of the NHMRC asked Brooks to step down. Brooks responded: 're the NHMRC Homeopathy review – because of other commitments I would like to resign as Chair but am happy to remain on the Committee. I hope this is acceptable.'[9] It was acceptable to the NHMRC. By not acknowledging his conflict of interest, Brooks deceived the public, and by remaining a member of the committee, Brooks was in a position to distort its findings (Dendrinos, 2016).

FSM members held influential positions on the NHMRC council, the NHMRC principal committee involved in guiding the HWC, the health care committee and the first chair of the HWC. The Australian research centre for the health of women and babies at the University of Adelaide was contracted in 2014 to review additional evidence submitted during public consultation. Although this was not included as part of the main information paper analysis, two reviewers from the Adelaide centre were involved. One of these was an FSM supporter, but no conflict of interest was declared (Dendrinos, 2016). When a conflict of interest is not disclosed, this is the tactic of censorship.

The NHMRC did not consult any homœopathy experts in the development of its draft position statement on homœopathy in 2010/11, nor did it consult any such experts in the subsequent formal evidence review process. It is generally accepted that expert committees contain experts relevant to the topic under inquiry. Having no topic experts on the advisory committee was unprecedented in an NHMRC evidence review and a breach of mandatory NHMRC standards. Limiting professional inputs increases the risk of bias. HWC meeting minutes obtained under FOI declare that homœopathy experts represented 'an unmanageable conflict of interest.'[10] One of the three expert reviewers NHMRC used during the public consultation phase of the review in 2014 thought this extraordinary: 'I am concerned that no homoeopathic expert was appointed to the NHMRC Review Panel. I cannot imagine this being agreed in oncology, orthopaedics or other disciplines.'[11]

The NHMRC requested public submissions for evaluation. Forty-nine of these were considered suitable for review (nine studies from the AHA and the Australian Register of Homoeopaths (AROH), and 40 studies from public submissions), 22% of the data being evaluated. However, these submissions remained separate from the main overview report and had no chance of altering the outcome (HRI, 2016d). The absence of any homœopathic expert in the HWC, in conjunction with the non-disclosure of the important feedback from the Australasian Cochrane Centre might be seen as the tactic of monopolisation. The NHMRC claim that 'All the reviewers' comments and suggestions were considered in consultation with the Homeopathy Working Committee and the report amended accordingly' is called into question and further censorship is suggested (NHMRC, 2015b, p.15).

The NHMRC made broad, sweeping conclusions about homœopathy that went beyond the review without considering related areas. Areas worthy of review include the effectiveness of real-world intervention, such as cohort and observational studies of homœopathy

for the treatment of clinical conditions in humans, as well as studies throughout Europe and Asia (papers not written in English). Such studies might include attention deficit hyperactivity disorder, allergic rhinitis, fracture healing, hypertension, influenza, lower back pain, insomnia, menopause, otitis media, post-op infection prevention, postpartum bleeding and vertigo (Australian Register of Homœopaths, 2014). Another area worthy of consideration is *in vitro* and animal studies that rule out the placebo effect. The NHMRC HWC excluded all these from its review. In doing so, it strengthened its own case whilst marginalising homœopathy.

The value of the evidence investigated was determined by the gold standard of current scientific rigour, the randomised controlled trial (RCT). About 50% of all homœopathic RCTs have positive results. Of the HRI list of placebo-controlled RCTs (104 were published before the NHMRC published its review), 41% were positive and only 4% negative. The NHMRC HWC came to the definitive conclusion that there was no reliable evidence of effectiveness, even though a significant proportion of RCTs was actually positive, a matter of some concern to reviewers from the Cochrane Centre.[12]

The NHMRC HWC dismissed high-quality, positive studies as 'unreliable' if the trials had fewer than 150 participants: 'For the purposes of the homeopathy overview, studies were considered to be of sufficient size where N > 150 … any study with less [*sic*] than 150 participants is small' (NHMRC, 2015b, pp.35–6). The report cited a paper from the *British Medical Journal* to justify this decision, yet the *BMJ* paper advised that its findings 'could not be applied to continuous outcome studies because such trials usually differ in medical condition, risk of bias, sample size and statistical analysis' (Dechartres, 2013). The homœopathic studies excluded on grounds of sample size were continuous outcome studies, which the HWC itself identified. The AHA challenged the NHMRC over the validity of the N > 150 threshold and the erroneous citation of the *BMJ* study, but to no effect. Many small studies of homœopathy are statistically significant, but these too were excluded. The impact of making the sample size N > 150 happened to exclude many high-quality studies. For example, a double blind RCT with a sample size of N = 147 (testing the homœopathy complex 'sinfrontal') that reported findings better than placebo for sinusitis was dismissed, as was another trial with a sample size N = 144 (showing efficacy in allergic rhinitis) (HRI, 2016d). The NHMRC report admits that these studies are high quality, but nonetheless excludes them. The *BMJ* does have a minimum size threshold (Dechartres, 2013). RCTs with at least 20 people are acceptable although criteria vary between reviews depending on the subject area. When little or no evidence is available, the *BMJ* may publish accounts of trials of fewer than 20 people. Almost all NHMRC-funded research has fewer than 150 participants, suggesting a case of double standards.

From a search of databases of health publications, the NHMRC HWC unearthed over 1800 studies. The bulk of these were dismissed as not suitable for review, leaving 176 trials. The 150-participant sample size excluded 146 of these. So, 83% of the trials were not considered further (HRI, 2016b). The remaining 30 studies had to leap another threshold for quality, and only five studies made it. A 'quality rating scales' criterion insisted that a study had to be rated 5/5 on the Jadad scale, an Oxford quality scoring system involving a procedure to assess independently the methodological quality of a clinical trial. The level of 5/5 or 100% was unusually high. A search of the NHMRC website shows that no previous research protocol had ever demanded this threshold. The Cochrane Collaboration regards 3/5 or 60% as being high quality. As a direct consequence of these exclusion criteria, the

conclusions of the entire review were based on only five studies. Four were negative and one was positive – and the positive study was excluded from the findings without explanation. Here we see marginalisation at its most extreme, where a review excludes all papers that might lead to a different outcome.

A research protocol is a detailed set of instructions for a project, supported by evidence from other projects. Research protocols are an important safeguard to prevent bias in scientific studies. How a project will be analysed is decided before the project begins. Changing a protocol during or after the original analysis is a recognised source of bias as the method may be altered to achieve a desired result. Any changes must therefore be published and explained.[13] The collection of research evidence was completed by March 2013. A month later, the NHMRC created a special HWC subgroup which introduced the unusual *post hoc* concept of 'trial reliability' – which meant a trial had to have both 150 participants and also 100% quality rating. Information gained via FOI retrieved from the NHMRC shows that these trial reliability thresholds were developed and applied more than seven months after the original protocol was finalised, and never disclosed (Dendrinos, 2017). The N > 150 sample size threshold was adopted at the July 2013 HWC meeting.[14] The quality rating scales criterion, that a study had to be rated 5/5 Jadad, was not adopted until July/August 2013,[15] and was not part of the evidence statement framework agreed in July 2013.[16] In its follow-up advice to NHMRC of 30 August 2013, the Cochrane Centre (the methodology peer reviewer) refers to never having seen it.[17]

In the original protocol, there is no mention of quality or sample size criteria as trial exclusion thresholds. In other words, the NHMRC HWC created additional rules after it published its research protocol, all of which operated against homœopathy. Among these was the retrospective adoption of the null-hypothesis approach, meaning that homœopathy was assumed to be ineffective unless 'reliable evidence' (as determined by the NHMRC) proved otherwise (NHMRC, 2015b, p.38). Combined with exclusions of evidence, this null hypothesis served to give the impression that no evidence supported homœopathy.

Papers not written in English were dismissed from the working committee's investigation. Hence, many strong European studies were not considered. The NHMRC justified the exclusion tactic: 'The NHMRC review searched for systematic reviews published in English, because that is generally an efficient method for identifying the broad range of research findings in an overview of evidence' (NHMRC, 2015a, p.6). The HWC also excluded all *in vitro* and animal trials from the evaluation (NHMRC, 2015b, p.14). The justification for this exclusion was that, 'for all therapies (medicines, treatments, procedures and devices), laboratory studies and evidence from animal studies (or human studies other than clinical trials in patients) are unreliable as a predictor of clinical effects in patients with the clinical condition' (NHMRC, 2015d, p.6). By excluding these trials, the committee relinquished the opportunity to investigate the evidence of the placebo effect in homœopathy, enabling it to conclude that 'studies reported that homeopathy was not more effective than placebo' (NHMRC, 2015b, p.24). Many studies granted NHMRC funding for biomedical research use animal and *in vitro* trials.[18]

The HWC considered positive trials to be unreliable if there were negative trials of similar substance. Jennifer Jacobs' robust and positive meta-analysis involving 252 participants investigated diarrhoea in children, but her separate N<150 trials were ignored when the HWC decided to dismiss meta-analysis altogether (HRI, 2016c). The point at issue here is that definitively negative conclusions were reached on the basis of a data-set that included

positive studies that were considered unreliable on the basis of N<150, different conclusions in similar studies, and the Jadad 5/5 criteria. In biomedical drug trials, 'The drug companies can conduct as many trials as they want until they find two showing significant effects. The negative trials simply don't count' (Kirsch, 2010, p.51). This rather suggests double standards.

By excluding much of the evidence on homœopathy, the NHMRC felt able to conclude that:

> Homeopathy should not be used to treat health conditions that are chronic, serious, or could become serious. People who choose homeopathy may put their health at risk if they reject or delay treatments for which there is good evidence for safety and effectiveness. (NHMRC, 2015c)

Such statements give authority to biomedicine and at the same time denigrate homœopathy. Furthermore, this and other statements enabled a press and media frenzy of negative headlines. For example, the British *Independent* newspaper sported the headline 'Homeopathy effective for 0 out of 68 illnesses, study finds' (Fenton, 2016). Headlines in Melbourne's quality daily, *The Age*, included 'How the federal government funds fakes' (Price, 2016) and 'Private health insurers urged to ditch homeopathy' (Heath, 2015). *The Australian* announced 'Homeopathy takes a hit: "It's hopeless"' (Trounson, 2014) and 'Steve Jobs likely victim of homeopathy, expert tells…' (Edzard, 2011). In ridiculing homœopathy, newspapers were simply responding to the NHMRC findings. The implication that biomedicine is always scientific and evidence-based, while homœopathy never is, normalises homœopathy's marginality.

Complaints commonly made against homœopathy are that: there are no reliable randomised controlled trials, homœopathy has not been clinically proven, and treating patients individually does not enable repeat trials. Having no way to rebut these accusations within the required scientific paradigm results in homœopathy being described as unscientific. This label provided opportunities to dominate, criticise, ridicule, debase and exclude homœopathy. In demanding that scientific research be done in prescribed fashion, biomedicine used its authority to marginalise homœopathy, expanding its own power base and undermining that of homœopathy in the process. Attempting to respond using biomedical methods has not, until recently, been effective for homœopathy, thereby creating a bigger knowledge gap and enabling further criticism. The NHMRC report interpreted non-conformity with biomedical methods as a failure of homœopathy, a good example of autonomy protection, monopolisation and exclusion. Not using the same investigative or diagnostic tools as biomedicine leaves homœopathy open to accusation of inadequacy. The accusation that it is not scientific was enough for the NHMRC to condemn it as not plausible and so not effective and ultimately not safe. It follows, that biomedicine is everything that homœopathy is not.

Though the NHMRC's review of homœopathy took years to complete, the final product is fundamentally flawed. The NHMRC report is a good example of how an authoritative body, despite being bound by ethical principles, can be affected by bias and conflicts of interest, with its investigations plagued by methodological flaws, procedural irregularities, and distorted findings. Authority assertion, monopolisation, protection of autonomy, expulsion, expansion, ambiguity, normalisation, denigration and censorship are evident throughout and show how a dominant group can marginalise an outsider (Gieryn, 1995, 1999; Åkerström, 2002; Howard, 2004). This myriad of marginalisation tactics suggests a serious political struggle for scientific and medical authority. This is important because the NHMRC is a very significant custodian of biomedicine in Australia, simultaneously circumscribing and defining what counts as acceptable health/medical practice. What gets

funded is an important point of reference for medical practice. NHMRC findings are cited as definitive statements of what is acceptable in medicine. If the NHMRC were to state that homœopathy is a reliable and effective medicine, this would give considerable credibility to homœopathy. By the same token, NHMRC dismissal of homœopathy as lacking any evidence to support it is highly damaging, essentially excluding homœopathy from the bounds of medicine and making its practice unethical.

Conclusion

Using a case study of the NHMRC report, this paper has looked at how homœopathy can be marginalised by biomedicine. There is no standard framework or classification of marginalisation tactics. Although business and military academics study tactics and strategy, traditional social science academics seldom do. James Jasper recognises this shortfall and states that it is time to study the social aspects of strategic action. Jasper, (2006, p.xii) lays bare strategies used to define actions amongst people who 'do not necessarily share goals or even common understanding of what they are doing and why'. He brings to light 'cultural and institutional contexts of strategies, the rhetorical and emotional work involved, the crucial identities and alliances, the creativity and learning, and the complex goals and motives that drive action in the first place.'

Boundary work creates and maintains boundaries. It often has the effect of marginalising those who do not fit within the boundaries formed. Marginalisation is not the same as boundary work, but there are commonalities. Boundary work defines a boundary: marginalisation pushes something beyond the boundary into an inferior position. This paper has examined methods of marginalisation inspired by a range of boundary work strategies and looked at their use in a particular case. 'Science is no single thing' (Gieryn, 1999, p.729); however, in order to maintain autonomy, authority, expansion and monopolisation, boundary work tactics are often used to make science appear singular. Gieryn says that, contrary to popular belief, science is flexible; there is no such thing as definitive scientific proof. Naturally, scientists prefer theories for which there is more and better evidence to theories for which there is less and worse evidence, but proof is not the currency of science. This case study has shown how the NHMRC used a variety of techniques to reach its conclusion that there is no reliable evidence in support of homœopathy. The conclusion relies on the assumed authority of biomedicine. In this way, the dominant view is valorised and the other silenced. The NHMRC finding marginalises homœopathy while valorising biomedicine.

The NHMRC asserted its authority in demanding the use of biomedical criteria to judge homœopathy, it made arbitrary exclusions to influence the results, it applied requirements that served to discredit homœopathy, and failed to apply these to its own funded research (N > 150, 100% quality rating, exclusion of *in vitro* studies and animal studies, null hypothesis and *post hoc* changes to the research protocol). The NHMRC concealed important and relevant information (particularly known bias), it employed denigration, and used diversion tactics to turn attention from the shortcomings of biomedicine. The NHMRC report is a good example of how supporters of biomedicine can deploy tactics to marginalise unorthodox therapeutic approaches. Claims that alternatives are pseudo-scientific establish a scientific *ultra mare* where there is nothing worthy of consideration.

Why should the NHMRC seek to discredit homœopathy? An unconscious use of a diversion tactic perhaps. With research uncovering the damage done by iatrogenic illness

(Willis, 1989; Gotzsche, 2013; Buhner, 2014), biomedicine finds itself attracting unwanted attention. Labelling smaller therapeutic approaches, such as homœopathy, as unscientific, unsafe and ineffective, may direct attention from the harm that biomedicine can do. As to why the NHMRC made decisions and applied rules discriminating against homœopathy, possible factors include the constitution of the committee and the unconscious bias of committee members. It is also conceivable that the biomedical commitment to a particular 'rational' view of the world is threatened by the empirical outlook of homœopathy (Coulter, 1999). The empirical tradition sees the organism as reactive, at all times coping with and attempting to overcome external attack. It behaves purposely, responding to a specific environmental stress. The response can be seen in the patient's symptoms, which (however unpleasant) are nonetheless beneficial manifestations of the organism's effort to overcome the disease. They are signs of a curative, not a morbific, process. The rationalist therapeutic doctrine proceeds from different assumptions and arrives at a different mode of diagnosis and treatment. The living organism is not seen as reactive, even less as purposive. Symptoms arrive following abnormal disturbance. In current times, this is seen as a physico-chemical imbalance, often caused by a virus or bacterium. Put simply, empiricism emphasises wholism and rationalism emphasises reductionism.

Samuel Hahnemann, the founder of homœopathy, was trained in traditional, rational thought, but became discouraged by poor and unpredictable results. In an attempt to improve his patient treatment, he returned to first principles, the principles of empiricism, including observation, alongside his rational understanding. Biomedicine is based on rational medicine and may be threatened by scientific evidence for empirical medicine. The dynamics of marginalisation tactics in the Australian health sector have been illustrated using a single case study. Further investigation is needed to see whether similar techniques have been used elsewhere, for example, by expert committees in other countries. Further investigation might also consider how homœopathy uses boundary work to establish its own place in therapeutics. In principle, such research could point to commonalities and complementarities between different therapeutic approaches and thereby foster mutual understanding and advancement.

Notes

1. Jennifer Jacobs (2015) has presented RCTs in homœopathy, as have Debora Olioso and her colleagues (Olioso *et al.*, 2016). Others have also produced trials showing homœopathy to be clinically viable (see Homeopathic Research Institute (HRI), *passim*) available at https://www.hri-research.org/resources/ (accessed March 2018).
2. FOI request 2014/15-004 pertaining to the NHMRC homeopathy review, 64 documents released in full or part, with redactions under s22 (499 pages). Access date 29 October 2014.
3. An account of events was produced by the NHMRC (2015b). An alternative, anonymous account is available at http://www.nhmrchomeopathy.com/bias.html (accessed April 2018).
4. A reference to Avogadro's constant, often designated with the symbol N_A or L, and having the value $6.022140857(74)\times10^{23}$ mol^{-1}. Harvey is implying that homœopathy is impossible because of its dilutions.
5. FOI 2014/15 021-08 Mendelsohn, F., expert feedback to NHMRC Homeopathy Working Committee on the July 2012 version of the first reviewer's draft report, 15 July 2012.
6. FOI 2015–16 006 Complementary Medicine Australia FOI request to NHMRC re final draft report of the first contractor, 7 October 2015.

7. Cochrane Australia (2018) 'Our work,' available at http://australia.cochrane.org/our-work-0 (accessed April 2018).
8. FOI 2015/16 007-05 Australasian Cochrane Centre follow-up methodological review feedback to NHMRC Homeopathy Working Committee.
9. FOI 2014/15 021-03 email correspondence from Peter Brooks to NHMRC CEO Warwick Anderson.
10. FOI 2015/16 008-11 Minutes of face to face meeting of the Homeopathy Working Committee, 30 July 2014.
11. FOI 2014/15 004 Expert reviewer feedback on the NHMRC draft information paper on homeopathy, section 62, 10 May 2014.
12. FOI 2015/16 007-05 Australasian Cochrane Centre follow-up methodological review feedback to NHMRC Homeopathy Working Committee.
13. FOI 2014/15, email from the Office of NHMRC to Homeopathy Working Committee members attaching final agreed research protocol, section 58.
14. FOI 2015/16 008-06 Minutes of face to face meeting of the Homeopathy Working Committee, Principles for evidence statements, attachment B, item 7, 11–12 July 2015.
15. FOI 2015/16 007-05 Australasian Cochrane Centre follow-up methodological review feedback to NHMRC Homeopathy Working Committee.
16. FOI 2015/16 008-06 Minutes of face to face meeting of the Homeopathy Working Committee, 11–12 July 2015.
17. FOI 2015/16 007-05 Australasian Cochrane Centre follow-up methodological Review feedback to NHMRC Homeopathy Working Committee.
18. For example, nearly three million dollars was awarded to Joseph Trapani of the University of Melbourne to undertake *in vitro* research investigating 'Cell death pathways and type 1 diabetes.' Over $77,000 was granted to Helene Kammoun of the Baker IDI Heart and Diabetes Institute, Victoria for research using animal studies to investigate 'Developing new therapeutic approaches to depression.' $250,000 was granted to Georges Grau from the University of Sydney for *in vitro* research to investigate 'Pathogenic roles of microparticles in cerebral malaria.'

Appendix: reflexivity considerations

I worked for 20 years as a midwife in an orthodox medical setting. Today, I am a practising homœopath. My background is relevant to my choice of research topic, my access to information about it, and my understanding of the issues. My years working as a midwife gave me an understanding of biomedicine from a nursing perspective; working as a homœopath gives me an understanding of homœopathy from a homœopathic viewpoint. Working among the small and intimate network of homœopaths in Australia, I am familiar with the attacks on homœopathy and how they affect my colleagues and me. Those who are not homœopaths might find this antipathy hard to understand. My experience is that many of the attacks on homœopathy come from a few antagonists, and not from the majority of health workers.

While studying for my Master's degree (in science, homœopathy) at the University of Central Lancashire, I interviewed doctors and medical students to determine their views on homœopathy. Most were not familiar with homœopathy at all and just accepted the recommendations of the Cochrane Collaboration, which recommends further high-quality randomised control trials, and enrolling larger numbers of patients to assess the effectiveness and safety of individualised homœopathy compared with placebo or usual care. This suggested to me that it was important to raise awareness of methods used to marginalise homœopathy. Being a homœopath and a member of the Australian Homœopathic Association, I heard how homœopaths considered the NHMRC report to be unfair, even outrageous. This affected the choice of my case study and the methodology used: I recognised the NHMRC report as likely to provide good evidence of marginalisation tactics; indeed, that is what I discovered. Exposing these techniques may open up a space for critical scrutiny and help to create opportunities for intervention and change in health practices and choices – a struggle in which we are all implicated.

My aim in this paper is not to debate the validity of homœopathy, but instead to look at techniques used in marginalising it, with the objective of encouraging more participation in the discussion. However, this area of research has been highly polarised in Australia and I am well aware that I may come under attack myself. Even those who aim to investigate a controversy following the principle of symmetry – in which both sides are examined with the same conceptual tools – are liable to be captured by the side with less epistemological authority (Scott *et al.*, 1990; Martin, 1996; Richards, 1996). I have made every effort to be fair and accurate. I have written this commentary about my background and role because I may be accused of bias in as much as I am a homœopath writing about the marginalisation of homœopathy. It is interesting that this sort of explicit reflexivity is never seen as necessary for those arguing against homœopathy.

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