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Industry influences on science and policy: identifying levers for independence

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Despite contemporary concerns about misinformation and disinformation and the politicisation of expertise, scientific evidence continues to confer legitimacy and credibility, and serves as currency within decision-making processes. For industry, the sponsorship, conduct and dissemination of science with outcomes that promote its products and a favourable regulatory environment has long been a key political strategy.[1–3]

To preserve public perception of its legitimacy and credibility, industry has often and most successfully worked through purportedly independent third parties to undertake key scientific activities. Sismondo refers to these systematic tactics and practices to shape a body of evidence through third-party entities and actors as 'ghost management', given that the role of the sponsor, such as a pharmaceutical or tobacco company, is often covert.[4] It is largely through the study of internal industry documents that a more comprehensive picture of the extent to which a body of evidence has been shaped by commercial interests comes to light.[5]

An in-depth case study of the contemporary foundation for a smoke-free world (FSFW) by Legg *et al* aimed to understand whether, and to what extent, the foundation's activities mirror those of third-party organisations historically funded by the tobacco industry to shape scientific and regulatory environments in ways that further industry aims.[6] Litigation involving the tobacco industry in the USA in the 1990s exposed the industry's role in misleading the public about the harms of firsthand and passive smoking and the efforts to generate controversy and doubt within policy-making processes. This litigation resulted in the dissolution of three industry-funded third-party organisations that had used science to mislead.[6] Yet, in 2017, Philip Morris International (PM International) established and anually funds the FSFW, which in turn 'fund[s] research… that is non-duplicative and novel, focusing on scientific and regulatory gaps' with the purported aim of ending combustible tobacco smoking.[7]

Despite the opacity that typically surrounds the relationships between industry sponsors and third-party organisations, Legg *et al* amassed an impressive data set of publicly available documents, collected systematically and prospectively over 4 years between 2017 and 2021, detailing the research activities and outputs of the FSFW.[6] To this body of evidence they applied the Science for Profit Typology and Model,[8] finding that the FSFW adopted and deployed strategies used by corporations across sectors to influence the conduct and publication of science in favour of its sponsor (PM International) in order to distort interpretations of the evidence base, amplify the reach of favourable evidence and promote the credibility of the tobacco industry's scientific activities.[6]

In its application of the Science for Profit Model, this case study confirms that scientific independence cannot be achieved through third-party organisations or grantees that are guided and exclusively funded by corporations with a commercial interest in the outcome of the research, particularly without independent external oversight and accountability. It also builds on a body of literature examining the activities and impacts of similar third-party organisations across sectors that have operated historically and contemporarily, such as the International Life Sciences Institute and its role in nutrition science.[9]

IDENTIFYING LEVERS TO CREATE INDEPENDENCE

Beyond increasing understanding of how organisations like the FSFW work to advance industry interests to the possible detriment of public health, the application of the Science for Profit Model to such case studies also allows for identification of points within the scientific research enterprise to develop and implement policy levers to generate independence from industry sponsors. The case study of FSFW offers some insights into what these might be.

First, this case study suggests that scientific organisations need to take a preventive approach to researchers' conflicts of interest, ensuring that those who produce, synthesise and use scientific evidence to guide decision-making are free from financial ties to industry sponsors. The FSFW, through its grantees, cultivated a network of messengers who worked to disseminate favourable science, to 'package' it in ways that supported industry interests, while appearing to be at arm's length.[6] Industry sponsor influence on the production of evidence occurs within a web of social and financial relationships among carefully selected researchers whose activities and positions align with the sponsor's, amplifying these views.[4]

Second, this case study again underscores that research agendas are inherently political, affecting the distribution of resources and who might benefit or be placed at risk. Within public health, there is a need to develop research agenda-setting mechanisms that are deliberative, transparent and ensure adequate representation and accountability to those directly affected by research. Legg *et al* documented the ways that the FSFW funded research

that adhered to a narrow scope in terms of addressing the purported goal of 'ending smoking'—focusing on promoting product-oriented solutions to the tobacco epidemic and an industry-favourable definition of harm reduction.[6] Occurring across industry sectors, research agenda biases arising from sponsorship can have wide-reaching effects in terms of shaping what is known, and the possibilities for addressing public health problems.[10]

Third, in addition to co-opting notions of independence (ie, the 'arm's length' FSFW), this case study highlighted the industry's ability to use broader trends within the scientific enterprise to its advantage. For example, advances in open science such as preprint servers need to be critically questioned in terms of how these processes can be manipulated to serve powerful interests and should be accompanied by robust governance that extends beyond transparency. Although a long-standing practice within physics and the life sciences, there has been a recent explosion in the publication of preprints in the health sciences, where health research articles are made publicly available prior to, or during, peer review.[11] Aligned with the open science movement, proponents of this practice argued that the posting of preprints promotes openness and transparency and can reduce duplication of effort or research waste. However, Legg *et al* found that the FSFW and its grantees also embraced the movement towards 'openness,' frequently self-publishing reports or posting preprints which mimicked peer-reviewed scientific evidence but had not gone through that process.[6]

BEYOND TRANSPARENCY TOWARDS A NORM OF SEPARATION

Although it was established to appear at arm's length, the FSFW serves to launder tobacco industry sponsorship in a way that renders existing mechanisms to ensure tobacco industry independence ineffective. For example, Legg *et al* demonstrate the ways that authors and their research were able to elude journal policies prohibiting tobacco industry-funded research or authors with clear conflicts of interest (eg, an editorial by an author with tobacco company ties) because the funds were channelled through a third-party organisation.[6]

The Science for Profit Model[8] furthers our understandings of the ways that industry actors across sectors influence the production of scientific research in ways that further their own interests. This helpfully provides an analytic lens to understand the mechanisms of corporate capture within the scientific realm and a place to begin connecting these strategies and practices to other forms of corporate capture including professional, regulatory, technology, market, media and civil society capture.[5] It also provides a strong argument for a norm of separation,[12] which argues that the integrity of the scientific enterprise (or other public health organisations) relies on independence from industry sponsors. Research integrity as a social practice thus requires spaces, including for training, research infrastructure and dissemination venues, which are fully independent of commercial interests.

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