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GC Insights: **Scientists as Marketers**

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Abstract. Motivated by pressing planetary concerns, scientists are increasingly taking their work into the public arena, but it remains uncertain whether current science communication practices are appropriate for tackling complex and contested societal issues. A fresh perspective emerges from the business sector, and from the contrasting marketing paradigms of 'make and sell', 'sense and respond', and 'guide and co-create'. The newly emergent guide-and-co-create paradigm - purpose-driven, interdisciplinary, participatory, and reflexive – would seem to offer the best template for science communicators addressing long-term geo-environmental concerns.

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1. Introduction

Over the last decade or so, universities have strongly emphasised, professionalised and expanded their public communication efforts to demonstrate the utility of their knowledge to society. Initially, those efforts were spearheaded by in-house communication teams that grew out of public relations to serve as intermediaries between scientists and the print and broadcast media (Bielak et al. 2008). But more recently, the rise of social media has emboldened many scientists to bypass traditional gatekeepers and place themselves at the direct interface between universities and their wider public.

In the business world, that interface between an organization and its public (customers) is occupied by 'the marketer', who uses the principles and practices of marketing to match the needs and demands of an internal production process with the needs and demands of the external market. The notion that in the academic business of knowledge production, scientists might be viewed as 'marketers' is likely to be unpopular. The influential US National Academy of Sciences report on *Communicating Science Effectively* notes that marketing may '…offer insights into several aspects of science communication - for example,

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understanding audiences - but the goals of marketing and public relations professionals may differ from those of many science communicators' (NAS 2017, p.15). Those marketing-led goals centre on the science and art of 'persuasion' – encouraging people to change their attitudes or to take particular courses of action.

It is marketing's persuasive power, however, that many see as having impelled an over-consumptive global society towards its perilous unsustainability, and therefore marketers are complicit in the climatic and ecological breakdown that much of contemporary science communication is concerned with. The 'wicked' nature of the planet's unsustainability crisis (e.g. Grundman 2016), however, is so complex and sprawling that it is uncertain that conventional science communications can effectively address it. Specifically, '…the emphasis on science communication as broadcasting and the drive for consistency and simplicity in messaging do not well serve the needs of either science-based governmental organizations, or the public at large, when dealing with messy, contested issues such as sustainability' (Bielak et al. 2008, p.202)

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2. Make and Sell Communications

At the heart of the problem is that much of the science communication undertaken in universities conforms to a classical economic- and production-orientated marketing paradigm (Stewart & Hurth 2021). This 'make and sell' paradigm focuses almost entirely on the internal knowledge production process (Hurth & Whittlesea 2017). Academics design their research 'inside out', starting with what they already know and only later seeking to translate their work for a public that has not asked for it (but has often paid for it). For most research, the communication (marketing) element is an afterthought, often loosely justified as 'educating' the public about science (Dudo & Besley 2016). Despite a separation of science from society (to maintain objectivity, credibility and political neutrality), societal benefits are assumed to accrue mainly because the knowledge generated is expected and presumed to be somehow useful to solve problems. Within universities, therefore, the primary goal of science communication is to better school and skill scientists in the media practices and journalistic arts that will make them better storytellers and their information more digestible for public consumption (Stewart & Hurth 2021).

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3. Sense and Respond Communications

To these long-standing tenets of science journalism have been added new insights from a more sophisticated 'sense and respond' marketing practice that took hold from the 1950s onwards, as neo-classical economics turned the make-and-sell paradigm on its head (Haeckel 1992). The core focus of an organization shifted from its product to its customer. Decisions about what was produced, where it was made available, how much it cost, and how it was communicated would be informed by insights about what the customer wanted. And it was the marketer's responsibility to sense and to respond to public needs (Hurth & Whittlesea 2017).

A similar external-facing 'sense and respond' paradigm shift arguably enveloped science communication towards the end of the 20th century. In the face of the inability of scientific knowledge to quell growing public disquiet about new technologies, science communicators shifted away from the goal of 'public understanding' towards a mission of 'public engagement' (Weigold 2001). Dialogue was sought across the university-society divide to produce science that was more socially accountable and culturally tuned. This broader, more inclusive approach was better aligned to the

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emerging 'mode 2' or 'post-normal' science thinking that sought to wrestle with complex and contested science-society issues (Funtowitz & Ravetz 1993, Schneidewind et al. 2016). It was an approach that demanded genuine interdisciplinary collaboration, notably empirical input social and behavioural science to better gauge public attitudes, values and norms, and authentic partnerships with the creative arts to access more diverse audiences (Nisbet et al. 2010). If scientists and their organisations wanted to be more effective at using the media to connect with hard-to-reach publics, they needed to '…switch the frame—or interpretative lens—by which they communicate about a scientific topic, and carry out careful audience research to determine which frames work across intended audiences' (Bulbela et al. 2009).

Despite being more people centred, this 'sense and respond' approach to science communication still maintained the broad intent to convey internal science to external audiences (Stewart & Hurth 2021). Scientific knowledge could now be disseminated more effectively not only by making scientists better storytellers but also by segmenting the public to empirically sense what their target audience was interested in, aligning with it, and delivering against it.

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The trouble is, what the public is interested in can be notoriously short-term, myopic and fickle. Humanity, by contrast, currently faces long-term, existential challenges of climate change and ecological breakdown. Scientific understanding can offer vital guidance on sustainable human progress (e.g. Rockstrom et al. 2008) but it's not all about technical knowledge. 'Many environmental claims are not so much about life's quantities as its qualities. They are aesthetic and moral choices. They are about equity and ethics' (Oreskes 2004, p.).

4. Guide and Co-create Communications

In the business sector, that growing consumer demand for better social and ethical practice has led to the rise of 'purpose-driven' corporations, which no longer exclusively reward shareholders but rather serve the interests of all stakeholders (Mayer 2021). This sector-wide shift to 'purpose' is underpinned by a new marketing paradigm that motivates consumers via a long-term motivating social vision to guide sustainable future wellbeing, co-created in partnership with stakeholders (Hurth & Whittlesea 2017).

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This 'guide and co-create' marketing paradigm offers a potential template for a third mode of science communication. It extends the established skillsets of make-and-sell and sense-and-respond communications into the broader competencies of sustainability science (Wiek et al. 2011). Facilitative skills are needed for fostering participatory dialogues, conciliative skills for resolving tensions between stakeholders, and ethical reflection for maintaining the role of 'honest brokers' in mediating socially contested debates (Pielke 2007). It nudges scientists, and the universities they work for, further into the public sphere, requiring their own communications to be purpose-led and wellbeing-focused (Stewart & Hurth 2021). The much-maligned corporate world has already started out on the path to purpose and academia could follow, with universities becoming purpose-driven organisations. The first step on that rocky road will be science communicators acknowledging that whilst we are marketers at heart we can help guide and co-create a sustainable future.

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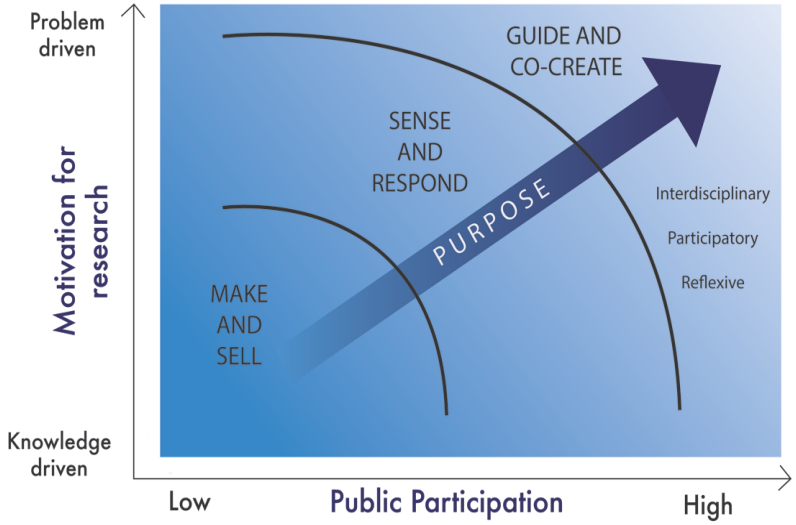

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241 FIGURE: The science-public communication landscape in
242 the context of ‘make-and-sell’, ‘sense-and-respond’, and
243 ‘guide and co-create’ marketing paradigms.