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Policy, Expertise and Trust

Policy Brief: Behavioural Science: Ethics, Expertise, and Systemic Risk

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PERITIA POLICY BRIEF: Behavioural Science: Ethics, Expertise, and Systemic Risk

Liam Delaney, Atrina Oraee, and Jet Sanders

London School of Economics and Political Science, Department of Psychological and Behavioural Science

Behavioural science has increasingly integrated into public policy over the last decade. A particularly important recent development has been the inclusion of behavioural science researchers into expert advisory committees tasked with dealing with major systemic issues or crises at national and international level. The case of covid-19 illustrates the importance of prioritising questions of professional ethics and public perception of expertise. In this chapter, we discuss the nature of behavioural science expertise and factors that impact upon trust and public perception. A key point that the chapter develops is that employing explicit ethical codes for the role of behavioural scientists may contribute to the development of more resilient crisis responses. More generally, creating more opportunities for reflection on the development of the discipline, communication across disciplines, and training of behavioural scientists involved in policy, is important for developing behavioural science as an input to systemic risk management.

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1. Introduction

The years following the global financial crisis have seen a proliferation of behavioural science research entities engaged in informing public policy (e.g Halpern 2015). A key lesson from policy responses to covid-19 is that the role of behavioural and social science in the policy process needs to be clarified and developed further. As was the case with covid-19, behavioural scientists are increasingly involved in informing policy in high-stakes environments with high degrees of public contestation and media scrutiny such as climate change and internet regulation. Such a context increases the importance of robust communication of the role of behavioural science, the nature of behavioural science expertise, and the ethical structures that enhance the trustworthiness of behavioural science research and advice.[1]

In recent work (Sanders et al 2021), we examined the media and public representation of behavioural science in the context of the covid-19 response in the UK. While on a broad level both the UK public and media expressed a high degree of positive sentiment to the involvement of behavioural scientists in covid-19 response, a constellation of issues regarding transparency and potential weakening of the overall response played a strong role in the UK covid-19 discussion. This is particularly important given the importance of trust in public policy in facilitating coordination during major crisis events (e.g Cairney and Wellstead 2021). Related to this question, how can emerging areas of behavioural science enhance the extent to which they are both trustworthy and trusted by the wider public. To what extent are

[1] Throughout this chapter, we are mostly focused on the emergence of interdisciplinary applied behavioural science capacities in government and international agencies. It is clearly the case that various behavioural sciences have long histories of applications and engagement with public policy that are important. But reviewing all of these histories is beyond the scope of the current chapter. See, for example, Owens (2011) for an account of the role of expertise including social science expertise in shaping UK environmental policy.

behavioural scientists trusted by policy-makers, the media, and the wider public to provide credible input into crisis responses? In particular, what is the status of transdisciplinary or interdisciplinary behavioural science or behavioural insights functions as trusted sources of evidence within the policy. We examine these issues in the context of covid-19 and employ a multidimensional ethical framework to outline factors that could impact on trust in behavioural science expertise.

The rest of this chapter is structured as follows. Section 2 discusses the wider literature on trust in expertise and the importance of trust in the development of expert capacities. Section 3 examines the role of behavioural science in the recent covid-19 response, in particular examining public perception of behavioural science in the UK covid-19 response. The role of behavioural science in the UK during the early period of covid-19 is a critically important case study for the wider development of professional behavioural science capacities globally. We argue that it is crucially important to learn key lessons from this experience for the development of future responses and integration of behavioural science in areas such as climate change. Section 4 makes the connection between trust in expertise and a wider ethical framework to structure the input of behavioural science into policy and expert committees.We connect the development of trustworthy behavioural science to each dimension of this framework. Section 5 outlines a number of reflections for policy-makers on how to integrate behavioural science into systemic risk management and crisis response, drawing from lessons learned during the covid-19 pandemic. Section 6 concludes with implications for the development of trusted and trustworthy behavioural science with the emerging area itself, including the potential role of emerging journals, academic societies, policy structures, ethical frameworks, and education.

2. Trust in Expertise and Behavioural Science

A large literature exists on trust in science as an enterprise more generally. At the broadest level, scholars have conceptualised trust in expertise in two dimensions, epistemic and non-epistemic, with the former involving characteristics of the quality of the knowledge produced by experts including its coherence, evidence-base etc., and the latter revolving around the motivation and values of the experts, including whether they have conflicts of interest and whether they sufficiently internalise the consequences of mis-representing knowledge claims (e.g. Wilholt 2013).

Much of the research on trust in expertise and science is focused on natural scientists and STEM. There is comparatively less research on trust in social and behavioural sciences. While some of the issues surrounding trust in behavioural science will follow naturally from the wider literature, there are many reasons why social sciences more generally and behavioural science itself might interact with the public and with policy professionals in a different way (e.g. Cassidy 2014). Most obviously, behavioural scientists are frequently speaking about issues that have deep resonance on a personal level with members of the public and with other experts. As such they may be providing evidence in areas where people already hold deep convictions based on their own life experience.

Another key aspect of trust in behavioural science is the extent to which emerging transdisciplinary areas can be mapped on to existing disciplines. The phrase behavioural science clearly has various meanings, ranging from an umbrella term encapsulating a wide range of disciplines such as anthropology, sociology, psychology, and economics, to more narrow meanings referring to emerging transdisciplinary applied knowledge paradigms. The rapid emergence of behavioural

economics in the 1990s and 2000s created in particular a situation where large amounts of research from wider behavioural sciences were being used in policy contexts traditionally heavily dominated by economics and legal experts. For example, the MINDSPACE framework (Dolan et al 2010) developed by the Institute for Government was highly influential in UK policy and underpinned the development of the behavioural insights team. It was not uncommon at the time for such work to be referred to as "behavioural economics" despite its clear interdisciplinary and transdisciplinary orientation. This became more marked as behavioural research capacities began to scale across many countries. Phrases such as behavioural insights and behavioural science began to be used to encapsulate this type of activity, with the latter clearly already widely used in a wider capacity. While the interdisciplinary and transdisciplinary orientation of these areas is arguably a source of strength in terms of problem-solving capacities, it does create difficulty in communicating the nature of the expertise to policy-makers and the public, something we will discuss below.[2]

3. Covid-19 and Behavioural Science

The Global Financial Crisis of the late 2000s was a key moment for behavioural approaches in public policy (e.g. Thaler 2015). Stunned by the unfolding events, governments and regulators around the world began to question the reliance on models of economic behaviour that relied on assumptions of rational behaviour. Following these events, many actors in the UK and US policy environment sought to embed a wider set of models and methods relating to human behaviour directly into areas of policy that had traditionally been the domain of areas of economics and law

[2] See Priaulx, and Weinel (2014) for one account of the difficulties encountered in developing transdisciplinary research frameworks.

that had strong roots in rational choice theory. The next decade saw an extraordinary proliferation of behavioural science research across governments.

A particular development has been the institutionalisation of behavioural science inputs through the creation of dedicated interdisciplinary research infrastructure. The prime example of this was the development of the behavioural insights team (Nudge Unit) in the UK Cabinet office. More recently, many national and international agencies, including the WHO and United Nations have developed generalised behavioural science capacity and bodies such as the OECD have published extensively on promoting good practice in this area internationally. This trend was well underway in advance of covid-19 and many behavioural science teams found themselves in key positions with regard to providing evidence to national and international systemic covid-19 responses. The deep-level embedding of behavioural science in the UK represented a new challenge in the context of covid-19, namely that behavioural scientists were quite embedded in policy in the UK and therefore rapidly in the public and media spotlight at a time of high public anxiety about an impending threat. If the financial crisis represented a moment where behavioural science (re)introduced itself in a major way to public policy contexts, covid-19 represented more of a test of its scalability and wider acceptance among policy-makers and the public.

The nature of this became rapidly apparent in a very public debate by experts, policy and public about the role of behavioural science in the covid-19 response. This took many forms, including a highly polarised discussion in the UK on whether behavioural scientists were leading the UK to adopt softer interventions than recommended by epidemiological experts. A large number of newspaper articles and

social media commentators in the UK created a link between the British government pursuing a "*herd immunity*" strategy and alleged advice from behavioural scientists that such a policy was at least partly necessary due to the potential for "behavioural fatigue" arising from physical distancing policies rendering them unsustainable.[3] This led to a letter being distributed and signed by over 650 university researchers declaring themselves as behavioural scientists that argued that behavioural science research was not a justification for delaying physical distancing policies and denying that the evidence base on behavioural fatigue was sufficient to guide strategy in this area.[4] It is beyond the scope of this chapter and still not very clear what exact advice the UK government received on these topics at different points in their decision-making process but it is very clear that the debate around behavioural fatigue, herd immunity, and physical distancing policies propelled behavioural scientists into a highly charged public debate at a time of major crisis.

As this debate played out in the UK media, almost in parallel behavioural science researchers in many countries began to play part of the pandemic response either in the form of independent researchers reorienting their research to address pandemic issues or as part of institutionally embedded behavioural science research teams reporting directly to government and international agencies. For example, the Scientific Pandemic Insights Group on Behaviours (SPI-B) *provides behavioural science advice aimed at anticipating and helping people adhere to interventions that are recommended by medical or epidemiological experts*. An academic advisory

[3] See for example Sonia Sodha "Nudge theory is a poor substitute for hard science in matters of life or death" https://www.theguardian.com/commentisfree/2020/apr/26/nudge-theory-is-a-poor-substitute-for-science-in-matters-of-life-or-death-coronavirus

[4] Open letter to the UK Government regarding COVID-19 https://sites.google.com/view/covidopenletter/home

board in support of the newly ignited Corona Behavioural Unit advised the national COVID-19 response in the Netherlands (WHO, 2022). A similar group was established in Ireland to provide input into pandemic response. One of its key members published a review summarising the behavioural science literature across a range of contexts, including evidence on crisis, emergencies and risk communication. They identified seven key themes: hand washing; face touching; entering and coping with isolation; encouraging collective action; avoiding undesirable behaviour; crisis communication; risk perception (Lunn et al 2020).

At supranational level the WHO developed guidance documents on COVID-19 measure adherence (REF) and the European Commission focused on readying evidence about barriers and drivers of vaccination uptake. Large volumes of research emerged across all aspects of covid-19-related behaviour. Van-Bavel et al 2021 attempted to both summarise the likely factors relevant to covid-19 and provide guidance to policy-makers as to the likely operant factors and effectiveness of different approaches and is the most cited paper in that literature. The debate about the quality of behavioural research was not restricted to the UK context. For example, IJzerman et al (2020) title their *Nature Human Behaviour* paper "*Use caution when applying behavioural science to policy*" and argue that behavioural science was not at a sufficiently evidence-readiness level to be reliably used as an input into public policy. In particular, they argue that behavioural science research up to that point was not systematic or structured enough to make reliable predictions about human behaviour in a complex environment such as the start of a pandemic. It is outside the scope of the chapter to fully evaluate the scale and quality of behavioural research during this period. But it is clear that the nature of this debate revealed major differences in viewpoint about the role of behavioural science in

policy even among behavioural scientists and combined with wider ideological debates, there was significant potential for behavioural science research to be represented as low in epistemic and non-epistemic trustworthiness.

In a recent paper we examined this question by looking in detail at the media and social representations of behavioural science and behavioural scientists during the pandemic (Sanders et al 2021). Our work demonstrated varying social representations of the role of behavioural science in policy that had potential knock-on consequences for trust in national covid-19 policy in the UK. Their research demonstrated several significant findings after analysing over 650 UK print articles and over 2000 original tweets (plus over 11,000 retweets) for the 24 weeks surrounding the first lockdown. First, attention was heightened towards behavioural science actors and principles in the lead-up to the lockdown decision and again after the first easing. These trends were marked by increasingly divisive sentiment toward their contribution to covid-19 policies at both time points.

They further identified two distinct clusters of association in social and print media for what is considered as “behavioural science”: ‘‘nudge’, and associated concepts and actors were perceived as more embedded with policy application and, most negatively; ‘behaviour change’ and associated concepts and actors were perceived as more distant from policy and most positively. Differences between clusters are further heightened by perceptions of behaviour change and psychology as enablers of citizen choice (e.g. handwashing, social distancing), whilst negative and divisive sentiments were associated with behavioural science when applied to more politicised restrictions of citizen choice (e.g. lockdown, rules of social isolation). However, they also observed negative sentiment toward nudge for not being

restrictive enough, indicating that such polarity does not seem to explain the divisive debate entirely. Another contrast between these clusters of actors and concepts is their perceived embeddedness vs independence from political, as opposed to public, needs. In other words, a question reflected by the media (and public) is to what extent behavioural scientists were seen as working for the public good instead of biasing the selection of evidence to suit these political needs.

4. Ethical and Trustworthy Behavioural Science

A large literature has developed on the ethics of behavioural science applications. Much of this literature has focused on questions such as the underlying political philosophy of government underpinning behavioural policy applications. In a recent paper, we argue the case for a pragmatic focus on multi-attribute ethical reflection in the embedding of policy (Delaney and Lades 2022). Based on the rapidly evolving literature on behavioural ethics, we outlined seven principles that should be considered when developing an ethical and trustworthy behavioural science strategy, summarised under the FORGOOD acronym. These principles provide a working template for addressing questions surrounding trust in behavioural science inputs.

Fairness: Policies that impact people's behaviour should be examined from the perspective of fairness. While a vast literature already exists examining the equity implications of systemic policies in areas such as climate change and pandemic responses, further issues may arise when extending the toolkit to include a range of psychological interventions.

Openness: The extent to which behavioural science is integrated transparently is an important aspect of trustworthiness and public perception. One particular feature of the representation of behavioural science in the early stages of the UK pandemic

response was the idea that behavioural scientists were advising the government of particular courses of action outside of formal scrutiny. While the extent of this is very unclear, it is the case that this perception remained relatively unchallenged in the UK media for a significant period of time. While it may be difficult to respond to all suggestions of lack of transparency in real-time in an evolving complex situation, it is clearly worth considering how the role of behavioural science can be made more transparent, including the potential for greater degrees of decision tracing and formal identification of the chain of evidence to which behavioural scientists contributed. Mechanisms to involve citizens in the development of large-scale behavioural interventions is another potential way in which issues of respect and transparency might be improved in future cases. Transparency about the deployment of behavioural sciences could take the form of publishing membership of committee immediately, giving more details about deliberation, noting points of disagreement and dissent, publishing research as early as feasible, and related measures.

Respect: The proliferation of personalised micro-data and the tools to use it for behavioural change purposes raises profound questions about the privacy and autonomy of citizens. Banerjee and John (2023) make the case for the importance of agency in the context of behavioural public policies. In particular, they argue that public policy should embed the capacity for reflection into changes in choice architecture that influence choice.

Goals: While overarching goals might be clear regarding climate policies, understanding the goals of any particular behavioural change strategy is vital in determining trade-offs between approaches. Additionally, individual goals and trade-offs may be distinct for different subsets of the population. Enabling informed citizen

choice in their goal setting as the closest attainable outcome measure is one approach that accounts for such population variance

Neglecting Other opportunities: One critique that has been made about behavioural research in public policy is their role in promoting individualised approaches at the expense of wider systemic approaches. A key example of this was the social representation of the concept of nudging during covid-19, with many media articles equating the role of behavioural science with a political philosophy that promoted non-mandatory forms of intervention at the expense of legislation and enforcement.. This is clearly a major issue of concern with regard to climate change and the potential for green-washing and more generally weaker policies being promoted on the basis of less industry backlash. This has been debated heavily among broad behavioural science communities. A recent widely discussed paper by Chater and Loewenstein has argued that the growing of interdisciplinary behavioural science paradigms have inappropriately narrowly focused on short-run, low-impact, and individualised interventions in areas such as climate change rather than maintaining a systemic focus (Chater and Loewenstein 2022). While this has been contested and is a wide source of current debate, it is clearly an issue at very least in terms of public perception and trust in expertise in this area and emerged as a key issue in the initial weeks of the UK covid-19 response, with a large body of public opinion expressing concern that the UK was being led by behavioural science expertise into a softer response than needed.

Opinions: Factoring in public opinion about the mechanisms of behavioural change is another important aspect of ensuring that behaviourally-informed interventions are scalable and acceptable. Several recent papers have examined the public

acceptability of nudge-type interventions, in general finding a high degree of public popularity for soft-mandatory policies widely discussed in the literature. However, as discussed above, there is clear the potential for partisan debates in the public about the overall orientation of behavioural science inputs into public policy. It could perhaps be argued that such debates are peripheral to the specific policy questions and not under the control of people designing policies that otherwise have strong welfare and public acceptability properties. However, it is also clear that such debates impact the scalability of behavioural science and will likely continue to recur and be a feature of debates where behavioural scientists are making inputs to policy based on claimed expertise. The extent to which public attitudes should be taken into account is a key question that emerged throughout the first phase of covid-19. Support for physical distancing restrictions was consistently high across many countries, though many countries saw the emergence of vocal minorities who opposed the measures.

Delegation: Many questions relating to the input of behavioural scientists into policy revolve around the composition of the researchers engaged in this work and the actors that will implement their recommendations. One aspect of this is the extent of expertise required to engage in population-level behavioural change interventions. A key question for the deployment of behavioural science during an emergency situation is the legitimacy of the teams involved. How can behavioural science be integrated with other types of knowledge to inform overall assessments of risks?

How to embed professional ethical codes into behavioural science is a key question for reflection. Delaney and Lades (2022) make a case that a framework such as FORGOOD could be embedded into behavioural science practice through its

inclusion in educational programmes in the area, its use as an ethical pre-mortem tool for projects, and it's use more generally as a voluntary ethical self-reflection tool. One of the authors used the framework to develop a code-of-conduct for a new professional body in behavioural science, the Global Association for Applied Behavioural Science (GAABS).[5] The code of conduct includes 12 aspects encouraging members to behave honestly and transparently, some of which are common to any scientific association but others which focus more on conflicts more likely to be encountered in behavioural research such as the potential for conflicts with goals around autonomy and avoiding manipulation.

It should also be said that much of the discussion around the ethics of including behavioural science in areas such as pandemic response took on a somewhat defensive stance. It is worth examining the case from the viewpoint of the ethics of not including behavioural scientists and related expertise in these contexts. In a previous paper, we argued that the UK pandemic response was insufficiently equipped to deal with many of the behavioural and psychological issues associated with covid-19 response. While the behavioural group advising the UK emergency response contained many leading psychologists and behavioural scientists, their remit was quite narrowly restricted to examining response to restrictions. Questions such as psycho-social resilience and mental health were addressed on a comparatively peripheral basis. Large-scale systemic policy initiatives impact on well-being in many ways, including job displacement, psychological impacts of communications, and impacts on inter-personal interactions. Many governments grappled with these aspects of covid-19 late in the policy process and were arguably

[5] Details of the code of conduct are available on the GAABS website https://gaabs.org/wp-content/uploads/2020/12/GAABS_CodeofConduct_VersionSeptember2020.pdf

under-equipped and under-prepared to deal with these aspects (Daly and Delaney 2022).

5. Wider Reflections on Behavioural Science and Systemic Response

This chapter has examined trust in behavioural science expertise, in particular in the context of behavioural science being included as part of expert responses to systemic risk and major crises. The more climate policies and other areas of systemic risk will involve evidence-based attempts to change behaviours at scale, the more evidence on the effectiveness and mechanism of such interventions is seen as credible and legitimate becomes crucial factor. The existing literature is underdeveloped as a guide for how policymakers can engage with and best utilise behavioural and social science expertise.

Having said that, we think the following suggestions form a useful starting point. In particular, policy-makers charged with developing evidence-based policies in areas of systemic risk that have significant human behaviour aspects should consider the following actions.

1. Examine committee structures to ensure that there is sufficient expertise to evaluate claims being made about human behaviour and well-being in the context of climate. Many policies will require understanding of economic, behavioural, psychological, and social aspects of climate change and having a mix of expertise in these areas is important. For example, in recent capacity building exercises, the WHO have recommended that health policy-makers engage with interdisciplinary networks at national level to ensure sufficient capacity to produce and interpret behavioural science evidence.

2. Examine the extent to which different social and behavioural science inputs are understood and trusted by the public. As well as the type of survey data discussed in previous sections, the role of citizen juries and deliberative democracy exercises is one very promising direction for the integration of behavioural and social science into public policy. As discussed below, this is clearly also an urgent task for professional and academic bodies in these disciplines themselves, it is something that policy-makers may need to address directly in areas where confusion as the role of experts could lead to wider confusion about overall crisis response.

3. Clarify how evidence being provided by social and behavioural scientists is done so in an independent and transparent manner. In particular, clarify the role of behavioural evidence in the policy process. A key issue that emerged during covid-19 and that is clearly present in the climate change discussion is the conflation of behavioural science approaches to evidence and soft-mandatory forms of policy. This can lead to confusion and distrust as to the motivations of policy-makers for including behavioural and social scientists, for example in the context of wider concerns about green-washing in the climate change response.[6]

4. Develop a working model for how the input of social and behavioural scientists are understood from an ethical perspective. In previous work, we put forward the acronym FORGOOD to describe how behavioural scientists working on policy applications should consider Fairness, the potential for recommendations for soft recommendations to crowd out Other opportunities, Respect for autonomy, Goals in terms of welfare, Openness and transparency, Opinions and public acceptability, and Delegation in terms of structure of response and the nature of the expertise. More

[6] There are several existing frameworks such as the Nuffield Ladder of Intervention and the Behavioural Change Wheel that allow for communication of these distinctions.

recently, the OECD has put forward an ethical checklist that can be used by policy-makers to review ethical aspects of their project and behavioural science capacities.

5. More generally, a number of frameworks are developing to assist policy-makers to integrate behavioural science into policy in an ethical and trustworthy manner. The OECD Basic Framework is one of the most detailed to date and examines ethics and expertise considerations across the policy process. Recent works by the OECD, UNICEF and the United Nations provide guidelines for developing behavioural science policy capacities.

6. Science research councils and related bodies should also consider how to promote the development and integration of behavioural science into public policy, including through promotion of advanced training in this area. For example, the UK ESRC recently released a call for both a national leadership hub in behavioural science and a centre for advanced doctoral training in this area. Social and behavioural scientists are often providing evidence about issues on which the public have deep personal experience. The potential for social and behavioural science to be seen as common-sense both by the public and policymakers has the potential both to reduce trust in recommendations and for input to be downplayed in the policy process.

6. Future Developments in Behavioural Science, Ethics, and Policy

Much of the material in this chapter is based on the UK context and, in particular, the extent to which behavioural science was received by the public and media as part of the covid-19 response. While the broad categories of issues are likely to map on to other countries and other issues, the extent to which this applies varies across contexts. One possibility is that the highly politically polarised environment of the UK

in the run-up to covid-19 led to a situation where behavioural scientists were particularly vulnerable to being drawn into partisan disputes about the competence of the overall government response. Even if this were the case, understanding in which ways the scaling of behavioural expertise depends on political configurations would be an important thing to understand, something at least partly developed in recent work on the political economy of behavioural interventions. In general, international comparative analysis of the development and public perception of behavioural science inputs to public policy will be increasingly interesting as this area develops across many different countries. The extent to which clear ethical structures act as a buffer against the potential to get drawn into partisan debates is another key area for future work.

Furthermore much of the analysis above relies on data from public media rather than direct reports from citizens. In ongoing work, we are gathering baseline data on the extent to which adding behavioural scientists to expert climate committees influence the perception of the quality of the advice coming from these committees. Such information is important for messaging from these institutions to be credible; we need to understand public perception of the role of the evidence providers in these contexts.

The case of covid-19 revealed fundamental issues among behavioural scientists themselves as to the nature of their expertise. Many national and international agencies have established behavioural science teams over the last decade. The relation of these agencies to traditional social and behavioural science disciplines varies quite widely and in some cases there is an explicit emphasis on moving beyond traditional academic disciplines to focus on problem solving. This at least

partly contributed to confusion as to their role in pandemic response and delays in responding to media concerns about the use of behavioural science in policy. The beginning of a major global crisis is likely not the optimal environment for teasing through these issues and it is important that people involved in behavioural science and policy work toward at least clarifying the nature of the debates to avoid talking past one another during future crises.

There are many potential aspects to resolving these issues but it is clear that the following must be addressed urgently to reduce confusion: the extent to which behavioural science is itself an evolving area of science and practice and the connection of that area to disciplines such as psychology, anthropology, and economics and sub-disciplines such as behavioural economics, social psychology, and health psychology; the connection between behavioural science and the philosophical ideas underpinning libertarian paternalism and *Nudge* as an organising idea for policy; the extent to which empirical literatures in behavioural science can form a basis for prediction of behaviours in novel contexts as opposed to informing strategy and evaluation; the training and expertise levels needed to provide credible evidence on behavioural issues in public policy.

The confusion about the definition of behavioural science and the legitimacy of behavioural science expertise needs to be resolved through greater clarification between different groups using the phrase behavioural science as a description of their activities and areas of expertise. Ideally processes will develop to lead to some element of consensus on the skill-mixes needed to provide recommendations based on behavioural science evidence. A particularly promising development in the last decade has been the development of new journals and societies that allow for

transdisciplinary perspectives on the evolution of behavioural public policy. Journals such as *Nature Human Behaviour, Behavioural Science and Policy, Behavioural Public Policy,* and *Journal of Behavioural Public Administration* and related societies such as the *Behavioural Science and Policy Association* and the *International Behavioural Public Policy Association* explicitly allow for the development of ideas at the intersection of behavioural science and not necessarily linked to any traditional discipline or subdiscipline. These outlets have created a substantial potential to develop behavioural science as a transdisciplinary field with explicit real-world functions and applications. Related to this is the development of structures to allow for the development of capacity in applying behavioural science. Societies such as the *Behavioral Science and Policy Association* and the *Global Association of Applied Behavioural Science* have developed structures for professional development and networking. Several formal networks also exist in national governments and international agencies such as the United Nations. These also have the potential to be a clearing house of knowledge and a forum for the creation of shared understandings of the principles underlying applications of behavioural research evidence.

While such networks offer the potential to address many of the conceptual questions that hung over behavioural science during covid-19, a further need is to examine the structures through which behavioural science is integrated directly into public policy. The Behavioural Insights Team has provided one major model of integration into government, with a small team developed in the UK Cabinet Office eventually growing into a non-profit entity with shared ownership responding to government calls for projects across many areas of public policy. Many national and international agencies have built dedicated in-house units to provide capacity to conduct

behavioural science research. A key task for the next phase of applied behavioural science will be to assess the effectiveness of these structures in bridging the policy and academic research environments. As discussed above, the precise role of behavioural scientists in expert advisory groups addressing high-stakes systemic or crisis response issues is most urgently in need of clarification to ensure that confusion over their role does not weaken trust in pandemic response capacities, climate change mitigation, and related areas. The potential role for behavioural science to contribute not only to response but also general psychosocial and behavioural readiness for major crisis events will also benefit from a clearer conception of this role.

How the developments addressed above impact on the education of behavioural scientists is another key aspect of fostering trust in this area. A key question is how behavioural scientists should be trained to be prepared to work in emergency contexts. To what extent should behavioural science training involve experience of real-world policy environments? How can the training environments for behavioural scientists both equip them to deal with ethical issues and confer legitimacy on their involvement in these areas? The integration of ethical frameworks into behavioural science education is one mechanism that could potentially enhance the capacity of the next generation of behavioural scientists to enhance trust in its application in policy. More explicit reflection on the nature of behavioural science expertise is another area that could be fostered through case studies and simulations. Relatedly, simulations and reflection exercises that involve students, academics, and professionals working with a wide range of disciplines and reflecting on how to communicate their expertise to people from different disciplinary backgrounds could contribute to reducing confusion during emergency situations. Such exercises could

also increasingly form a basis for executive education for industry and policy practitioners and leaders.

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