Environmental Science and Policy 77 (2017) 147–150

Contents lists available at ScienceDirect

Environmental Science and Policy

journal homepage: www.elsevier.com/locate/envsci

What use is CRELE? A response to Dunn and Laing

ARTICLE INFO

Keywords:
Science-policy interface
CRELE
Evidence-based policy
Credibility
Salience
Legitimacy

ABSTRACT

This paper responds to an original research article by Gemma Dunn and Matthew Laing in volume 76 of this journal. Their article describes an empirical study on the demand-side of the science-policy interface, and proposes a new framework by which to evaluate and/or design effective knowledge systems for influencing policymaking. In doing so, they also critique the commonly used CRELE framework, and propose that their alternative ACTA framework better summarises the most important aspects of scientific research for influencing decision-making. In response, this paper highlights some ambiguities commonly arising from the use of CRELE, to which Dunn and Laing have also succumbed, alongside ambiguities within CRELE itself, which they have failed to address. These difficulties highlight how empirical evidence of the sort collected by Dunn and Laing should not alone determine the worth of any knowledge-systems framework. This paper then discusses the dangers arising from a framework such as ACTA, were it to be used instead, and concludes that although CRELE is flawed, it does at least point to appropriate priorities for the use of evidence in public decision-making.

1. Introduction

In volume 76 of this publication, Gemma Dunn and Matthew Laing (2017) present their research on policymakers' perspectives of the usefulness and usability of scientific evidence for decision-making. Their research provides a worthwhile empirical contribution to the ongoing debate over the use of science for public decisions and, in particular, confirms others' empirical findings[1] about the requirements for policy-relevant evidence (Porter and Dessai, 2016; Tangney and Howes, 2016). In doing so, however, their critique is notably ambiguous about CRELE's theoretical character as well as its worth as a conceptual aid. To be fair to Dunn and Laing, ambiguities surrounding CRELE originated long before their study and have been perpetuated by many users of this model, including by Cash et al. (2002) who first established it as a 'knowledge systems' framework. However, since Dunn and Laing are ambitious enough to tentatively replace CRELE, and thereby their study so usefully highlights the difficulties with knowledge-systems models more generally, a response to their paper seems particularly apt. Moreover, I fear that their proposed alternative criteria (ACTA) which they justify on empirical grounds may add to, rather than help resolve, confusion about how we can develop useful, usable evidence for policy when addressing complex technical issues of society and the environment. The principal difficulties with their paper, in a nutshell, are that they conflate the *evaluative* attributes of the CRELE framework with its *prescriptive* ability (or lack thereof) and, in implying an alternative prescription, they then neglect arguably CRELE's most valuable contribution for understanding the science-policy interface; when defined appropriately CRELE provides a useful heuristic to describe the tensions arising between political and expert authority in public decision-making. As I describe here, however, how CRELE is defined and used has a significant bearing on its relative worth as a theoretical or conceptual aid.

2. Problems with CRELE

Neither Cash et al. (2002, 2003), nor almost anyone who subsequently used CRELE, have satisfactorily discussed how it could and should help to *direct* interactions at the science-policy interface. Moreover, Cash et al.'s (2002) standardisation of the definitions of credibility, salience (relevance) and legitimacy appeared to give little thought to their prescriptive application in practice. Therefore, although their study strongly implies a *prescriptive* application for the framework, their use of it was as a descriptive-normative formula for the *ex-post evaluation* of extant bodies of expert knowledge. Likewise, most subsequent users of CRELE have employed the framework somewhat uncritically as a purely evaluative tool (e.g. Tang and Dessai, 2012; Rickards et al., 2014) or, less commonly, in ways that accentuate and build on its prescriptive ability to assist in effectively designing knowledge systems (e.g. Sarkki et al., 2015). Although equivalent in terms of normative intent, the challenge of reconciling these contrasting uses for any knowledge-systems framework highlights the need for caution when placing too much store in their worth. Perhaps the most significant limitation for the normative use of the CRELE framework more generally, relates to ambiguous understandings of evidence *legitimacy* and *salience*. Cash et al.'s (2002) original definitions do not adequately explicate the alternative possible meanings for these criteria in a way that accounts for the politics of evidence-based policymaking (Tangney and Howes, 2016). In particular, they are not wholly clear about whether or how political forces extrinsic to the knowledge production process should be obviated or accounted for. In its original guise, therefore, I agree with Dunn

[1] Dunn and Laing validly claim a dearth of empirical work in this field, but their allusions to literature review indicate that they may have omitted a number of key empirical studies that have used the CRELE framework. In particular, those from the UK and Australia assessing uses of climate and adaptation science (Tang and Dessai, 2012; Rickards et al., 2014; Tangney and Howes, 2016; Tangney, 2016).

http://dx.doi.org/10.1016/j.envsci.2017.08.012
Received 9 August 2017

and Laing (albeit for different reasons) that CRELE is not a wholly satisfactory formula for either evaluating or designing effective knowledge systems.

Is salience solely an *instrumental* attribute to ensure the practical usability of evidence? Or, does this criterion also allude, in some sense, to the political acceptability of evidence acquired through (prior or concurrent) agenda-setting or advocacy? Cash et al. (2002, 2003) are unclear. Subsequent interpretations have presumed that salience is a purely instrumental attribute, in a way that does not account for any such prior but necessary foundational salience of expert knowledge for a given policy issue (Weingart, 1999). However, if salience is meant in purely instrumental ways, and legitimacy is solely an attribute of the knowledge production process, then CRELE seems to have failed to fully account for the political acceptability of the resulting evidence itself. Just because a knowledge process is perceived as inclusive, fair and unbiased to those policy players involved in or adjacent to that process, does not mean that the resulting knowledge will be politically acceptable outside of this clique, even to those with whom it is ideologically compatible. For hyper-politicised problems like climate change in particular, and as Dunn and Laing also note from their literature review, policy players at other levels of government (or concerned with other scales of governance) will likely be dissatisfied with any knowledge process (and its outputs) if it is not in line with their own political priorities and commitments. This difficulty with relevance is a matter, not only of evidence *usability*, but also of its *political acceptability* (Tangney, 2017).

Moreover, Cash et al.'s formulation of evidence legitimacy sounds remarkably similar in effect to the concurrent attribute of evidence credibility, since, if a knowledge process is biased or somehow unfair, then surely the resulting evidence is also not wholly credible. In their original paper, Cash et al. (2002) come close to, but don't quite, suggest that legitimacy could be an attribute, not only of the knowledge process, but also of the resulting evidence, an alternative formulation which has been used elsewhere for the purposes of its evaluative and heuristic utility (Tangney, 2017). If used in this dual sense, I argue, legitimacy can indeed provide a useful ex-post evaluation of the political acceptability of evidence within the policymaking sphere. As specifically defined, however, Cash et al.'s (2002) criteria fail to fully account for external political forces upon knowledge systems.

Ultimately, resolving the ambiguities inherent in these criteria, I argue, depends upon how you interpret the framework. Is CRELE to be used to evaluate an existing body of evidence according to the perceptions of policy players? If so then we must first avoid policy players' confusion between perceptual criteria, as well as any confusion concerning our interpretation of policy players' understandings of these criteria. In the case of 'legitimacy', for instance, Dunn and Laing are less than convincing about whether they achieved this latter feat (cf. Weichselgartner and Kasperson, 2010; Tang and Dessai, 2012). Either way, a general lack of policymakers' concern with legitimacy cannot be discerned from a single (relatively uncontroversial) case-study, such as was investigated by Dunn and Laing. And more importantly, any ex-post evaluation of scientific evidence using CRELE is limited unless it can encompass the inevitable need for political-economic acceptability of that knowledge (Porter et al., 2015; Tangney and Howes, 2016). When used prescriptively, on the other hand, accounting for the chaotic realities and contingencies of broader political influence upon knowledge production processes using any knowledge-systems formula, speaks to the politicisation of policy evidence (Turner, 2001). Experts and other policy players following prescriptions for legitimacy and/or political acceptability, for instance, would presumably heed (at least some of) the normative demands of government or other influential advocacy coalitions, even though these political players may not be involved in the knowledge production process. But at what cost to the expert authority of that evidence? CRELE does not adequately account for how to overcome the politics of evidence-based policy and therefore, I argue, should not be used in a wholly prescriptive way.

Much as previous studies have done, Dunn and Laing's critique of CRELE appears to conflate its evaluative and prescriptive potential. They claim that CRELE purports a prescription for how evidence will be most influential and thereby question "whether CRELE is a useful mindset for researchers interested in policy influence". The former claim seems reasonable given the aforementioned ambiguities instigated by Cash et al. (2002, 2003). The latter critique, however, seems a reasonable sort of scepticism only had they given appropriate justification concerning CRELE's treatment of liberal democratic norms for a balance between politics and expertise; as well as due consideration to the expectations of experts and not only those of evidence users. They propose their *ACTA* framework which they believe "better summarises the most important aspects of scientific research" since "CRELE was a poor predictor of policymakers' concerns". Although they never explicitly state as much, they strongly imply that ACTA should replace CRELE. However, when used in a normative way (evaluative or prescriptive) the effectiveness of CRELE for influencing decision-making cannot be considered solely in terms of users' needs and wants; nor indeed should any possible alternative. Such normative use must also hang upon the norms of liberal-democracy concerning a balance between political (representative) authority, and expert (impartial and privileged) authority (Kitcher, 2011). Any lack of support from evidence users for CRELE, therefore, does not disqualify it as a normative framework for effective knowledge systems, nor necessarily provide significant justification for any alternative that would receive such endorsement. I suspect the authors might have reached this conclusion themselves had they explored an appropriate counterfactual. For instance, *if policy players were to design knowledge systems as prescribed by the ACTA framework, then what would be the likely result?*

3. Is ACTA any better?

Dunn and Laing give what they describe as "double-billing" to relevance through their ACTA framework in a way that, much like Cash et al. (2002) before them, appears largely prescriptive in intent, though evaluative in its use. Indeed, they give third and fourth billing to relevance too, since each of the four criteria could all be usefully subsumed within CRELE's criterion of relevance. They omit direct consideration of any prior or concurrent legitimacy or political acceptability for evidence, except in so far as it may be required for the fulfilment of their ACTA criteria, and in a way that merely avoids the thorny issue of evidence-politics and does not normatively address it. In this way they fall prey to the same ambiguities affecting CRELE. This is strange too, since they readily admit how "[f]actors falling outside the purview of science-policy that can impede uptake of useful information include […] values and ethics […] and entrenched commitments". Moreover, under this framework, issues of credibility appear to be assigned to the status of scientists' problem and not directly relevant to the effectiveness of knowledge systems. But should a knowledge-systems prescription neglect explicit consideration of technical credibility? ACTA, for one, would be in serious danger of misrepresenting scientists' factual understandings for the sake of user accessibility (for examples, see Cash et al., 2002; Tangney and Howes, 2016) and, thereby, fail to account for the nuance, complexity and uncertainty inherent in so many environmental and social policy problems (Head, 2008). These characteristics will always complicate the challenge of adhering to populist demands for usable evidence. However, even if used alone in a purely evaluative way, the ACTA framework would still be seriously misleading.

As demonstrated by hotly-contested issues concerning climate risk management, even instrumentally relevant science (displaying many, if not all, of the highly desirable attributes outlined through ACTA) is not used by policy makers unless underlying political-economic priorities, values and ideals align to allow for evidence to be developed and used for public decision-making in practice (Tangney, 2015). In terms of technical credibility too, evaluation through the ACTA framework would imply that, as long as we simply trust the experts, the development of useful policy evidence will