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Commentary

Revisiting the Three Generations of Evidence Use: How Far Have We Come, and Where to From Here?

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Abstract

Despite decades of scholarship identifying factors that prevent evidence from improving policy and practice, effective evidence use remains challenging. In 2010, Best and Holmes linked this challenge to complexity (2010). They discussed three generations of evidence use—linear, relationship, and systems—and the promise of the third. This paper revisits and responds to Best and Holmes, noting progress in acknowledging the complexity of evidence use. However, we argue that the systems approach is elusive for various reasons, including time and resources, a misunderstanding of what assessing context means, and measurement of outcomes and impact. Further, we suggest that evidence use interventions will not fulfill their potential unless the broader system is strengthened. What we define as the research system, following Pang et al. (2003), functions well in some ways despite interrelated factors preventing the optimal production and use of evidence, including competition, funding scarcity, mismatched incentives, and power imbalances. Given increasing connectivity, collaboration, infrastructure, and knowledge across disciplines and communities of evidence users, now is the time to determine how the system can improve. We advocate for dialogue to establish shared commitment, followed by deliberate, coordinated activity toward a global research system supporting realistic production and use of evidence for societal benefit.

Keywords

Evidence use, research systems, knowledge translation, knowledge mobilization, research impact

Introduction

Over the past several decades, research has identified many factors preventing evidence from being used by policymakers and practitioners (Oliver et al., 2026). Despite the significant growth in related efforts (Oliver et al., 2022), what is variously known as knowledge translation, knowledge mobilization, and knowledge-to-action (Holmes et al., 2017), as well as what we refer to in this paper as *evidence use* (e.g., Boaz et al., 2019), remains challenging.

Best and Holmes (2010) suggested this challenge has a lot to do with complexity. They wrote about three generations of efforts to improve the use of research evidence—linear, relationships, and systems—and advocated for more attention to the third. They observed that evidence use interventions were typically linear in nature—that is, pushing evidence out from research-producing organizations into policy and practice or pulling it into those settings through narrow channels. Although Best and Holmes identified growing recognition of the importance of the relational work involved in evidence use, "using a systems lens from the outset [would ensure] that all key factors that might affect the process are taken into account when developing inter-

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vention and evaluation strategies" (Best & Holmes, 2010, p. 6).

Over the past 16 years, there have been increasing calls for a systems approach to evidence use. One response has been the development and implementation of interventions incorporating what might be called systems realities, acknowledging that interventions unfold amid a complex interdependent set of factors (Boaz et al., 2024). To use a systems approach, a team implementing an intervention would define and delineate its system of interest: for example, a community mental health system or a built environment policy system. This does not negate the existence of other systems; it only conceptualizes a specific one for the purposes of intervention.

While the benefits of systems approaches are recognized by many (Cairney et al., 2026), similar to Best and Holmes, we still see the majority of evidence use interventions sitting in the linear or relational space (Oliver & Boaz, 2019).

Best and Holmes focused on evidence use interventions related to specific issues or topics. What they touched on only briefly, and is of interest to us in this commentary, is the broader system in which those interventions take place and in which evidence itself is produced and used. We refer to this as the *research system*. We define it, building on Pang et al. (2003), as the people, institutions, and activities whose primary purpose in relation to research is to help generate, mobilize, and use high-quality knowledge to improve lives. This system's actors are funders, researchers, evidence users, and intermediaries who ideally work together to maximize evidence use. As above, defining it does not negate the existence of other systems nor suggest that actors in this system are not also part of other systems.

Interventions designed to strengthen the research system generally (e.g., embedded researcher programs, evidence synthesis infrastructure, and research coproduction support) are increasingly widespread (Oliver et al., 2022). Yet these interventions risk falling short of their ambitions when they are treated as standalone solutions rather than included in a systems approach. For example, in a paper evaluating the first cohort of the UK Policy Fellowship Scheme, Benson-Egglenton and Flinders (2025) argued that while such fellowship programs are increasingly popular, they are not necessarily connected to existing infrastructure, relationships, capabilities, and sources of investment. More concerning are proposed research system solutions that take the form of entirely new fields aimed at improving evidence use, for example, implementation science and metascience. While their contributions are valuable, there is increasing realization that these proposed fields can and do exist almost separately from the people whom they were meant to help.

In short, there seems to be a collective amnesia in the research community: All the knowledge that exists about how to close the research–practice–policy gap is too easily ignored when a new, seemingly easier solution surfaces. The result is rediscovery of old problems, reinvention of old solutions, and duplicated or wasted effort.

As three veterans of the evidence use movement, we offer reflections on progress since the Best and Holmes paper was published. We draw on experience conducting research in this area and from working within government (AB and KO) and research funding organizations (BH and KO). We focus on these two areas: evidence use interventions designed to address specific issues or topics and interventions to strengthen the research system itself. Our argument is twofold:

- Evidence use interventions are improving but could be more systems-informed.
- Evidence use interventions will never fulfill their potential unless there are increased, concerted efforts to strengthen the research system in which those interventions are undertaken.

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Below, we describe what we mean by systems and system approaches, before expanding on these two arguments in turn.

What Is Meant by Systems and Systems Approaches?

Leading systems thinkers define a system as elements, interconnections, and a function or purpose (Meadows & Wright, 2008). To know we are looking at a system and not just a "bunch of things," we can ask:

Is it possible to identify parts?

Do the parts affect each other?

Do the parts together produce an effect that is different from the effect of each part on its own?

Does that effect persist in a variety of circumstances?

The systems metaphor may imply that interventions can be implemented in a relatively straightforward way. But complex systems are self-organizing with no single point of control and include actors with varying degrees of influence and goals that are likely to conflict (Hunter, 2015). Planned change in complex systems is difficult because an intervention adds to an already chaotic set of activities (Greenhalgh & Wieringa, 2011).

A systems approach to evidence use takes a multilevel, multiactor view. It constantly examines how people and processes influence one another within a whole, paying attention to how seemingly minor barriers interact in ways that are difficult to predict (Nilsen, 2015) and letting change emerge rather than trying to orchestrate it. We see systems approaches as important in both informing evidence use interventions and strengthening the research system itself.

Evidence Use Interventions: Assessing Context and Prioritizing Relationships Is Not Enough

A systems approach to the use of evidence in policy and practice has high potential to make improvements. Yet most evidence use interventions are still fundamentally linear. Granted, a problem may be framed as occurring within a system, and the proposed solution may include an assessment of context and relational strategies, such as partnership development. But the solution often presupposes a high degree of rationality in the system (Holmes et al., 2017).

What does a systems approach to evidence use look like? A first step would be identifying the elements of the system in question and its purpose. For example, as noted above, a research team could define and draw boundaries around a variety of systems (e.g., a global climate change policy system, a regional early childhood education system, a low-resource-setting mental health services system, or a national youth justice system). Next, the team would "[gain] understanding by looking at the relationships between things" in that system (Reynolds & Holwell, 2020, p. 8), as opposed to the reductionism common in scientific thinking that generates understanding by taking things apart. Resisting the urge to design interventions as if they move through discrete, predictable, manageable stages is difficult (Oliver et al., 2026) but important, as is acknowledging the critical role of both formal and informal leaders, the centrality of both "small p" and often "big p" politics, and the needs and motivations of those involved. In a truly systems-informed evidence use intervention, assessing context would not be the one-time, up-front activity it often is. Generations of systems thinkers remind us that it is the ongoing interaction between an intervention and its context that determines the outcome (Pawson, 2013).

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To be fair, the lack of systems approaches is not simply a failure of "mental models." Research teams are not necessarily funded or otherwise supported to undertake the difficult, time-consuming work involved in systems approaches. But those who are interested can turn to the literature for support. As Oliver et al. (2026) note, existing knowledge could be better drawn on for evidence use interventions. Case studies can provide lessons on what worked and what did not work in various complexity-informed evidence use interventions. Holmes et al. (2017) draw on several of these—clinical care guideline implementation, large-scale change across a national health region, partnerships between higher education institutions and local health services, and the integration of an integrated care program—to illustrate common critical success factors, such as adequate resourcing, appropriate leadership, communication, accountability, alignment of incentives, "support from the top" in the form of organizational expectations, training and development, and committed change champions. Drawing on the last case study, the aim was to redesign care for a population of almost one million people in an area facing significant health and social challenges, including helping people live independently, avoiding duplicated caregiving effort, and enabling new models of partnership. The program was a collaboration between the local health system and government and featured an embedded researcher model; this setup enabled communication about the disconnect between the strategy and its operational delivery, the lack of a convincing narrative for front-line staff, and the preoccupation of leadership with new structures and governance arrangements rather than with new ways of working. These findings were negotiated with operational leads and influenced the program's rollout. A process evaluation provided the monitoring necessary to enable rapid learning and change.

Acknowledging that much of the related literature is not specific enough to be helpful (e.g., suggesting "we need to do this" or "this needs to be done"), Holmes et al. (2017) present actions and related guidance for those developing and implementing systems-informed evidence use interventions, as well as specific actors "beyond the interventions"—those who can influence the system in which interventions are undertaken. The actions presented include the following: coproduce knowledge, establish shared goals and measures, enable and support leadership, ensure adequate resourcing, contribute to the science of knowledge-to-action, and be strategic with communication.

On the point of measurement, Best and Holmes mentioned it only briefly in the conclusion of their 2010 paper. We believe the difficulty of measuring systems approaches to evidence use—in addition to the difficulty of systems work itself—limits the appeal of such an approach. Of course, measuring research impact is a complex and debated topic. However, we argue that too much related activity focuses on project outputs that are often captured in simplistic but compelling stories with some data to impress funders and decision-makers. We also note that many assessments fail to capture the impacts of evidence generation or mobilization at a system level (Ekboir, 2003) and that even robust evaluations of evidence use interventions rarely capture system-level outcomes (Oliver, 2022).

Strengthening the Research System: A Necessary Shared Goal

We are not suggesting that those implementing specific evidence use interventions are responsible for simultaneously strengthening the research system itself—but it is, surely, in the interest of all research system actors to do so. What might it look like to collectively increase the pace and ambition of research system change—to completely rethink the current division of research, practice, and policy such that they are not seen as separate activities undertaken by distinct groups of people?

There is already progress in changing the system, which has been caused by a more nuanced understanding of the nontechnical (i.e., the social and political) impediments to evidence use, as well as more willingness to tackle the challenges. There is more potential for connectivity than ever before, more infrastructure, and more knowledge across disciplines and communities of evidence users. There are also productive (but fragmented) efforts underway to maximize the use of research evidence for societal benefit:

- Governments are articulating evidence needs, creating roles to strengthen internal scientific capability, and embedding evidence use into cyclical processes, such as resource allocation and policy prioritization (Shaxson et al., 2024).
- Funding agencies are acting as change agents through their programs, award conditions, and advocacy for related change in academic and practice settings (Bednarek et al., 2025; Holmes & Jones, 2022; Holmes et al., 2012). They are funding knowledge broker schemes and investing in long-term infrastructure to maximize needs-led evidence synthesis and knowledge use.
- Researchers are engaging with, and continuing to build, the multiple bodies of scholarship related to evidence use.
- Leaders in research and decision-making organizations are investing in a flexible workforce able to move between organizations and sectors. Some are building evidence use more explicitly into university promotion and tenure policies and providing training in research coproduction, knowledge mobilization, and policy systems.
- Publishers are broadening their ideas about useful outputs. The launch of IMPACT, in which this commentary is published, is a promising addition to the community of researchers and research users committed to strengthening the system in which evidence is produced and used.

To go further, connections and deep conversations are needed among a range of research system actors and those from a range of disciplines who have spent years studying systems approaches. We see the first step as constructive dialogue about the purpose of the research system—perhaps at various levels, including regional, national, and global—and about how best to observe, study, understand, and define that system or systems before intervening more deeply and strategically. As Meadows and Wright (2008) observe, the purpose of a system is critical, but it is not necessarily expressed explicitly: It may only be demonstrated through the operation of the system. This seems particularly apt for the research system, especially where talk focuses on the ideal of evidence use. A dialogue would likely reveal different, competing purposes among evidence users, funders, researchers, and intermediaries (see, e.g., Oliver, 2022). Dialogue would also reveal different perspectives. For example, many academics see a substantial, even central role for research evidence in policymaking. However, many funders think about their grant accountabilities in isolation from broader factors, and many governments and donors want to see outcomes from research investments before it is realistic. All of these perspectives will influence actors' views of a system's purpose and reveal underlying issues, such as competition, funding scarcity, mismatched incentives, power imbalances, and more that should not be overlooked.

After dialogue, the following step would be to agree on implementing and evaluating systems-strengthening interventions toward a shared purpose, while acknowledging that different actors have different accountabilities, responsibilities, capabilities, and capacities. The examples in the bullet points above (and more) would ideally be part of a more coordinated, whole system of research, evidence production, and use. Of

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course, this system needs to be properly studied and evaluated, which helpfully necessitates a shift away from evaluating individual interventions toward a systemic view of evidence generation and use for societal benefit.

Strengthening Evidence Use and the System That Supports It: Concluding Thoughts

In a complex system, no one can exercise ultimate authority—and this is no doubt a good thing. But while few people would openly disagree with the imperative to produce and use evidence more responsibly and effectively, system change can seem overwhelming and unattainable. It may also not be particularly appealing for those who understand the current system and reap its rewards. The research system is caught in what Meadows and Wright (2008) call a *policy-resistant trap*—a situation where new ways of being and doing can produce backlash and result in efforts to maintain the status quo, even if it is not ideal. Meadows and Wright's solution is to "let go—bring in all the actors and use the energy formerly expended on resistance to seek out mutually satisfactory ways for all goals to be realized—or redefinitions of larger and more important goals that everyone can pull toward together" (Meadows & Wright, 2008, p. 113).

So who will catalyze this dialogue? Governments are important and powerful actors vested in the production of evidence that will help them address societal problems and strengthen the economy. International bodies and agencies are well positioned to set expectations for and support the realization of strong research systems. Global fora and collectives can also provide leadership for research systems change. We see examples of these actors' commitments to research systems: for example, the UK government's Science Capability Review, which makes the case for science in policymaking (Government Office for Science, 2019); work at the European Union level (Oliver, 2022) and at the Organization for Economic Co-Operation and Development in education; the WHO Global Research Agenda on Knowledge Translation (Chapman et al., 2026); and our own work with Transforming Evidence and Impact Funders Forum.

Influential actors, such as governments and cross-government bodies, could help rally more sector leaders and cross-institutional networks, especially if they make their expectations explicit. With the influential actors and individual champions—opinion leaders who do not follow the pack but rather exercise positive deviance (Holmes et al., 2017)—working together, the system could have the momentum it needs for this broader dialogue.

We believe a research system dialogue builds naturally on Best and Holmes' work and on advancements since their paper was written. Regarding the current landscape, we argue that evidence use interventions could be more systems-informed and that these interventions will never be maximized without concerted efforts to strengthen the research system in which they are undertaken. We believe there can be mutually reinforcing progress in these two areas, particularly with collective attention focused on "who's minding the system." The timing is right to set shared goals. We can begin to move beyond mere acknowledgment of systems and separate related strands of work toward broader commitment and deliberate, coordinated activity across organizations, sectors, and geographies. This can also include shared accountability and continuous monitoring, evaluation, and learning centered on identified research system change.

Given that problems arise within systems as a consequence of human actions, deliberate or unintended, it follows that human action can be mobilized to solve them. In 2010, it would have felt like too much to ask; but in 2026, those of us working in the research system seem ready to put systems change at the center of our thinking to maximize the impact of research for societal and planetary benefit.

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