1. Knowledge brokers in education and international cooperation: a typology with blurred boundaries

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The rise of knowledge brokerage has triggered an avalanche of publications on the topic. In their systematic literature review, Mackillop et al. (2019) asserted,

> These multiple definitions are symptomatic of the growth of the field and of various researchers and disciplines' attempts at making sense of and implementing/refining these new processes. (p. 339)

Therefore, this might be an opportune moment to (1) explain in broad strokes the genealogy of the term; (2) propose a tentative typology that differentiates between pull and push factors, institutional brokers at the national, regional, and global levels, as well as the types of knowledge mobilized at different stages of the policy process; (3) present a few strategies on how trust in policy advice is established; and (4) critically reflect on typologies that assume clear-cut boundaries among knowledge producers, brokers, and users, as well as homogeneity within each of the three communities.

THE TWO-COMMUNITY FRAMEWORK AND THE FASCINATION WITH THE ACTOR IN BETWEEN

The study of knowledge brokerage dates back to Caplan's (1979) two-community theory. As Cairney (2016) and Mackillop et al. (2019) astutely pointed out, the polarization between science and politics sometimes uncritically suggests a juxtaposition between "truth" or "facts" (produced by science) and action or decisions (taken in politics). The individuals or organizations that are dedicated to transferring, translating, or

"pushing" research, truth, or facts onto political decision-makers, that is, bridging the two communities, are referred to as brokers, intermediaries, or boundary spanners.

However, the two-community theory requires a more complex explanation, because the two spheres are often structurally coupled, thereby generating an area of overlap in which policy-relevant research evidence is produced by both communities. Unsurprisingly, the nexus between science and politics has become an object of intense academic scrutiny (Bellmann, 2015; Grek & Ydesen, 2021; Steiner-Khamsi et al., 2021). Weingart (2003) argued that a recursive coupling of science and politics—the scientization of politics and the politicization of science—has resulted in a legitimacy crisis of scientific knowledge. The use of research evidence attempts to depoliticize policy decisions, but in effect, it politicizes them (see Bellmann, 2015): in political controversies, both sides invoke scientific evidence to substantiate their point. They contradict and, in effect, neutralize each other's arguments, demonstrating to everyone that science is not as neutral, objective, and factual as it pretends to be. Both Eyal (2019) and Weingart (2003) wrote about strategies used to overcome the crisis of expertise. According to Weingart (2003), individuals and organizations have deployed two strategies to address the inflation of scientific expertise: contraction and expansion. The contraction approach, used in the realm of politics, entails a "hierarchization of expertise" (Weingart, 2003, p. 57) and a quasi-certification of expert status, thereby generating an artificial scarcity of expertise. By limiting what knowledge is included in the policy process, contraction controls the "delegitimizing effects of contradictory statements made by scientific experts" (Weingart, 2003, p. 81). In contrast, the expansive approach is propelled by experts. To cope with the proliferation of competing expertise, they exaggerate their own discursive power by narrowing the scope of interrelated problems to the one issue for which, supposedly, they alone have a (policy) solution for.

The field of international cooperation is brimming with organizations that use data to invoke crisis scenarios for which supposedly only they have a solution to. By now, we are all numbed by meaningless statistics, reported in absolute numbers rather than in percentages, which have been used, for example, to dramatize the great masses of out-of-school children, dropouts, or, more recently, learning loss. Ingrained in its name, Education Cannot Wait, for example, has adopted the slogan "Impatience as a Virtue"[1] and emulates UNICEF in its alarmist tone to position itself as the top expert for vulnerable children and youth,

particularly for those in fragile and conflict-affected states. Expansive strategies are directly related to how organizations are funded. As Jones (1998) eloquently remarked, UNICEF's "analyses of needs tend to be dramatic, its projections tend to be alarmist and its solutions tend to be populist" (p. 151) simply because organizations rely on voluntary donations from governments, private foundations, and individuals. In contrast, UNESCO competes with other UN agencies for funding and relies on membership contributions from governments. For unrelated political reasons, it has been more successful in extracting fees from low-income governments than high-income governments, such as the United States (see Elfert & Ydesen, 2023). Given the global scope of its operation and perpetual financial crisis, UNESCO relies on building alliances with governments, resourceful development agencies, and more recently on foundations (e.g., La Caixa, Huawei); therefore, it is on guard not to antagonize any of its members or partners. Even though chronically underfunded, UNESCO underpins its expansive strategy with its "convening power" (Burnett, 2019, p. 16), a power that should not be underestimated: "if UNESCO calls a meeting on something, ministers of education or senior officials tend to show up" (Burnett, 2019, p. 16).

Similar to Weingart (1999, 2003), Eyal (2019) observed that the proliferation of evidence-based policy has paradoxically added fuel to "the crisis of expertise" because science has become demystified in front of everyone's eyes:

> [t]he very discourse on expertise increases uncertainty and threatens legitimacy because now the public is witness to controversies between scientists. (p. 102)

Eyal (2019) wrote about three communities or lanes with regulatory science in the middle lane, situated between pure science and regulation. The three groups of actors have three different functions, as Weingart and Lentsch's (2008) poignant book title indicates: *Knowing, Advising, and Deciding* (German: *Wissen, Beraten, Entscheiden*).

The revitalization of the 1979 two-community theory (Caplan, 1979), with a third pillar or lane added in the 1990s, needs to be understood against changes in the policy ecosystem. The quest for evidence-based policy has its origin in the wave of new public management (NPM) reform that has been spreading like wildfire across the world since the late 1980s. By all accounts, it was a fundamental reform that revamped the entire public sector, including the education sector. The NPM reform

put in place outcome (rather than input) regulation and governance by numbers (rather than expert judgment). Many governments put structures in place to facilitate data collection, the metamorphosis of data into research evidence, and the circulation of research evidence for policy use. The new instruments of regulation are reflected in the establishment of new structures and institutions (e.g., "what works" units funded by the governments), beliefs (e.g., deliverology), new professions (e.g., education leadership data analyst specialists[2]), new software (e.g., data visualization), new business branches (e.g., research communication), new networks (e.g., networked digital platforms with toolkits, databanks, and other global public goods), and new ways of justifying policy decisions, especially unpopular ones. The widespread belief that political decisions need to have a scientific foundation has become ubiquitous, as seen in the following three examples. The British government, in 1996 and 1997, spent more than one quarter of its budget on research and development for "scientific policy support" (Weingart, 2003, p. 55). Similarly, the US No Child Left Behind Act of 2001 mentioned the expression "scientifically based" over 100 times (Lubienski, 2018). The call for the use of evidence has been heard. In fact, more than a decade later, policy actions abound with evidence to the extent that the designers of the US federal legislation the 2015 Every Student Succeeds Act (ESSA), felt compelled to differentiate among the four "tiers of evidence": strong evidence, moderate evidence, promising evidence, and evidence that demonstrates a rationale. Finally, data visualization has become a powerful means to trigger political reactions. The "killer graph" in Sweden, visualizing the downward spiral in students' standardized test scores, alerted decision-makers and had far-reaching policy implications (Grek, 2020, p. 190). The decline in the 2009 Programme for International Student Assessment (PISA) test scores was widely explained by school choice and the advance of for-profit businesses in Sweden that run schools with public finances.

In an era characterized by an information glut, "information pollution," and information silos (Malin & Lubienski, 2022), information reduction in the form of knowledge brokerage comes across as liberation. Placed in its historical context, the demand for brokerage is a logical consequence of governance by numbers or knowledge-based regulation, which was propelled by the 1990s NPM reform. A few years later, the move toward knowledge-based regulation, combined with the technological possibilities of free access to information, led to an abundance of research evidence. For this reason, we made the case in another publication for a

multidisciplinary research program that would grasp the complexity of "Governance by Numbers 2.0" (Steiner-Khamsi et al., 2024b).

A TENTATIVE TYPOLOGY OF KNOWLEDGE BROKERAGE

Despite the blurred boundaries and complexities associated with the three groups of actors, all three groups have their own identities: they define themselves in relation to, or more accurately, in opposition to each other. For this very reason, I find it useful to differentiate analytically among three distinct communities to better understand the process of evidence-based policy decisions, the features of producers (science), brokers (between science and politics), and users (politics), and the complicated relationships among the three sets of actors.

Push and Pull Factors for Knowledge Brokerage

Knowledge brokerage per se is not new. Ever since government officials experienced political pressure to justify their policy decisions with reference to research evidence, they have resorted to a practice of a curious kind: they have hired their own trusted experts to summarize key findings from existing literature, including a concluding paragraph with recommendations, in a document that oftentimes should not exceed two pages. As absurd as it seems to summarize vast bodies of knowledge on two pages, these experts are charged with crossing the boundaries between science and politics. Situated in think tanks, universities, government-affiliated research entities, or research and development units within the ministries themselves, these experts may be seen as knowledge brokers who turn research findings into research evidence for use in policy decisions.

Scholars have encountered these government-appointed "certified experts" (Dunlop, 2014) with one grain of envy and two grains of skepticism. Their impact is huge, but their judgment is suspected to be agenda-driven. The trust in data, and as a corollary, the trust in those who turn data into research evidence for policy advice, relies, after all, on the independence of the knowledge source (Boswell, 2017; see also Baekkeskov & Öberg, 2017). For this reason, governments draw on a combination of policy expertise: appointed individual experts as well as institutionalized forms of policy expertise in the form of ad hoc commissions and other expert panels, explained later in this chapter.

In addition to these pull factors mentioned above, there also exist push factors that account for the proliferation of knowledge brokers: the push of researchers to have their findings widely read and used by decision-makers. Therefore, some researchers choose to hire, or act themselves as, knowledge brokers that break down their findings into "actionable" or "policy-relevant" information items. The trend has now become a new norm in professional associations and national science foundations, as well as in a great number of national higher education systems. The British Academy of Social Sciences, for example, is concerned about whether the social sciences have a real-world impact. It released a report in January 2024 that:

> sheds light on the tangible impact of UK SHAPE (Social Sciences, Humanities and the Arts for People and the Economy) research on the wellbeing of society, culture and the economy, through a collection of case studies. (Academy of Social Sciences, 2024)

In a similar vein, societal impact is now one of the main criteria for reappointment, tenure, and promotion reviews in the UK higher education system. The trend to assess the quality of scholarship in terms of whether the researcher was able to inform the media, mobilize civil society, or influence decision-makers has also spread globally and is now inscribed in the San Francisco Declaration of Research Assessment (DORA[3]), signed by many national science foundations.

Undoubtedly, there is a mismatch between the production of studies, as well as databanks, toolkits, and other public goods, and their usage. As documented in a comprehensive UNESCO study, there is limited uptake of global public goods for policy and planning in the education sector (Steiner-Khamsi et al., 2024a). Moreover, knowledge inequity is glaring: global public goods are, for the most part, developed in the Global North with the expectation that they are used internationally, including within countries of the Global South (Steiner-Khamsi et al., 2024a; Read, 2019). The overproduction of global public goods is also a concern in countries in the Northern Hemisphere. Addressing the US context, Lubienski, for example, contended that there is not a scarcity but, on the contrary, a "surplus of evidence." In such a "market place of ideas," there is ample opportunity for new, non-state actors, specifically the private sector, to serve as intermediaries between research production and policymaking:

> Into the chasm between research production and policymaking, we are seeing the entrance of new actors—networks of intermediaries—that seek to

collect, interpret, package, and promote evidence for policymakers to use in forming their decisions. (Lubienski, 2019, p. 70)

The exponential growth of publicly available knowledge products has created a demand for individuals and institutions that reduce complexity and eliminate ambiguity by synthesizing, visualizing, and translating research for use by policymakers.

In both cases, knowledge brokerage is a communication strategy. Even though the act of knowledge brokerage is remarkably similar, regardless of whether it is pushed or pulled, the purpose differs significantly. From a sociological systems theory perspective, knowledge brokerage in the "push case" is a constitutive part of the science system, whereas in the "pull case," it is an essential feature of the politics system (see also Weingart, 2003). The two types of knowledge brokerage—that arising in response to government demand versus that put in place by researchers—represent just one of the differentiations that, in my opinion, need to be made when discussing the rationale, scope, and impact of brokerage.

Institutionalized Forms of Knowledge Brokerage: A Multilevel Perspective

In concert with the observations of Mackillop et al. (2019) and Stone et al. (2021), there tends to be an overemphasis in public policy research on individual brokers. There is a need to de-individualize research in this area and instead draw attention to institutionalized forms of knowledge brokerage.

At the national level, many democratic governments appoint expert panels that are charged with reviewing literature against the backdrop of domestic reform debates and making policy recommendations based on their review. Government-appointed advisory commissions are typically established to fulfill three broader purposes: expertise, accountability, and representation (e.g., Boswell, 2017). Governments need to rely on experts with insider knowledge who are sufficiently familiar with the bureaucracy to provide useful and realistic advice regarding complex matters. Ideally, independent experts—preferably academics working outside the bureaucracy—are required to provide credible expertise. These independent experts are authorized to observe and evaluate past reforms and, by implication, hold the administration accountable for its technocratic performance. Finally, governments need to satisfy demands

in their political environment for participation and representation in government decisions.

In effect, these expert panels constitute institutionalized forms of knowledge brokerage at the national level. Of course, the surplus of research evidence, or, put differently, the democratization of expertise, did not pass unnoticed by the government-appointed expert panels. For example, according to Weingart and Lentsch (2008, p. 207ff.), the relationship between science and politics in Germany's policy process has experienced three distinct shifts over the past 70 years. During the early period of scientific policy advice (1950s to 1970s), ad hoc expert commissions insisted on being autonomous and independent from the government. As a corollary, their reports amassed foundational scientific knowledge that policy actors could or could not use. In the second phase (1970s to 1990s), the commissions became increasingly politicized because they were charged with the task of producing policy-relevant scientific knowledge. In the current, third phase, governments in many countries have experienced a shift from "knowledge-based legitimacy" to "participation-based legitimacy." In the latest stage, the end users are enlisted to participate as experts. Unsurprisingly, the government-appointed expert panels in Germany, as well as in many other democratic countries, are under pressure to further democratize scientific policy advice by (i) providing open access to reviews and expertise, (ii) expanding the definition of "experts" (e.g., by including public opinion surveys in which the users are considered experts), and (iii) insisting that the knowledge products must be useful, that is, provide a clear foundation for stop/go policy decisions.

A brief comparison with other political systems may be useful for demonstrating the path dependency of evidence-based policy processes. A good case in point comes from the Nordic countries Denmark, Finland, Iceland, Norway, and Sweden. Even though they are located in the same region, they differ in terms of how, to what extent, and which research evidence they use in their respective policy processes (see Karseth et al., 2022). The five-year, five-country comparative study POLNET[4] drew on bibliometric network analysis and other methods of inquiry to investigate, among other things, the type of knowledge used to review policies (reflected in the so-called Green Papers) or to make policy decisions (as seen in the so-called White Papers) in the five Nordic countries. The comparative study also examined whether the Ministry of Education and Science of each country drew, in its White Papers, on similar types of knowledge as their appointed expert commissions. Several findings of

the comprehensive study are directly related to the topic of knowledge brokerage.

First, an examination of references made in the Green and White Papers in the Norwegian education sector revealed an excessive use of references.[5] With regard to the 2020 curriculum reform, each paper or report listed, on average, 246 references at the end of the document in the bibliography section (Baek et al., 2018). When compared over a period of three significant school reforms in Norway (1997, 2006, 2020), the growth of evidence-based policy review/recommendation (Green Papers) and evidence-based policy decisions (White Papers) is striking both numerically and graphically. To illustrate the point, the relevant papers for the 1997 reform did not bother listing their references to studies, reports, and policy documents explicitly in a stand-alone bibliography section; instead, the few references made in the texts were either embedded in the text or listed as footnotes. Second, the composition of the expert panels in Norway (Norwegian: *Norges offentlige utredninger*) has changed dramatically over time. The proportion of academics serving on these expert panels increased at the expense of representatives from political interest groups. The academization or "expertization" (Christensen & Hesstvedt, 2018) of these ad hoc expert panels was accompanied by a depoliticization of the commissions in Norway, making it more difficult for these panels to have a direct political impact. Finally, the Ministry of Education and Science selects very few publications from the Green Papers but instead produces its own research evidence to justify its policy decisions. For example, of the 464 texts that the five expert panels cited in their Green Papers, only 22 were also referenced in the two ministerial White Papers for the 2006 reform. In addition, 20 of the 22 references were retrieved from the expert panel that reviewed the Organisation for Economic Co-operation and Development (OECD) DeSeCo recommendations on competency-based curriculum reform. Apparently, not all commissioned Green Papers carry the same political weight. As Steiner-Khamsi et al. (2020, p. 128) pointed out, "95 percent of the commissions' body of knowledge was lost in (political) translation."

Baek convincingly demonstrated in his three-country comparative study of Norway, South Korea, and the United States (Baek, 2020; see also Baek, 2022) that each and every government has its own "expertise-seeking arrangement" in place. Similarly, the country-specific arrangements, that is, the path dependency of the evidence-based policy ecosystem, became quite discernible in the POLNET study. Unlike Sweden and Norway, the other three Nordic countries in the study do

not have clear-cut government-appointed expert panels in place that synthesize research and offer policy advice to line ministries. The same applies to other countries too. For example, the German-speaking cantons of Switzerland have commissions in place with representatives from various interest groups that advise the cantonal ministries of education. Their primary mandate, however, is political: in their charge for consensus-building, they may or may not draw on research evidence for their coalition building within the commission. In fact, the collection of data, production of research evidence, and evidence-based policy advice take place somewhere else. Similar to other European countries, the Canton of Zurich, for example, had until the early 1990s an in-house research and development unit in place, located in the Ministry of Education. It was only later that sector research was outsourced and commissioned to higher education institutions and think tanks.[6] Finally, the expertise-seeking arrangements in aid-dependent governments are vastly different too, as will be explained below.

In contrast, regional knowledge brokerage is severely understudied yet gained prominence during the pandemic-related international travel ban and, in countries of the Global South, because of the broader decolonial discourse demanding a greater acknowledgment of national and regional policy expertise. The UNESCO study on the use of research evidence for policy, planning, and implementation (Steiner-Khamsi et al., 2024a) provides an overview of regional organizations that have established digital platforms, networks, and initiatives that encourage decision-makers to use research evidence for policy and planning. In addition to civil society organizations such as ANCEFA, ASPBAE, CEPAL, CLADE, and ESSA, there are also intergovernmental regional organizations, such as SAMEO, and international organizations, such as the Global Partnership for Education (GPE), OECD, UNESCO, and UNICEF that actively promote peer exchange on the use of research evidence for policy and planning at the regional level.[7] The Knowledge and Innovation Exchange Initiative of the Global Partnership for Education deserves special mention here: it is administered at the global level by the International Development Research Centre (IDRC) and is the funder of four regional hubs for the period 2020–2027 with a specific mandate to surface, amplify, and disseminate national policy expertise, facilitate peer exchange among policy actors, and promote the use of research evidence for policy and planning. Other regional initiatives are also explicit in their knowledge brokerage function, notably the 2008–2019 Think Tank Initiative of IDRC,[8] the OECD's peer-support structure among

PISA lead analysts, the Hewlett Foundation's evidence-informed poli-cymaking strategy, or the partnership for evidence and equity in respon-sive social systems. To some extent, these regional initiatives have taken to scale the 1990s' conception of South–South Cooperation promoted by the United Nations Development Programme, albeit with a much stronger emphasis on promoting the use of research evidence for policy, planning, and practice.

At the global level, the OECD and the World Bank are seen as the first movers to use data and international comparison for global norm-setting and for monitoring national development. The big five in inter-national educational development—GPE, OECD, UNESCO, UNICEF, and the World Bank—have grown over the past few decades into data and knowledge depositories. According to Jarl Bengtsson, a former head and long-time staff member (1971–2002) of the OECD's Centre for Educational Research and Innovation (CERI), the 1980s was the time when CERI started to develop "the strong focus on educational stand-ards and interest in indicators" (Bengtsson, 2008, p. 2), which then led to its International Education Indicators program, the *Education at a Glance* series, and later on PISA (see Grek & Ydesen, 2021). The World Bank also started to invest in indicator development in the late 1980s: it expanded its databank progressively from 116 indicators in April 1989 to 1,600 indicators in October 2018,[9] linking evidence to numerical data and making policy recommendations based on that evidence. In com-parison, UNESCO established its Institute for Statistics only in 1999 and its Global Monitoring Report unit in 2002. GPE was only estab-lished in 2003 (under the name Education for All – Fast Track Initiative). Similarly, UNICEF started to build its quantification regime in the new millennium. Of course, the differentiation between knowledge broker-age and policy brokerage is fluid when one and the same organization brokers knowledge that it previously had produced in-house, or even more blatantly, produces *and* funds its own projects with recourse to scientific rationality.

The blurred boundary between knowledge production and policy advice applies, to some extent, to all international organizations. As mentioned above, the OECD in Sweden was actively involved in inter-preting the catastrophic 2009 PISA findings against the backdrop of policy changes that took place in the country since the late 1990s. Even though the OECD is a global organization, it has been periodically invited by Swedish government officials to serve as a policy advisor or as the intermediary between science and politics. Grek (2020), therefore,

convincingly stated that education policy research should move away from "viewing the relationship of the national with the global as hierarchical, linear and hegemonic" (p. 175). Grek's correct assertion notwithstanding, it is important to acknowledge that policy actors at particular moments of protracted domestic policy constellations tend to instrumentally use global actors *as* if they were external political forces (Steiner-Khamsi, 2013, 2021). Externalization or, in this case, the quasi-external stamp of approval for domestic policies has become a norm and is no longer an exception once we start reviewing the policy process from a transnational perspective. In other words, national policy actors are in the habit of using supranational actors—such as the OECD, the World Bank, and the EU—as a "quasi-external force" to authorize controversial domestic reforms (Steiner-Khamsi, 2021). The act of externalization—references elsewhere, to other sectors, or to international standards—has a salutary effect on coalition building. Thus, globalization as a quasi-external force is internally or domestically induced.

Possibly a victim of their own success in reinventing themselves as global knowledge depositories, the big five moved away from merely collecting and sharing information to also providing informed policy advice. Two prototypical knowledge brokerage initiatives are worth mentioning here explicitly: Building Evidence in Education Group (BE2), a donor working group launched in 2012, and the Global Education Evidence Advisory Panel (GEEAP; see GEEAP, 2023), co-sponsored by the Foreign, Commonwealth and Development Office, UNICEF, USAID, and the World Bank. Apart from such joint initiatives, the global actors in education do not only compete with each other over influencing decision-makers, they also have to grapple with businesses such as McKinsey, Cambridge Education (member of the Mott MacDonald Group), Boston Consulting Group, and others that provide advisory services in the Pakistani province of Punjab, Kazakhstan, Mongolia, and India, to name a few (see Stone et al., 2021). The same governments that receive external financial assistance also use their own funds to solicit policy advice from businesses of their choice. Unlike international organizations that insist on being listed in sector analyses, sector plans, and other government-issued documents as authors or funders, consulting businesses agree to remain covert and operate as backstage advisors.

Brokering along the Policy Cycle

Since the use of research evidence has become a constitutive element of the policy process, we may also ponder exactly what knowledge brokerage is used for. Is the purpose agenda-setting, policy formulation, decision-making, policy implementation, or policy evaluation? In other words, at what stage in the policy process is research evidence mobilized? What kind of research evidence is typically cited to generate problem awareness (stage of agenda-setting), to compare and assess the feasibility and constraints of several policy options (stage of policy implementation)?

Strikingly, policymakers seem to compartmentalize the pool of knowledge brokers according to their own political objectives. For example, international brokers lend themselves to "externalization"; that is, decision-makers like to reference them as if they were an external, politically independent source that dictates the need for reform (Steiner-Khamsi, 2021). They instrumentalize international large-scale student assessments (ILSAs) for generating problem awareness or, more specifically, to either generate or alleviate reform pressure. However, the ILSAs themselves—such as the OECD's PISA, PIAAC, and TALIS—are supposed to have, according to their architects, a much larger impact than merely creating public uproar or celebration for a few years when the results are released. According to Schleicher et al. (2021),

> [T]he organization [OECD] provides a unique forum and knowledge hub for data and analysis, exchange of experiences, best-practice sharing, and advice on public policies and international standard-setting. (p. 1)

From a policy perspective, creating problem awareness is not a small feat. In fact, ILSA results, especially negative ones, have a salutary effect on political coalition building and resource mobilization. The point of contestation with ILSA is rather the overlap between diagnostics and prescriptions, that is, the ambition to provide "advice on public policies and international standard-setting" (Schleicher et al., 2021, p. 1). Recourse to research evidence (e.g., OECD, 2011; World Bank, 2011) was instrumental in the global spread of the reform package "school-autonomy-with-accountability" (see Verger et al., 2019), which the OECD and World Bank actively helped to disseminate globally.

Given the burnout, or more correctly the saturation, of countries with NPM reforms (see Bromley et al., 2021; Seitzer et al., 2023), the attention

of many funders has moved away from agenda-setting and has recently been redirected to implementation studies. For example, the US National Science Foundation and William T. Grant Foundation combined their resources to promote the implementation of science in education by financing applied research on what works.[10] Another example is the Research on Improving Systems of Education (RISE) program, which seems to focus on policy implementation in the area of foundational learning and claims to generate

> new, rigorous scholarship that bridges research and policy and catalyses education reform to improve learning outcomes for all. (RISE website[11])

Similarly, BE2 and GEEAP, mentioned earlier, concentrate on policy implementation rather than agenda-setting.

Given this background, it is important to keep in mind that one organization's saturation with agenda-setting is another organization's starting point for using research evidence to create public awareness of "new" problems such as climate change (see Seitzer et al., 2023). Even though the contents of reform agendas have changed over time, the instruments of agenda-setting, such as the use of international comparison, ranking, or benchmarking, have prevailed.

Finally, the use of empirical research at the policy evaluation stage is not new. For a while, there was a hierarchy of evaluation methods and, as a corollary, a hierarchization of what counts as evidence, with randomized controlled trials (RCTs) as the gold standard. Based on Golden's (2020) succinct analysis, however, the spectrum of popular methods of evaluation has expanded in OECD countries over the past few years. For evaluations in the Global South, in contrast, the same principle of methodological heterodoxy does not necessarily apply. In fact, RCTs are very much the favored evaluation method of development economists seated in the upper echelons of development banks.

THE COMMON ORDEAL: LEVERAGING TRUST IN ONE'S OWN RESEARCH EVIDENCE

Given the perpetual risk of being suspected of political manipulation, the big challenge for knowledge brokers is how to make their advice appear to be scientific rather than agenda-driven. How can one stand out as a trusted knowledge broker in a space that is crowded with knowledge brokers? The ordeal is especially pronounced for organizations such as the

OECD and World Bank, both of which produce and broker policy-related knowledge. How does one avoid being embarrassed and exposed as an agenda-driven policy broker, one that, behind the façade of scientific evidence, lobbies for its own portfolio of best practices? Certainly, knowledge brokers do not want to be known as policy brokers. Therefore, the following questions arise: How can trust be established? What sources of information help legitimize policy advice?

I would like to confine myself to presenting the following five strategies: (i) a self-referential approach in which trust in one's own research evidence is supported with claims of rigorous research methodology (e.g., World Bank), (ii) peer-learning (e.g., OECD), (iii) cross-sectoral transfer and learnings of how research evidence is produced and used in other sectors (e.g., health sector), (iv) a recourse to established or well-cited knowledge sources (e.g., OECD or John Hattie), and (v) claiming "detachment" or impartiality from the object of study.

First, in a recent study (Seitzer et al., 2023), we investigated the brokerage strategies of the first two movers (OECD and World Bank), drawing on the publicly accessible World Education Reform Database (WERD[12]). From this comprehensive database, we selected the relevant documents of the OECD (Review of National Policies for Education, Education Policy Outlook) and the World Bank (Systems Approach for Better Education; SABER). As Baek explains in greater detail in this edited book (see Chapter 2), the two intergovernmental organizations choose diametrically opposed strategies: the OECD refers to countries that implemented noteworthy school reforms, whereas the World Bank has a more universalist approach in that it attempts to determine a set of best practices based on their own evaluations (preferably RCTs) presented in their SABER database. Thus, the World Bank is self-referential when it seeks to justify the scientific foundation of its evidence claims. In contrast, the OECD reports on experiences in other countries. As a result, the OECD makes much greater use of reference societies, that is, reforms from other countries that it considers worthy of lesson drawing and emulation.

Other strategies to "validate" one's own research evidence for policy advice are common too. For example, some knowledge brokers in education use a "lessons-learned" approach from other sectors, especially from the health sector, and more recently from the environmental sector[13] (e.g., Burnett, 2019). Of all the sectors, the health sector is mentioned most frequently as a positive exemplar of how research evidence is produced and used (see also Steiner-Khamsi et al., 2024a). There is cause for caution,

though, in using the health sector as a comparator case for the education sector. The fact that both sectors are part of the social sector does not necessarily make them comparable: there is a huge gap that yawns between who produces and who uses—or, in fact, understands—health-specific research evidence. The "democratization of expertise" (Maasen & Weingart, 2005) is widespread in education—everyone thinks they are an education expert—but almost completely absent in the health sector, as reflected in the technologies of exclusion (e.g., medical jargon and certification of expertise). In contrast, research evidence in education is traceable and intelligible to everyone and, therefore, a matter of public opinion and consequently a terrain of public contestation.

Fourth, a popular strategy for establishing trust in policy expertise is recourse to well-known and reputable knowledge sources, both individual and institutional. In foundational research, trusted sources are the founders of discursiveness, such as John Dewey, Paulo Freire, Pierre Bourdieu, and others who, with a few exceptions, are male and located in the Northern Hemisphere. After a while, the references to founders of discursiveness develop a life of their own, and the authors are credited for more than they have actually published. In education policy research, the founders of discursiveness may be determined through a bibliometric analysis. For example, in the POLNET research project mentioned earlier, John Hattie stood out in several countries as the most cited author (e.g., Hattie, 2009) and the OECD as the most cited institution (Karseth et al., 2022; see also Pettersson et al., 2017). The OECD, notably the DeSeCo Report (Salganik et al., 1999), as well as country reports, PISA results, and other policy documents of the OECD, ranked top in all five countries compared with other international references made in the relevant policy documents of the five countries. In fact, in both Norway and Sweden, where government-appointed expert panels are in place, the ministries of education and science charged their advisory bodies to review OECD recommendations. As explained before, the bibliometric analyses revealed that, from all research evidence amassed in the Green Papers (NOUs and SOUs[14]), the panels with the charge of reviewing the OECD recommendations (in Sweden, SOU, 2017; in Norway, NOU, 2003) were the most widely cited at the political level at the expense of all other studies that the expert panels reviewed. In Sweden, it was the OECD-inspired report, translated as *Gathering for School* (SOU, 2017, p. 35), and in Norway, it was *In the First Row* report (NOU, 2003). The strategy of appointing national expert panels to review and incorporate the policy advice given by the OECD has many advantages, such as it

affords the Ministry of Education and Science to frame OECD policy advice as homespun policy advice.

Finally, within the science community, we are confronted with the perennial question of how detached or involved we should be with regard to societal issues. Norbert Elias (1939) formulated this quandary close to a hundred years ago (see also Elias, 1983). Elias' century-old question still holds, but nowadays sails under different labels, such as foundational research versus transformative research or "mode-1 research" versus "mode-2 research" (see Nowotny et al., 2003). It is important to acknowledge the utility turn in the social sciences and the move toward involved, transformative, or mode-2 research that has evolved over the past decades. In some academic communities, such as the United States, the differentiations have become nearly superfluous. There, funders of social research tend to favor applied, interdisciplinary, and policy/practice-relevant studies, preferably with a social justice component, over foundational disciplinary research that shies away from being normative and prescriptive.

CONCLUSIONS: DISAGGREGATING THE SCIENCE AND POLITICS COMMUNITIES

In the previous section, I focused on the middle lane, that is, the knowledge brokers, boundary spanners, or intermediary actors. By proposing a tentative typology, I had to disaggregate the group of brokers and show that knowledge brokerage is multifaceted. In this concluding section, I demonstrate that the same applies to the individuals and institutions that operate in the left lane (producers) and in the right lane (knowledge users). They are heterogeneous, too. Neither the science nor the political community is a homogeneous group with shared beliefs and knowledge. There is a need to complicate the two- or rather three-community theory. Within each of the three lanes, there are avenues, roads, and even alleys.

Just think of the science lane: the utility turn has affected some scholars more than others. There is a wide range of researchers, from normative to analytical and from applied to foundational. Typically, scholars identify with, communicate with, and publish in journals and book series of their own academic community and, as a corollary, distance themselves from those in other disciplines, professional fields, theoretical orientations, and methods of inquiry. In summary, there are multiple voices spoken and heard in academic research.

What polyphony is for science, polycentric governance is for politics. Within the political community, there exists a plethora of decision-makers. This applies to multiple levels of government (e.g., federal/national, regional, and district/municipality) and multiple centers of decision-making at the national level. In federally administered states, a multilevel analysis of education policy is considered indispensable for understanding, among others, the gap between policy and policy enactment (e.g., Appius & Nägeli, 2017). In addition, paying greater attention to the divergent decision-makers at the national level is strongly advised. The varied members of the executive branch of the government, for example, tend to solicit policy advice on their own terms and in ways that reflect their own, broader mandate. Just bear in mind how diametrically opposed the thinking of ministers of education and ministers of finance is. Despite operating in parallel spaces or universes, they are both considered "government." Regardless of their party affiliation, the two ministers are likely to solicit policy advice from knowledge brokers with vastly different disciplinary backgrounds and methods of inquiry. Oftentimes, their knowledge brokers define themselves in opposition to each other.

In concert with the proposal of "asking spatial questions of education policy" entertained by Gulson et al. (2023, p. 31), I recommend that we differentiate between place and space (Gulson et al., 2023; see also Gulson & Symes, 2007). Even though the various representatives of "government" share the same place or country, they operate in different spaces. Some of them have a sense of international belonging and, therefore, are part of an international knowledge space, as opposed to others with a clear national orientation. Two recent dissertations at the Graduate School of Arts and Sciences, Columbia University (Iwabuchi, 2022; Kurakbayev, 2023), applied Cairney's concept of polycentric governance (Cairney et al., 2019; see also Diamond, 2020) to distill the different positionalities toward the so-called "international standard schools" (ISS). A public–private partnership (PPP) enterprise, ISS have become popular in many countries because the schools are accredited by a foreign entity and the medium of instruction is English. The ISS are typically well-funded centers of excellence, established with the expectation that their innovations will be transferred to all public schools. The government of Indonesia pioneered ISS as a reform modality in the 1990s with mixed results but eventually dropped the experiment because of the huge inequalities that arose between ISS and regular public schools (Steiner-Khamsi & Dugonjić-Rodwin, 2018). Regardless of the controversy over

ISS in Indonesia, many heads of state have been keen to international-ize a few public schools with the expectation that the innovation would spill over to the surrounding schools and eventually reach all schools in the country. The publicly funded bilingual schools in Mongolia (Steiner-Khamsi & Dugonjić-Rodwin, 2018), the International Baccalaureate Schools in Japan (Iwabuchi, 2022), and the Nazarbayev Intellectual Schools in Kazakhstan (Kurakbayev, 2023) are only three examples of a long list of PPPs that were typically pushed by heads of state yet resisted by ministries of education and teacher unions in the respective countries. In Mongolia and Kazakhstan, the President's Office, and in Japan, the Office of the Prime Minister led the reform with great support from their respective chambers of commerce and the elites in their country. The statesmen seemed to be more innovative and internationally minded than the executive branch of the government, notably the ministries of educa-tion. This is because the statesmen operate in a transnational space where the worries about falling behind in a global economy may be used as an argument to justify the introduction of English as a medium of instruc-tion and the internationally valid upper secondary school degree. The ministries, in contrast, operate in a national space and have to respond to day-to-day realities in-country, including teachers unions or associations that resist such sweeping changes. The discord within a government over ISS and the research evidence used by both camps to substantiate their support or opposition for the internationalization of public schools are suitable examples to illustrate polycentric governance in the education sector. They invite us to correct our assumption that line ministries, such as the Ministry of Education, are the "backbone of most policy sectors" (Howlett, 2019, p. 247). In an era of "network governance" (Stephen J. Ball) or "polycentric governance" (Paul Cairney), line ministries are not the only important actors in school reform in a country.

This chapter purposefully refrained from discussing the topic of knowledge brokerage normatively. There already exist publications on how to improve the effectiveness of knowledge brokerage for policy, planning, and/or practice (e.g., Nelson et al., 2023; Malin & Brown, 2020; Rycroft-Smith, 2022; Weber & Yanovitzky, 2021). The aim of this introduction was more modest: to advance the debate on what the differentiation between science and politics, and the space in between, entails for understanding what kind of knowledge is elevated as research evidence, by whom, and for what stage in the education policy process. Arguably, an international comparative lens opens up new ways of

knowing; it helps us detect knowledge brokerage as a new instrument for global governance.

NOTES

1. https://www.educationcannotwait.org.
2. See https://www.tc.columbia.edu/elda/.
3. See https://sfdora.org/.
4. The acronym stands for "Policy knowledge and lesson drawing in Nordic school reform in an era of international comparison." POLNET was funded by the Research Council of Norway from 2018 to 2023. The Principal Investigator was Kirsten Sivesind, University of Oslo. For more information, see Karseth et al. (2022).
5. Chapter 2 in the edited volume (Steiner-Khamsi, 2022) explains how the researchers in the POLNET project interpreted references in a text and why a bibliometric analysis lends itself to understanding whose knowledge is considered an authoritative source for constructing research evidence for policy decisions.
6. Ender (2019) explained well the history of sector research within the Ministry of Education of the Canton of Zurich, founded and directed by Uri Peter Trier from 1971 to 1992. I was fortunate to work for this research and development unit *(Forschung und Entwicklung)* within the Ministry of Education from 1979 to 1988.
7. The abbreviations and acronyms are spelled out as follows: ANCEFA (Africa Network Campaign on Education for All), ASPBAE (Asia South Pacific Association for Basic and Adult Education), CEPAL (Comisión Económica para América Latina y el Caribe), CLADE (Campaña Latinoamericana por el Derecho a la Educación), and ESSA (Education Sub-Saharan Africa).
8. The Think Tank initiative in Latin America, South Asia, and Sub-Saharan Africa was funded by five different donors, representing three bilateral international cooperation agencies (the UK, the Netherlands, Norway) and two private foundations (Hewlett-Packard and the Bill and Melinda Gates Foundation).
9. https://datatopics.worldbank.org/world-development-indicators/stories/world-development-indicators-the-story.html.
10. https://www.nsf.gov/pubs/2022/nsf22035/nsf22035.jsp.
11. https://riseprogramme.org/about-rise.
12. https://werd.stanford.edu. The database contains reports of over 10,000 policy changes that took place in 189 countries in the period 1970–2020. Patricia Bromley, Stanford University, and Rie Kijima, University of Toronto, and their associates collected the information

for their impressive database from several international data sources, including the OECD, UNESCO, and the World Bank

13. https://educationcommission.org/updates/the-global-architecture-for -climate-action-lessons-for-the-education-sector/.

14. The Swedish government official reports are abbreviated as SOU (*Statens offentliga utredningar*).

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