

5

Multi- and Interdisciplinary Research in a World of Crisis: A Responsible Research Solution

GERALD F. DAVIS, PETER MCKIERNAN,
AND ANNE S. TSUI

Introduction

The year 2020 will be remembered as a moment of omni-crisis at the intersection of public health, politics, and economics. A global pandemic on a scale not seen in a century struck tens of millions and left a wake of devastation. Governments around the world responded in divergent ways, from competent and well organized to chaotic and inept, with predictable consequences for their citizens. Their economies suffered the consequences as well, with many facing skyrocketing rates of unemployment and business failure. Those at the low end of the income spectrum fared the worst: in the United States, employment in the foodservice industry dropped from 12 million to 6 million in a single month, leaving the equivalent of the population of Denmark out of work.

A key lesson from the pandemic is that policy responses rooted in credible science yield better outcomes. Countries in which governments paid attention to scientific expertise and adjusted their actions in response to systematic evidence were much more effective in keeping their populations safe than those driven by whim or anecdote.

Like governments, businesses also stood to benefit from relevant expertise rooted in research. How should workplaces be organized to limit the spread of a virus? What are viable alternative sources of distribution if face-to-face contact is not possible? How can employees be kept engaged and connected when they are working from home? How can manufacturing facilities be rapidly reconfigured to make emergency medical equipment? Moreover, how can we build back better once the virus is vanquished?

In this situation, research in business and management could provide crucial guidance. Business schools hold a unique vantage point between academia and practice. Like an estuary, they stand between the fresh water and saltwater of the world of academia and business and policy. Given the wealth of expertise that resides in business schools, we might anticipate that executives would be making pilgrimages to seek out our counsel. However, with some key exceptions, business faculty members were not equipped in practical utility to help address this crisis. More to the point, many senior faculty members would have a hard time advising their untenured colleagues to take on this challenge because it would not contribute to the publications needed to achieve tenure. To be fair, over 80,000 COVID-19 related publications have emerged, but there has been a large number of retractions, even among top medical journals.¹ Relevance without rigor is also a poor bargain.

How is it possible that helping to save a business from collapse and saving workers from unemployment would be considered too risky for many faculty? Moreover, how strange is this state of affairs? In this chapter, we trace how business research evolved from anecdotes and war stories to highly rigorous social science with limited application in the real world. We then describe recent efforts to change the ecosystem surrounding research in business and management to be more responsible, producing work that is both rigorous and relevant.

Why We Do Not Live Up to the Promise

Those unfamiliar with business schools may be surprised to learn that they are at least as research intensive as the rest of the university. Business faculty routinely publish in top journals in economics, statistics, sociology, psychology, and political science, as well as field-based publications in accounting, finance, marketing, management, and operations, with rejection rates well above 90 percent. Moreover, the typical article in an academic business journal is at least as obscure and inaccessible to practitioners as work in other fields.

It was not always this way. Business schools spread across the United States in the early twentieth century to provide vocational

¹ See Primer (n.d.) for a running tally of articles on COVID-19. On retractions, see Rabin (2020).

training for managers to work in the new corporate economy, and research was decidedly secondary. According to the 1959 Gordon and Howell report “Higher Education for Business,” funded by the Ford Foundation:

Much if not most research in the business schools attempts merely to describe current practice or, going a short step further, to develop normative rules which summarise what is considered to be the best of prevailing practice. The business literature is not, in general, characterised by challenging hypotheses, well developed conceptual frameworks, the use of sophisticated research techniques, penetrating analysis, the use of evidence drawn from the relevant underlying disciplines – or very significant conclusions. (Gordon and Howell, 1959, p. 379)

The authors urged business schools to recruit faculty trained in core social science disciplines to increase their rigor.

Business schools embraced this prescription with gusto over the next generation, creating a robust infrastructure for research and implementing evaluative criteria for faculty that favored research over teaching. Schools such as Stanford, Harvard, and Chicago hired scholars from top departments of economics, psychology, sociology, statistics, and elsewhere. Standards for tenure increasingly came to resemble those elsewhere in the university, with a strong emphasis on publication in scholarly journals. Applicability came to be increasingly detached from the evaluation of research.

Part of this detachment comes from how business research is both funded and evaluated. Business schools often rely primarily on internal funding sources for research and evaluate outputs based on publications and citations. Thus – ironically for a professional school aimed at improving practice – business schools are oriented almost entirely toward *internal* metrics of evaluation (“A” publications and Google Scholar citation counts), without the external accountability that comes from grant funding, as in other parts of the university.

Within the United States, business is perennially the most popular undergraduate major, year in and year out. Moreover, business education has spread around the globe and may count as one of the most successful American “exports.” Along with the standard model of business, education has spread the standard model of research. “Management” journals indexed in the Web of Science tripled between 2003 (67) and 2019 (226), and the number of articles published each

year increased from 2,730 to 11,668. There is an astounding amount of research, although its impact beyond academia remains in doubt.

The Responsibility Turn

Questionable science in business and management research and its perceived lack of relevance to an executive or policy audience has fashioned a global industry of critical publications. Ironically, writers have submitted these critiques to the very research audits that have helped fuel and shape the culture of “rush to research” at the root of the misguided behavior about which they speak. The malaise is widespread across the sciences and jeopardizes Merton’s (1942) pillars of universalism, disinterestedness, communality, and organized skepticism, thus making the search for truth almost impossible. Ritchie (2020) speaks of

a deep corruption within science itself; a corruption that affects the very culture in which research is practised and published. Science, the discipline in which we should find the harshest scepticism, the most pin-sharp rationality and the hardest-headed empiricism, has become home to a dizzying array of incompetence, delusion, lies and self-deception. (Ritchie, 2020, pp. 6–7)

Science finds many cures, but it requires considerable “self-correction” if it is to find an urgent cure for itself. Riddled with the problems of fraud, bias, negligence, and hype (Ritchie, 2020), the recovery may be long and painful. A vaccine that focuses on the root causes rather than the symptoms is likely to have more remedial traction.

Sociological Patterning

Pressures from the three actors of rankings, ratings, and accreditation prescriptions led business schools to conform to common standards of research evaluation (Wilson and McKiernan, 2011). This conformity was made more successful since the early 1980s by the emergence of the “audit society” (Power, 1997). These pressures developed for different reasons (the sale of for-profit publications like the *Financial Times* and *The Economist*; the distribution of scarce research funding as in the UK Research Excellence Framework [REF]; and academic quality with the triple-badged Association of MBAs [AMBA],

EFMD Quality Improvement System [EQUIS], and Association to Advance Collegiate Schools of Business [AACSB]). They became the targets of both schools and individual academics, evoking Goodhart's (1975) law: "when a measure becomes the target, it ceases to be a good measure." More so, they took on a life-form of expectations, order, reactivity, and gaming, with hierarchy and legitimacy becoming dynamic forces that drove behavior patterns akin to what sociologist Donald MacKenzie might call "engines not cameras" (MacKenzie, 2006). At first, a stable and pragmatic sector experimented in *habituation*. Then, the preferred business model arose under *objectification*, where articles in top journals, their authors, and the related incentives became reified. The sector slid "naturally" into *sedimentation*, privileging elitism and accelerating the practice of scientific foibles as part of faculty survival and promotion. Inevitably, that sedimentation became path dependent for business schools, with strategy captured by both local institutional rules and regulations and those about the norms set by the three actors.

Such systems require shocks to stimulate new habituation or objectification. In broader science, the shocks were personal and came over several decades with the high-level exposure of the scientifically corrupt amid a perennial failure to replicate results. In business and management, the macro-eruption of the global financial crisis pierced theory, method, and the evidence base of both finance and economics while business and management, bereft of impactful research, had nothing to say (Starkey, 2015). The nadir reached, the existing sediment began to crack, and new habituation and objectification stages beckoned. Recalling the "communality" of Merton's (1942) pillars, scientists around the world gathered and called for change, creating organizational bonds of determined purpose and swearing allegiance to new principles of behavior to underpin them. The *responsibility turn* in science was underway.

The Emergence of the "Principles-Based" Responsibility Turn

The Principles for Responsible Management Education (PRME) of the United Nations influenced many enlightened institutions. The movement was established in 2007 to bring an appreciation of sustainability into business schools and help them produce leaders imbued with an innate concern and responsibility for the world around them. In 2020,

it had attracted over 800 subscribers² claiming allegiance to its six principles. Principle 4 concerns research, and schools must promise to “engage in conceptual and empirical research that advances our understanding about the role, dynamics, and impact of corporations in the creation of sustainable social, environmental and economic value” (PRME, n.d., para. 1).

This sense of global social responsibility and multiple stakeholder alliances runs through the remainder of the PRME’s principles. For many, the sentiments are real. However, for others, trapped in a cage of fast-produced research that satisfies personal promotion, ego, and monetary ambitions, they may remain hypothetical, with the PRME badge adorning school literature for marketing purposes only. To make it real, the ecosystem of business research into which PRME was born needed transformation.

Such significant change required attention to the root cause of academic publishing behavior. The latter has become driven by metrics, particularly citations of papers in top journals. In business schools, in particular, the perverse incentive structures that reward the production of such articles became the norm, and the costs of such production were huge.³

Previously, the assessment and measurement process for academic output was a human affair, where deans and others read the work themselves.⁴ Nevertheless, with such explosions in growth, numeric ratios – often calculated for entirely different reasons – became a convenient alternative judgment.⁵

² Compared with the number of business schools in the world (over 10,000), however, this may seem a low percentage.

³ The cost of each paper has been estimated at \$400k (Terwiesch and Ulrich, 2014), assuming 50 percent of faculty time is committed to research and a calculated investment of \$3.9 billion per year by the 780 AACSB-accredited schools (figures provided kindly by B. Glick of the Community for Responsible Research in Business and Management [cRRBM]; personal communication, 2018).

⁴ In British universities, one of the senior academic posts was that of reader – usually seen as a cadetship for a full professorship. One of the roles of such readers was to read draft research papers from faculty members and act as a friendly critic before they entered the formal journal reviewing process. Many universities have abandoned the title now – and with it, the role.

⁵ McKiernan and Tsui (2020) have argued for the possibility that the increasing metrification around research output may have concealed some of the scientific malpractice. Deans made tenure, promotion, and appointment decisions based more on such figures (e.g., Hirsch’s *b*-index) than on human opinion.

However, these metrics were both poorly constructed and badly used. Moreover, their use had unintended consequences, such as extended reference lists to propel citations and reviewers requesting citations of their own work. Finally, many influential scientists said, “Enough is enough.” Cell biologists meeting in San Francisco founded the Declaration on Research Assessment (DORA)⁶ and began to focus on the elimination of single-metric-only judgments (e.g., the Journal Impact Factor) for articles, grant funding, recruitment, and promotion and advocacy for complementing any use of metrics with human opinion. DORA’s formalization of the responsibility turn was followed quickly by other robust initiatives, such as the responsibility turn in psychology.

Experimental psychology was one of the first social science fields to grapple with its crisis of replication (Ritchie, 2020). In 2013, the Center for Open Science (COS) started at the University of Virginia with a mission to increase “openness, integrity and reproducibility of research” (COS, n.d.). COS members imagined a research future when every part of the research process was transparent and available to all. In particular, it championed preregistration, advocated the evaluation of scholars on the integrity of their scientific approach and not on where they published their output, and recommended the full and uninterrupted involvement of all stakeholders throughout the research cycle. Quickly, COS became well supported within the science community, with multiple significant donors. Reflecting the demand for such action, it amassed over 10,000 subscribers to its Open Science Framework (OSF) in good time. Although COS deals mostly with the natural sciences, its approach and principles were to inspire the cRRBM (see later discussion).

Europe’s response to these scientific foibles was equally formidable. Following a position paper under the Science in Transition (SiT) banner – “Why Science Does Not Work as It Should and What to Do about It” (Dijstelbloem et al., 2013) – four academics from two Dutch universities inspired an impactful conference of researchers and policymakers in 2013. Their discussion sparked a 9-month national debate, whose many voices shifted the initial principles of the founders:

⁶ See Munafò et al. (2017).

Science in Transition has designated seven related concerns about current science: the image of science; trust in science; quality; fraud and deceit; communication; education; and democracy and policy. . . . The bibliometric assessment of quality has to be replaced by alternative analyses, requiring pilots and experiments for each domain. Furthermore, scientists will have to involve their societal stakeholders in formulating the research agenda and must also define and seek out their public. (Dijstelbloem et al., 2013, p. 3)

By their admittance, SiT had joined a growing “worldwide chorus” (including DORA, COS, *The Economist*, Nobel Prize winners [e.g., Schekman], the *Lancet*, and others) to correct the self-inflicted wounds within the scientific community. They feared that science had become wrapped in a self-referential system that excluded the rest of society. Hence, stakeholder interaction became paramount and exported to other movements (e.g., see later discussion of cRRBM). In the SiT’s immediate wake came the Leiden Manifesto⁷ for research metrics that emphasized many DORA and COS principles but added the necessity for an analysis of the context for a better understanding of any judgments leading to rankings and ratings.

The responsibility turn spread internationally as it linked the ethical use of artificial intelligence (AI) in the research process with human behavior. As data sources become increasingly widespread on a labyrinthine internet, humans’ ability to locate, decipher, and access the sources they cannot identify at speed becomes challenged. The FAIR Guiding Principles⁸ (findability, accessibility, interoperability, and reuse) of digital assets informed researchers of best practice and helped to ensure replicability.

This series of scientific covenants has been complemented in business and management by the emergence of several global movements covering teaching, research, and practice, such as the Network for Sustainability Business (NBS), the Alliance for Research on Corporate Sustainability (ARCS), and the International Humanistic Management Association (IHMA). However, one is inspired to place responsibility firmly back with the researcher to ensure scientific prowess and societal utility – the cRRBM. This initiative prioritizes “challenge-centered impact” and focuses on knowledge creation, which is a

⁷ Named after the University of Leiden, where the 2014 conference of the European network of indicator developers met (see Hicks et al., 2015).

⁸ This work stems from workshops in Leiden in 2014 (see Wilkinson et al., 2016).

necessary precondition for responsible learning and education. Responsible research feeds credible and useful knowledge for responsible management learning and education (RMLE) (see Moosmeyer et al., 2020).⁹

The Community of Responsible Research in Business and Management

The threat to the credibility of science in the business disciplines is well documented (Bedeian et al., 2010; Schwab and Starbuck, 2017; Tsui, 2016). However, distinctive from the natural sciences, there also is a concern about the practical relevance of business research. Beginning in the early 1990s, many senior scholars, including the presidents of the Academy of Management (with almost 20,000 members, the largest management research association in the world), called for attention to improving the connection of our research to the world around us. Don Hambrick's presidential address in 1993, titled "What If the Academy Actually Mattered?," was considered the first to formally call for a critical examination of the relevance and meaning of our work. His description of our annual academic ritual was sobering:

Each August, we come to talk to each other [at the Academy of Management's annual meetings]; during the rest of the year, we read each other's papers in our journals and write our own papers so that we may, in turn, have an audience the following August: an incestuous, closed-loop. (Hambrick, 1994, p. 13)

Subsequent presidents, including Andy Van de Ven (2001), Denise Rousseau (2005), Angelo DeNisi (2009), James Walsh (2010), and Anne S. Tsui (2013), and more recently, Anita McGahan (2017) and Jackie Coyle-Shapiro (2020), have issued a similar call (e.g., Tsui, 2013). Their addresses emphasize the need for our research to focus on fundamental problems in our world, to improve the practical relevance of our studies, and more importantly, to have relevance for creating a better world. The president of the American Finance Association asked (and answered) the question, "Does finance benefit society?" during his presidential address in 2015 (Zingales, 2015).

⁹ This handbook, published in 2020, evidences the rapid growth of RMLE, with 33 chapters by 65 leading international authors.

Editors of leading business journals (e.g., Davis, 2015; Reibstein et al., 2009; Tang, 2016) also joined the chorus by publishing an editorial on the same question of relevance. In essence, the business and management field faced both a “credibility crisis” and a “relevance crisis.” These two crises were the impetus for the creation of the Responsible Research in Business and Management (RRBM) network.

The RRBM is a multidisciplinary network founded in 2015, representing the core disciplines of accounting, finance, management, marketing, and operations management in business schools. The founding team consisted of 24 highly accomplished senior scholars from 23 universities in 10 countries, along with four institutional partners, the European Foundation for Management Development (EFMD), the Association to Advance Collegiate Schools of Business (AACSB), the Principles for Responsible Management Education (PRME), and the Aspen Institute Business & Society (Aspen-BSP).

The 28 cofounders authored a position paper (RRBM, n.d.-a) that begins with a vision statement for business and management research. It notes that by 2030, business and management research will be used widely in business and nonbusiness organizations to improve the lives of people in our societies – that is, it notes that “executives [will] be making pilgrimages en masse to seek out our counsel.” The RRBM’s mission is to inspire, encourage, catalyze, and support credible and useful research in the business and management disciplines.

Responsible research is scientific work that produces credible knowledge that is also useful for practice. Achieving either alone does not qualify as responsible research. Responsible scientists work on fundamental problems for society and engage in rigorous research design to ensure the findings are reliable and replicable, along with careful estimates on the consequences of wrongful conclusions. The cofounders further formulated seven principles to guide research design, as described in the next section.¹⁰

Seven Principles of Responsible Research

The first principle, “Service to Society,” is foundational (RRBM, n.d.-a). To bring benefits to all citizens (not only the privileged few)

¹⁰ The RRBM position paper (RRBM, n.d.-a) provides detailed discussions of these seven principles.

and to avoid negative externalities on society are universal norms of the scientific community. Science in business schools should not enjoy an exception.

Principle 2 is “Valuing Both Basic and Applied Contributions” (RRBM, n.d.-a). Basic research provides understanding and sharpens prediction. Applied research aims to find reliable solutions to puzzles and thorny problems, with or without the benefits of robust theories. In-depth studies with new insights at a pre-theory stage are just as valuable as hypotheses-testing studies.

Principle 3, “Valuing Plurality and Multidisciplinary Collaboration” (RRBM, n.d.-a), refers to accepting different research themes, methods, forms of inquiry, interdisciplinary collaboration, and knowledge co-creation with practitioners. This approach recognizes that different realities may exist between the researcher and the researched, and truth may be a negotiated social construction. It also aims to encourage a focus on problems and investigations guided by the epistemology and ontology of the local context. For complex problems primarily, a multidisciplinary team and involvement of those who are living the problem may provide a contextualized understanding and comprehensive insight that may not be possible by applying a single disciplinary lens or by using the “outside-in” approach (Tsui, 2006).

Principle 4, “Sound Methodology” (RRBM, n.d.-a), applies to both theory-testing and theory-building studies using either quantitative or qualitative methods. Empirical research requires transparency in the data source, data manipulation and transformation, sample construction, and measurement, that is, open science practices. Rigor also applies to in-depth ethnographic field studies with qualitative data, although different criteria of rigor may apply.

Principle 5, “Stakeholder Involvement” (RRBM, n.d.-a), is about engaging relevant stakeholders in the research, from defining the research question to collecting data, interpreting the results, and checking agreement in the assumption of reality. Stakeholder involvement may be particularly important in studying ill-defined problems because even insiders may not be able to articulate or understand the problem with certainty. Similarly, diversity in regional differences becomes part of the consideration in defining the problem and identifying the underlying logic (e.g., indigenous theorization) for explanation and prediction. Research design should avoid influencing the research subjects’ understanding of their realities or beliefs.

The “looping effect” should be avoided, and the “principle of charity” (subjects’ reality takes precedence over the researcher’s reality) has priority in the understanding of the phenomenon, especially in unfamiliar research contexts (Risjord, 2014, pp. 67–68).

Principle 6, “Impact on Stakeholders” (RRBM, n.d.-a), recognizes and rewards research studies that have a positive impact on diverse stakeholders and values knowledge that informs better business practices and better societies. Principle 7, “Broad Dissemination” (RRBM, n.d.-a), encourages the use of different forms of dissemination, taking advantage of internet technology or platforms, so that the research findings can reach diverse users in an easy-to-understand and timely manner.

In total, six of the seven principles (except principle 7 on dissemination) relate to the upstream side of the research process. This process supports the pursuit of problem-focused and solution-oriented research and research that has the potential to contribute to both basic knowledge and useful ideas for application, with sensitivity to regional differences. Principles 2 to 4 enhance the credibility of research findings. Principles 5 and 6 improve the relevance of the knowledge derived. The principles aim to solve the dual problems of rigor and relevance and avoid the homogenization of research practices, priorities, and valuation globally.

The RRBM emphasizes our responsibility as social scientists who are entrusted by society to contribute evidence-based solutions to solve society’s problems of injustice and to realize the potential to create a world that respects human dignity and protects human rights. All institutions arose in the history of humanity to facilitate order, justice, and survival.

The RRBM is not the panacea to the problems in our research culture. It is a modest effort to encourage, stimulate, and catalyze the recognition of and actions toward research that aims to produce both credible and useful information for a better world.

Work in (Good) Progress

In the 5 years since its founding, the RRBM and its partners have made some modest yet encouraging progress. Many leading journals, such as the *Journal of International Business Studies* (JIBS), *Strategic Management Journal* (SMJ), and *Management and Organizational*

Review (MOR), have published editorials on increasing the transparency of research and preventing problems like p-hacking or HARKing (Schwab and Starbuck, 2017). Some journals have begun to join the open science initiative of the COS and to encourage authors to pre-register research designs and hypotheses before data collection and to share their data for verification or replication studies.¹¹

Many journals have introduced special issues to encourage research on critical societal issues. For example, *JIBS* introduced a special issue: “The Global Scope of Corporate Sustainability: Multinational Firms, Supply Chains, and the Private Governance of Social and Environmental Issues.” The *Academy of Management Journal*’s new special research forum “Joining Conversations in the Society on Management and Organisations” invites authors to join conversations that are taking place around the world (rather than conversations in the literature). This call for submissions suggests many new topics, such as analyzing the effects of caste systems on employment and discrimination in organizations; sexual harassment, diversity, and inclusion in the workplace; global health inequities; bribery; political influence; and personal politics. The *Journal of Marketing* has a special issue titled “Better Marketing for a Better World,” and the journal of *Manufacturing & Service Operations Management* has an upcoming special issue titled “Responsible Research in Operations Management” (papers are under review as of the time of writing this chapter). As of early November 2020, there were at least nine special issues in leading journals with an active call for submissions.¹² These are the grand challenges of the twenty-first century, and the extant literature is silent on most of these topics.

The RRBM also inspired the creation of awards to recognize research that exemplifies the seven principles. One such award is the Manufacturing and Service Operations Management Society (MSOM) Society Award for Responsible Research in Operations Management;¹³ this award is for research papers (published or presented). The Organizational Behavior (OB) division of the Academy of Management (AoM) inaugurated the Societal Impact Award, noting that “scholarly work with societal impact is both scientifically credible

¹¹ The *MOR* journal has a formal preregistration policy with preapproval of manuscripts (Lewin et al., 2016).

¹² The list of journal special issues is available from the RRBM (n.d.-b).

¹³ RRBM (n.d.-c) provides information on the various awards.

and useful to society.” These award-winning papers provide examples of how to engage in responsible research and hopefully inspire young scholars to follow their passion and be instruments of change for a better world. Further awards have been instigated by both the British and European Academies of Management.

Research in business schools is highly specialized. These award-winning research projects, although well-executed and on fundamental problems, are mainly single-discipline works. However, many of the grand challenges in the contemporary world (e.g., COVID-19 pandemic, poverty, inequality, injustice) are incredibly complex, evading the possibility of an accurate or complete understanding using any single disciplinary perspective. Understanding and solving some of these “wicked” problems will require multidisciplinary and multisector collaboration. Business research must emphasize, encourage, and reward inter- or multidisciplinary projects as a responsible participant in solving wicked problems. In the next section, we provide an example of a project that combined expertise in architecture, sociology, information technology, and management.

A Multidisciplinary Responsible Research Example

The significant challenges that confront societies today do not respect the tidy boundaries of academic disciplines. Consider the COVID-19 pandemic. For an individual who has caught the virus, it is a medical problem. For the broader community concerned about contagion, it is a public health problem. For governments at various levels (city, county, region, nation), it is a public policy problem. For those who run businesses and must balance the needs of customers, the safety and economic well-being of employees, and the demands of investors, it is a business problem. All these levels are interconnected, and durable solutions require insights that cross boundaries. Nevertheless, relevant experts often speak different scientific languages and apply different frameworks. (“Aerosol” means something very different to an epidemiologist and a marketing professor.)

We propose two things. First, interdisciplinary scholarship, rooted in the principles of responsible research highlighted previously, will be most effective in addressing societal challenges. Problems cross disciplines; thus, so must solutions. Second, we see business schools as being uniquely appropriate hubs for hosting such efforts. Earlier, we described business schools as an estuary between academia and the

world of practice. At a fundamental level, business schools are about how to organize people and resources to get things done, and this is what all societal challenges require, from taking on pandemics and climate change to reducing inequalities across gender and race to ensuring access to food, education, and health care.

Consider an example. How does physical space shape social interactions, and how do these interactions, in turn, influence innovation in organizations? Answering this question implicates several different fields. Architecture scholars are skilled at measuring the attributes of the built environment and have developed quantitative methods to characterize the relations among different spaces as nodes in a network. Sociologists employ tools of social network analysis to quantify the relations among actors in a social system and how they change over time. Psychologists have theorized about the different properties of groups that influence creativity, such as the group's diversity. Strategic management scholars study the nature and production of innovation in organizations. Any of these fields has something useful to contribute to the question of space, interaction, and innovation. However, all of them together will likely yield far greater insights that can inform the production of innovative solutions.

This example is not entirely hypothetical. One of us (Davis) was a co-principal investigator on a study of precisely this question, along with colleagues in the College of Architecture and Urban Planning, the Sociology Department, and the School of Information (Wineman et al., 2014). The National Science Foundation in the United States funded the research, which unfolded over several years. Architects on the team used electronic charts of the floor plates of buildings to create heat maps based on which spaces were on the shortest paths between any given pair of rooms. Sociologists surveyed employees about the people they interacted with to analyze their social networks at work. Business scholars found ways to measure innovations as they developed from the gleam in the eye to a finished product. The study examined a diverse set of workplaces (involving software development, truck manufacturing, medical research, and engineering) to maximize the chances for generalizability and application. In the most intensive study setting, an entire floor of an office building was wired with location-tracking tools, and employee participants in the study carried location-tagged badges that allowed the team to track their interactions at work over several weeks. Participants also completed written

surveys, and one of the researchers took up residence in the office for participant observation and one-on-one interviews. The result was a rich portrait of social networks at work and how they shaped the innovation process, demonstrating the different facets of “networks” observed using different methods. Moreover, one of the dissertations to emerge from this project created an entire suite of new dynamic network measures.

We now have a much richer understanding of how to organize space to create the kinds of social networks that yield innovation in organizations. However, we also have a strong sense of the points of maximum leverage for making a workplace safe in the event of a viral pandemic, which are – ironically – in opposition to those for creating innovation. Innovation thrives when the average geodesic (the shortest network path between any two people) is low, but this is also the prescription for maximizing viral spread. Sometimes even the researchers may not realize the ultimate applications of their work.

The potential audiences for work such as this are as diverse as the scholars who produced it. How should architects design buildings to promote human relationships? How should businesses organize spaces within buildings to encourage innovative networks? How should managers organize staffing engagements to yield the most productive and creative teams? Moreover, how can work be reorganized after the pandemic to balance needs for safety and innovation? Interdisciplinary work guided by principles of responsible research has rich potential to benefit society.

Conclusion

Effective multidisciplinary work, often embedded in practice, takes time, but that is time worth taking because the outcome is richer and more useful than operating with a single lens. Multi-lens work is becoming increasingly widespread. Indeed, some business schools (e.g., in the UK) that were doing little before the outbreak of the recent pandemic have responded to their government’s calls for grant-aided research into the disease’s impact on, for instance, manufacturing output, the homeless, care homes, and frontline workers. Much of this work involves combinations of academics from different disciplines, often in conjunction with medical scientists, spurred on by a national consciousness to pioneer solutions for the good of society. COVID-19

has triggered a portfolio of multidisciplinary activity that was not there before and may well continue after that. Practical relevance may have returned on a large scale, taking business and management research back to its roots.

In parallel, a whole swathe of global movements have kicked into action to counter the paucity of good science underpinning research and, most importantly, the credibility of the research results on which policy decisions depend. Among these, the RRBM has gained considerable traction in a short time because of the need for action recognized by many academics, especially junior ones with little influence over the system they had entered who have concerns about the practice inside it. Finding senior academics sponsoring a movement and taking actions that they dared not, or could not, take must have come as a blessing. Although it must also have seemed strange to them that the RRBM's birth came by way of the EFMD – an agency concerned with management development and recognized globally as an accreditation body (EQUIS) for business schools. Why would an accreditation agency be interested in quality and impactful research? Often, external eyes see things more clearly than internal ones – especially across the breadth of a sector. The EFMD's eye was broad because of the nature of its work. Its executives saw the need for action but also knew that the academics involved had to heal themselves. The EFMD's foresight in sponsoring the RRBM and its support throughout the years have been invaluable. The EFMD played its part in transforming the behavior of academics in the sector. We congratulate the EFMD on this achievement and upon its remarkable 50th milestone!

References

- Bedeian, A. G., Taylor, S. G., and Miller, A. N. (2010). Management science on the credibility bubble: Cardinal sins and various misdemeanors. *Academy of Management Learning & Education*, 9(4), 715–725.
- Center for Open Science. (n.d.). *Our mission is to promote openness, integrity and reproducibility of research*. www.cos.io/about/mission.
- Davis, G. F. (2015). Editorial essay: What is organisational research for? *Administrative Science Quarterly*, 60(2), 179–188.
- Dijstelbloem, H., Huisman, F., Miedema, F., and Mijnhardt, W. (2013, October 17). *Why science does not work as it should and what to do about it*. Science in Transition Position Paper. www.scienceintransition.nl/app/uploads/2013/10/Science-in-Transition-Position-Paper-final.pdf.

- Goodhart, C. (1975). Problems of monetary management: The U.K. experience. In A. S. Courakis, ed., *Inflation, depression, and economic policy in the West*. Barnes and Noble Books, pp. 91–121.
- Gordon, R. A., and Howell, J. E. (1959). *Higher education for business*. Columbia University Press.
- Hambrick, D. C. (1994). 1993 presidential address: What if the Academy actually mattered? *The Academy of Management Review* 19(1), 11–16.
- Hicks, D., Wouters, L., de Rijcke, S., and Rafols, I. (2015). Bibliometrics: The Leiden manifesto for research. *Nature*, 520(7548), 429–431.
- Lewin, A. Y., Chiu, C. Y., Fey, C. F., Levine, S. S., McDermott, G., Murmann, J. P., and Tsang, E. (2016). The critique of empirical social science: New policies at management and organisation review. *Management and Organization Review*, 12(4), 649–658.
- MacKenzie, D. (2006). *An engine, not a camera: How financial models shape markets*. MIT Press.
- McKiernan, P., and Tsui, A. S. (2020). Responsible research in business and management: Transforming doctoral education. In D. C. Moosmeyer, O. Laasch, C. Parkes, and K. G. Brown, eds., *The Sage handbook of responsible management, learning and education*. Sage, pp. 485–501.
- Merton, R. K. (1942). The normative structure of science. *The sociology of science: Theoretical and empirical investigations*. University of Chicago Press.
- Moosmeyer, D. C., Laasch, O., Parkes, C., and Brown, K. G., eds. (2020). *The Sage handbook of responsible management, learning and education*. Sage.
- Munafò, M. R., Nosek, B. A., Bishop, D. V., Button, K. S., Chambers, C. D., Du Sert, N. P., and Ioannidis, J. P. (2017). A manifesto for reproducible science. *Nature Human Behaviour*, 1(1), article 21.
- Power, M. (1997). *Audit society: Rituals of verification*. Oxford University Press.
- Primer. (n.d.). *COVID-19 primer*. <https://covid19primer.com/dashboard>.
- Principles for Responsible Management Education. (n.d.). *What we do: Six principles*. www.unprme.org/what-we-do.
- Rabin, R. C. (2020, June 14). The pandemic claims new victims: Prestigious medical journals. *New York Times*. www.nytimes.com/2020/06/14/health/virus-journals.html.
- Reibstein, D. J., Day, G., and Wind, J. (2009). Guest editorial: Is marketing academia losing its way? *Journal of Marketing*, 73(4), 1–3.
- Responsible Research in Business and Management. (n.d.-a). *Position paper*. www.rrbm.network/position-paper/.
- (n.d.-b). *A vision of responsible research in business and management*. www.rrbm.network/.

- (n.d.-c). Awards. www.rrbm.network/taking-action/awards/.
- Risjord, M. (2014). *Philosophy of social science: A contemporary introduction*. Routledge.
- Ritchie, S. (2020). *Science fictions: Exposing fraud, bias, negligence and hype in science*. Bodley Head.
- Schwab, A., and Starbuck, W. H. (2017). A call for openness in research reporting: How to turn covert practices into helpful tools. *Academy of Management Learning & Education*, 16(1), 125–141.
- Starkey, K. (2015). The strange absence of management during the current financial crisis. *Academy of Management Review*, 40, 652–663.
- Tang, C. S. (2016). O.M. forum – making O.M. research more relevant: “Why?” and “How?”. *Manufacturing & Service Operations Management*, 18(2), 178–183.
- Terwiesch, C., and Ulrich, K. T. (2014, July 16). *Will video kill the classroom star? The threat and opportunity of massively open on-line courses for full-time MBA programs*. <https://ssrn.com/abstract=2467557>.
- Tsui, A. (2016). Reflections on the so-called value-free ideal: A call for responsible science in the business schools. *Cross Cultural & Strategic Management*, 23(1), 4–28.
- Tsui, A. S. (2006). Contextualisation in Chinese management research. *Management and Organization Review*, 2(1), 1–13.
- (2013). 2012 presidential address. On compassion in scholarship: Why should we care? *Academy of Management Review*, 38(2), 167–180.
- Wilkinson, M., Dumontier, M., Aalbersberg, I., Appleton, G., Axton, M., Baak, A., Blomberg, N., et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3, article 160018.
- Wilson, D., and McKiernan, P. (2011). Global mimicry: Putting strategic choice back on the business school agenda. *British Journal of Management*, 22(3), 457–469.
- Wineman, J., Hwang, Y., Kabo, F., Owen-Smith, J., and Davis, G. F. (2014). Spatial layout, social structure and innovation in organisations. *Environment and Planning B: Planning and Design*, 41(6), 1100–1112.
- Zingales, L. (2015). Presidential address: Does finance benefit society? *The Journal of Finance*, 70(4), 1327–1363.

