

54. When the Network Becomes the Platform

Julie Thompson Klein¹

Gabriele Bammer's call for an I2S Development Drive in support of 'integrative applied research' comes at a crucial time in the history of interdisciplinarity. Publications and conference presentations proliferate across the academic sphere, amplified by calls for new approaches to research and education from professional associations, science policy bodies and other organisations. Yet, efforts are scattered, resulting in shortfalls of wisdom and practice. Some groups interact, but too many efforts have been isolated. Their collective existence affirms the importance and prominence of integrative applied research. Yet, groups are often small, marginal or, even when achieving a threshold point of size and strength, unaware of new developments in other organisations and networks. As a result, resources are under-utilised, cross-fertilisations foreshortened and progress in establishing an identifiable field stalled by fragmentation and marginalisation. The fragility and vulnerability of local projects and programs mirror this problem at the level of individuals and teams. Ill-informed definitions, shallow practices and inappropriate criteria for evaluation also prevail.

The 'floor plan' Bammer calls for would provide a systematic approach that is greater than any single method or theory. Systematic does not mean universalist. The Drive begins by recognising the limits of its own endeavour. Gaps and errors are inevitable; however, the price of waiting is high, impeding progress at a critical moment in the host of problems in need of integrative applied research. The Drive also begins by accepting, not minimising or erasing, the diversity of forms of research on real-world problems. Examples abound, documented by the exponential growth of related literatures. Yet, they must be identified and synthesised—'harnessed', in a core metaphor of the Drive—before it is possible to engage in comparative weighing of advantages and limits of particular methods and approaches. Only then can appropriate options for particular contexts be determined. The task is complicated by a long-recognised challenge in the literature of library and information sciences: the problem of scatter.

¹ Julie Thompson Klein was invited as a 'senior scholar who has pioneered, and continues to advance thinking about, interdisciplinary research, in addition to being an assiduous networker'.

Interdisciplinary fields and other boundary-crossing initiatives are all too familiar with the problem of 'information scatter,' resulting from the distribution of knowledge and information. Scatter occurs in all areas, including disciplines. Yet, the dispersal of information and knowledge is greater in interdisciplinary fields. Advances in database-searching tools are a boon to serving information needs in these areas, including federated search engines that seek relevant materials across disciplines and fields as well as alert services that allow users to customise searches. Yet, many searches do not go beyond the blunt instrument of a simple Google quest or Wikipedia entry.

In the case of an I2S Development Drive, the problem of scatter is compounded by the ambitious scale of the project, posited at the level of a Big-Science project such as the Human Genome Project and the Manhattan Project. Prior efforts to collect pertinent materials have yielded helpful but partial results on a small scale. They brought to light many primary works but not the full extent of grey literature consisting of work published in small and peripheral venues, internal reports and informal records, let alone the wisdom of practice that is never written down.

Large as the challenge is, the Drive is at a readiness point, able to leverage and synergise a vast array of human and material resources already identified within the Integration and Implementation Sciences network. It also has links to the leadership of organisations poised to partner in this initiative, major among them the Science of Team Science network and the US National Institutes of Health Toolkit Project, as well as the European-based transdisciplinarity.net. Partnership is all the more crucial given the dynamic nature of the literature and the broader family of discourses that have important though under-realised congruencies. Beyond communities dedicated to interdisciplinary and transdisciplinary work, they include the discourses of post-normal science, systemic intervention, integrated assessment, sustainability science, team science, Mode 2 and action research. Current increased interest in research translation, knowledge brokering and impacts on policy and practice widens this spectrum. It expands even further with the enormous number of problem domains, not the least of which are sustainability, participatory democracy, and health and wellbeing.

Allied interests are not uniformly aligned with integrative applied research. Rather, they are loosely and tightly coupled, with differing boundaries and arrangements with common objectives across domains. Bammer's proposal to posit I2S as a 'discipline' underscores the need for a robust structure that is more than an add-on to existing ones. 'Discipline', though, is a limited concept for the complexity and scale of the strong 'knowledge base' that is needed. 'Interdiscipline' would be more appropriate, although even it does not acknowledge the 'inter-professional' dimensions of practice. Yet 'interdiscipline', at least, takes into account the relevance of not only disciplines but also interdisciplinary fields and networks as well as the interfaces of disciplinary, interdisciplinary and professional spheres.

The analogy of statistics highlights the methodological character of a Drive focused on the 'best available' information and methodology. At the same time, there is a theoretical dimension. A fully developed science of integrative applied research is not simply a toolkit—large and influential though such a 'storehouse' could become. It also entails new conceptual approaches that are capable of transforming current paradigms of both knowing and doing. Action research and other endeavours that merge 'know-how' with 'know-what' interrogate the strict dichotomy of practical and theoretical knowledge, academic and stakeholder knowledge, and individual and epistemological knowledge. Ultimately, too, the formation of a 'new research style' (Chapter 1) anchored by an identifiable body of knowledge and practices has implications for current taxonomies and typologies.

The 'agility' that accompanies a new research style also has implications for degrees of expertise. A core community of I2S specialists would possess the most consolidated and fully developed expertise. In assuming responsibility for its development, they would perform the dual functions of repository and vision. Repository ensures collection and codification. Vision scaffolds from that foundation to develop new approaches, to foster innovations that are not yet imagined, to encourage reflection and to strengthen the vital infrastructure of meeting and funding. Beyond this I2S 'home', a much larger and dispersed body of individuals needs expertise for doing integrative work both within and across disciplinary, interdisciplinary, professional and stakeholder contexts. Their newly honed capacity for integration and collaboration will not lie strictly outside their original homes. They will be the most dependent on a robust storehouse complete with customised guides genuinely capable of fast-tracking integrative applied work. At a time when new demands are being made on traditional research styles, they will also recognise the need to internalise new competencies of integration and collaboration in all of their locations.

Finally, building the foundation that is needed will not only require broadcasting results in familiar forums, including journals and conferences that have long been sites of mutual learning. It will also require a prominent virtual presence. A closing analogy comes from the world of digital cyber-infrastructure—that of 'platform'. John Unsworth's description of the shift from Web 1.0 to Web 2.0 suggests a useful way of thinking. The introduction of Web 2.0 shifted emphasis from the computer as platform to the network as platform, especially the network of interactions and synergies. An I2S 'college of peers' beckons a networked platform that is not possible with current groups operating in separate or even in tandem fashion. It requires the traction that cannot only derive from a concerted effort.

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Further Reading

On the topic of scatter, see: Palmer, C. L. (2010). 'Information research on interdisciplinarity'. In: Frodeman, R. (ed.), Klein, J. T. and Mitcham, C. (assoc. eds). *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press, 176–7.

On the metaphor of platform, see: Unsworth, J. (2008). 'University 2.0'. In: Katz, R. N. (ed.). *The Tower and the Cloud: Higher education in the age of cloud computing*. Washington, DC: EDUCAUSE, 227.

On the relationship of individual and epistemic knowledge, see: Krohn, W. (2010). 'Interdisciplinary cases and disciplinary knowledge'. In: Frodeman, R. (ed.), Klein, J. T. and Mitcham, C. (assoc. eds). *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press, 42–3.

Brief Biography

Julie Thompson Klein is Professor of Humanities in the English Department and Faculty Fellow for Interdisciplinary Development in the Division of Research at Wayne State University (Detroit, USA). She is an internationally known expert on the history, theory and practice of interdisciplinarity. Her authored and co-edited books include *Interdisciplinarity: History, theory, and practice* (1990), *Interdisciplinary Studies Today* (1994), *Crossing Boundaries: Knowledge, disciplinarity, and interdisciplinarity* (1996), *Transdisciplinarity: Joint problem solving among science, technology, and society* (2001), *Interdisciplinary Education in K–12 and College* (2002), the monograph *Mapping Interdisciplinary Studies* (1999), *Humanities, Culture, and Interdisciplinarity: The changing American academy* (2005), and *The Oxford Handbook of Interdisciplinarity* (2010). Klein is a recipient of the Kenneth Boulding Award for outstanding scholarship on interdisciplinarity, the Ramamoorthy & Yeh Distinguished Transdisciplinary Achievement Award and the Joseph Katz Award for Distinguished Contributions to the Practice and Discourse of General and Liberal Education. She is currently co-editor of the University of Michigan Press series Digital Humanities@digitalculturebooks, and her book *Mapping Digital Humanities* is forthcoming.

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