Interdisciplinarity

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Interdisciplinary encounters occur when disciplines move out of their respective silos to reorient and converge for the purpose of advancing emergent and novel potentialities that do not adhere to disciplinary norms. Cross-disciplinary stakeholders of varying epistemic interests collaborate in integrating, blending, and bringing into focus their respective disciplinary practices and values to produce multifaceted outcomes and findings.

There are subtle differences between multidisciplinarity and transdisciplinarity – in the case of multidisciplinarity, one obtains the coordination and juxtaposition between the different disciplines that perform independently and sequentially from/with other disciplines for broad-base analysis. However, the disciplines would then go their separate ways without being affected by such collaborations. Transdisciplinarity, on the other hand, transforms the disciplines that interact, therefore changing the original state of the interacting disciplines and contributing to the development of new disciplines that transcend established frameworks.

Every culture has its own knowledge system and classification scheme, with different explanans directed at the same phenomenon. Attempts at synthesizing causal explanations from multiple sources had existed from before the reification or institutionalization of disciplines; disciplinary formation is the inevitable consequence of evolution in the taxonomy of knowledge. Further, disciplinarity is grounded largely due to the establishment of modern university systems. Hitherto disparate subject areas began to consolidate and merge through processes both natural and arbitrary.

The present understanding of disciplinarity is likely related to the European Enlightenment. This is not to say that disciplinarity has not evolved outside the Western canon, as other systems have their own forms of disciplinary classifications. In fact, coexistence and symbiosis of knowledge systems, such as the complement between modern Western medicine and culturally inflected alternative therapies, is still commonly practiced in many communities. Nevertheless, the nineteenth- and twentieth-century development of the university as an industrial and imperial complex dominated the current discourse of disciplinary formation through colonial expansionism, postcolonial amnesia, and prestige attributed to technological expertise.

Despite the knowledge explosion in the aftermath of the World War II that contributed to increased specialization and the development of new scientific disciplines, there were also scientists who came together to establish a systems-based framework for knowledge operations known as cybernetics. Cybernetics, which emerged from interest in bioinformational and biophysical systems, and theories of computation, would evolve into an epistemic framework for metadisciplinary discourses of the social sciences and the humanities. The Macy conferences of the 1940s and 1950s are ~~an~~ explicit example of interdisciplinary conferences that bring together scientists and systems researchers to consider the nagging issues that might be better served through multidisciplinary contributions that could evolve into an interdisciplinary, if not transdisciplinary, enterprise.

However, in 1959, C. P. Snow delivered a Rede Lecture, "The Two Cultures," aimed at

Wiley Blackwell Encyclopedia of Social Theory. Edited by Bryan S. Turner.

dissecting the humanistic–scientific divide stemming from what he believed is the result of a poor grasp of the humanist writers over what the former considered as the most basic tenets of scientific thought, which cause the latter to be misguided about the science (Snow 1993/1953). He went on to argue that such ignorance has led humanists to bypass discussing some of the most awe-inspiring discoveries of science even if such discoveries would have benefited from the latter's insights. About four decades later, the Sokal Affair, through the "science wars" (which aroused different reactions from different disciplinary sides) (Sokal and Bricmont 1998), threatened to unravel inter- and transdisciplinary intercourse between the sciences and the humanities by causing disciplinary defensiveness to emerge on both sides instead of facilitating nonjudgmental conversations.

Transdisciplinarity appears to take place largely at the margins of disciplinary practices, and has an effect on methodological choices. Transdisciplinary practices inform the early developments of cybernetics introduced to work with problems that cannot be neatly packaged into scientific disciplines. In the humanities, the call of transdisciplinarity is targeted at extending the objects of critique, incorporating the methods of science into humanistic interrogations, and making available technological tools that are more suitable to humanistic inquiries. Transdisciplinarity and interdisciplinarity enable new research questions not sufficiently addressed within existing disciplines to be tackled through more flexible means.

There are different views concerning how interdisciplinary practices are implemented, and skepticism over the possibility of overcoming epistemic differences and gaps sufficiently to allow more than a superficial interaction between scholars from different disciplines. There are views on how some knowledge practices (such as the sciences) are pragmatic in their attitudes toward interdisciplinarity whereas others remain at the level of abstract gestures. However, one might question whether interdisciplinary interactions can penetrate and transform the highly reified attitudes and languages of well-established disciplines, or disciplines that demand advanced technical knowledge, or whether such interactions can take place only around the periphery owing to unyielding terms ~~of~~ legitimacy in knowledge practices and a steep learning curve. However, there are contentions that the realignment of disciplinary identities and interests can facilitate interdisciplinary approaches to a problem without the blurring or softening of boundaries (Centellas, Smardon, and Fifield 2014).

Explicit interdisciplinarity in the natural sciences and quantitatively predisposed social sciences are taken for granted through developments in the fields of biophysics, biochemistry, bioinformatics, cognitive science, computer simulation, human–computer interactions, and biomedical engineering, among other burgeoning fields. However, in the humanities (including digital humanities) and interpretive social sciences, interdisciplinary designations are more amorphous and less well defined because the same designation could have varying degrees of intellectual genealogies, depending on the academic and intellectual culture of the departments from which these fields emerged; examples are political science, gender/feminist studies, ethnic studies, international studies, comparative studies, religious studies, and science and technology studies.

Interdisciplinary thinking exists naturally outside the conventional fields of academia, and is integral to real-world problem solving and artistic creation. Thinking outside the box is important for resolving difficult cases, achieving entrepreneurial successes,

and working with design projects. Despite the appearance of increased support in the academy for interdisciplinary endeavors, conventions of disciplinary practices are more valued, with publications in disciplinary journals considered more prestigious, even to a field such as philosophy that was historically less conservative in its disciplinary involvement. Further, the attainment of the necessary paradigmatic shift toward interdisciplinary cognition requires intellectual risk-taking that is not always institutionally supported.

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SEE ALSO: Digital Humanities; Foucault, Michel; Grounded Theory; Posthumanism; Queer Theory; Science Policy; Transhumanism

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FURTHER READING

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ABSTRACT

Interdisciplinarity connects, blends, and integrates disciplines epistemologically and ontologically to serve up new insights into methodology, concepts, platforms, frameworks, and content-level analytics. Interdisciplinarity, and its cousin transdisciplinarity, encourage moving out of one's disciplinary comfort zone to consider problems and research questions from a variety of disciplinary perspectives to advance the development of new knowledge content that draws on a multiplicity of theoretical and applied knowledge fields and logics. The development of social, cultural, and other forms of critical theoretical frameworks is indebted to insights gained from cross-disciplinary considerations and observations of social and physical phenomena, and from abstractions distilled out of deep contemplation of these phenomena.

KEYWORDS

cross-disciplinary; disciplinary matrix; epistemic collaboration; science wars; two cultures