Interdisciplinarity, Humanities, and the Terministic Screens of Definition

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Inter-disciplinarity is problematised, as it abounds and proliferates.
Richard Marsden, “Aphorisms on Disciplines”

Richard Marsden’s aphorism is a fitting epigraph for an essay on the scope of interdisciplinarity. It frames the debate on the meaning of a concept that proliferated over the course of the twentieth century. As the concept proliferated, its practice pluralized. To echo another conference participant, Harvey Graff, interdisciplinarity now varies by field, time, place, relationships, and circumstances. Inevitably, too, differing claims arose. Graff called the spectrum “wide but not straight,” and fellow participant Ian Angus argued that definitions are cogently related to an individual’s position, current institutional priorities, and possibilities for alternative forms of knowledge production. Some participants treated interdisciplinarity as an epistemological question, while others focused on institutional structure. Some focused on pedagogy, while others highlighted the situated practices of new fields, Theory, and “non-academic” knowledge. This essay addresses the task of defining interdisciplinarity in two ways. Part I begins with an overview of key developments in the humanities,
then turns to the ways they have been remaking the subject, the object, and scholarship within three disciplines—literary studies, art history, and music studies. Part II analyzes the rhetorical boundary work of specialized terminology in taxonomic classification, then turns to current heightened interest in transdisciplinarity.

THE CHANGING HUMANITIES

When the modern disciplines formed in the late nineteenth and early twentieth centuries, the term “humanities” designated a range of culture-based studies, including literature, philosophy, art history, and often general history (Veysey 1979, 58, 64). Although interdisciplinarity was not yet a recognized movement, the historical warrants in the humanities were the generalist model of culture, a synoptic view of subjects, and interart comparison within synchronic eras. Period style was the most powerful basis of relationship, grounded in common motifs, themes, and genres within a particular era. Historical empiricism and positivist philology dominated the scholarly practices of the new disciplinary specialists. However, over the course of the twentieth century increasing attention was paid to the social contexts of aesthetic works and the responses of readers, viewers, and listeners. The concept of culture expanded from an aesthetic focus on elite forms to a broader anthropological notion, and once discrete objects were reimagined as forces that circulate in a network of forms and actions. New theoretical and critical approaches also emerged. The importation of European philosophy and new literary theories began in the 1950s, with existentialism and phenomenology. In the 1960s, the impact of the Saussurean theory of language gave rise to structuralist influences across the humanities and social sciences, including the anthropology of Lévi-Strauss, the psychoanalysis of Jacques Lacan, the Marxist theory of Althusser, and the philosophical-literary movement of deconstruction of Jacques Derrida. All made significant inroads into North American academies. During the late 1970s and early 1980s, interest in feminism and semiotics widened and, further into the 1980s, a number of practices lumped under the label “poststructuralism.” In addition to deconstruction, feminism, and Lacanian analysis, they included a form
of French post-structuralist theory, new historicism, Foucauldian-style studies of knowledge and power, and cultural and postcolonial critique. By the 1990s, many discourses were also positioning themselves under the rubric “multiculturalism” (Bender 1997b, 43–45; Bender and Schorske 1997, 9; Kellner 1995, 20–24; Klein 2005, 34–54).

The changes associated with these developments have been described in many ways. Thomas Bender grouped a number of trends in the humanities and social sciences under the label “cultural turn.” Together they fostered a wider and more critical perspective on the study of culture (Bender 1997b, 41–42). The changes have also been stylized as historical, sociological, and political “turns.” The historical turn that occurred in the late twentieth century stood in stark contrast to disciplinary relations at mid-century. In the 1950s, the cutting of ties with history was so widespread that Carl Schorske (1997) called it a generalized paradigm shift in academic culture. Social scientists turned to behaviourism and natural-scientific modes, while humanists turned to self-referential formalistic criticism. During the 1960s and 1970s, a variety of “new histories” opened new space for interdisciplinary contextualizations.

Peter Burke (1991) identified six points of comparison between the Old and the New within the discipline of history and its uses in other disciplines and fields. Four are particularly relevant to the changing relationships of the humanities and social sciences. The first distinction lies in subject and object. The traditional paradigm of historical study accentuated politics of the state in national and international contexts. The new history embraced virtually all human activities. The second distinction is method and approach. The traditional paradigm privileged narration of events while focusing on regimes and administrations, legislation and politics, diplomacy and foreign policy, wars and revolutions. Today’s practices tend to be analytic and thematic, and some of the most influential new work is emanating from efforts to recast intellectual history as cultural history. The third distinction lies in the difference between the traditional “history from above” and the new “history from below,” taking into account the everyday experience of ordinary people. The fourth distinction follows from the third. Instead of prioritizing archival documents, records, and treatises, new scholarship draws on a greater variety of evidence, using statistics, oral history, visual images, material
culture, sociological models, and psychological theories. Official records are also being read in new ways.

The re-engagement with sociology and politics differed. It was linked more closely to the 1960s and 1970s, especially new social movements that challenged established forms of society and culture, produced countercultures, and stimulated interest in all social classes. Douglas Kellner cautions, though, that renewal of social and political interests was more than simple nostalgia. The new subfield of social history fostered greater space for popular histories and popular culture in multiple disciplines and fields. The momentum created by postmodern discourses in the 1970s and 1980s also reinvigorated sociological and political scholarship. In addition, the problems of the contemporary world and new technological and economic systems called for new theoretical and political modes of understanding linked with struggles for human rights, the civil liberties of oppressed people, peace and justice, ecology, and the search for a more humane organization of society on a global scale (Kellner 1995, 1, 17, 19).

Rick Szostak remarked during the symposium in Edmonton that interdisciplinary humanists are more likely to focus on theory than on a problem or issue more typical of interdisciplinarity in the social sciences. Yet problem- and issue-focus heightened as a result of the historical, social, and political turns, fostering greater interest in contexts framed by questions of cause and effect, motive, social structure, and power and authority.

For their part, social scientists looked increasingly toward the humanities. In 1980, anthropologist Clifford Geertz (1980) called attention to a shift within intellectual life in general and within the social sciences in particular. The model of physical sciences and a laws-and-instances ideal of explanation, Geertz contended, was being supplanted by a case-and-interpretation model and symbolic form analogies. Social scientists were increasingly representing society as a game, a drama, a discourse, or a text, rather than a machine or a quasi-organism, and they were borrowing methods of speech-act analysis, discourse models, and cognitive aesthetics. This shift crossed the traditional boundary of explanation and interpretation, replacing former keywords of “cause,” “variable,” “force,” or “function” with a new vocabulary of “rules,” “representation,” “attitude,” and “intention.” They began talking of “actors,” “scenes,” “plots,” “performance,” and “personae.” Not all social scientists took the
turn that Geertz described. All the same, the stress on empirical research and logical positivism of the 1950s and 1960s eased, giving way to a growing interest in how people make and communicate meaning. Increasing frustration with methodological purism and naïve empiricism, coupled with critical debates on methodology, also encouraged a “third methodological movement.” Mixed methods draw from both quantitative and qualitative traditions, combining them in unique ways to solve practical research problems and to answer research questions (Tashakkori and Teddlie 2003).

Humanists responded to new developments by moving in two directions. Some, Bender recalls, expanded the domain of the humanities. Others assumed an increasingly defensive posture. A new ideology also emerged in forms of cultural studies aligned with the vision of a postdisciplinary academy. The postmodern hope of greater cosmopolitanism is belied by increased fractionality, and discipline-based departments continue to be the dominant organizational unit of the academy. Yet they no longer clearly or fully represent the intellectual work carried out within traditional structures. Moreover, “culture” is no longer the sole province of language departments and disciplines such as history and literature. Traditionally, the study of less familiar cultures was located in area studies, international relations, and anthropology. Today, more interactive definitions of culture and cultural relationships are appearing across the humanities and social sciences. Moreover, exclusive control of culture as it relates to mass communications, social issues, the family, and the cultural text is being challenged (Bender 1997a, 3; 1997b, 35, 44–47).

The cumulative effect of new developments also fostered the notion that interdisciplinarity is increasingly important to the conduct of humanistic inquiry. This notion was affirmed by the president of the American Council of Learned Societies, an umbrella organization in the United States for professional groups representing both the humanities and social sciences. Stanley Katz (1996) highlighted two mounting pressures on academic organizations: the weakening of disciplinary boundaries and the emergence of new organizational structures of knowledge. Since the mid-1960s, this twofold pressure has led to the creation of new fields such as African-American studies, women’s studies, and ethnic studies. Such fields marked the possibility of a more flexible design with
the potential to transform the paradigm of the disciplinary department. The radicalism of the 1960s, alternative definitions of culture and politics, and challenges to the existing structure of higher education also encouraged methodological creativity and experiments with new approaches. Many academics today, Katz found, are by inclination or training “multi-,” “inter-,” or “non-”disciplinary. Not surprisingly, then, changes took root within disciplines.

*Subject, Object, and Scholarship*

As new developments took root, the nature of the subject, the object, and scholarly practices changed. In literary studies, Richard Ohmann recalls, the success of Theory justified including “literally everything” from film, romances, and hip-hop to museums and sexuality. The canon also broadened as greater attention was paid to national literature beyond the historical foundation of British literature (e.g., American and Canadian) and works by once-excluded groups (e.g., women, African-Americans, Latinos). Echoing the pattern in the discipline of history, interest in popular culture also eroded the traditional boundaries of “high” and “low” forms of cultural expression, and new media became the focus of increased research and teaching (2002, 216–18). Reflecting on expansion of the discipline’s objects of study and subject field, John Carlos Rowe concluded: “Literature as it was can’t be saved.” It now encompasses older texts and “extraliterary” materials such as letters, diaries, films, paintings, manifestos, and philosophical, political, psychological, religious, and medical treatises (1992, 204).

Scholarship changed in turn. From roughly 1860 to 1915, philology and literary history were the dominant practices. The new disciplinary science of literary study emphasized editing and annotating texts; compiling bibliographies, dictionaries, and concordances; conducting source and etymology studies; discovering facts; and writing biographies and literary and intellectual histories (Miller 1991, 119–20). In the 1930s and 1940s, criticism became the dominant practice, though it was not a monolithic one. One strain, led by the New Critics, emphasized aesthetic formalism in close readings of poems treated as organically unified objects. The other, led by the Chicago Critics, emphasized theory and argued for a pluralist approach and humanist moralism focusing on the qualities that
literature shares with philosophy, ethics, and general ideas (Leitch 1998, 62; Shumway and Dionne 2002a, 8–9; Graff 1987, 148). By 1981, when the Modern Language Association’s authoritative *Introduction to Scholarship in Modern Languages and Literatures* appeared, both of the trends noted in the opening account of new developments were apparent: one moving toward the speculative and abstruse world usually dubbed “Theory,” and the other toward the complex relationship between scholarship and the “real world.” The 1992 update introduced a new category, Cross-Disciplinary and Cultural Studies, with separate sections on interdisciplinary, feminist and gender, ethnic and minority, border, and cultural studies (Gibaldi 1992). The category did not appear in the 2007 update, but gender, sexuality, race, and migrations are now treated as interdisciplinary “topics” within the discipline (Nicholls 2007).

New developments compound the task of mapping interdisciplinary studies. Giles Gunn identified four approaches in literary studies. The traditional critical coordinates are author, reader, material or linguistic components of a text, and the world. The map changes depending on which coordinate is the axis. If text is the axis, a number of developments appear, including structuralist, formalist, and generic interests; hermeneutics, or interpretation theory; and certain forms of Marxist criticism. If reader, others appear, such as audience-oriented criticism. The most conventional strategy of mapping is tracing the relationship of one discipline to another. Mapping literature and anthropology, for instance, reveals practices of structuralism, ethnography, or “thick description,” folklore and folklife studies, and myth criticism. Mapping literature and politics reveals sociological criticism, cultural studies, ideological criticism, materialist studies. The map changes, however, when asking a different question. What new subjects and topics have emerged? Other examples appear, including materialism of the body, psychoanalysis of the reader, the sociology of conventions, and the ideology of gender, race, and class. The final and most difficult approach is rarely acknowledged. Correlate fields such as anthropology, philosophy, religious studies, and psychology have changed. “The threading of disciplinary principles and procedures,” Gunn concluded, “is frequently doubled, tripled, and quadrupled in ways that are not only mixed but, from a conventional disciplinary perspective, somewhat off center.” They do not develop in a linear
fashion, nor are they traceable in all their effects. They are characterized
by overlapping, underlayered, interlaced, crosshatched affiliations, colla-
tions, and alliances that have ill-understood and unpredictable feedbacks

The object, the subject, and scholarship also changed in art history. New stylistic movements such as pure form, colour field painting, and minimal art had little in common visually with earlier traditions. The canon of art expanded to include the works of women and different cultural groups. The boundary between high and low or popular art eroded, legitimating the artistry of once-excluded objects such as furniture and quilts, cartoons and graffiti, commercial illustrations, and tattooing. The repertoire of works expanded on a global scale with large exhibits on Chinese painting and excavations, African art, and the art of the Mamluks and the Mughals. And new hybrid genres emerged. Performance art combined music, visual art, literary expression, and theatrical performance (Kraft 1989, 64–65). Interart forms crafted from new media and digital technology also began appearing, and multi-genre forms emanated from cultural movements for identity and equality, such as the Black Arts movement and the Chicano Performing and Graphic Arts.

Scholarship changed in kind. During the late 1980s, historical empiricism and traditional-style analysis dominated the mainstream, but talk of “new art history” grew. Selma Kraft identified two general directions of change. One—from the social sciences—accentuated production and use, focusing on political, cultural, social, and economic conditions under which art is made and on subjects such as patronage, the art public, and workshop practices. The other—closer to the humanities—drew on critical, semiotic, and deconstructionist approaches, especially from literary theory and philosophy. The new art history critiqued assumptions about self-evident meaning and uniformities of interpretation that ignore differences of ethnicity, race, gender, and class. Scholars also began treating artworks as texts and structures of signification whose meaning depends on the interpretation that is applied. They weighed the relative merits of disciplinary methods and protocols, examined origins of the discipline, and explored processes of professionalization. They expanded the discipline’s relationship with art criticism, aesthetic philosophy, markets, exhibitions, and museology. They used insights from Marxism to understand
social and economic determinations. They imported explanations of repressed instincts from psychoanalysis, power relationships from political theory, institutions from sociology, and structures from anthropology (Kraft 1989, 65–66). The new art history is not focused solely on the present. Scholars are returning to earlier periods to understand, for instance, paleolithic imagery and marking and palimpsesting through the lens of alternative critical approaches. They are also bringing new insights to bear on iconography, attribution of works, and genre definition (Preziosi 1989, 155).

New developments also made inroads within the discipline of music, though more slowly. Arnold Schoenberg’s first non-triad, non-tonal compositions in 1907 were a symbolic turning point. Schoenberg’s twelve-tone system was the starting point for contemporary avant-garde compositional theory (Kerman 1985, 69). Over the course of the century, the nature of “music” continued to change. Artists such as John Cage sought a unique sound corpus for each composition and allowed the indeterminacy of chance and randomness to determine musical materials and order. Noise, and even silence, gained a place in the definition of music. In the 1960s, borrowing also became a major compositional practice, initially in quotations of established Western tonal forms, then early historical styles and popular, folk, and non-Western music. New hybrid genres such as performance art further challenged the traditional boundaries of discipline, and orchestras and opera houses began to combine recent and older music and to play secondary composers. The current pluralism, Robert Morgan concluded, has rendered music a “melange of conflicting subcultures” that interact in complex ways, challenging the notion of a dominant musical mainstream (1992, 57).

Scholarship expanded in kind. Initially, Levy and Tischler (1990) recall, aesthetic and antiquarian interests dominated. Three approaches prevailed well into the twentieth century: biographies, sentimental local studies, and compendia of music groups, performers, and institutions. Concert or art traditions were privileged, though some early composers drew on vernacular sources. Over time, music histories broadened to include historical and cultural contexts, the social and political role of music, popular genres, women and other cultural groups, and oral and regional traditions. In the late 1950s and early 1960s, empirically grounded
facts and historicism were prioritized (Shepherd 1991, 190). New scholarship redefined meaning as an interplay of musical texts, cultural contexts, dynamics of performance, and the experience of listeners. Marxists critiqued essentialist binaries, especially separations of serious and popular music and the individual and the social. Poststructuralist criticism linked notions of truth with systems of power, interrogating the master narrative of tonality. Postmodernist critique of global universalizing stimulated interest in local, everyday, variable, and contingent aspects of music making. Deconstructive analysis unveiled operations of power related to gender, race, and class. Feminist, gay, lesbian, and Black scholars uncovered the history of lesser-known composers. Heightened interest in popular and folk cultures also stimulated studies of contemporary genres, communication-centred folklorists began examining the social organization of community music making, and musicologists borrowed ethnomusicological methods and fieldwork techniques from anthropology to study the distant past (Allen 2001, 185; for fuller accounts of the changes in this section, see Klein 2005, 83–150).

**Discipline and Method**

Inevitably, fears about disciplinary purity arose. Disciplinarity is defined in various ways: as a subject matter, a system of control, and a process of knowledge production. Likewise, its relationship with interdisciplinarity is defined differently: as a corrective or counterforce and as a complementary partner in the process of knowledge production. In his opening keynote address at the symposium in Edmonton, Martin Jay treated disciplines as “relational networks,” highlighting their dynamic properties in the larger force field of knowledge formations. The metaphors of “force field” and “network” acknowledge the boundary work of claims making while calling attention to the porosity of boundaries that shift, fracture, dissolve, and reformulate. Speaking from the vantage point of art history, Donald Preziosi observed that disciplinarians also position themselves differently: as interventionists working from outside traditional disciplines, as integrationists striving to create a larger field, and as agents of a critical return to an original conceptual foundation. The salient issues in debates on the discipline hinge in no small part on boundaries and the proper domain or object of study (1989, xiii, 2, 7, 18, 157–58).
In literary studies, opponents of change revalidated the Renaissance ideal of *literae humaniores*, rejected the arcane language of Theory, and resisted the distractions of politics. In art history, the tension between traditional connoisseurship and a new social history of art reinvigorated earlier debate on the ground of an expanding canon and critical approaches, amplified by tensions between modernist and poststructuralist semiotics. In music, a similar debate on intrinsic versus extrinsic meaning gained momentum, driven by the expanding plurality of objects, greater attention to contexts of aesthetic production and reception, and widening interest in ethnomethodology and popular culture. Inevitably, too, talk of a “new interdisciplinarity” arose in the humanities. E. Ann Kaplan and George Levine aligned it directly with increased recognition of the arbitrary nature of disciplinary boundaries (1997, 3–4). In a widely cited polemic, though, Stanley Fish (1985) challenged the underlying logic of new interdisciplinarity. As an agenda, interdisciplinarity seems to flow naturally from the imperatives of left culturalist theory. Yet, Fish argued, any strategy that calls into question the foundations of disciplines theoretically negates itself if it becomes institutionalized.

Others weighed in when the Modern Language Association (MLA) published results of a call for responses to the question of whether interdisciplinarity is actually being achieved. Alan Rauch replied that the profession’s sense of the idea had not changed much. The figure of the eclectic polymath remained predominant, validating disciplinary boundaries and suggesting that interdisciplinarity is about capacity and retention more than synthesis and analysis. Yet the popular image of interdisciplinary programs disguises the more complex cultural matrix of inquiries, including Rauch’s own field of science, technology, and society studies, where a more sophisticated dissolution of disciplinary boundaries has occurred in research and curriculum. Derek Attridge concurred. Attridge distinguished feminism, deconstruction, and cultural studies from the absorptive process and called the creation of new disciplines an “inherent” function of interdisciplinarity, though it runs the risk of producing inhibiting codes and cultures (“Forum” 1996).

Changes are also apparent in the methodological tool kits of disciplines. Borrowing has increased across boundaries, and a greater hybridity of method has challenged the long-held assumption that
theoretical-textual modes are the business of humanists and data-driven modes are the lot of social scientists. In the rapidly growing field of digital humanities, for instance, the shift from page to screen is marked by greater use of technological methodologies in computational linguistics and text editing, as well as intersections with the social sciences in studies of networked identity and subjectivity. Angus also called attention to a new synthesis in communication studies formed by intersections of social science research on mass media’s impact on society, the classical tradition of rhetoric, and investigations of interpersonal communication. In the field of cultural studies, traditional humanistic approaches are also being combined with cultural anthropology and new ethnography, oral history, social history and the study of material culture, reader-response criticism, and transnational perspectives. Sometimes methods are combined, meshing survey research with ethnography, information from marketing research with utopian conceptions of empowered consumers, and textual or ethnographic analysis with social, political, and cultural commentary. Methods usually reflect original disciplinary training, amplified by situational borrowings (Nelson, Treichler, and Grossberg 1992, 2–3, 10–11). At the same time, traditional approaches continue. Archival work has been crucial to establishing accurate editions, taxonomies, bibliographies, discographies, and authentic performances. Traditional skills of textual analysis, narratology, iconography, and musicology are also being redeployed in the study of new objects (Goodwin and Woolf 1987, 135).

Nonetheless, limits persist. In popular music studies, John Shepherd reported, contexts are often isolated and individuals are still influenced by the problematics of their own disciplines and fields. Neither of the two principal disciplines that have contributed to popular music studies—sociology and musicology—has adequate theoretical protocols for understanding the meaning of popular music. Sociologists tend to believe answers to the question of meaning are found in contextual processes—social, historical, cultural, economic, political, psychological, and biographical in nature—that are extrinsic to an event but imbue it with meaning and significance. Musicologists tend to believe answers lie in textual processes—oriented to sonic, motional, verbal, and visual properties (1991, 197, 204–8). In English studies, Linda Pratt (2002) reported, research still tends to be solitary, incorporating fragments of
history, sociology, ethnography, and psychology as contexts for a broad
definition of texts. The surface evidence of publication, Jacqueline Henkel
commented in the MLA Forum, suggests that scholars and teachers are
invested in interdisciplinary research. Yet models and modes of discourse
in other fields are not regularly examined. Sara Van den Berg also cited
the crossfire of legitimation. Some psychoanalysts smirk at literary crit-
ics’ assumption that psychoanalytic theory stopped with Freud (or Jung,
Winnicott, or Lacan). Literary critics smile back at psychoanalysts’
assumption that literary theory stopped with New Criticism. Sociologists
criticize literary critics for pirating odd bits of sociological thinking, but
come under attack themselves for “content analysis” of literature without
regard for interpretation or aesthetic qualities (“Forum” 1996).

Claims for cultural studies are checked by limits as well. Cultural stud-
ies, Jo-Ann Wallace (1995) warns, holds the potential for collaborative
work, more flexible exchanges and groupings, and new questions and
knowledge. Yet the “easy slippage” into cultural studies poses a serious
threat to small disciplines, such as art history, film studies, classics, and
philosophy. Joining a modern languages department or a comparative
cultural studies department might result in productive collaboration, but
the integrity of subjects does not follow naturally when faculty members
are moved around. Even if faculty in English studies can “do” cultural
studies, Wallace cautions, they cannot necessarily teach art history, film,
philosophy, or other disciplines. The utopic promise of new interdiscipli-
narity collapses in a superficial eclecticism promoted under the banner
of a dubious fusion of literature, art, music, and other humanities. The
renewal of the cultural function of literature (and other humanities dis-
ciplines) also collapses. It is no longer waged on the ground of liberal
humanism but a polyglot specialization in a field crowded with compet-
ing subspecialities.

THE TERMINISTIC SCREENS OF INTERDISCIPLINARITY

The meaning of interdisciplinarity was implicated at every turn in the
changes described in the first section of this essay. Proponents distin-
guished their individual projects, but new discourses fostered a new
generalism that countered both the traditional unified vision of culture in the humanities and the modern system of disciplinarity. The new generalism was not a unified paradigm. It was a cross-fertilizing synergism in the form of common methods, concepts, theories, and a shared metalanguage. A new rhetoric of interdisciplinarity developed in kind. “Plurality” and “heterogeneity” replaced “unity” and “universality.” “Interrogation” and “intervention” supplanted “synthesis” and “holism,” and older forms of “interdisciplinarity” were challenged by new “anti,” “post,” “non,” and “de-disciplinary” formulations. A host of other terms also appear in the discourse on interdisciplinarity, from “indiscriminate” and “auxiliary” to “free-range” and “cosmological” forms. Harvey Graff, elsewhere in this volume, has criticized “the swamp of confusing, conflicting, and contradictory definitions,” branding the proliferation of hyphenated coinages “silly, even funny.” Yet comparative analysis of nomenclature is crucial to understanding overlapping and differing claims, patterns of practice, and institutional priorities.

Kenneth Burke’s notion of “terministic screens” is particularly helpful for thinking about nomenclature. We must use terministic screens, Kenneth Burke admonished, since we can’t say anything without using terms. Furthermore, labels screen, filter, direct, and redirect attention in certain directions rather than others. Burke distinguished two basic types: terms that put things together and terms that take them apart. “The choices we make,” he added, “constitute an additional kind of screen that directs attention to one field or another, and even within a single field further screens direct attention while shaping the range of observations implicit in particular words.” Nomenclature, therefore, is not simply a “reflection” of reality, it is also a “selection” and a “deflection” of reality (1966, 45–46, 49–50). The earliest uses of the keyword “interdisciplinary” have been traced to the opening decades of the twentieth century, in social science research and the general education movement. The most prominent terminology, though, derives from a typology presented at the first international conference on interdisciplinary research and teaching, sponsored in part by the Organisation for Economic Co-operation and Development (OECD) in 1970 (OECD 1972). The three most widely cited labels in the typology are “multidisciplinary,” “interdisciplinary,” and “transdisciplinary.” Figure 6.1 groups a number of prominent terms from
the discourse and Graff’s litany of examples in order to help us understand the patterns of meaning they screen. (For more extensive considerations of terminology, see Klein 2009, 2010.)

**The Interdisciplinary Spectrum**

**Multidisciplinary**
- juxtaposing
- sequencing
- coordinating

**Interdisciplinary**
- integrating
- interacting
- linking
- focusing
- blending
- intermeshing

**Transdisciplinary**
- transcending
- transgressing
- transforming

**Degrees of Integration and Disciplinary Interaction**

<table>
<thead>
<tr>
<th>Partial integration</th>
<th>Full integration</th>
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<tbody>
<tr>
<td>Bridge building</td>
<td>Restructuring</td>
</tr>
</tbody>
</table>

| Encyclopedic | Contextualizing | Auxiliary | Generalizing |
| Discriminate | Composite | Supplementary | Integrative |
| Pseudo | Structural | Conceptual | Unifying |

**Degrees of Scope and Team-Based Collaboration**

<table>
<thead>
<tr>
<th>Narrow</th>
<th>Broad or wide</th>
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<tbody>
<tr>
<td>Shared</td>
<td>Cooperative</td>
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</table>

**Other Key Distinctions**

- Methodological versus theoretical
- Instrumental versus critical
- Endogenous versus exogenous

Figure 6.1. Typologies of interdisciplinarity
(adapted from Klein, “The Taxonomy of Interdisciplinarity” [2010])

The groupings depict two major sets of differences: (1) of integration and interaction of disciplines, and (2) goals and purposes. At the
Multidisciplinary end of the spectrum, juxtaposing and sequencing disciplines fosters greater breadth of knowledge, information, and methods. Yet the relationship of disciplines is loose and restricted, their elements retain an original identity, and the existing structure of knowledge is not questioned. The descriptors *encyclopedic*, *indiscriminate*, and *pseudo* signal the widespread belief that these are “weak” forms or even “false” forms. In *Contextualizing Interdisciplinarity (ID)*, Margaret Boden stipulates that disciplines are taken into account for informative context or background but without active co-operation. In *Composite ID*, when complementary skills are applied to address complex problems or to achieve a shared goal, production of knowledge also retains a strong disciplinary thrust, even when results are integrated within a common framework (1999, 15–16). In the biosciences, for instance, technical knowledge from many fields and expensive instruments are often shared.

When integration and interaction become more substantial and proactive, the line between Multidisciplinary and Interdisciplinary is crossed. The major actions are *focusing*, *blending*, and *linking*. Scope still differs, though. The degree of integration varies on a spectrum from Partial to Full, and the relationship of disciplines varies from Narrow to Broad or Wide depending on the compatibility of their methods, paradigms, and epistemologies as well as the number of disciplines involved in any particular field or project. Many believe that interdisciplinarity is also synonymous with collaboration. It is not, and degrees of interaction also vary, from Shared interest in a common problem or question to Co-operative teamwork. Two further distinctions are also important, between Methodological and Theoretical ID. The typical motivation in Methodological forms is to improve the quality of results, usually through borrowing a method or concept in order to test a hypothesis, to answer a research question, or to help develop a theory. In a typology of interdisciplinary approaches to the social sciences, Raymond Miller (1982) identified two major sources: *Shared Components* (such as research methods of statistical inference) and *Cross-Cutting Organizing Principles* (focal concepts such as “role” and “exchange”). In addition, the roster of examples includes techniques of surveying and interviewing and the conceptual principles of systems theory, information theory, and communication theory. Here too, degree
of integration and interactions differ, from Auxiliary to Supplementary to more fully interdependent Structural relationships.

Theoretical ID entails a more comprehensive general view, conceptual framework or synthesis that is associated with a number of other distinctions as well, including Transdisciplinarity. Its Generalizing function is not a lower-level encyclopedic embrace but a focused theoretical perspective applied across wide range of disciplines, such as cybernetics or complexity theory. At this level it is not unusual to hear talk of “true” or “genuine” interdisciplinarity. Boden (1999) deemed Integrated ID “the only true interdisciplinarity,” achieved when new conceptual categories and methodological unification emerge. Comparably, Lisa Lattuca considers Conceptual ID to be a “true or full” form, because core issues and questions lack a compelling disciplinary basis, and a critique of disciplinary understanding is often implied (2001, 117). Theoretical ID also illustrates the difference between two fundamental metaphors of interdisciplinarity identified in a report by the Nuffield Foundation (1975)—Bridge building and Restructuring. Bridge building occurs between complete and firm disciplines. Restructuring detaches parts of several disciplines to form a new coherent whole, illustrated by the search for alternative methodological and conceptual categories within the behavioural science movement and the formation of new fields such as area studies. Miller also identified four categories of new fields and hybrid specializations in his typology: Topics (e.g., crime, labor, urban, and environment), Life Experience (e.g., ethnic studies and women’s studies), Hybrids (e.g., social psychology, political sociology), and Professional Preparation (e.g., social work and nursing).

Figure 6.1 contains another important distinction that has become a fault line in the political economy of interdisciplinarity—instrumentality versus critique. The keywords of the new rhetoric in the humanities signalled the evolution of a form of “critical interdisciplinarity” that countered “instrumental” goals aligned with “strategic,” “pragmatic,” and “opportunistic” motivations. Instrumental goals are prominent in economic, technological, and scientific problem solving, especially in science-based areas of international economic competition such as computers, biotechnology, manufacturing, and industry. In this instance, interdisciplinarity serves the needs of the market and national priorities.
without regard for questions of epistemology or institutional structure. In contrast, “critical interdisciplinarity” interrogates the existing structure of knowledge and education, raising questions of value and purpose that are silent in instrumental forms lacking reflexivity. Critical forms interrogate disciplines and institutional structures with the aim of transforming them and, in the strongest version of this argument, posit the collapse of disciplines in a “postdisciplinary” transformation in thinking about knowledge and culture.

Bryan Turner (1990) drew a parallel distinction between two trends in the medical curriculum. When interdisciplinarity is conceived as a short-term solution to economic and technological problems, pragmatic questions of reliability, efficiency, and commercial value take centre stage. On the contrary, interdisciplinarity emerged as an epistemological goal within social medicine and the sociology of health. Researchers focused on the complex causality of illness and disease, factoring in psychological, social, and ethical factors within a holistic biosocial or biopsychosocial model that were missing from the hierarchical biomedical model. The distinction between instrumental and critical forms is not absolute. Research and education on problems of the environment and health often combine critique and problem solving. The objects of critique in critical interdisciplinarity also vary. The most prominent targets have been the absorptive tendency noted in the MLA Forum and the prioritizing of research funding for strategic problem solving. Mark Kann’s typology of forms of interdisciplinary explanation captures the conflicting positions. Conservative elites want to solve social and economic problems, without concern for epistemological questions. Liberal academics demand accommodation but maintain a base in the existing structure, in the middle ground of harmonious interaction. Radical dissidents challenge the existing structure of knowledge, demanding that interdisciplinarity respond to the needs and problems of oppressed and marginalized groups in order to achieve greater equality (1979, 197–98).

Ultimately, W.J.T. Mitchell argues, everything depends on what sort of interdisciplinarity is being practised. Mitchell distinguished three major types that have been prominent in the humanities:
(1) \textit{top-down}: comparative, structural formations that aim to know an overarching system or conceptual totality within which all disciplines are related;

(2) \textit{bottom-up}: a compulsive and compulsory interdisciplinarity that is dictated by a specific problem or event;

(3) \textit{inside-out}: the indisciplined or anarchist moment, a site of convergence and turbulence. (1995, 541)

The top-down model hearkens back to a Kantian architectonic of learning, in a pyramidal or corporate organization of knowledge production capable of regulating flows of information from one part of the structure to another. It appears in philosophy and in critical theory, in claims for a utopian convergence of theory and practice and in the promotion of semiotics as a universal metalanguage for studying culture. Mitchell’s bottom-up model emerges “on the shop floor,” in response to emergencies and opportunities. Cultural studies is a general form of the bottom-up model. The inside-out form is aligned with the “indiscipline” of breakage or rupture. It disturbs continuity and practice, though ruptures can become routinized, as the rapid transformation of deconstruction into an institutionalized method of interpretation demonstrated. The “anarchist” moment, Mitchell maintains, may well be the most important event. It is the moment when routine or ritual is reasserted (1995, 541). Comparably, Salter and Hearn (1996) highlight interdisciplinarity’s role as the “churn in the system,” and Gunn argues that the result of much of interdisciplinary study, if not its ostensible purpose, is “to dispute and disorder conventional understandings of relations between such things as origin and terminus, center and periphery, focus and margin, inside and outside.” Ultimately, interdisciplinarity is a double-sided question. Relational studies of the conjunctive kind proceed from the question of what disciplines have to do with each other. “Genuine” interdisciplinarity, Gunn maintains, alters the constitutive question that generates interdisciplinary inquiry in the first place, asking how insights and methods of another field or structure can remodel understanding of what literature is, for instance, and the ways literary conceptions and approaches remodel allied fields and subject materials. Ethical criticism and American studies exemplify this aim too. The radical project exposes the political nature of
the distinction, with the aim of transforming not only academic structure but the larger structure of social articulation (1992a, 241–43, 249; 1992b, 187–88, 193–97; see also Klein 1996, 173–208).

All terminology embodies principles of continuity or discontinuity, and even continuing terms assume new meanings in new applications (McKeon 1971, 50). Transdisciplinarity is a compelling case. Graff, in his essay in this volume, associates the term with the “evangelical chapel of transdisciplinarity,” aligning it with a particular vision advanced at the First World Congress and subsequent charter by the Centre International de Recherches et Études Transdisciplinaire (CIERT). The term, though, has a complex history, and its recent heightened importance is a significant benchmark of new ways of thinking about interdisciplinarity. The term is traced conventionally to the OECD typology, where it connoted a set of common axioms that transcend the narrow scope of disciplinary world views through an overarching synthesis such as anthropology conceived as a comprehensive science of humans (OECD 1972, 26). Characteristic of the time, the prominent conceptual vocabularies were general systems theory, structuralism, and cybernetics. The term had limited circulation at first but proliferated in the closing decades of the century. It now appears as a descriptor of broad fields and synoptic disciplines, a team-based holistic approach to health care, a general ethos, and a comprehensive integrative curriculum design. At present, there are four major trend lines of definition.

The first trend line is an extension of the original connotation. Miller defined transdisciplinarity as conceptual frameworks that transcend the narrow scope of disciplinary world views. Holistic in intent, they propose to reorganize the structure of knowledge (1982, 21). General systems theory, structuralism, semiotics, Marxism, feminism, ecology, sociobiology, and cultural theory have been leading examples. The assertion of new transcendent paradigms led to criticism, even when their proponents opposed the totalizing intent of grand narratives. Yet, Kellner advises, lumping all grand narratives together ignores the diversity of theoretical narratives that operate in culture and in the name of interdisciplinarity. Kellner contrasts Lyotard’s generalized critique of “master narratives” that attempt to subsume every particular viewpoint into one totalizing theory—such as science, liberal humanism, some versions of Marxism,
or feminism—with “grand narratives” that attempt to tell a particular Big Story—such as the rise of capitalism, patriarchy, or the colonial subject. Within grand narratives, metanarratives that tell a story about the foundation of knowledge can also be distinguished from macro social theory that attempts to conceptualize and to interpret a complex diversity of phenomena. Synchronic narratives that tell a story about a given society at a given point in history are further distinct from diachronic narratives that analyze historical change, accounting for discontinuities and ruptures (1988, 252–53).

More recently, a parallel development has appeared in the emergence of transdisciplinary team science in broad areas such as cancer research, where shared conceptual and methodological frameworks not only integrate but transcend their respective disciplinary perspectives. This emergence of transdisciplinary team science embodies Patricia Rosenfield’s (1992) notion of a “transcendent interdisciplinary research” that fosters systematic theoretical frameworks for analyzing social, economic, political, environmental, and institutional factors in human health and well-being. Team members representing different fields work together over extended periods, and their collaborations are fostering new forms of collaborative research, methodologies, training programs, and career development outcomes legitimated by efforts to institutionalize the concept in the US National Cancer Institute. Collaborations of this kind, though, are more difficult to achieve and sustain owing to their greater complexity and aspirations for transcendent, supra-disciplinary integrations (Stokols et al. 2008).

A second trend line appears in the contemporary version of the ancient quest for systematic integration of knowledge. This quest spans ancient Greek philosophy, the medieval Christian summa, the Enlightenment ambition of universal reason, Transcendentalism, Umberto Eco’s speculation on a perfect language, the Unity of Science movement, the search for unification theories in physics, and E.O. Wilson’s theory of consilience. Reviewing the history of this particular terministic screen, philosopher Joseph Kockelmans (1979) found that it has tended to centre on educational and philosophical dimensions of sciences. In contrast to the past, however, the search for unity today does not follow automatically from a pre-given, presupposed order of things. It must be continually “brought
about” through critical, philosophical, and supra-scientific reflection. It also accepts plurality and diversity. This value is prominent in ciret, where a new universality of thought and type of education is being developed informed by the world view of complexity in science. This form of transdisciplinary vision replaces reduction with a new principle of relativity that is transcultural, transnational, and encompasses ethics, spirituality, and creativity (http://perso.club-internet.fr/nicol/ciret).

A third trend line is apparent in the transgressive operations of critical interdisciplinarity. In the 1990s, “transdisciplinarity” began appearing more often as a label for knowledge formations imbued with a critical imperative. Michael Peters associated the term with creating new theoretical paradigms, questions, and knowledge that cannot be taken up within the boundaries of existing disciplines (1999, xn3). Ronald Schleifer (2002) linked “the new interdisciplinarity” with theory and transdisciplinary or cultural study of large social and intellectual formations that have breached canons of wholeness and the simplicity of the Kantian architecture of knowledge and art. The transdisciplinary operation of cultural studies, Kellner noted, draws on a range of fields to theorize the complexity and contradictions of media/culture/communications. It moves from text to contexts, pushing boundaries of class, gender, race, ethnicity, and other identities (1995, 27–28). In women’s and gender studies, Dölling and Hark aligned transdisciplinarity with critical evaluation of terms, concepts, and methods that transgress disciplinary boundaries (2000, 1196–97). And, in Canadian studies, Jill Vickers (1997) aligned the transgressive connotative of critical interdisciplinarity with “trans-” and “anti-disciplinarity” with movements that rejected disciplinarity in whole or in part while raising questions of socio-political justice.

Some fields, Vickers elaborated, were problem-driven. Environmental studies is an oft-cited example. Others were part of broad societal movement for change, including the women’s movement and the Quebec and First Nations’ movements for self-determination. Asserting “anti-disciplinary” positions, they tend to use materials in ways dictated by their own transdisciplinary theories, cultural traditions, and lived experience. A greater number of graduate students now have interdisciplinary undergraduate degrees and experience in inter- or transdisciplinary fields or a combination of interdisciplines (such as art, history, political
economy) mixed with transdisciplinary fields (such as women’s or Native/Aboriginal studies). Two forces are apparent: an “integrative” tendency, evident in Canadian studies as area studies, and a self-asserting “disintegrating tendency” that draws the focus away from the centre of existing knowledge systems, evident in critical, oppositional, or self-studies. In transdisciplinary or anti-disciplinary movements, Vickers adds, students may reject epistemological claims of disciplines altogether, preferring alternative understandings of “knowledge” and “evidence” that incorporate notions of “non-disciplinary knowledge” embedded in everyday life, including traditional Aboriginal knowledges and emergent knowledges motivated by critical social movements. Both Angus and Lorraine Code have called attention to the latter in their contributions to this volume.

A fourth trend line has become prominent in Europe and North-South partnerships. The core premise is that problems in the lifeworld need to frame research questions and practice in new trans-sector collaboration, not problems in the disciplines. The growing prominence of problem-focused interdisciplinarity was signalled in 1982 by a distinction that appears in figure 6.1. Based on a conference and recent reports, the OECD declared that Exogenous Interdisciplinarity now has priority over Endogenous University that originates within science. The Exogenous originates in “real problems of the community” and the demand that universities perform their pragmatic social mission (OECD 1982, 130). The trend was further evident in the late 1980s and early 1990s in German and Swiss contexts of environmental research that involved the participation of stakeholders in society. By 2000, at a major international conference on transdisciplinarity, case studies were reported in all fields of human interaction with natural systems and technical innovations as well as the development context (Klein et al. 2001).

Not all problems are the same, however, underscoring the importance of comparative study of terministic screens. Transdisciplinary collaborations between academic researchers and members of the private sector for the purpose of product development promote very different goals than projects focused on democratic solutions to social, environmental, and political problems. Both, though, are being advanced today under the label of transdisciplinarity. The escalation of this keyword signals a new phase in the history of the keyword “interdisciplinarity.” Framed
historically by ancient warrants of unity and universality, the underlying concept evolved over the course of a century to serve multiple purposes, pluralizing the discourse and introducing new thematics of critique, complexity, collaboration, and problem solving. The rhetorical boundary work of terministic screens continues to create, legitimate, maintain, challenge, and reformulate meaning and practice (Klein 2009).

NOTE


WORKS CITED


