

# Interdisciplinarity

*Some Lessons from John Dewey*

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**I**nterdisciplinarity is, without a doubt, a contested concept. Its meaning is often in dispute. It is also much more difficult to say exactly what it is, to positively define it, than it is to say what it is not, or to negatively define it. For instance, we can say with some confidence that it is *not* rigid observance of the boundaries of a single discipline. It is also *not* a matter of declaring a single discipline the ideal and expecting scholars in other disciplines to model their inquiries after a pattern found in that supreme discipline (as in the declaration by some positivists that physics is the “queen of the sciences”).

So, let us take up the more difficult question: What is interdisciplinarity, positively-speaking? One way to begin answering this question is to identify some less controversial features. An interdisciplinary approach generally aims (1) to bridge between academic disciplines, subdisciplines or schools of thought; (2) to recruit a wide range of teachers, students, researchers, professionals and even technologies in order to gain a more complete perspective; (3) to assemble tools or approaches from multiple disciplines in order to resolve an especially challenging problem; and (4) to cross traditional academic boundaries for the purpose of improved research or teaching.<sup>1</sup>

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<sup>1</sup> Several scholars have offered generic definitions of interdisciplinarity. See, for instance, J. J. Kockelmans, “Why Interdisciplinarity?” in J. J. Kockelmans, ed., *Interdisciplinarity and Higher Education* (University Park: Pennsylvania State University Press, 1979), 123-60 and J. T. Klein, *Interdisciplinarity* (Detroit:

Given the recent upsurge in interdisciplinary research, teaching and educational programs, one might have the impression that interdisciplinarity is something “new on the scene.” However, this is not the case.<sup>2</sup> Interdisciplinarity, and particularly the related notion of *consilience*, can be traced back to philosophers in ancient Greece. Often attributed to Pythagoras and his followers, consilience means that there exists a unity of knowledge, a single rational order to the cosmos.<sup>3</sup> It was this enduring notion of consilience that would inspire the twentieth-century Unity of Science Movement to demonstrate that all sciences—whether, natural, physical or social—are of the same cloth.<sup>4</sup> However, the danger of consilience is that such unity can come at the cost of

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Wayne State University Press, 1990). A definition worth quoting at length is Moti Nasani’s: “Interdisciplinarity is best seen as bringing together distinctive components of two or more disciplines [defined as any comparatively self-contained and isolated domain of human experience which possesses its own community of experts]. In academic discourse, interdisciplinarity typically applies to four realms: knowledge, research, education, and theory. Interdisciplinary knowledge involves familiarity with two or more disciplines. Interdisciplinary research combines components of two or more disciplines in the search [for] or creation of new knowledge, operations, or artistic expressions. Interdisciplinary education merges components of two or more disciplines in a single program of instruction. Interdisciplinary theory takes interdisciplinary knowledge, research, or education as its main object of study.” “Ten Cheers for Interdisciplinarity,” *The Social Science Journal*, vol. 34, no. 2 (1997): 203. In personal correspondence, Colin Koopman notes that he prefers the terms *counter-disciplinary* and *cross-disciplinary* to *interdisciplinary*, since they connote the connections among and between disciplines as well as the more radical goal of disintegrating the notion of a discipline altogether.

<sup>2</sup> It would be more accurate to call interdisciplinarity a resurgent concept. See J. G. Gaff, “The Resurgence of Interdisciplinary Studies,” *National Forum*, vol. 69 (1989): 4-5.

<sup>3</sup> Pythagoreans believed that that cosmic order was rational because it is based on numbers. See Aristotle’s account in *Metaphysics*, translated by W. D. Ross (Stilwell, KS: Digireads.com 2006), 985b 31-986a 3.

<sup>4</sup> Edward S. Robinson claims that the “ambitions of the [Unity of Science] group are fairly modest. Procrusteanism is deliberately eschewed; there is no attempt to fit all the existing sciences into one all-embracing philosophical system or super-science imposed from above.” “The Unity of Sciences Movement and the Social Sciences,” *Proceedings of the Oklahoma Academy of Science* (1939): 129-130.

difference, plurality and tolerance of diverse disciplinary approaches.

As I will try to show, the lineage of interdisciplinarity (or the concept of interdisciplinarity) also runs through the writings of John Dewey, the late-nineteenth and early-twentieth-century American philosopher who, along with William James and Charles Sanders Peirce, founded what we now call *pragmatism* (or classic pragmatism). By focusing on Dewey, though, I do not wish to minimize the contributions of other key thinkers. So, I will touch on two of these first: Arthur Fisher Bentley and Max Weber.

Bentley received his doctoral training in sociology in late nineteenth-century Germany, before going on to research, write and publish in a wide array of disciplines: philosophy, linguistics, psychology, mathematics, political science and the physical sciences.<sup>5</sup> If interdisciplinarity was one thing for Bentley, it was a method of inquiry, a way of investigating phenomena by recourse to multiple approaches inside a “laboratory”:

A laboratory in the most significant sense is not a building of brick or stone, containing instruments perhaps of steel or of glass. Rather it is a region of standards and techniques of research, where selected happenings in the world are brought into specialized forms and given

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<sup>5</sup> As a biographical aside, Bentley’s career as a scholar-teacher was anything but exemplary. After returning from Germany, he tried to teach a graduate course at University of Chicago and the students could not understand him, leading him to give up teaching in frustration. He decided to audit several courses taught by John Dewey during the years of 1896 and 1897, before writing what would in time become a classic in the discipline of Political Science, *The Process of Government*. Later, living at his parents’ farm off of inherited wealth, he collaborated with Dewey on a work about language and knowledge called *Knowing and the Known*. See A. F. Bentley, *The Process of Government* (Cambridge: Belknap Press, 1967 [1907]), and J. Dewey and A. F. Bentley, *Knowing and the Known* (Westport: Greenwood Springs Publishers, 1949). For a more complete account of Bentley’s life and life’s work, see Sidney Ratner’s introduction to *John Dewey and Arthur F. Bentley: A Philosophical Correspondence, 1932-1951*, eds. Ratner, Altman, and Wheeler (New Brunswick, NJ: Rutgers University Press, 1964), 24-36.

observation under careful conditioning to permit their more accurate knowledge.<sup>6</sup>

Bentley noted the difficulty of engaging in interdisciplinary inquiry, especially when a scholar's graduate training is confined to a single discipline. "The continents go," he said, "and the islands [too]."<sup>7</sup> In other words, when engaging in interdisciplinary research, there is no firm ground upon which to stand; you feel like you are constantly at sea with no firm footing!

For those readers who do not recognize Bentley's name, Max Weber's is perhaps more familiar. In 1918, Weber delivered a lecture called "Scholarship as a Vocation," attempting to capture the underling *geist* or spirit of the scholarly enterprise. Weber begins the lecture by asking: "What are the prospects of a graduate student who is resolved to dedicate himself professionally to scholarship in university life?"<sup>8</sup> It is an interesting question, for it is another way of asking: What is the research ideal? What does it mean to conduct research and to do it in a way that one's peers would recognize as excellent? In a discussion of these questions, Anthony Kronman connects Weber's views with the state of modern American graduate studies. As he points out, graduate school is our common experience, our rite of passage, our crucible or trial by fire, an experience that binds nearly all university and college professors together as a tight-knit community of scholars. There are certain things we all tend to learn in graduate school:

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<sup>6</sup> A. F. Bentley, *Behavior, Knowledge, Fact* (Bloomington, IN: Principia Press, 1935), 5. Consistent with the laboratory metaphor, Bentley opens *The Process of Government* with the poignant declaration: "THIS BOOK IS AN ATTEMPT TO FASHION A TOOL."

<sup>7</sup> *Ibid.*, 183.

<sup>8</sup> Max Weber, "Scholarship as a Vocation," in H. Gerth and C.W. Mills, eds., *From Max Weber* (New York: Oxford University Press, 1946); quoted in A. T. Kronman, *Education's End: Why Our Colleges and Universities Have Given Up on the Meaning of Life* (New Haven and London: Yale University Press, 2007), 91.

1. Disciplines are distinct “fields” of inquiry, each divided as intellectual work for intellectual laborers;
2. these fields are “specialties,” each addressing a sub-set of questions and employing distinct methods to answer them;
3. each field has a separate “literature” or body of knowledge;
4. “cutting edge” represents the best or most innovative contributions to the literature; and
5. to become a competent teacher-scholar, it is necessary to master the discipline’s literature and distinguish that which is cutting edge from that which is not.<sup>9</sup>

The point is that as graduate students we are trained to specialize, to narrow our attention to a very narrow slice of human knowledge, and only by accepting this specialization will we ever hope to contribute cutting-edge scholarship or original work to the existing literature in our separate disciplines—which is, of course, the most satisfying accomplishment of a researcher’s academic career.

Weber and several of his contemporaries in the nineteenth-century German universities understood the calling to become an academic in pseudo-religious terms. They saw the invitation to specialize and make an original contribution as part of an ideal that had its roots in higher spiritual values—sometimes referred to as the *Bildung* (literally meaning self-cultivation or inward development) ideal, a precursor of the modern research ideal.<sup>10</sup> For Weber, then, interdisciplinarity is positively-speaking an abomination, an outright failure to respond properly to one’s highest spiritual calling.

Institutionally-speaking, the legacy of the German *Bildung* is a university system that maintains strict divisions between disciplines and incentivizes the push towards increasing

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<sup>9</sup> Kronman, *Education’s End*, 92-95.

<sup>10</sup> *Ibid.*, 108-114.

specialization within each discipline. Though Weber was an opponent of interdisciplinarity, it is only against the background of the *Bildung* and the closely related modern research ideal that we can appreciate what it means to pursue an alternative—what might be called an *interdisciplinary ideal*. According to Robert Bullough, interdisciplinarity is distinct from disciplinary approaches in that it “requires the crossing of well-established intellectual divisions and social and institutional boundaries—divisions and boundaries that tend to encourage and reward insularity . . .”<sup>11</sup> One might even go so far as to call interdisciplinarity an insurgent strategy, especially in the context of a traditional university system.

So, what was interdisciplinarity, positively-speaking, for John Dewey? How did it differ from *Bildung*? First, in *Democracy and Education*, he argues against a hierarchy of educational values and in favor of a plurality of disciplines brought into the service of solving life’s problems:

We cannot establish a hierarchy of values among studies. It is futile to attempt to arrange them in order, beginning with one having least worth and going on to that of maximum value. In so far as any study has a unique and irreplaceable function in experience, in so far as it marks a characteristic enrichment of life, its worth is intrinsic or incomparable. Since education is not a means to living, but is identical with the operation of living a life which is fruitful and inherently significant, the only ultimate value which can be set up is just the process of living itself. And this is not an end to which studies and activities are subordinate means; it is the whole of which they are ingredients.<sup>12</sup>

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<sup>11</sup> R. V. Bullough, Jr., “Developing Interdisciplinary Researchers: What Ever Happened to the Humanities in Education?” *Educational Researcher*, vol. 35, no. 8 (2006): 9.

<sup>12</sup> John Dewey, *The Collected Works of John Dewey: Electronic Edition*, ed. L. Hickman (Charlottesville, VA: Intelix Corporation, 1996 [1882-1953]), MW 9:248. Citations follow the conventional method, LW (Later Works) or MW (Middle Works) or EW (Early Works), volume: page number. For example, MW 9:248 refers to the Middle Works, volume 9, page 248.

In the same text, he also argues for interdisciplinary instruction: “It [education] should aim not at keeping science as a study of nature apart from literature as a record of human interests, but at cross-fertilizing both the natural sciences and the various human disciplines such as history, literature, economics, and politics.”<sup>13</sup> Second, he introduces the metaphor of the “liaison officer” in his book *Experience and Nature*:

Overspecialization and division of interests, occupations and goods, create the need for a generalized medium of intercommunication, of mutual criticism through all-around translation from one separated region of experience into another. Thus philosophy as a critical organ becomes in effect a messenger, a liaison officer, making reciprocally intelligible voices speaking provincial tongues, and thereby enlarging as well as rectifying the meaning with which they are charged.<sup>14</sup>

Third, and lastly, he expands the “liaison officer” metaphor in *The Quest for Certainty*: “It [Philosophy] is a liaison officer between the conclusions of science and the modes of social and personal action through which attainable possibilities are projected and striven for.”<sup>15</sup> As I have argued for elsewhere, this expansion makes the philosophical liaison officer more than a translator between disciplines. He or she also becomes a liaison between those inside and outside of the Academy.<sup>16</sup>

How do interdisciplinary research and interdisciplinary collaborations get started? To some extent this is an empirical question. An adequate response would require surveying scholars who have begun interdisciplinary collaborations or strayed themselves into disciplinary realms other than their own. Lacking such data, though, we can still speculate. Two or more scholars are

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<sup>13</sup> Ibid., MW 9:294-95.

<sup>14</sup> Ibid., LW 1:306.

<sup>15</sup> Ibid., LW 4:248.

<sup>16</sup> Shane Ralston, “Recovering Pragmatism’s Practicality: Four Views,” *Philosophical Frontiers*, vol. 4, no. 1 (2009): 3-19.

working on the same problem, or scholars in different disciplines wish to make use of resources in the others' disciplines in order to solve a common problem. One contemporary pragmatist, Colin Koopman, calls this "adjacency" in describing how his own research coincided with the research of anthropologists working on similar problems:

These anthropologists were themselves engaged in reflection on the thought of pragmatists, and that is more or less how I became engaged with them. This led to our occupying positions in our research that can be described as adjacent to one another. We were not quite inside of one another's intellectual cocoons, but we were clearly adjacent to one another's intellectual instrumentalities. This adjacency resulted to the familiar experiences of surprise, provocation, and experimentation.<sup>17</sup>

Koopman's experience highlights how interdisciplinary collaborations emerge when researchers in different disciplines face the same problem in adjacent spaces of inquiry.

So, what are some lessons that Dewey might teach us about interdisciplinarity today? First, interdisciplinary inquiries represent opportunities for faculty to become innovators, even revolutionaries, to bring many disciplinary tools to bear on crucial problems (for example, homelessness, corruption, environmental degradation, alternative energy), some that have confounded previous generations working in their own divided (and sub-divided) disciplines. Second, interdisciplinary inquiries are opportunities for faculty researchers to discover new research "niches," working at the boundaries of multiple disciplines, thereby distinguishing their research from the inquiries of more specialized researchers (which is

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<sup>17</sup> Colin Koopman, *Pragmatism as Transition: Historicity and Hope in James, Dewey and Rorty* (New York: Columbia University Press, 2009), 37. The anthropologist Paul Rabinow originally used the term 'adjacency' to describe interdisciplinary overlap with respect to a research question or problem. For a similar account, more specific to interdisciplinary inquiry in human geography, see P. Raento, "Interdisciplinarity," in *International Encyclopedia of Human Geography*, eds. R. Kitchin and N. Thrift (St. Louis, MO: Elsevier, 2009), 517-22.



especially helpful when you do not have the same resources as a large research university, as is the case at many smaller academic institutions). Third, interdisciplinary collaborations foster greater collegiality by cultivating more appreciation and understanding of the scholarly methods, nomenclature and literature mastered by our colleagues in different disciplines. Fourth, interdisciplinary inquiries and collaborations can positively impact teaching. Student disinterest in academic subject-matter could be blamed on an American culture steeped in anti-intellectualism.<sup>18</sup> Still, interdisciplinary education has the potential to liberate students from this attitude of disinterest, helping them see connections between their studies in different classes and disciplines—in a sense, enlivening academic pursuits. Rather than being overly scholastic and dead to students' interests, the methods and literature they are exposed to can become relevant and fascinating. Fifth and last, interdisciplinary collaborations might help us to define "research" in more generic terms, in language not so narrowly tailored to any one discipline, but that invites as many scholars in as many disciplines as possible "to the table"—in other words, a definition that makes interdisciplinary teaching and research highly inclusive and collaborative endeavors.

I will conclude by sharing my own vision of interdisciplinarity. It is tied to my identity as a philosopher, a political scientist and a public administration scholar—though, primarily, a philosopher. Given what Dewey wrote in *Democracy and Education*, I do not believe he was claiming that philosophy should become the archetype for all academic inquires or the "mother of all disciplines" (as some positivists argued physics was in

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<sup>18</sup> Dewey observed American anti-intellectualism in his own time: "The merely intellectual life, the life of scholarship and of learning . . . gets a very altered value. Academic and scholastic, instead of being titles of honor, are becoming terms of reproach." Dewey, *Collected Works*, MW 1:17.

the early twentieth century). Instead, he was claiming that someone should assume the twin role of generalist and translator (or “liaison officer”) in interdisciplinary dialogues, and philosophers are well qualified to assume this role. Indeed, Dewey’s own interdisciplinary approach to the philosophy of mind confirms this interpretation. In *Experience and Nature*, he argues for an emergent concept of mind, whereby anticipating future contingencies involves a reciprocal dance between brain, body and nervous system, not merely conscious control over actions.<sup>19</sup> Dewey’s emergent theory of mind was not the product of armchair philosophizing. Rather, it was the outcome of translating research by members of the American school of neurology, including Adolf M. Child, C. L. Herrick, Henry Donaldson and Frederick Tilney, into terms more suitable for a lay audience (including scholars outside the field of neurology).<sup>20</sup> Their scientific discoveries about how the brain, nervous system and behavior develop in coordination had a marked impact on Dewey’s naturalistic theory of mind. In a sense, Dewey had fulfilled the role of liaison officer.

Notwithstanding the obvious limitations of human foresight, I think that Dewey was too sanguine in predicting that philosophers would gladly assume the role of liaison officers. Philosophers in the twentieth century have tended to specialize and compartmentalize inquiries in their own discipline, shutting themselves off from genuine interdisciplinary collaborations (with some notable

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<sup>19</sup> Dewey claims that “when locomotor organs are accompanied by distance receptors, response to the distant in space becomes increasingly prepotent and equivalent in effect to response to the future in time. A response toward what is in the future is in effect a prediction of a later contact.” Dewey, *Collected Works*, LW 1:197. Consciousness for Dewey is the capacity for judgment formation.

<sup>20</sup> Thomas C. Dalton, *Becoming John Dewey: Dilemmas of a Philosopher and Naturalist* (Indianapolis: Indiana University Press, 2002), 11. Note that I am not arguing that Dewey’s is the correct theory of mind, since more recent research advances in neurological and cognitive science have superseded those Dewey relied on in the 1930s.

exceptions, for instance, in experimental philosophy and applied ethics). To some extent, our role as liaison officers has been compromised by our own disciplinary push towards specialization.<sup>21</sup> In some cases, the result is that philosophers have become marginalized in the Academy. University administrators often question the worth of philosophy given the dearth of theoretical advances. Since philosophy departments rarely attract grant funding, they tend to be the last to receive new tenure-track lines, capital and infrastructure improvements as well as research support. They also tend to be the first candidates for elimination when universities and colleges, subject to shrinking budgets, decide to make cuts to majors, programs and departments.<sup>22</sup> On the other hand, Philosophy programs are fairly inexpensive for universities to run, especially when compared to programs in the natural and physical sciences. Nevertheless, the value of academic philosophy remains in doubt.

Pushing philosophy in a more interdisciplinary direction could be of inestimable value to philosophers and nonphilosophers. If philosophers wish to reverse the trend toward their own marginalization within the Academy, they might consider Dewey's overture to become liaison officers. The majority of philosophy faculty members fulfill the role of general education instructors, teaching undergraduates required courses in logic, ethics and critical

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<sup>21</sup> For proof of the lack of generalists and the abundance of specialists in philosophy, one needs only to peruse the *Proceedings and Addresses of the American Philosophical Association* (any of the three divisions). Most of the talks would not be accessible to a lay audience. One heartening sign that philosophers are becoming generalists is found in the philosophy publication industry. With a growing market for pop culture and philosophy books, philosophers contributing to these collections have had to learn to communicate to a broader audience of nonphilosophers.

<sup>22</sup> Recent examples of Philosophy departments slated for elimination include those at the University of Nevada Las Vegas, University of Greenwich and Keele University.

thinking. Unsurprisingly, the acceptance of this limited role for philosophers in the Academy has generated unintended and, at times, deleterious consequences for all involved. At many institutions, it results in frustration among ambitious Philosophy faculty who wish to make meaningful contributions to the university's research mission, but discover that their efforts are undervalued. Sometimes it produces animosity between philosophers and members of other faculties whose research receives more generous financial support. Frustration and animosity only prove counterproductive for the cause of philosophy, both inside and outside the Academy. Frustration and friction have the effect of cutting off philosophers from other faculty as well as those who stand outside the ivory tower. My hope is that philosophers would embrace an alternative to the traditional *Bildung*-inspired research ideal—what I have called the *interdisciplinary ideal*. Moreover, I would hope that they would choose to reconstruct the discipline as well as their professional identity, seeing themselves as liaison officers in Dewey's double sense, that is, as thinkers capable of translating *both* between different disciplinary discourses and between academic and popular discourses. In other words, to counter our own marginalization within the Academy, we philosophers should seek to remake ourselves in the image of interdisciplinary scholars *and* public intellectuals.<sup>23</sup> While interdisciplinarity is especially compatible

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<sup>23</sup> I am not claiming that philosophers never fulfill one or both of these roles. Indeed, to name only a few representative examples, John Murungi and Gary Backhaus have for several years run an exciting interdisciplinary conference on space and place at Towson University, combining philosophical inquiry with geographical subject-matter. Also, experimental philosophers, led by Joshua Knobe and Stephen Stich, have breached the barrier between philosophy and the sciences, probing and testing various intuitions and hypotheses in the areas of ethics, philosophy of mind, and philosophical psychology. Several high profile philosophers in the U.S. and Canada, such as Richard Rorty, Ronald Dworkin, Brian Leiter, Daniel Weinstock and Charles Taylor, have assumed the role of

with pragmatism, given its emphasis on practice and problem solving,<sup>24</sup> pursuit of the ideal would not necessarily exclude other philosophical perspectives.

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public intellectuals in various high-profile public debates. Some philosophers, of course, lack the motivation or ability to become public intellectuals. For them, perhaps fulfilling the role of interdisciplinary scholar will suffice.

<sup>24</sup> Eric Weber writes: "Pragmatism avoids venturing into matters for which we can find no conceivable practical consequences." Eric Weber, *Rawls, Dewey and Constructivism: On the Epistemology of Justice* (London and New York: Continuum, 2010), 41. This point is also affirmed in a recent article by Philip Kitcher, who makes a similar Deweyan plea to renew philosophy through closer contact with practical exigencies of life and "the framing of conceptions that can assist existing disciplines, or even initiate new modes of inquiry. "Philosophy Inside Out," *Metaphilosophy*, vol. 42, no. 3 (2011): 251.