

THE BOW AND THE LYRE

Towards a Healthy Tension between Disciplinarity and Interdisciplinarity

Remmon E. Barbaza
Ateneo de Manila University
rbarbaza@ateneo.edu

Abstract

While interdisciplinary work is something to be encouraged and supported, it can only thrive on the basis of strong disciplinarity. When carried out properly, interdisciplinarity does not diminish or undermine the individual disciplines, but in fact is made possible by vibrant individual disciplines. A healthy tension between disciplinarity and interdisciplinarity must then be sought, calling to mind the Heraclitean ideal of harmony that is produced through the proper tension, say as in the strings of musical instrument, as in the well-known example of the bow and the lyre. Genuine interdisciplinary work does not constrict, but rather helps expand the individual disciplines through research and scholarship.

Keywords

Disciplinarity; interdisciplinarity; Heraclitus

About the Author

Remmon E. Barbaza is Associate Professor at the Department of Philosophy, School of Humanities, Ateneo de Manila University. His interests include Heidegger, language, translation, technology, environment, and the city.

In his introduction to Werner Heisenberg's book, *Physics and Philosophy: The Revolution in Modern Science*, David Lindley notes how the German physicist's background in philosophy, and the humanities in general, partly explains his assessment of a contested theory that set him apart from his peers:

The Copenhagen response is to insist that asking such a question is essentially asking for a classical account of the quantum world, which by definition can't be done. But this doesn't tell us how we should think instead. By way of addressing this conundrum—how do we describe a state of affairs when we admit at the outset we don't have the language to do it?—Heisenberg embarks on a philosophical tour that starts with the Greeks and brings us through to Kant. That he would do this at all sets Heisenberg apart from most modern physicists, who generally disdain or simply ignore philosophical thinking about their subject. But Heisenberg was educated in Germany at the beginning of the twentieth century, and had a professor of classics for his father. Being reasonably well versed in philosophy, was, for Heisenberg, merely an aspect of a good general education. (XIV-XV)

This anecdote on Heisenberg is quite instructive for us. On the one hand, it tells us that being good at one's discipline demands concentration, rigor, and commitment towards the field of inquiry. One must be very good at one's discipline if one is to be able to contribute positively to its advancement, indeed to the intellectual progress of humanity in general.

On the other hand, it also tells us that one's commitment to a discipline and the single-minded determination to develop one's expertise in it should not make one lose sight of the bigger picture, for to lose sight of this wider context could lead to the impoverishment of one's work to the extent that it is unable to incorporate what otherwise could prove to be helpful insights and findings from other disciplines. In the example of Heisenberg, his own thinking within his discipline set him apart from the rest of his peers precisely because of his being well versed in philosophy. What sets him apart from the others was clearly something qualitative rather than something that could be measured through various metrics.

In general, we see that the growth of a discipline is made vibrant by both its internal and external dynamism. The internal dynamism is its own activity as the discipline that it is, as it operates within its own presuppositions, concepts, and terms, among others, mindful of both its foundations as well as historical development. The external dynamism, on the other hand, is manifested through its active engagement with other disciplines insofar as there are shared interests and points of convergences.

The condition for the possibility of a genuinely productive interdisciplinary work is internal vibrancy and dynamism of the individual disciplines themselves. There can be no interdisciplinarity without strong and vibrant disciplines. The concern that interdisciplinary work comes at the cost of the weakening or watering down of disciplines does in fact have a concrete basis, but it must be understood correctly, precisely to avoid such disciplinary dissolution. Incorrectly understood, such a concern can lead to a dichotomy that is to be avoided for being not only false but, even more so, unproductive, if not downright destructive.

Disciplines must, therefore, engage in interdisciplinary research, not artificially, but organically, out of a sense of an actual and concrete necessity in confronting either a practical or theoretical question or concern. They must not engage in it simply as a response to a directive from university administration, for the sake of sheer compliance, which, usually—something that is even worse—is in turn driven by the uncritical drive towards competitiveness for the sake of competition, such as we see in the obsession with world university rankings. Jacobs says it so well in defending the disciplines and challenging the prevailing trend towards interdisciplinarity that lacks the critical element: “While surely it has its place in the modern university, interdisciplinarity should not be viewed as an end in itself. In organizing research, advancing knowledge is the goal, and reforms should be undertaken when they represent the best means of achieving that objective.” (9)

Thus, interdisciplinary work must be driven by an inner necessity, perceived either by individual disciplines, or else by two or more disciplines in a collaborative endeavor. Three points need to be emphasized to understand this internal-external dynamism in interdisciplinarity.

First, the need for interdisciplinarity should not be understood as something uniform across all disciplines. Perhaps this need not even be stressed, as in fact there is no one universally accepted definition of interdisciplinarity. Michael H. G. Hoffman and Jan C. Schmidt, in a report on a 2009 workshop on interdisciplinarity, simply find it “remarkable that after more than 30 years of public and scientific debate there is still no consensus about the exact meaning of popular catchwords like ‘interdisciplinarity’ and ‘transdisciplinarity’” (169). The differences in disciplines themselves determine the kind of interdisciplinarity they might need to get into, as well as the specific problems and challenges they will face. Séverine Louvel and Amy Jacobs, for instance, note how it is more common for the humanities and the social sciences to feel that they are being besieged, and that their disciplinary integrity is being sacrificed (65, footnote 3). It is thus important to recognize the differences in both the grounds of necessity of as well as the actual experience in interdisciplinary work. Ignoring these differences is not only naïve. It may also cause unnecessary

stress and misunderstandings among those who are in the position to push for the interdisciplinary agenda, and among potential interdisciplinary collaborators.

Second, interdisciplinarity ought to extend, rather than restrict, disciplinary boundaries. When, as I have mentioned above, interdisciplinarity is incorrectly or insufficiently understood, it could indeed lead to the compromising or dissolution of the disciplines. Louvel and Jacobs refer to a study that “has shown that there is no clear tie between the development of interdisciplinarity and the weakening of disciplinary institutions, and has highlighted the ability of some disciplines to both shift and maintain their boundaries” (81). This shifting and maintaining of boundaries is precisely the internal and external dynamism that we spoke of above. Thus, Louvel and Jacobs stress that “interdisciplinarity impacts on disciplinary territories by way of endogenous and exogenous dynamics, neither of which is stronger than the other” (81). One can even see that the same internal-external dynamics is at work on the personal level as well: the command to “love others as we love ourselves” does not only mean that only those who love themselves can also love others, but also that the loving of the self as well as of others go hand in hand. Both are enriched and uplifted, and neither is diminished, much less destroyed.

The sociologist Michael Burawoy, however, makes a helpful distinction between hard and soft approaches to interdisciplinarity, saying that “interdisciplinarity is an innocent notion. It simply refers to cementing relations among disciplines” (7). When disciplinary identity and integrity are not determined and owned by its practitioners, with a reasonable level of self-awareness and self-confidence, individual disciplines indeed run the risk of dissolution. As Burawoy warns:

[I]t is the very obvious appeal of interdisciplinarity that makes it dangerous to weaker, critical disciplines since it can become the Trojan horse for the dissolution of particular disciplines by bringing them into a hierarchical relation with more powerful disciplines. It can become the basis for a narrowing rather than widening of perspectives, especially when the university is in crisis and restructuring is on the agenda. Finally, it can have the effect of dissolving the very “discipline” required for any serious scholarship or science. (7)

For his part, James S. Kelly distinguishes between “wide and narrow interdisciplinarity,” calling our attention to “the fact that there is a very different set of categorical presuppositions operative in the sciences than in the humanities,” a distinction that, unfortunately, is often overlooked or set aside (95). Like Burawoy, Kelly sees the danger of ignoring such distinction among varying kinds of interdisciplinarity, noting that “[h]umanistic needs, human needs beyond the realm of manipulatory power, are often marginalized when the epistemic emphasis is driven by the juggernaut of science” (96). One might say that we need not belabor

this point about the different kinds of interdisciplinarity, but the fact is, such distinction indeed is often altogether missed, if not simply ignored.

Third, and finally, a healthy tension between disciplinarity and interdisciplinarity is the key to allowing the flourishing of both. It would not suffice to say that disciplinarity and interdisciplinarity are compatible with each other. What we need even more is to assert that the two are mutually sustaining and necessary. Ernst Müller describes this mutual dynamics, in the case of the sharing and transferring (i.e., translating) of concepts between disciplines, as follows:

The underlying thesis of our approach is that the formation of the disciplines of modern knowledge and their specific semantics must from the start be understood as resulting from boundary-crossing processes of semantic transfers, metaphorizations, and shifts of meaning between the semantics of disciplines, as well as between ordinary language and metaphorical and terminologically defined semantics. (49)

Thus, to reiterate what has been pointed out at the beginning of this essay, interdisciplinarity can only succeed based on strong disciplinarity. Disciplines engaged in collaborative work must bring something to the table that comes from their own unique fields of expertise. On the other hand, interdisciplinarity challenges disciplines to become even more conscious of their individual boundaries and presuppositions, to have a better sense of where one discipline ends and another begins, and where two or more of them might meet in collaborative work. And as it happens, interdisciplinary work can give birth to new disciplines altogether. Interdisciplinarity and disciplinarity are thus not only mutually sustaining and necessary, but together are also generative.

Such a healthy tension between disciplinarity and interdisciplinarity must only be welcomed, the kind of tension or conflict (*polemos*) that Heraclitus spoke of, as in the famous example of the bow and the lyre: “They do not comprehend how a thing agrees at variance with itself; it is an attunement turning back on itself, like that of the bow and the lyre” (Fragment LXXVIII, p. 65). With the right tension of the strings—neither too tight nor too loose—the bow and the lyre can produce the harmony that music requires. In the same way, a healthy tension between disciplinarity and interdisciplinarity will enable disciplines to both flourish as the distinct disciplines that they are as well as to pursue goals that require collaborative work and mutual support.

It is true, as L. Earle Reybold and Mark D. Halx remind us, that “real life” is not compartmentalized into disciplines, in contrast with the university that by necessity must establish separate disciplines and demarcate their boundaries (336). But then again, we also know that in “real life”—however one may construe it—we do need

the services of others who have acquired distinct competencies and developed areas of expertise to help us deal with concrete problems. We need a plumber as much as we need a driver, or an accountant as much as a medical doctor. Just as our lives are enriched by the interaction with people from different backgrounds and professions, so, too, students who are exposed to interdisciplinarity stand to benefit from the “deeper learning” that interdisciplinarity makes possible, as one study has shown (Reybold and Halx 336).

There may indeed be something artificial in the university insofar as it is divided into distinct disciplines by practical necessity. But those who work in universities must not forget that in encouraging deeper learning across disciplines among their students, they are helping them deal with concrete issues and live their “real life,” hopefully in a way that is not dispersed and lacking in focus and orientation, but rather with a sense of a whole, even as the boundaries of this whole constantly shifts, never constricting, but ever expanding.

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