Mind the Gap (or Mending It): Qualitative Research and Interdisciplinarity in Kinesiology

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This article addresses the perceived gap between the humanities and social sciences, and the sciences in kinesiology faculties and departments as interdisciplinary pressures mount in an increasingly complex world. I use an historical lens to highlight past difficulties in working across the two solitudes and describe Stephen Jay Gould’s efforts to mend the gap. Likening the humanities to the cunning fox and science to the persistent hedgehog, he argued that with care the two seeming opposites can be unified. I discuss how kinesiologists might follow his advice in developing more fertile collaborative interdisciplinary approaches in research, teaching, and professional training and provide some suggestions for mechanisms that might enhance the benefits of working together to bridge the divide. I conclude that we had better seek productive ways—in mutual respect and frequent conversations—to stick together in our broad and useful diversity.

In the early 1980s, Bob Morford and Hal Lawson announced their view of the structure of the discipline of kinesiology at a meeting of the School of Physical Education and Recreation where I worked as a young faculty member. Kinesiology, they repeated, can best describe the business of this school for it is a unique intellectual discipline founded on a scholarly and scientific analysis of human movement in physical and ludic activities. The audience was distinctly skeptical. The pedagogists and coaches would have none of it, and both, in fact, were eventually redeployed elsewhere. It was clear to all, however, that although physical education had once been the bread and butter of the school, science was newly becoming enthroned as king.

I have told the story that occurred over the next two decades of the metamorphosis of the cross-disciplinary or multidisciplinary work of our school through an analysis of the spaces of its home, the War Memorial Gymnasium (Vertinsky & McKay, 2004). Within its changing spaces, the Cartesian divide maintained and intensified its hold on the academic enterprise. No longer merely a joint enterprise catering to the athletic needs of the students and professional training in physical education, technology replaced the athletic body in motion and debates raged within the emergent subdisciplines over laboratory space, curricula, and resources,
as well as the right name for the school’s increasingly scientific focus. In many respects, groups of faculty members came to inhabit small and different worlds focused increasingly on applied science and the technical management of sport. It lent credence to Rorty’s (1979) observation that much of what gets defined as knowledge in a society can be recognized as those beliefs and modes of practice that are successful in helping official groups in that society do what they want to do.

One of my abiding memories during these years was the administrative leadership that sharpened these arrangements. To encourage research productivity, all faculty were publicly scored and ranked annually (with standard deviations provided) on the basis of their research output. Eight points, for example, were allotted to a refereed article in an appropriate scientific journal, whereas a book could merit only six. For a historian, for whom published monographs were in many respects the coin of the realm and could take months if not years to bring to fruition, it told a story louder than words. The use of quantitative tools became mandatory in the graduate curriculum, and when hiring took place, those who accumulated the most points had the greater say in determining the nature of the position.

The Academy endlessly discussed the nature of these broader battles at its meetings and documented them in issues of *Quest* and elsewhere during the 1980s and 90s, with some members deploring the fragmentation caused by growing numbers of subdisciplines and its effects on the field they now (mostly) agreed should be called kinesiology. On a hopeful note, Synthia Slowikowski and Karl Newell (1990) pointed to signs of an expanding mission suggesting that “our new name has provided a forum for us to tell our story” (p. 292), and Waneen Spirduso (1990) was not alone in taking that as an opportunity to move the argument away from disciplinary fragmentation and define kinesiology as a field focused on the cross-disciplinary study of physical activity. Others attempted to rearticulate the role of professional training within this broadening field, leading to a series of evolving models of kinesiology with differing philosophies. Overall, however, as the field moved toward and into the 21st century, there was an increasingly strong move to science-based kinesiology, sport performance analysis, an applied health science focus, a return to a medical base, and a broadening of professional domains. Looking to the future, Jane Clark (2008) announced that “for a field that laid down its roots at the start of the last century, we find kinesiology at the start of this century a young but quickly maturing scholarly discipline” (p. 1).

Yet schools, departments, and faculties of kinesiology (and related names) have had very mixed fortunes in a rapidly changing academic environment. The drive to create a unit to connect individuals based on certain ways of knowing and objects of study has tended to engender segmented departments with quite distinct cultures, organizational values, and professional associations. The result has often been a heady mix of scholarly alienation and disciplinary nationalism that has shaped the questions asked and the ways in which they were asked (Damrosch, 1995). It could be at best, said Jan Harris (1987), a collection of scholars with considerable potential to break apart and take up residence in the department that housed the parent discipline of their particular specialization. In some cases, an inability to work together to articulate the kinesiology mission has led to a perceived lack of centrality to the academic mission leading to the dissolution of
entire faculties. In others it has forced reorganizations or the diversion of particular subdisciplines or groups to other faculties. This has especially been the case in the redeployment of pedagogy to education faculties and the dénouement of subdisciplines such as sport history and sport philosophy (Abbott, 2001; McKay, Gore, & Kirk, 1990).

At the same time, a reflowering of interdisciplinary research and programs has become increasingly apparent in higher education, especially in many of the larger research universities. It has been spurred by a number of factors internal and external to the academy—particularly the compelling argument that in a socially and technologically complex society, many problems require interdisciplinary solutions (Klein, 1996; Salter & Hearn, 1996; Gieryn, 1999; Birnbaum-More, Rossini, & Baldwin, 1990). In kinesiology departments, in which issues around health and the body are generally recognized as central to the study of physical activity, it has become clear to many that the complexity of these problems requires an interdisciplinary team-based problem-oriented approach, especially when attempting to garner research funds from public and private agencies or educate students for newly emerging professions.

Of course this drive to focus interdisciplinary efforts on complex problems in a changing social environment with complex demands is by no means new, or unproblematic. It is an argument that has been heard since the start of the 20th century, although it has assumed an increased sense of urgency as the magnitude and complexity of problems mount and calls for praxis increase (Klein, 1990). A central challenge has continued to be the privileging of individualism and the vertical structures of discipline-focused academic units that have established academia as a highly individualistic enterprise rather than a team sport (Friedman & Friedman, 1986). Another challenge has been that too many people have promoted interdisciplinary research without addressing even the most basic difficulties and problems involved in the attempt to do it (Salter & Hearn, 1996). Furthermore, the possibilities for team building and integration have traditionally differed according to the number of disciplines involved and the distances between them, especially where the sciences and humanities are involved. C.P. Snow in The Two Cultures and the Scientific Revolution (1960) famously complained that the breakdown of communication between the sciences and the humanities was a major hindrance to solving the world’s problems and hence to interdisciplinary endeavors.4

If I had asked an even simpler question (of literary intellectuals), such as, What do you mean by mass, or acceleration, which is the scientific equivalent of saying, Can you read?—not more than one in ten of the highly educated would have felt that I was speaking the same language. So the great edifice of modern physics goes up and the majority of the cleverest people in the western world would have about as much insight into it as their Neolithic ancestors would have had. (p. 15)

The passage of time has helped—in some respects—to reduce the cultural divide articulated by Snow (which in any case was particularly applicable to problems of overspecialization within English education at mid century), as have mounting efforts within the academy to articulate effective interdisciplinary

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strategies since the 1970s. Starting with calls to “go fishing together” and to “smuggle ideas across the lines,” efforts to address the difficulty of horizontally connecting individuals working within distinctly vertical structures were made, although not always successfully, through new forms of grouping such as centers and interdisciplinary research institutes and organizations, which can be found on many campuses and indeed within some kinesiology departments. Goaded by a series of “science wars,” including Sokal’s hoax\(^6\) and the reductionist claims of sociobiologist Edward O. Wilson that science should guide all humanistic, artistic, and moral discussion, evolutionary biologist Stephen Jay Gould (2003) pointed out that Snow’s (mis)perceived gap between the two solitudes needed mending not minding. Snow’s concept of two cultures, he said, was grossly exaggerated and overgeneralized, a damaging and short-sighted concept that had led to decades of unnecessary fence building. In *The Hedgehog, the Fox and the Magister’s Pox: Mending the Gap Between Science and the Humanities* (2003), he insisted that the sciences and humanities could foster mutual regard and respect rather than competitive wrangling over superiority. Likening the humanities to the cunning fox and science to the persistent hedgehog, he argued that, with care, the two seeming opposites could be unified. Neither the fox (who devises many strategies) nor the hedgehog (who knows one great and effective strategy) could work alone, while together they could develop a common enterprise of power and unity—with goodwill and significant restraint on both sides. “The way of the hedgehog cannot suffice because the sciences and the humanities, by the basic logics of their disparate enterprises, do different things, each equally essential to human wholeness” (p. 5).

In fact, Gould felt that the so-called science wars had been much exaggerated and that as a general rule, both sides of the putative conflict between the sciences and humanities did not generally hold extreme relativist or realist views. The vast majority of scientists have never heard about the science wars, he said.

Scientists tend to be a parochial lot. . . . Most of us are even tolerably intellectual. But the vast majority of us would never dream about reading technical literature from other fields, especially literature that claims to present deep, critical, and insightful analysis of science as an institution, or to depict the history of science as a socially embedded institution. I mean why read about it, written by outsiders, when we live it every single day. (p. 101)

Taking on the postmodern criticism of the humanists, Gould suggested that he had never met a serious historian of science who espoused a doctrine of pure relativism.

The true, insightful and fundamental statement that science, as a quintessentially human activity, must reflect a surrounding social context does not imply either that no accessible external reality exists, or that science, as a socially constructed institution, cannot achieve progressively more adequate understanding of nature’s facts and mechanisms. . . . If all science arises as pure social construction, one might as well reside in an armchair and think great thoughts. (p. 103)

Indeed although remaining intuitively appealing, the idea that the humanities/sciences divide consists of different modes of knowing, with the humanities
focused on sympathetic understanding and interpretation and the sciences focused purely on mechanistic explanations, is both contested and outdated. Revolutionary work in theoretical physics has helped to challenge traditional models of scientific thinking and encourage the role of imagination, of metaphor and analogy, of category transforming speculations and off-beat intuitions. Leading humanists such as Hans Ulrich Gumbrecht in *In Praise of Athletic Beauty* challenge the cultural and philosophical default position in the West that has focused unabatedly on the mind (Gumbrecht, 2006; Young, 2008). Edward Slingerland (2008) argues that in light of recent discoveries about human cognition, the less commonly recognized root of this distinction is mind–body dualism, which is no longer plausible in light of recent discoveries about human cognition. It has become increasingly apparent that there is no ghost in the machine and that mind and body are one. We must find ways, he says, to move from diversities to real universities. Leaping the divide are cult-like groups such as the emerging school of literary criticism known as Literary Darwinists who argue that literary texts can be mined for innate patterns of human behavior with an evolutionary toolkit—hence the most effective and “truest” works of literature are those that reference or exemplify these basic facts (Carroll, 2004). (Shakespeare’s *Hamlet* is a familiar and rich example, as is Jane Austen’s *Pride and Prejudice.* ) The alpha male of Literary Darwinism, of course, is Harvard biologist Edward O. Wilson, who sees the movement as adding a deep genetic history to art criticism (Max, 2005).

Kinesiology has not been immune to these debates and their effects and they have impacted on efforts to establish the legitimacy of kinesiology as a discrete and important area of study within the academy as well as efforts to enhance interdisciplinarity and develop more fertile collaborative approaches in research, teaching, and professional training. Interdisciplinarity is integrative. It refers to activities that cross disciplinary borders and processes that require clarifying different perspectives and resolving conflicts to produce coherent syntheses. The process often begins with a problem or particular issue. Then it requires the slow development of understandings among participants from different disciplines or subdisciplines such that the notion that “everyone on the other side is an idiot” can be slowly changed toward “getting to know the enemy” and moving toward a more in-depth knowledge of other disciplines—not only in terms of immediate knowledge for the problem at hand but also the discipline’s general structures, principles, and ways of thinking (Klein, 2008). Because interdisciplinary groups seem to perform best when the cognitive distances between disciplines are short and the broader organizational cultures are similar (McNeill, 1999), in kinesiology this has tended to take place most often among the natural and applied sciences, and the psychologists, leading to research groups in my own unit around neuro-mechanical kinesiology and health and integrative physiology (Maienschein, Laubichler, & Loettgers, 2008). Greater difficulties arise when the disciplines vary radically not only in the ways they define their identities and maintain their boundaries but also in how they regulate and reward their practitioners, manage consensus and dissent, and communicate internally and externally.9

David Andrews (2008) spoke cogently and passionately about this at the 2007 Academy meetings, referring to his experience of the instantiation of an epistemological hierarchy that continues to privilege positivist over post positivist, quantitative over qualitative, and predictive over interpretive ways of knowing. It was “an inconvenient truth,” he said, that “the scientific hegemony currently in place
within kinesiology speaks less about the veracity of the scientific method per se, as it does about the political economy of the corporate university and the broader political, economic, cultural and technological context in which the process of corporatization exists and operates” (p. 48). This accords with other compelling arguments that claim that universities have “sold their souls,” not only through their commercialization and commodification, but also through their adherence to rigid and restrictive disciplinary norms (Geiser, 2006).10 Andrew’s use of “truth” was interesting given that truth is the one thing that postmodernists spend much of their energies deconstructing and relativizing (Brown, 2008). Indeed, Kuhn (1970) long ago articulated quite clearly how particular regimes of power are underpinned by specific regimes of truth. But Andrews (2008) was lamenting, in particular, his experience—“in the neo-liberal academic jungle which accords primacy to high-quality science”—of the persistence of C.P. Snow’s two solitudes in a faculty that professed a focus on human movement while failing to capitalize on the tremendous opportunities to take advantage of the multiple theoretical and methodological insights available within his unit.

Ways of knowing associated with the active body/human movement are not the exclusive domain of the quantitative data-driven logical positivist . . . a true kinesiology program in name and intent requires a complimentary synthesis of epistemologies if it is to realize its diverse and multifaceted empirical project. (pp. 49–50)

We are agreed on these points, but it is my experience that our best scientifically minded researchers in kinesiology would not argue with the principle that science, and the humanities and social sciences, need to both mind and mend the gap that has become more marked in kinesiology since Franklin Henry’s press for disciplinary (and cross-disciplinary) rigor in the post-Sputnik years. In health-related research, most are well aware of the growing efforts of funding agencies to foster stronger interdisciplinary partnerships to bring together the behavioral-social-ecologic models of multilevel “causes of the causes” and the molecular, cellular, and ultimately physiological bases of health and disease. In some cases our scientists are farther along the inter- or transdisciplinary path in grasping the potential utility of the emerging field of the Science of Team Science.11 In their article on “The Increasing Dominance of Teams in Production of Knowledge,” Wuchty, Jones, and Uzzi (2007) evaluated 19.9 million papers over five decades and 2.1 million patents to demonstrate that, contrary to an acclaimed tradition in the history and sociology of science that emphasizes the role of the individual genius in scientific discovery, research is increasingly done in teams across nearly all fields (especially in the natural sciences and psychology, but also in the humanities, which show somewhat lower growth rates in team size), suggesting that the process of knowledge creation across all disciplines has fundamentally changed.

What is becoming clear through interdisciplinary work is that scientists in kinesiology need to consider more carefully the ways in which their work affects or might affect policy development. This can surely be helped through a better understanding of the insights of the humanities and social sciences, including the qualitative research approaches that they use in their research inquiries. In fact, new ways to draw on and blend quantitative and qualitative approaches are urgently needed. Put simply, qualitative researchers study things in their natural
settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 1998). As such they deploy a wide range of interconnected, interpretive practices privileging no single methodological practice over another. They stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. They focus on the value-laden nature of inquiry that is in distinct contrast to quantitative studies that presume to be value-free by emphasizing the measurement and analysis of causal relationships between variables rather than the processes. Thus, they are political in their very orientation and can point out, for example, how crude or incautious use of racial and gender categories or theories of risk perception that ignore culture and context can lead to insensitive and counterproductive policies. In a meticulous study on race and bone formation, for example, Anne Fausto Sterling (2008) warned scientists against the careless use and abuse of racial categories in their research by showing how claims of racial difference in bone density lack a theoretical foundation. Arguing that specific anatomies and physiologies are not fixed traits, she illustrated precisely how the social produces the biological in a system of constant feedback between body and social experience.

Individual bone structure emerges from a combination of genetic possibility, diet, exposure to sunlight, skeletal biomechanics, forms of exercise and physical labor, plus other contributors that we have yet to articulate with any clarity. . . . Instead of spending our wisdom and dollars on a concept of little scientific use why not dedicate our brainpower and our researchers to studying the biological, cultural, and social dynamics of bone development as the interdependent nexus that they are. (pp. 659, 683)

Similarly, Mary Douglas in her seminal work on risk and risk perception complained that because academics too often ignore or muffle politics and justice in their research, interdisciplinary conversation is critical. She pointed out in *Culture Matters* (1997) that it is true that the immediate practical relevance of social research is not always immediately obvious, especially in regard to research around risk and health behavior, but she wrote:

I cannot take seriously a theory of risk perception that has eliminated cultural factors. When people knowingly take risks they are not alone; the bigger the risk the more likely they are to consult among their family and friends and go to experts. Deciding to take a risk is generally a cooperative matter, and this makes the results of questionnaires on the psychometric model implausible as clues to how people think about risks. (pp. 125–126)

At the same time it behooves the humanists and social scientists to articulate their views in clear and simple language and to clarify for scientists the critical importance of the cultural production of science and different ways of knowing, such as the many ways in which the moving body has been represented, regulated, endowed with meanings, and imbued with power in a myriad of contexts (Hargreaves & Vertinsky, 2007). My colleagues in social and cultural history can show how scientific discourse and common sense combine to naturalize the truth about the body such that its historical context and its significance in the constitution of
human relationships have been obscured. Scientists need to help their students fully understand that although the bodies they study might appear natural—a biological entity—they have also been constituted in particular ways in response to social and cultural arrangements and beliefs. Ideas about men’s and women’s bodies and what they should or should not do in relation to health practices, sport, and physical activity give shape, quite literally, to the bodies in which both live. As Susan Bordo (1999) explained:

> We need to recognize the body as a cultural form that carries meaning with it. . . . When we look at bodies (including our own in the mirror) we don’t just see biological nature at work, but values and ideals, difference and similarities that culture has “written,” so to speak, on those bodies. (p. 26)

Yet there is also a limit to the level of intimacy with language, theoretical approaches, and methodological intricacies that we might sensibly expect of our kinesiology colleagues on either side of the two solitudes—where such still exist—and indeed within our own domains. Qualitative research is endlessly creative and interpretive, and it has separate and distinguished histories in history, sociology, psychology, pedagogy, communications, medical science, and anthropology. “Messy, uncertain, multi-vocal texts, cultural criticism and new experimental works are increasingly common as are more reflexive forms of fieldwork, analyses and inter-textual representation” (Denzin & Lincoln, 2003, p. 38). Outsiders tend to see uniformity in other disciplines and fine distinctions within their own, and as a historian I am only too aware that history itself cannot decide whether it is part of the humanities or the social sciences, that indeed history sprawls all over the academic landscape. Historians disagree about the objectives of history, the meaning of facts, the construction of facts, methods of procedure, the role of theory, the basis of theory, and the form of presentation. But they do agree that history is an evidence-based discipline and that evidence imposes limitations on interpretation (Booth, 2005; Phillips, 2006). At the same time, the cross-pollination of the humanities and social sciences continues to broaden the pool of acceptable sources for historians to use. Ethnographic techniques, oral histories, literary criticism, material artifacts, and archeology all yield new studies of populations and their sporting and leisure activities throughout history and open up questions of interest to a number of disciplines. As well there remains a strong tendency of sociologists, historians, and philosophers in kinesiology to work alone (sometimes of necessity because there are so few of them) and to ignore pressures to foster or join interdisciplinary projects, generate research funds together, contribute to indirect and infrastructure costs, and fund graduate students. It does not take a village to write an award winning book, and one of the most valuable resources an historian can garner through research funding is time to read and reflect.

What does seem clear to me, however, if one looks at graduate student training and the research output of faculty members in the kinesiology faculties that I am familiar with, is that even while there is a growing comprehension of the benefits that might accrue from deeper levels of horizontal integration and broader collaboration, the mechanisms for accomplishing this need minding. Evaluation is a case in point. Faculty involved in interdisciplinary and transdisciplinary research
can find to their dismay that, if mechanisms have not been put in place to judge research at the boundaries of an intellectual field, a series of difficulties arise in evaluating their performance, especially in a multidisciplinary department such as kinesiology. Given that there are multiple pathways of integration and collaboration in a wide range of contexts, individual standards must be calibrated and tensions among different disciplinary, professional, and interdisciplinary approaches carefully managed in balancing acts that require negotiation and compromise (Klein, 2008).

Thorny issues of faculty and student evaluation might be alleviated through “mending the gap” focused doctoral and master’s seminars where all students are helped to have some familiarity with both qualitative and quantitative methodologies, and topics are incorporated around the history and philosophy of science, science and culture, research ethics, and cross-cutting issues such as class, gender, and race. Such seminar courses, however, are hard to staff and even harder to find in kinesiology faculties. The University of California, Berkeley, until the Department of Human Biodynamics foundered in 1997, stood out like a beacon in demanding the intellectual equivalence of bilingualism among its graduate students, a capacity not only to exercise the language of the department’s respective specializations but also to attend to, learn from, and contribute to wider cultural conversations around sport, movement, and the body (Park, 2004). Where these are present, lecture/seminar series can more easily provide opportunities for integrative experiences through meaningful discussions and press the point that attending to these larger questions is not some kind of off-duty volunteer work but is an integral and properly rewarded part of professional achievement. All too often, for lack of adequate resources and planning time, weekly or monthly seminar series fall into a pattern of opportunistic talks given by colleagues passing by and/or distributing the slots across the disciplines such that interdisciplinary conversation does not take place.

Leadership really matters in terms of fair distribution of graduate student funding, ample support of team teaching practices, and equitable workload distribution. It requires attention to interdisciplinary experiences in the undergraduate as well as the graduate curriculum, fostering a collegial climate internally through spatial proximity and frequency of face-to-face interaction, as well as encouraging an outward gaze through university citizenship, community partnerships, and widespread networking. Academic citizenship, for example, is no less valuable simply because it might be perceived as harder to measure or evaluate (Macfarlane, 2007). Of particular importance is the careful management of the quintessential issue of hiring for the future (including a commitment to gender and diversity while sustaining a balance between critical mass and breadth). As Henry Giroux (2008) pointed out, “engaged and substantive citizenship requires a commitment to debate, dialogue, matters of justice and power, and a willingness to listen to the claims of others” (p. 614). Leadership sets the standard.

This willingness to debate and dialogue and to listen to the ideas, theories, and methods of others can have the valuable effect of preventing us from being complacent about the conditions of knowledge in our time and encourage a growing awareness that there is validity (and utility) in the insights of both cultural constructivism and the scientific method. In some respects, those of my science colleagues who claim to be unrepentant hedgehogs are in fact increasingly being
pressed to become foxes with an eye on the henhouse as research granting councils and private and corporate ventures hold out ever larger incentives to encourage collaborative, interdisciplinary ventures, often with important policy-related outcomes. Whether my foxy colleagues in sport history and sociology are interested in becoming more hedgehog-like is harder to tell, although they are certainly not Luddites given the escalating technological demands of daily academic life. For some of them, an emphasis on integrating the humanities and sciences is less a matter of making the humanities more scientific than in showing how scientific inquiry can be improved when cultural embeddedness is explicitly examined, which is the hallmark of analysis in the humanities. Some—enlightened by evolutionary thinking—are signing up for courses in quantitative analysis and science and technology studies to better understand how scientific ways of knowing have shaped our lives and our society. Some just rail against “Bush science.” I think we all understand that interdisciplinarity, in itself, is no panacea. Many an interdisciplinary field, once institutionalized, becomes as protective of its turf and its conventional wisdom as established disciplines. Many an interdisciplinary project has turned out to be more fashionable than fruitful (Calhoun & Marrett, 2003).

In his plea to mend the gap, Stephen Jay Gould (2003, p. 265) supposed that in the final analysis we had better seek productive ways—in mutual respect and constant conversation—to stick together in our broad and useful diversity. It might not be a bad idea, he said, to quest more diligently for collaboration across disciplinary boundaries by following Benjamin Franklin’s advice for the people of America that we had better hang together or assuredly we will all hang separately.

Notes

1. See, for example, one of their position papers (Lawson & Morford, 1979). This was the School of Physical Education and Recreation at the University of British Columbia in Canada. The school abandoned performance courses, recreation, and teacher education, and in 1994 changed its name to the School of Human Kinetics.

2. I turned my attention for a while—although not too happily—to questionnaires and quantitative analyses that might be published in the Research Quarterly and gain the necessary points to keep up with the scientists and psychologists.

3. Actually I do not wholly agree with this view because very often the possibility of taking up residence in the parent department is missing and its lack is the very reason that faculty have moved to kinesiology as a step into the academy. Sometimes they continue to focus their research on that of their mentors in the parent department and locate themselves on the perimeters of kinesiology rather than in the center, scorning the professional missions of physical educators and leisure and sport managers.

4. The great divide between the sciences and the humanities appeared during the last decades of the 19th century—before then most people saw the worlds of human thought as contiguous and overlapping.

5. At my university there is now a College for Interdisciplinary Studies whose mandate is “to facilitate and support interdisciplinary activities campus-wide and serve as a place for the creation, development and dissemination of new and important scholarly activities which advance the interests of UBC.” It claims to house 15 centers, institutes, and schools and liaise with more
than 80 faculty in interdepartmental homes; 14 interdisciplinary graduate programs enroll a total of 700 graduate students, half in Master’s and half in PhDs. Its recent creation, however, was plagued with territorial and political arguments rather than an elegant appraisal of the benefits of interdisciplinarity to the education of students and new modes of learning and research.

6. Sokal’s hoax refers to the prank played by the NYU mathematical physicist Alan Sokal who submitted a sham article to the cultural studies journal *Social Text* in which he reviewed current topics in physics and mathematics and drew various cultural and philosophical morals that he felt would appeal to academics who questioned the claims of science to objectivity. The article was published in 1996, and shortly after Sokal revealed that his paper was liberally salted with nonsense (Weinberg, 1996).

7. In this book Gould invoked philosopher David Hume’s division of things into matters of fact and matters of obligation, where logically there is no way to get from one to the other. For example, science answers factual questions, whereas religion deals with matters of feeling, sentiment, and obligation. Given this approach, science and the humanities will always remain separate—but separate and equal. This was a very different approach than E.O. Wilson (1999) who wanted to combine everything within one massive framework—a “consilience” where all questions are answered by evolution (i.e., ethics is simply a consequence of biology). At stake, therefore, is the choice between two different visions of the ways in which people think and in consequence the direction research should take (Ruse, 2003).

8. Gould (*The Hedgehog, the Fox*) took the idea from Konrad Gesner in his *Historia animalium* of 1551. “Gesner’s fox embodies the deceit and cunning traditionally associated with this important symbol of our culture—poised on his haunches, ready for anything . . . ears cocked and hair erect. . . . Above all his face grins enigmatically . . . from the erect eyelashes to the long smirk . . . all seeming to say, ‘Watch me now, and then tell me if you’ve ever seen anything half so clever.’ . . . The hedgehog by contrast is long and low, all exposed and nothing hidden. . . . Spines cover the entire upper surface of his body; and his small feet neatly fit under this protective mat above. The face . . . seems simply placid: neither dumb nor disengaged but rather serenely confident in a quiet, yet fully engaged manner” (pp. 1–2).

9. Studies of institutions and innovations show that institutional arrangements that enhance interdisciplinary integration increase the capacity of organizations for research discoveries, although too much diversity may impede integration.

10. In a savage attack on neoliberalism in what he calls the “New Gilded Age,” Henry Giroux (2008) recently bemoaned the increasingly repressive antidemocratic tendencies and economic rationality that he believes are taking over the halls of academia through a seductive and powerful mode of public pedagogy. Surely, he points out, interdisciplinary endeavors will encounter difficulty when any notion of collective goals designed to deepen and expand the meaning of freedom and democracy is derided and dismissed because the market is the guide for all human actions.

11. In 2006 the National Cancer Institute held a watershed meeting devoted to the Science of Team Science. See also the special issue in the *American Journal of Preventive Medicine, 35* (2 Supplement), August 2008 on The Science of Team Science and Transdisciplinary Collaboration.

12. Social history, for example, has encouraged historians to scrutinize lived behaviors as indexes of people’s identities, beliefs, and agencies and to focus on sporting and physical culture practices that mark, and are marked by, class, gender, race, age, and sexuality. Cultural history analyses direct scholarly attention to culture as the ways and means by which people make meanings for and about themselves in society, with these ways and means ranging widely from the symbolic to the concrete, the semiotic to the structural.

13. I do not just mean here a continuation of conference going in the old style that Jaques Barzun (1968) referred to decades ago as “the waxworks of the intellectual world.”
References


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