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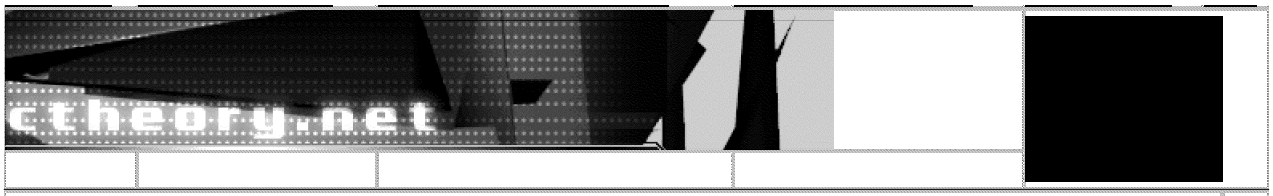

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The "Third Culture" and Disciplinary Science

Michael R. Allen

Recent claims that there is a "new science" forming through the junctures of several large theories seem to tell of a scientific intellectual community that has turned to directly engage its culture. According to scientific theorists working in genetics, physics and artificial intelligence, among other fields, their work carries the same import for cultural life as philosophy and art. In fact, many scientific theorists claim that new scientific inter-disciplines have eclipsed the so-called literary disciplines as those most relevant to the general reader's study of cultural life. The work of one of their stalwart cheerleaders, the literary agent and former Andy Warhol backer John Brockman, best exemplifies how such claims are a distortion of true interdisciplinarity. The recent anthology edited by Brockman, *The Next Fifty Years: Science in the First Half of the 21st Century* (Vintage Books, 2002) is only the continuation of a project he undertook with the 1995 manifesto *The Third Culture: Beyond the Scientific Revolution,* a collection of interviews that announced that new interdisciplinary scientific theory was going to replace cultural studies and all other literary disciplinary projects as the most advanced, comprehensive method of studying the meaning of human culture. Unfortunately, Brockman's claim falls under its own confusion about the way disciplines are created. Fortunately, his claims can be evaluated using the more humble insights into interdisciplinarity offered by Joe Moran in his recent book, *Interdisciplinarity.* The contrast suggests that, despite the errant assumptions of Brockman's project, interdisciplinary relationships between the scientific and literary disciplines are still possible.

In order to understand Brockman's recent anthology and the speed

with which the "third culture" idea gained acceptability in intellectual circles, one must examine the foundation of this project, the positions set forth in *The Third Culture*. There Brockman makes a very strong claim: he says that the division of intellectual disciplines into the literary and the scientific--the scientist and novelist C.P. Snow's "two cultures"--is obsolete. Yet reconciliation has not occured. Brockman writes that "what we are witnessing is a passing of the torch from one group of thinkers, the traditional literary intellectuals, to a new group, the intellectuals of the emerging third culture" [1]. Thus, Brockman argues that the dichotomy has been collapsed by the cultural privileging of one side over the other. He uses *The Third Culture* to showcase his many interviews with scientists who think that they indeed form a "third culture" that transcends the category. Unfortunately, Brockman and his scientists have to distort contemporary relations between literary and scientific intellectuals to hide the remarkable similarities in their current disciplinary interests in theory.

Arguments made by Brockman and others assert that the theoretical category of "culture" has been governed by the theories of literary intellectuals, who exclude scientific theory from serious studies of culture. Yet literary and scientific intellectuals are grasping for the same cultural prominence for their theories. Both groups seek to explain the phenomena of human culture by analyzing how the world has become what it is. The difference, which is often not easy to see, is that literary intellectuals make their inquiries in the world that is discourse, while scientific intellectuals make theirs in the world of physical material. Yet that difference does not always hold, nor is it rigid. The literary intellectual who inquires into what is written or thought about the physical world is also studying, through discursive reference, the physical world. That intellectual also studies the literary work of scientific intellectuals, who, after all, write and talk about their work. The scientific intellectual also studies not just the physical world, but also the discursive one. Theorems and data are all encoded in discourse that other scientists must refine or replace. Scientific paradigm shifts are much like linguistic paradigm shifts: they are a change in how reality is defined and perceived. Scientists use literary means to make their arguments to other scientists and to society. To achieve cultural prominence for a theory, a theorist in a scientific or literary discipline must be proficient in the methods of both disciplines. It is in that methodological overlap that the two cultures make a third, but not in the way Brockman describes.

Perhaps Brockman's book is a poor starting point for ascertaining what scientific theorists actually feel about their work's impact on the old divide between the two cultures. After all, most of his own arguments in the introduction are decidedly shallow broadsides against the supposed literary establishment that Brockman accuses of controlling all cultural theory in the past. Yet Brockman's points can hardly be dismissed without consideration; his views are supported by the scores of scientists (some the clients of his literary agency) who follow up with their own attacks on literary intellectuals. The Third

Culture does embody the attitude of a large number of scientists toward cultural theory, even if the book admits no argument in favor of literary intellectuals, and scarcely even compares theories in the two cultures. Brockman thinks that literary intellectuals are guaranteeing their own irrelevance to cultural theory, because of the superior theory and communications ability of scientific intellectuals: "Literary intellectuals are not communicating with scientists. Scientists are communicating directly with the general public" [2]. This statement, as we will see, is based entirely on the reduction of the most narrow portion of literary intellectuals. Brockman chooses to ignore the dialogues taking place in ecocriticism in literary studies, in the history of science, and in political science with the Green movement and its resistance to biotechnology. And, negatively, the historiography required to downplay the dangers of nuclear energy, and bumbling attempts by literary theorists to appropriate scientific theories to their own ends. But Brockman's aim is the rhetorical construction of a third culture--a discursive maneuver that owes much to the methods of literary intellectuals--and he cannot include any fact that might undermine this construction.

Yet Brockman's need to construct a third culture should not contradict the actual experiences of theorists--and it does not. That is, his idea of the "third culture" resonates with all of the scientific theorists he interviews for his book. Presumably, even the inclusion of a flattering reference to a scientist by a literary intellectual would undermine the effectiveness of Brockman's thesis. Then, an interdisciplinary connection would be shown and the whole "third culture" would dissolve. There can only be such a culture if it excludes work from the disciplines that must be pushed aside by the triumph of the scientific disciplines. Of course, Brockman oversimplifies by acting as if scientists as diverse as Lynn Margulis and Marvin Minsky really belong in the same disciplinary category. He also includes the philosopher Daniel Dennett, who makes obligatory remarks against pernicious literary elites. Brockman's scientific discipline is presented as one solid "third culture" when his own books displays how disparate the scientific disciplines really are.

Brockman pushes his relentless attack on literary culture, or the literary "conspiracy" as none other than Stephen Jay Gould calls it [3]. *The Third Culture* begins not with a celebration of the new links between disciplines of scientific knowledge, nor of the new cultural prominence of scientific theories. Discussion of those links and the new prominence can be found in the later chapters, but not in the introduction, which serves as a sort of mission statement. There is a definite suggestion of the inadequacies of literary culture, but few unqualified pronouncements of the inherent value of the new third culture science. Brockman could focus on the ways in which physics and paleobotany are beginning to enter into a dialogue, and how each discipline is simultaneously entering into a dialogue with society. But he and his scientists instead assert their superior approach mainly through contrast. The comments of physicist Lee Smolin are self-congratulatory, although partly truthful:

> ... the humanities have become traditions of reading and writing. People in these fields don't talk to each other ... Scientists speak to each other, first and foremost. Our culture is verbal, and we know how to talk to people. [4]

Smolin overlooks all the accompanying facts that negate his division: scientists often have argued that their empirical, concrete inquiries are more sophisticated than the loose, conversational inquiry of literary critics and philosophers; literary intellectuals are as verbal as scientists, and are responsible for the "talking head" type television programs that are anything but silent. Both sets of disciplines share the tendency to do important work in the privacy of writing, but both also share this work through verbal performance.

The negative aspects of literary disciplines are those limiting tendencies of all disciplines, even those of Smolin, Brockman and company. They easily exaggerate those things that prevent innovation and accessibility in all disciplines, as another, newer book, Joe Moran's *Interdisciplinarity,* shows. Moran is exploring the emergence of interdisciplinary approaches to cultural theory being done in the discipline of literary studies, that most literary of all literary disciplines. Moran introduces his subject with a careful study of the history of disciplinarity--the practice of working within disciplines--and of the specific history of English literary studies. He notes that narrow interests, an exclusion of outside inquiries into the knowledge of culture, and dry emphasis on specialized textual knowledge are features of all disciplines in their most specialized forms:

> In fact, the very notion of the term [discipline] as a recognized mode of learning implies the establishment of hierarchy and the operation of power: it derives from the Latin, disciplina, which refers to the instruction of disciples by their elders, and it necessarily alludes to a specialized, valued knowledge which some people possess and others do not" [5].

The discipline is disciplinary to some extent; it is a set of conventions that act as if they are enforceable rules. Thus Brockman might as well criticize the conventions that lead his scientists and himself to so roundly condemn literary disciplinarity. That he does not shows that his work is not that of a true "third culture" but the failed attempts of a group of scientific theorists to make a coherent statement of their relationship to culture.

Yet, this failure is not surprising given the disciplinary anchor of Brockman's work. His "third culture" seems like a theory-based hybrid, and even allows for interpretation and indeterminacy to be at least considered as aspects of science; but the project never strays from it disciplinary base, which is why scientists can congratulate themselves and heap scorn upon those in other disciplines. As Moran notes:

> disciplines are as much a product of institutional and economic pragmatism as they are of intellectual justification. [6]

With the rise of cultural studies projects that make interdisciplinary relationships based in literary disciplines, scientific disciplines have reason to have to assert their relevance to cultural life. But that assertion proves to be little more than identity construction in *The Third Culture.* If other attempts to make interdisciplinary, culturally-connected science are anything like Brockman's, there is no wonder that literary intellectuals have turned away from such projects. Moran, who advocates strong ties between scientific and literary disciplines, notes that literary intellectuals have been slow to embrace recent advances from scientists because:

> the call for interdisciplinarity is presented as a project of intellectual synthesis, but is actually based on the vested interests of one discipline. [7]

These vested interests of disciplinarity are close to what Thomas Kuhn called the "normal science" of each paradigm, and are difficult to lose amid intense disciplinary fights over the scarce supplies of general readers and academic budgets.

Another problem in Brockman's thesis arises from the method that he uses to define scientific intellectuals: he collapses the interests of each discipline within science into one normal science that he calls the methods of the "third culture." Yet this is not supported by the interviews in *The Third Culture,* which reveal a plethora of different normal sciences that divide this so-called united culture. The Minskyan artificial intelligence theorists have different ways of talking about the mind than the cyberneticians; the Gaia hypothesis champions differ from the "strong" Darwinism of Richard Dawkins, which differs from the Darwinism of Gould; and so on. The criticism exchanged between these normal sciences mirrors the criticism the entire group levels at literary intellectuals. The computer scientist Daniel Hillis says of Richard Dawkins:

> People who read his books often walk away with an illusion of things being much simpler than they actually are. [8]

This statement could very well be Hillis' complaint about the theoretical books of Jean Baudrillard, because it carries an accusation of simplification through theory and a turn away from scientific complexity. Likewise, when Daniel Dennett talks about cognitive psychologist Nicholas Humphrey, he describes Humphrey as if he were an iconoclastic cultural critic:

> The dream of proving a famous theorem isn't as enticing to him as the dream of doing something so idiosyncratic and original that people would say, 'Well, only Humphrey could have done that; this is a unique and person contribution to world culture.' You find this in the arts; you don't find it much in the sciences" [9].

Both Dennett and Hillis resort to charges of simplification and incompletion as opprobrium for their fellow "third culture" theorists and for literary intellectuals. The disciplinary lines have to lie elsewhere than where Brockman places them.

In addition to the interdisciplinary criticism within the supposed third culture, *The Third Culture* contains this interesting note by physicist Martin Rees:

> there's obviously a gap between those who are at ease with mathematics and those who are not. [10]

Rees is not simply talking about explaining science to general readers, but physics to theorists in other disciplines. He shows that each scientific discipline has its own normal science that limits its ability to interact with other disciplines. Thus, the relationships between disciplines involve a mutual explanation of normal sciences so that some understanding can occur. Of course, along with the methodologies and theories of normal science comes a unifying discourse that must be translated into other normal science discourses--more combination of literary and scientific methods within science. Rees' example shows that there is a hierarchy within the "third culture" itself from the perspective of each of the disciplines that Brockman places under its identity. To Rees, knowledge of mathematics divides him and his colleagues in physics from a cybernetician like Francisco Varela. Consequently, Brockman's attempt to pose the third culture as a new disciplinary paradigm only reveals that science itself is segmented into disciplines, some of which interact and others which are seemingly incommensurate. Brockman makes things seem simpler than they are, in a way that his scientists might call literary but which is better called disciplinary.

There are obvious problems with veiling of disciplinary divisions among scientists, but an even bigger problem comes through the construction of a "third culture" entirely in one set of disciplines without acknowledging its relationship to that other set of disciplines. Brockman's "third culture" never explains the links between science (or should I write "sciences"?) and discourse, science and culture, and science and political economy. These areas of connection is where scientific theories are being discussed among the general public, although Brockman mentions very little of these connections. If *The Third Culture* were to examine the way outsiders view scientific theory--and not simply self-congratulatory scientists--the book would reveal that scientific theory is already being integrated into cultural discourse by those despised literary intellectuals. The only problem to scientific theory's new relationship to literary culture is that some scientists are rejecting that relationship and calling for a self-serving set of "third culture" terms. Certainly these scientists recognize the importance of discursive practice and theory to their disciplines, but they simply are not willing to note the correspondence of that importance to the central role of discourse and theory to literary intellectuals. Too much of their identity as scientists practicing a new, culturally-relevant science seems to be at stake.

Yet this identity construction, as we have seen, hides the real nature of science as a wonderfully diverse field of disciplines, and it also impairs the ability of scientists to be critically aware of the way they construct their own disciplinary normal sciences. "Third culture"

rhetoric does nothing to help scientists make lasting interdisciplinary relationships among themselves and especially with literary disciplines. Of course, embracing the "third culture" identity does call attention to the way interdisciplinarity might help the sciences, but it provides no methods of doing so. In fact, it suggests a discarding of disciplinary identities within science and a retrenchment away from literary culture.

Another method of making interdisciplinary science will have to be found, perhaps along the lines Joe Moran suggests in *Interdisciplinarity:*

> a more productive interdisciplinary space might be constructed by examining the ways in which scientific ideas extend beyond the area of specialist inquiry and form part of culture: how they are informed by the dominant philosophies, preoccupations, and representations of society, and how they interact with 'non-science' when they are widely disseminated. [11]

Moran suggests a way of making relationships across disciplines in which scientists retain their disciplinary identities while also being aware of the discursive and disciplinary practices that sustain their identities and those of colleagues in other disciplines. Thus collaborative ways of sharing disciplinary practices and findings are accompanied by an awareness of the sociological constructions involved in each act of interdisciplinarity.

Under Moran's model of an interdisciplinary science, each scientist is always aware of the normal science in which he or she is working. The arbitrary nature of one's discipline is noted during interactions with other disciplines, so that each discipline is recognized as an equal participant in the relationship. At its best, such interdisciplinarity offers something akin to a conversation in which knowledge is shared:

> I take interdisciplinarity to mean any form of dialogue or interaction between two disciplines. [12]

Interdisciplinarity can maintain a dialogue in which no discipline is privileged, unlike the in the relationship Brockman outlines between the "third culture" and literary culture. At the least, interdisciplinarity makes its participants aware that their efforts to privilege their own practices or knowledge in interaction with members of another discipline are assertions of identity and power. As Moran notes:

> Interdisciplinary approaches often draw attention, either implicitly or explicitly, to the fact that what is studied and taught within universities is always a political question. [13]

That is a big step forward from the "third culture" model, which naturalizes its own political biases. Brockman's presentation of science does not challenge any of its own practices, not even in an attempt to appear self-aware of the "third culture" limits.

A rethinking of new scientific theoretical practice as interdisciplinary theory would allow it to more effectively present itself as culturally

relevant. Sciences that critically engaged themselves alongside literary disciplines would produce more complete theoretical statements. If the "third culture" is an attempt on the part of scientists to make interdisciplinary cultural theory, then they are seeking to accomplish some of the same things as literary intellectuals have done in interdisciplinary projects like "cultural studies" and "critical theory." These projects have succeeded because they critique their own discursive practices and disciplinary constitution. As Moran writes, the resulting theories are stronger when they result from self-critical interdisciplinary relations:

> from the point of view of 'theory', it is better to be self-questioning than to carry on doing what we have always done for reasons of institutional practicality or intellectual inertia. [14]

Brockman and his group of scientific theorists would be wise to study literary intellectuals closer, and to be ready to praise their strengths. After all, both scientific and literary interdisciplinary theory shares at least one major common goal: "they form part of a much broader philosophical questioning of the nature of reality itself" [15]. A mutual understanding could produce unprecedented interdisciplinary work that privileges neither discourse nor data but imagines completely new interactions between the two. Until then, though, the words of Nicholas Humphrey--that most literary of scientists--can be re-applied to scientific intellectuals trying to build a "third culture" without relating to literary culture:

> Since they don't understand science, their only defense is to say that it doesn't matter. [16]

If one substitutes "literary culture" for science, one sees how his words turn back upon scientists. Yet if the "third culture" does not challenge its confused disciplinarity, then one might say that Humphrey's words could be applied to some scientific theorists without any change at all.

Notes

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[1]John Brockman, *The Third Culture,* New York: Touchstone, 1996, p. 19.

[2]Brockman, p. 18.

[3]Brockman, p. 21.

[4]Brockman, p. 30.

[5]Joe Moran, *Interdisciplinarity,* London: Routledge: 2002, p. 2.

[6]Moran, p. 187.

[7]Moran, p. 181.

[8]Brockman, p. 91.

[9]Brockman, p. 206.

[10]Brockman, p. 29.

[11]Moran, p. 159.

[12]Moran, p. 16.

[13]Moran, p. 16-17.

[14]Moran, p. 113.

[15]Moran, p. 157.

[16]Brockman, p. 25.

Michael R. Allen edits the literary journal *The Ampersand* (http://www.mprsnd.org/), and serves on the editorial board of *Synthesis/Regeneration: A Magazine of Green Social Thought* (www.greens.org/s-r/). He lives in St. Louis, Missouri.