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Commentary/Response: Turner's "Contested Identities"

The Rising Cost of Contestation

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Bill Turner identifies serious disciplinary problems for geography within such highly competitive arenas as academic prestige, external funding, and university structures. There is indeed a major disconnect between the self-appointed mandarins prescribing "new" imperatives and the departmental chairs in the trenches staving off encroachment from other, (re)invented university units upon GIS, environmental studies, or human-environment science.

It bears emphasis that the shifting and unresolved debate sketched by Turner across the last two centuries has had fundamental implications for what geographers study and teach, and how well they do both. Although a "civil" discourse can nudge a subdiscipline into new directions, constructive methodology by example may well be more creative. However, if discord degenerates into ideological imposition or attempted usurpation of departmental curricula, hiring policies, the peer-review system, or media outlets, then everybody loses. As a physical geographer and geoarcheologist, and later as a cultural ecologist, I have watched the zigzagging of our discipline from 1960 to 2001. My reading of the events suggests that the changing tone of discourse or intensity of contestation has indeed had significant effects.

Around 1960, adherents of the "Midwestern school" dominated the majority of departments. Their penchant was descriptive, nonanalytical, and antiprocessual. They were deeply suspicious of the role of physical geography, their human geography had advanced little beyond the "commercial geography" of the late 1800s, and they were disinterested in culture, let alone its "inner workings." James and Martin (1978, 73–77) eulogized the mindless land-use mapping projects of the Wisconsin field schools, but recountings to me by several of the original participants while I was on the Wisconsin faculty indicate minimal discussion of how multiple datasets might be compared, let alone integrated.

The spatial-quantitative "revolution" rapidly gained ascendance during the 1960s, measurably assisted by the rapid expansion of geography departments, which created positions for a new, more heterodox generation. The Hartshornian regionalists fought a determined, if vacuous, rear-guard action, attempting to retain hold of the media outlets. The "quantifiers" have been accused of arrogance, but they actually made their case in a series of innovative textbooks that merit retrospective appreciation. For the first time, the applicability of quantitative geography opened countless jobs for geography graduates in the private sector, earning for the discipline a respect that now continues to provide employment for our GIS specialists. Equally, the intellectual dimensions of the spatial-analytic approach had a major impact on archaeology (e.g., Clarke 1968). I do not, therefore, believe that the inherent spatial focus of quantitative geography worked against our disciplinary respectability.

However, the chorological emphasis of both the older regionalist and the newer quantitative clusters served to marginalize physical geography. Throughout the 1960s, many major departments were satisfied to staff their introductory physical geography courses with young instructors unqualified to recognize physical features outdoors that they defined for freshmen indoors. As a consequence, Earth Day 1970 found geography too emaciated to jump in and play a conspicuous role. Deans across the country noticed this and became more sympathetic to co-optation of geography's "bread-and-butter" physical courses by rival departments. Course enrollments and numbers of declared majors leveled off or declined, as students also sensed that our curricula on environmental issues were totally antiquated. In fact, we lost the preeminence briefly merited by *Man's Role in Changing the Face of the Earth* (Thomas 1956).

We switch now to 1980. In that year, geography was vibrantly alive. Younger academics had gone beyond the disciplinary fences to explore other ideas. I found it exhilarating to stop by at random sessions of the annual meetings to see the enthusiasm of an upcoming generation enjoying a field of 1000 flowers. Specialty groups were forming, to foment greater exchange by like-minded practitioners, while some old-timers grumbled that geography was bursting apart at the seams and about to disintegrate. In fact, there had been little "theoretical discourse" during the 1970s, and the humanistic (re)surgence was mainly achieved by well-read thinkers opting for nonpolemic methodology by example. To their great

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credit, the matured spatial analysts became a component of this postpositivist swell, now exploring behavioral and welfare issues without a blush.

In the interim, traditional cultural geography, which had culminated with *Readings in Cultural Geography* (Wagner and Mikesell 1962), was soon tellingly indicted by Brookfield (1964) for its emphasis on (inferred) process rather than agency and its generalizing approach without attention to the microcosm of the human community. Only now did Sauer himself begin to write his best, data-grounded works (Sauer 1966, 1971), while a fresh infusion of anthropological experience led to the emergence of a sophisticated cultural ecology (Brookfield and Brown 1963; Butzer 1971, 1976; Waddell 1972; Brookfield 1973; Nietschmann 1973; Denevan 1983; Turner 1983; Watts 1983; Grossman 1984). These nondeterministic case studies of the human-environment interface (see Butzer 1994b) had as much cross-disciplinary impact as any branch of geography during the last fifty years. They also gained access for many of our students to international bodies concerned with resource management and environmental conservation. Although not much cited today, *Perspectives on Environment* (Manners and Mikesell 1974) helped to revitalize the study of human impacts on and attitudes to the environment, so that by 1980 physical and biogeography were back and quite healthy.

Moving forward to the year 2000, we find geography larger by several orders of magnitude, with some 4,000 presentations at the annual meetings, compared with only ninety-six papers offered in 1960. In addition, it was more international, with 24 percent of participants hailing from Canada or abroad. However, the healthy diversity of a big tent had given way to divisiveness and—as some would argue—polemical put-downs and blanket dismissals or caricatures of whole categories of research. Book reviews could be vicious and egregiously uninformed (e.g., *Ecumene* 1996). Recently, younger scholars who do not match the semantics of endless neologisms drawn from "critical theory" have had trouble getting published in some journals. Passages in articles or books often need two or three readings to make sense, rendering our written products more inaccessible than in the heyday of positivist jargon. Dissatisfaction with the alleged bias of our flagship journal has forced a switch to four independent editors, while association membership is declining. I claim no privileged information as to whether the former is true, or the latter related. Some interpret this as an intellectual retreat vis-à-vis a benighted mainstream, others as a stepping back from the brink.

Something is amiss. There have always been dialectical tensions within modern geography, as in any other discipline. But while the debaters of 1960 read each other and actually argued, some of today's contestants proclaim rather than make their positions, hectoring others as to what is fashionable or not. Whereas most creative writers of the 1960s and 1970s proscribed their visions through methodology by example, some recent authors contemptuously ignore data-grounded research and prescribe the study of social inequalities, on the basis of assumptions, rather than the investigation of contingent relations (see Butzer 1994b, 416–18). Most practitioners of data-grounded research refuse to engage in such a "discourse without rules," even as they improve their theoretical positions with a heightened self-reflexivity in response to various postpositivist ("postmodern," if you prefer) currents of thought.

Of course, the stridency of some exponents of "critical," "social," or "radical" theory is not unique to geography, having already paralyzed many anthropology programs. The question here is whether such a cantankerous ideological stance will impress our rival disciplines in the long run. "Critical theory" may have been just dandy for departments of English twenty years ago, but, unlike English, geography does have a "real world" (with apologies to our borderline antifoundationalists) to study, in all its manifold dimensions.

That "real world," I contend, has a great deal to do with why geography did not become part of the "seven liberal arts" of late antiquity and why it came to the university curriculum late. Those liberal arts included grammar, rhetoric, and logic in one category and geometry, arithmetic, music, and astronomy in another; the last of these was focused on mathematical computation, rather than observation. Absent from this list are not only geography but all of "natural history," including Aristotle's works on meteorology, rocks, and veterinary science, Theophrastus's botany, and any treatise on agriculture. The liberal arts were subjects for indoor drill, not scientific observation.

"Classical geography" was a very disparate field: Strabo (c. 25 B.C.) used the name for his seventeen books of *Länderkunde* (1931–1935), as did Claudius Ptolemy (c. 160 A.D.) for his study of mathematical cartography (1991). Strabo and the other Greek travelers who preceded him presented more than information on peoples and places, adapting new data for Cartesian location and incorporating much natural history, including some exquisite observations on geomorphology. Their writings became a durable genre that was preserved for later periods *because* they were widely appreciated, appealing to a healthy human curiosity about how the world looks—its environments, what other peoples do and how they behave, and where things of interest hap-

pened. Islamic agroecologist Ibn Bassâl (c. 1075) used the latitudinal *klimata* and his own observations to empirically characterize a bioecological gradient from subtropical desert to the temperate zone, while Ibn el-Awwâm (c. 1160) built on observations of earlier agroecologists to offer a complex (and recognizable) classification of soils and their typical sites (Butzer 1994a). Continuing through the ages of (re)discovery and Enlightenment, geographical "practice" was primarily driven by the information and conceptualization of observant people from many walks of life, never the unchallenged preserve of academic scholars.

During the 1820s, "geographical societies" were founded in Paris and Berlin to meet strong interest in the scientific "discovery" of ancient Egypt. The number of such societies expanded as travel opened other windows on hitherto unfamiliar lands. Significantly, most members of such societies were academics from other disciplines, for whom "geography" was a vibrant interdisciplinary enterprise that brought them all together. It was increasingly felt that such subject matter had to be added to the curriculum for secondary schools, warranting university departments that would train secondary school teachers.

My point is not to suggest that classical, medieval, or early modern geography should be a model for geography today. Instead, I make two arguments. First, "geography" has long enjoyed public support because of what it does. Even now, professional journals in different countries are challenged by successful, popular magazines about geographical subject matter, however loosely defined. Second, communication—whether by ancient story-telling, the lecture hall, or modern media—has always been an integral and necessary part of our practice. As a search to understand the world and its human-environmental interconnectivities, geography served to help thinking individuals make sense of and order the world around them. That is where we hope to secure continuing public support and to attract students, while at the same time convincing the academy that geography offers unique insights into critical issues. To do so, we need to balance our internal research priorities and processes with the spatial/regional medium that serves our external ("outreach") function of addressing audiences (with a minimum of jargon!) in the classroom and beyond.

What new insights, and how do we get them across? Since the 1940s, geography has supplied large numbers of specialists to the public and private sectors in cartographic (re)presentation, spatial analysis, resource and environmental management, cultural ecology, geoarchaeology, and, most recently, GIS. By implication, government agencies, international foundations, nongovernmental organizations, banks, and other corporations and businesses recognize that we can provide special insights and expertise. Such applied specialists contribute substantially to geography's external function of communicating with various audiences. The operative word here is "specialists"; from my particular perspective, that means those doing theory-informed and data-grounded research with real technical expertise, be it biophysical, human, or spatial-economic. The challenge is for geography's research and training priorities to identify the appropriate "questions" and provide the requisite technology to address them in a context of cross-disciplinary experience. A recent text by Head (2000) boldly explores recursive terrain by bringing together environmental-change science with cultural constructions of nature. Although photocopied "readers" have now largely replaced textbooks, such texts continue to help set the agenda. Head's volume made clear to me just how much we need innovative textbooks, both to rattle our complacency and to attract the best students.

Of course, an academic discipline is much more than its applicable components of the moment, and what appears to be "pure" research today may well underwrite new applications down the road. Modern geography offers a large menu of possibilities for unique insights into critical issues. A less deductivist, "new" cultural geography comes to mind, particularly if it can develop a hands-on approach to ethnic minorities. Among many other promising avenues, one can also point to a GIScience that better addresses the spatial nature of the phenomena represented, with substantive theory and a suite of techniques, including closer links with biophysical research. From my own experience, I would single out the capabilities of biophysical geography to elucidate environmental change, whether or not induced by land use, in local, regional, and global contexts. This is a cross-disciplinary intellectual and applied arena in which we can offer special insights and expertise as to impacts or responses, whether for short-term change (e.g., Johnson and Lewis 1995) or over the long haul (e.g., Butzer forthcoming). It is another example of a range of questions that evokes broad, if not global, attention. Put differently, it has genuine interdisciplinary appeal, which I believe is one of the basic criteria for what will ultimately sway "the academy."

The expertise and vision of individual geographers is appreciated in many kinds of multidisciplinary interactions, as I can vouch from practical and intellectual collaboration with archaeologists and human paleontologists through much of my own career. Yet, as most of the fresh postgrads in my latest seminar volunteered, nobody they interact with on the outside seems to grasp what we

stand for as a discipline. We do so many different things, which most insiders recognize as related but which require quite different methodologies and theoretical priorities. What many of us do is embedded in spatial and environmental contexts that mediate our (re)presentations and communication. That fundamental commonality reflects the earth-bound structural components that happen to engage us, either in the material or the abstract—unless, of course, we insist on explaining the social by the social, on a homogeneous planet. The problem remains the label "geography," with its simplistic popular constructions, even though a brief description such as "the study of spatially focused human and environmental variability and their interconnectivities" is less abstract or awkward than a twelve-word descriptor for the field of physics would be. Short of changing what we call ourselves, we have no option but to exploit our applicabilities to the best, in whatever interdisciplinary medium, and to excel in what we do.

From our first introductory courses onward, we need to continue to explain what we specifically do and how our disciplinary expertise contributes to understanding the issues presented. In our graduate-level training programs, we must focus more on the bonds between research and praxis and treat applied practice as one primary goal, rather than an outlet for those who will not achieve academic positions. Our alumni should be able to proudly say that "I was trained in geography as a (spatial analyst, environmental specialist, and so on)." Applicability does not start outside the front door. Even environmental-change science has much to learn about the cultural dimensions of context or the meanings of nature, as Head (2000) suggests. Surely the environmental scientist, who may use heuristic models from systems theory, should at least be able to talk constructively with the "new" cultural geographer, to whom systems may be anathema. With less prejudice and more openness on both sides, we might begin to enjoy our disciplinary diversity, to promote a dynamic and extroverted field that attracts positive attention from "the academy." The rising costs of continuing contestation are simply too high.

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Humboldt's Dream, Beyond Disciplines, and Sustainability Science: Contested Identities in a Restructuring Academy

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The contest of identities so elegantly explored by Billie Lee Turner, II waxes and wanes, not only within our discipline, but also within the academy as a whole and within ourselves. Thus, over many individual research careers, these two visions of geography have competed for attention, energy, and allegiance. However, at the individual level, as well as those of the discipline and the academy as a whole, other fierce contests rage. In this brief commentary, I want to explore three of these contests and their implications for and beyond the four futures Turner envisions in his concluding review.

Humboldt's Dream

> In a few hours we sail round Cape Finisterre. I shall collect plants and fossils and make astronomic observations. But that's not the main purpose of my expedition—I shall try to find out how the forces of nature interact upon one another and how the geographic environment influences plant and animal life. In other words, I must find out about the unity of nature. (Alexander von Humboldt, cited in Nicolson 1995, ix)

Thus Humboldt, twenty-nine years old, set out his dream in a letter to friends in 1799 as he awaited his sailing from Spain to Venezuela and the beginning of his five-year exploration of the Orinoco river and the Andes mountains. He would pursue the dream until the final posthumous publication of volume 5 of his *Kosmos* in 1862. However, his dream was not to be shared widely, for by then the academy had discovered another more powerful approach to understanding nature, though not its unity. To pursue this new approach of reductionism, specialization increased, disciplines were born, and graduate degrees were invented.

Yet Humboldt's dream of the unity of nature, or its many variants, the most recent evidence of which is Wilson's (1998) enlightenment dream of *Consilience: The Unity of Knowledge*, persists as a contested identity with reductionism. Many active scientists experience a continuous contest between the efficacy of reductionist approaches and the necessity for more holistic explanations. The academy perceives simultaneous growth in both reductionist and unifying approaches. The reductionist triumph in deciphering the human genome is leading to major investment in such new "disciplines" as epigenetics, proteinomics, and bioinformatics. At the same time, as Turner describes, there is the rise of the "integrated sciences," based on the veritable success of reductionist approaches and the necessity for more holistic expression. Within this framework, we can renew Humboldt's dream: to understand, not just the unity of nature, but the fundamental interactions and unity of nature and society at scales ranging from the local to the global.

Beyond Disciplines

The basic structure of the modern university is clear—a trinity of students, graduate and undergraduate; administrators, from president to department chairs; faculty members, divided into departments and divisions. But there is another structure that is less transparent, too new to be familiar, and poorly understood.

> It is the collage of centers, programs and institutes that dot our campuses and complicate our academic directories. . . . The institutes and centers exist because almost none of the great questions of science, scholarship, or society fit in single disciplines, and many such questions are now pursued collaboratively. Whether they are questions of origin: particles, life, society or the cosmos; questions of meaning: of existence, being human, kinship, or symbol; or questions of matter and energy: of atom, cell, family or nation—we quickly run up against the boundaries of our disciplinary structures. And if we ask why people kill others, why hunger persists in a world of plenty, or why great gaps separate rich and poor, black and white, male and female—we quickly find how limited are our disciplinary perspectives. (Kates 1989, B2)

I wrote this in 1989, when, as director of an interdisciplinary program on world hunger at Brown University, I became aware of the contested identities many faculty felt between their roles in their departments and in their centers. The departments were where they taught, where they received salaries, and perhaps where they received tenure. The centers were where they learned and explored and where they received intellectual excitement and sustenance. Nonetheless, the prevailing view in the university was and still is that the centers are add-ons to the familiar structure of academic life. To be sustained, a center needs to evolve into a department—perhaps a hybrid department, or one with a new name, but essentially it must become a discipline, and everywhere there are signs of new and aspiring disciplines.

Yet the proliferation of hybrid departments is insufficient to address the continuously changing nature of creative inquiry into the great questions of science, scholarship, and society. The challenge to the university is to

maintain a continuing process of recombination, ferment, and group work, while providing for the long-term security and sustenance of individual scholars working beyond disciplines. It is still not clear how that challenge will be resolved, although an increasing number of arrangements, cross-appointments, and the like exist to enable centers and institutes to recruit and provide tenure or long-term appointments. The important point is that the emergence and flowering of the centers and institutes in the last quarter of the twentieth century represents as profound a change in the practice of science as was the emergence of graduate study in the last quarter of the nineteenth century. Geographers who create, lead, or participate in such centers and institutes will be well placed to continue our traditions beyond disciplines.

Sustainability Science

> Meeting fundamental human needs while preserving the life support systems of planet Earth is the essence of sustainable development, an idea that emerged in the early 1980s from scientific perspectives on the relationship between nature and society. During the late 80s and early 90s, however, much of the science and technology community became increasingly estranged from the preponderantly societal and political processes that were shaping the sustainable development agenda. This is now changing . . . [and] a new field of sustainability science is emerging that seeks to understand the fundamental character of interactions between nature and society. Such an understanding must encompass the interaction of global processes with the ecological and social characteristics of particular places and sectors. The regional character of much of what sustainability science is trying to explain means that relevant research will have to integrate the effects of key processes across the full range of scales from local to global. It will also require fundamental advances in our ability to address such issues as the behavior of complex self-organizing systems, as well as the responses, some irreversible, of the nature-society system to multiple and interacting stresses. Combining different ways of knowing and learning will permit different social actors to act in concert even with much uncertainty and limited information. (Kates et al. 2001, 641)

Thus, the twenty-three authors of the quoted paper—participants in a workshop in Friibergh, Sweden in October 2000—introduced sustainability science to the science and technology community both as the latest incarnation of Humboldt's dream and as an integrated science going beyond disciplines (Forum on Science and Technology for Sustainability 2001). Given such themes in this writing as nature-society interactions, scale, regional studies, vulnerability from multiple stresses, and multiple ways of knowing and learning, it can come as no surprise that the authors include at least five geographers. More significantly, although only five geographers were present, these "geographical" themes now resonate across a broad range of disciplinary backgrounds in both the natural and social sciences.

It is still too early to know whether sustainability science as title or idea will flourish, but signs abound that it is addressing the contested self-identities of many scientists and technologists, particularly those from developing countries, who aspire to integrate their concerns for their environment with the necessities of meeting the human needs of their societies. Beginning in November 2001, a series of meetings will seek further regionalization of environment and development by addressing both the particular concerns and the special needs of major areas of the world. These meetings are part of an international initiative for sustainability science launched by the workshop participants and built around an electronic forum (www.sustainabilityscience.org).

Implications

What are the implications of Humboldt's dream, going beyond disciplines, and sustainability science for Turner's four speculative future outcomes for geography? First, all three are part of the restructuring of the academy—and, indeed, the restructuring of knowledge—that Turner wisely uses as context for his tale of geography's contested identities. Second, variants of each of his four outcomes exist for the academy as a whole, which is itself undergoing both a persistence of the *status quo* and a *reversal* of emphases, *partitioning* into new integrated sciences or specialized disciplines, and new efforts at *union* as epitomized in sustainability science. Thus, while Turner's article is clearly destined to be a classic, it may itself in time be viewed as parochial. Finally, there is the *none of the above* outcome, in which geography does *not* survive by 2050 in any form—not because of the contested identities of our discipline, but because of the many contested identities of science itself, which will have undergone as profound a transformation as that of the Enlightenment of the eighteenth century or the scientific-technological revolution of the nineteenth and twentieth centuries.

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Environmental Geography—History and Prospect

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Professor Turner's "Contested Identities: Human-Environment Geography and Disciplinary Implications in a Restructuring Academy" (2002) arrived at the start of the 2001 fall semester, as many faculty were preparing syllabi on the history and theory of geography—a situation that initially impelled Turner to write his article. The article addresses important questions about the identity of human-environment geography, which I shall call environmental geography and discuss first in this commentary. It articulates concerns about the relations between environmental geography, the discipline, and larger academic institutions in ways that seem problematic; and it consciously, yet in my view mistakenly, omits research in physical geography and cartography, remote sensing, and GISciences (collectively termed mapping sciences below), which are important in the history and prospect of environmental geography.

The Identity of Environmental Geography

Turner (2002) offers a wealth of insights into the academic development of environmental geography in his sections on "The Foundation of the Human-Environment Identity," "Alternatives to the Geographic Factor," and "Contemporary Human-Environment Geography." In the latter, he makes six summary observations about the field:

1. A return to the unity of nature and human effects, e.g., in earth system and sustainability science, by geographers, "including physical geographers, strongly linked to the science community" (60).
2. Strong empirical and quantitative research, "especially as it engages the use of remote sensing and GIS sciences and modeling" (60).
3. Joint attention to agency and structure in explanatory frameworks.
4. Less distinction between pure and applied research.
5. A lack of metatheses (alternately attributed to the import of ideas from other fields and/or mistaken ideas about place-based research).
6. Reassertion of environmental geography in the discipline (e.g., this *Annals* section).

He offers intriguing digressions on each of these points and in other parts of the article and footnotes (some of which are debatable, e.g., Harlan Barrows's purported lack of "immediate impact" [p. 59] must be weighed against his contributions and his students' work on the Mississippi Valley Commission, Tennessee Valley Authority, Columbia Basin Investigations, Rio Grande Joint Investigations, etc., and the purported neglect of Capel, who is read in graduate courses that use *Human Geography: An Essential Anthology* [Agnew, Livingstone, and Rodgers 1996, 66–94]).

Instead of developing these six observations in a sustained examination of the identity *of* environmental geography, especially contemporary environmental geography, the article inverts the sixth point about the identity of environmental geography *in* the discipline to take up the question of "geography *as* human-environment science." In responding to commentaries, I hope Turner (2002) will extend some his earlier writings about the identity *of* environmental geography and what he terms here the "human-environment condition" to address the expansive scope of geographic research on resources, hazards, energy, land use, environmental quality, cultural ecology, environmental justice, climate-society relations, human-animal relations, and so on (cf. Turner 1997). This would seem a key component of the identity challenge, and perhaps a way to clarify some of the article's broader arguments.

The Changing Environment of Geography

Much of Turner's (2002) article addresses four broader disciplinary concerns: (1) relations between human-environment and spatial-chorological traditions in geography; (2) relations between geography and human-environment science; (3) relations between synthetic and substantive or systematic inquiry; and (4) relations

between geography and changing academic institutions. Turner frames these relations dualistically and justifies this approach, stating that "recognition of the instability of dualisms does not evaporate the reality of the two identities as I address them" (65). What complicates the argument, however, is that the other four sets of relationships are linked in varied historical and programmatic ways with the core dualism. To sort through these linkages and to assess Turner's core argument, I found it useful to return to my syllabus for the upcoming course in the history and theory of geography at the University of Colorado and to two of its texts, *Human Geography: An Essential Anthology*, mentioned above; and *The Changing Nature of Physical Geography* (Gregory 2000).

The editors of *Human Geography* organize the field in three conceptual clusters: (1) nature, culture, and landscape; (2) region, place, and locality; and (3) space, time, and space-time. (In one session of our course, we debate these clusterings vis-à-vis other combinations and other core concepts, and I imagine Turner and most geographers would readily join in such debate.) For present purposes, Turner's article seems to combine the second and third conceptual clusters. The question that arises is whether human geographers would find his "spatial-chorological tradition" to be as real, useful, or consequential as Agnew and colleagues' three-fold organization (or any other multidimensional alternative).

I regard the *Human Geography* clusters as a more clear and useful way to represent the past and present of human geography than Turner's spatial-chorological tradition, though the latter did lead me to reflect upon the sometimes close relations between research on space, place, region, and landscape. The way Turner lumps them together may help account for his ambivalent view of the humanities as both potentially "adverse" and "emancipating" (69), and for his spotty coverage of geographic research on environmental values associated with plants, animals, and places—which are not sufficiently "on the map."

Curiously, the one monad in the article is *the* academy. Even though this is qualified in an endnote as plural (Turner 2002, p. 65), much of the article presents academic institutions as a restructuring body that will either accept or reject geography as a discipline. A monistic perspective on the academy combined with a dualistic perspective on the discipline, whether real or not, have a number of programmatic consequences in the "Review and Implications" section. It leads Turner to identify alternatives for geography in which "one," "the other," "neither," or some kind of homologous "both" can succeed. When framed as a dualism, along with complementary dualisms in the article, the most likely disciplinary outcomes would seem to be the "status quo" or "partition," but perhaps not with the implications that Turner envisions.

The Rest of the Map

A deepening sense of identity in environmental geography relative to human geography could be positive or negative for the discipline, but it seems *inherently* negative within a dualistic perspective on the discipline. I can understand Turner's desire to limit the scope of his article to the voluminous material that he covers on historic tensions between human and environmental geography, and to set aside the broader challenges of physical geography and mapping sciences. However, this decision, which enables him to develop a partial perspective on the discipline's *past*, limits his view of its *prospect*. On this count, *Human Geography: An Essential Anthology* (Agnew, Livingstone, and Rodgers 1996, 8) offers little help: "human geography is a meaningful label for a field of knowledge since, outside the realm of rhetoric, physical and human geography have become largely separated. Whether this *should* be the case or will always remain so are entirely different issues." As Turner notes, many theoretical works on the discipline give limited attention to environmental geography and less to physical geography and mapping sciences.

What do we find in comparable theoretical reviews of physical geography and mapping sciences? For the former, Gregory's *The Changing Nature of Physical Geography* (2000) engages current debates in the philosophy of science; it includes full chapters on human activity, applied physical geography and environmental management, global physical geography, and even cultural physical geography, and every chapter cites linkages between physical geography and environmental management. Similarly, the *Annals of the Association of American Geographers* forum on "Methodology in Physical Geography" (Bauer 1999) creatively explores theoretical and methodological issues relevant for environmental geography. Published debates about the use, misuse, and potential of GISciences involve almost every subfield of environmental geography, from resource and hazards mapping to landscape visualization and environmental justice.

These omissions have consequences for Turner's (2002) historical account and programmatic argument. To be fair, Turner gives close attention to integrative writings by Stoddart and others. However, while his account chides the "new ecology" for its claims, it omits earlier relationships among Barrow's human ecology,

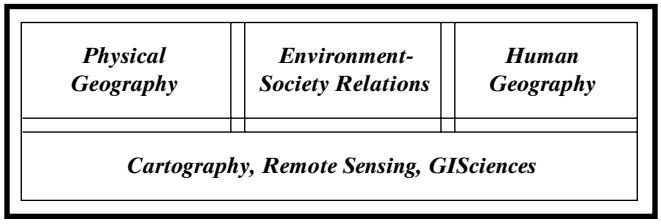

Figure 1. A diagram of the discipline of geography in the early twenty-first century. *Source:* Adapted from James Robb, Staff Cartographer, University of Colorado at Boulder.

Cowles's plant ecology, and Park's urban ecology. While it cites recent research on climate-society relations, it omits applied water budget climatology from Thornthwaite to the present. While it recalls the historic split between physiography and human geography, it omits historic links between fluvial geomorphology and water resources management, not to mention current philosophical debates in geomorphology (e.g., Rhoads and Thorn 1996). While it cites biogeographers on disturbance ecology, it omits their contributions to landscape history, vegetation policy, and ecosystem management. The irony of these omissions is that Turner has a better knowledge of them than I do, but by focusing on competing identities in human geography, he draws programmatic implications that are constrained by a *subdisciplinary* history.

I draw several implications from his account. First, the status quo between human and environmental geography would be fine if environmental geography clarified its own identity, as Turner urges, and as discussed in the first section above. The late twentieth century witnessed increasingly effective communication among human and environmental geographers, as evidenced by integrative research in political ecology, environmental hazards, environmental justice, landscape research, and animal geography, to name a few examples. Further integrative efforts along those lines, and the systematic ones that Turner suggests, should be encouraged.

Second—and more pressing, in my view—is the need for comparable communication, collaboration, and integration with physical geography and mapping sciences, in ways that address the lines of academic restructuring that Turner describes. Focusing on these other sides of environmental geography would help balance its identity, shed light on historical threads in the discipline which have been glossed and neglected, cut across the *four* related branches of our discipline (depicted in Figure 1), and more fully respond to changing academic currents and institutions.

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Restatements, Rifts, and Restructuring: A Response to Butzer, Kates, and Wescoat

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How delightful that three such consummate scholars, researchers, and thinkers agreed to comment on my essay, each providing useful insights that would lead to modifications if I were to rewrite it at this point. I note, however, that each is a committed human-environment geographer whose work, with which I am familiar, is not steeped in the spatial-chorological tradition as defined in the essay. I suspect that had practitioners with that affinity been asked to respond or responded, different arguments would have been cast my way.

Wescoat's response is the most directly critical and the most puzzling to me. In one vein, he appears to ask me to write another article with an expanded purpose; in another, I apparently fail to express my ideas in a way that he can digest as I intended. In regard to the first response, I am reminded of an incident from my undergraduate days, surely embellished through the years. Entering a men's room, I found myself standing next to a renowned scientist. I made no eye contact and said nothing—my mother having instilled in me that the "way famous" are not to be disturbed. Without looking at me, eyes transfixed on the wall in front of us, he spoke to no one and to me: "You write a book about potatoes. You call it *Potatoes*. The table of contents indicates that each chapter

addresses different aspects of potatoes. And what do the reviewers do? They criticize you because you did not write about maize." He then departed the room, never acknowledging my presence.

Wescoat apparently wants me to write on the content and character of contemporary human-environment geography, or what he calls "environmental geography"—a term I never use, in part because it inadequately conveys a "tweener" orientation between the natural and social sciences. This topic, however, was not my potatoes, and various parts and references to the topic were provided to illustrate the presence of the human-environment identity in geography at certain moments in its history. Wescoat approaches more closely "the potatoes" of the essay in his section on "The Changing Environment of Geography" (81–82) although here, too, he hesitates to recognize the whole case. This last observation is warranted because, after coming close to my intent, he then redirects his comments to the substantive domains of geography, wondering if my dualism of spatial-chorological and human-environment identities is useful to those domains (meaning, presumably, that the two identities capture adequately the substantive interests of the domains).

Wescoat and I seem to be talking past one another, or perhaps he simply does not find my rationale appealing and is too much of a gentleman to say so publicly. My identities are not geographic domains of study (substantive subfields), as articulated by Pattison (1964), Gregory (2000), and others, or as might be construed from the content of *Geography in America* (Gaile and Wilmott 1989). Rather, they are the root logic by which geographers and geographic traditions appeal, implicitly and explicitly, for formal recognition within the academy: witness, for example, the rationale used to gain a division within the National Science Foundation (Geography and Regional Science) and a place within the K–12 curriculum (historically, as noted in the Committee of Ten). I contend that geography has applied two such rationales (identities) throughout its modern history, and that virtually all of geography's substantive domains have lineages that can be traced back primarily through one or the other of them. These domains include physical geography and cartography or mapping sciences within geography, although, for the reasons noted, I did not include the literatures specific to them. I am skeptical, given what knowledge I do possess, that the addition of this literature would change the two identities or the base historical argument provided. It is important to recognize that individual practitioners within a substantive domain (e.g., physical geography) may follow an intellectual course consistent with either identity. For example, I cite Stoddart multiple times as a physical geographer (if such a label is applicable) who champions the human-environment vision. Gregory (2000, 287), however, provides "tenets for physical geography" in which the first reads "emphasize the *spatial perspective*" (emphasis added)—this after Gregory invokes Stoddart and kindred spirits throughout his book. In their practice, of course, some geographers may merge or blur concepts and interests linked to either identity. This practice, be it by physical geographers or by others, does not invalidate my claim that geography has provided one of two rationales for "membership" in the academy: (1) that understanding of any phenomenon is enhanced by an entry to the problem through the *place* in which it resides or the *spatial properties and attributes* that the phenomenon possesses—both comprising an *approach* to problem-solving; and (2) that the coupled human-environment system constitutes an aggregate *phenomenon* worthy of study in its own right and cannot be addressed fully through the analysis of its individual parts. No one, to my knowledge, has coherently combined these two identities in a way that makes them equal; one or the other always dominates in identity statements.

Given this apparent misunderstanding, permit me to reiterate the core arguments of my overall case.

1. Throughout its modern history, the "discipline" of geography has relied on one or the other of two identities—spatial-chorological and human-environment—as its core rationale, although both have supported diverse geographical practices.
2. These identities have provided different intellectual rationales for the existence of geography within the formal research and educational structures (the academy) of the time.
3. They have vied for dominance within the discipline, and some version of either has commanded transitory preeminence.
4. This history has remained opaque over the past forty years or so, owing to the momentary dominance of the spatial-chorological identity.
5. The academy's full acceptance of the spatial chorological identity is questionable, and geography's inability to articulate the two identities as a viable, logical whole further weakens our case to the remainder of the academy.
6. The current restructuring of the academy implies that the professed holism embedded in either identity is not conceded to the current discipline of geography, despite our claims that the interdisciplinary alternatives constitute a geographic way of problem formation and analysis.

In the remainder of this article, I speak to these parts as

addressed, even if indirectly, by each commentator, more or less following the points above in order.

Kates concurs with the contested nature of geography and raises three more contestations. The first, Humboldt's "unity in nature," I consider to be a foundational element of the human-environment identity. It provides geography a substance of study akin to the "systematic" sciences, but geographers typically pursue understanding of it through synthesis more so than reductionism. Inasmuch as I state these ideas in the text, I find Kates's commentary an embellishment of my intent, more than an additional arena of contestation.

Wescoat (2002, p. 81) disputes my claim that Capel's case about the origins of academic geography is not well known, citing its presence in an anthology that Wescoat apparently uses in his seminar. In my mind, Capel's North American influence is apparent in the low frequency with which his work is cited in the literature, suggesting that his case is either not well known or, perhaps, regarded as unimportant. Wescoat (p. 81) also worries that the immediate legacy of Barrows is less important than the subsequent influence that he and his students had on various government programs. Surely I signaled this downstream influence in various references to Gilbert White and the "Chicago School." My point was, however, that Barrows's "human ecology" failed to influence significantly the academic geography of the time, and that our discipline did not follow human ecology but marched to the cadence of the spatial-chorological identity, which both Kates and Butzer confirm. Indeed, the positive contributions of the "spatial" geographies notwithstanding, Butzer believes that both the chorological and spatial "subidentities" have marginalized physical geography.

Butzer (2002, p. 76) reminds us (especially me) that geography was left out of the "seven liberal arts" in late antiquity and in subsequent versions of the premodern academy because it was grounded in real-world observation. (The "human imprint" found on Rhodes by the shipwrecked Aristippus is a pointed reminder of what signified humankind; see the frontispiece to Glacken [1967] 1976). He worries that geography is currently deemphasizing work grounded in rigorous observation in favor of dismissive, ideological messages that value the semantics of neologisms. Butzer thus pays less attention to the identity question per se than to the negative (but potentially positive) implications that follow from academic rifts. These rifts have been linked to the identities in the past, as in the case of "the geographic factor" versus chorology, but today they seem to be far more aligned with the favored explanatory perspective or problem lens of practitioners than to the identity to which they adhere. The current rifts reflect the increasing drift of large parts of geography away from postpositivistic science and even structural-critical perspectives towards those whose origins rest wholly within humanities or within the interstices of the humanities and social sciences, bolstered by the apparent belief of some geographers that the base character of what constitutes the sciences is under some sort of pan-academy panel review. Given that geography is marginal to the mapping of the seats at the academy's table, the more important implication of this drift is the degree to which our practitioners become so consumed with the intellectual ideas from elsewhere that they abandon the "earth-bound structural components" of the geographic problem—our glue, according to Butzer (2002, p. 78). This last point has surely characterized geography at least since the dimming of the "spatial paradigm," which, like the landscape of the German School and Sauer before it, sought inspiration more from its own intellectual works than by borrowing repeatedly from other fields.

Butzer's (2002, p. 77–78) seminar students bemoan the fact that "others" do not grasp what geography stands for as a discipline. This complaint drives home my major conclusion (not original to me): that geography has never succeeded in finding an identity that both encompasses the breadth of its practice and also makes sense to the remainder of the academy. Given this omission, we have repeatedly, as Capel (1981) and Reynaud (1974) remind us, fallen back on a complementary rationale concerning holism or synthesis—putting the pieces of the reductionist puzzle back together. Historically, this argument has helped to marginalize geography within a reductionist-dominated science, but it also raises opportunities and questions that Kates (1989) has long posed and does so again in his commentary. Various integrated sciences (i.e., earth systems, sustainability, GISciences) appear on the academic horizon, and, if they continue to rise, they promise to challenge geography's long-standing claim to be *the* synthesis science. My implicit appeal for the existence of geography will surely appear parochial, as Kates (2002, p. 80) notes, if this dawning of integrated science foretells a fundamental restructuring of the academy. As he and others have noted, whatever structure emerges in the future, "geographic thinking" will be embedded somewhere, no matter how it is labeled.

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