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We Know More Than We Are, At First, Prepared To Acknowledge: Journeying to Develop Critical Thinking

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Journeying to develop critical thinking

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We know more than we are, at first, prepared to acknowledge: Journeying to develop critical thinking[1]

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Abstract

Exponents of critical thinking emphasize the teaching of skills and dispositions for scrutinizing the assumptions, reasoning, and evidence brought to bear on an issue by others and by oneself. In short, they promote thinking about thinking. But how do students come to see where there are issues to be opened up and identify them without relying on some authority? The current form of my evolving "answer" is that people need support to grapple with inevitable tensions in personal and intellectual development—support to undertake journeys that involve risk, open up questions, create more experiences than can be integrated at first sight, require support, and yield personal change. In this essay I present five passages in a pedagogical journey that has led from teaching undergraduate science-in-society courses to running a graduate program in critical thinking and reflective practice for teachers and other mid-career professionals. I have shaped these passages to expose some of my conceptual and practical struggles in learning to decenter pedagogy and to provide space and support for students to develop as critical thinkers. The key challenge I highlight is of helping people make knowledge and practice from insights and experience that they are not prepared, at first, to acknowledge. In a self-exemplifying style, each passage raises some questions for further inquiry or discussion. My hope is that the essay as a whole stimulates readers to grapple with issues they were not aware they faced and to generate questions beyond those I present.

> The most important parts of any conversation are those that neither party could have imagined before starting. William Isaacs (1999)

In the mid-1980s I was teaching science in its social context as a new faculty member at a non-traditional undergraduate college. I began an ecology course with a brief review of our place in space before I asked students to map their geographical positions and origins. One student, "K," did not come back to earth with the rest of us, but remained off in her own thoughts. Some minutes later she raised her hand: "I always knew the sun, not the earth, was the center of the solar system, but do you mean to say..." K paused, then continued. "I'd never thought about the sun not being the center of the universe."

From K's tone, it was clear that she was not simply rehearsing a new piece of knowledge. She was also observing that she had not thought about something she now saw as obvious. What other retrospectively obvious questions, I could see her thinking, had she not been asking? What other reconceptualizations might follow? Such self-questioning pointed her along the path I hoped my students would take as critical thinkers—grappling with issues they had not been aware they faced, generating questions beyond those I had presented, becoming open to reconceptualization, and accepting that their teacher should not be at the center of their learning.

Although I had provided space for K to move forward as a critical thinker, I had done so inadvertently. How could a teacher foster such critical thinking? It was some years before I became acquainted with the abundant literature on critical thinking, but that literature turns out not to illuminate central conundrum of the K incident (Critical Thinking Across The Curriculum Project 1996). I agree that everyone should have skills and dispositions for scrutinizing the assumptions, reasoning, and evidence brought to bear on an issue by others or by oneself; I see the value of thinking about thinking. But how do students come to see where there are issues to be opened up and in what directions? Moreover, how do they come to identify the issues and directions without relying on some authority? The "answer" I present in this essay is that teachers need to support students as they face inevitable tensions in personal and intellectual development—to support them to undertake journeys that involve risk, open up questions, create more experiences than can be integrated at first sight, require support, and yield personal change.

It might be interesting to analyze the literature to show how the experts tend to focus on the critical thinking *goals or standards* of clarity, accuracy, perseverance, and so on. This comes at the expense of opening up issues that I have come to see as important about students' *processes of development* (Paul et al. 1997). This essay, however, does not pin down arguments. Instead, seeking consistency of message and expository form, I evoke my own pedagogical journey and exposes questions that remain open for me. This journey has taken me from teaching the undergraduate science-in-society courses mentioned above to running a graduate program in critical thinking and reflective practice for teachers and other mid-career professionals. (A parallel journey in ecological and environmental research is described elsewhere, Taylor forthcoming.) I recount five passages in which I expose some of my conceptual and practical struggles in learning to decenter my pedagogy and to provide space and support for students to develop as critical thinkers. Each passage raises some questions and ends with an issue that I leave open for further inquiry or discussion. I hope, moreover, that the passages and questions stimulate you to grapple with issues you were not aware you faced and to generate questions beyond those I present.

Of course, I cannot create for readers the experience of participating in a classroom activity or semester-long process. Nor can readers divert me from the steps ahead already written and inject other considerations. If you could, I expect some of you would slow me down to ask for more detail about the situations I describe or to ask for more explication of my line of thinking in relation to other writers.[2] Indeed, it is one of the central tensions of my teaching and writing that I seek to open up questions and to

point to greater complexity of relevant considerations even though I know that some of my audience would prefer a tight analysis shaped to address their specific concerns and background. In acknowledgement of these tensions, this essay is accompanied by a web-based forum in which readers can engage or witness the author in conversation.[3] This experiment befits the central pedagogical challenge this essay raises, namely, helping people make knowledge and practice from insights and experience that they are not prepared, at first, to acknowledge.

1. Becoming aware of the forces that hold us or release us

Since childhood star gazing in rural Australia I had known about the sun's marginal place in the Milky Way and I felt some superiority when K admitted that she had not thought about this. To my chagrin, I subsequently discovered my own retrospectively obvious question about our place in space. I was reading Sally Ride's book on the space shuttle to my child, when I came to her description of astronauts regaining weight as they descended (Ride 1986). The idea conveyed was that weightlessness was a result of distance from the earth. Yet the space shuttle orbits only 300 kilometers up where the earth's gravity is still 90% of its strength down on the surface. So I started thinking about how to explain weightlessness correctly in a children's book. Try this—think of swinging an object around on the end of a piece of string. To make it go faster, you have to pull harder; if you do not hold on tight, the object might fly off into the neighbor's yard. Astronauts travel around the earth fast—at 7.5 kilometers per second. They feel weightless because all of the earth's gravitational attraction on them goes to keep them from flying off into space. The earth's pull on the astronauts is like your pulling on the string—but, while you may let go, gravity never stops acting. When the space shuttle *slows down* on its return to earth, less of gravity's force goes to keeping the astronauts circling the earth and what is left over is experienced as weight regained.

After rehearsing this explanation a few times, another kind of weightlessness occurred to me. The sun's gravitational attraction is keeping me circling around it—at 30 kilometers/second I figured out. On the earth I feel weightless with respect to the sun's gravity, but that force is acting nevertheless. I had never thought about this; I had considered myself a passenger on the earth, which the sun's gravity was keeping in orbit around it. I then realized that I was also zooming around the Milky Way galaxy, not as a passenger in a solar system that the galaxy's gravitational attraction keeps in orbit around it, but directly because the galaxy's gravity was keeping me orbiting around its center. It made me feel woozy to think of the sun and the rest of the galaxy "paying attention to me" all the time, keeping me circling at enormous speed through space—at over 200 kilometers/second, I soon learned. I then wondered if every molecule in the galaxy was attracting every molecule of my body every moment. Was there some other way to think about gravity? Perhaps a further radical reconceptualization awaits me, involving hyper-wooziness-inducing concepts such as Einsteinian curved space-time.

In recent years I have started courses and workshops on critical thinking by relating the reconceptualizations that occurred to K and then to myself. I usually follow the story with an activity. My

goal is to have people respond to story and bring insights to the surface about how people can generate questions about issues they were not aware they faced. The activity begins, therefore, with a freewriting exercise (Elbow 1981) in which each of us writes for ten minutes starting from this lead off: "When I entertain the idea that I haven't been asking some 'obvious' questions that might have led to radical reconceptualizations, the thoughts/ feelings/ experiences that come to mind include..." After this writing, participants pair up and describe situations in which we "saw something in a fresh way that made us wonder why we previously accepted what we had." We then list on the board short phrases capturing what made the "re-seeing" possible. The factors mentioned differ from one occasion to the next, but they always represent a diverse mix of mental, emotional, situational, and relational items, e.g., "relaxed frame of mind," "annoyed with this culture," "forgetting," "using a different vocabulary," and so on. I have concluded the activity simply by noting the challenge, which is common to many other questions in education, of acknowledging and mobilizing the diversity inherent in any group.

Recently, I have started to wonder whether, now that I have lists from several occasions, the factors could be synthesized into general directions. Would future audiences gain from my cutting through the diversity and presenting the synthesis—or does this run against the grain of facilitating thinking about re-seeing?

2. Critical thinking as journeying

A few years ago I taught for the first time a general course on critical thinking. The students were mostly mid-career teachers and other professionals. This was also the occasion of my first telling the place in space story and running the re-seeing activity. Some of the students construed the story as a science lesson; evidently, I had to clarify the delivery and message. Later in the semester I had a chance to do this when we revisited the activity to practice lesson-plan remodeling. What emerged from the class discussion was that it mattered little to me whether students understood my weightlessness explanation. I only wanted them to puzzle over the general conundrum of how questions that retrospectively seem obvious ever occurred to them and to consider their susceptibility to recurrent reconceptualizations. It was during this clarification process that the image occurred to me that development as a critical thinker is like undertaking a personal journey into unfamiliar or unknown areas. Both involve risk, open up questions, create more experiences than can be integrated at first sight, require support, yield personal change, and so on. This journeying metaphor differs markedly from the conventional philosophical view of critical thinking as scrutinizing the reasoning, assumptions, and evidence behind claims (Ennis 1987, Critical Thinking Across The Curriculum Project 1996). Instead of the usual connotations of "critical" with judgement and finding fault according to some standards (Williams 1983, 84ff), journeying draws attention to the inter- and intra-personal dimensions of people developing their thinking and practice.

In retrospect, the immediate impetus for my re-seeing critical thinking as journeying seemed to have been the "life-course" of students during that fifteen-week semester. Early in the course many students expressed dependency on my co-instructor and me: "Aren't small group discussions an exercise

in 'mutually shared ignorance'?" "Could the class be smaller?—we want more direct interaction with you." "I was never taught this at college—I'm not a critical thinking kind of person." Some students were uncomfortable with dialogues their two instructors would have in front of the class in order to expose tensions among different perspectives. They asked for clear definitions of critical thinking and explicit expectations for the product of each assignment or activity. Their anxieties were most evident when they looked ahead to a new end-of-semester "manifesto" assignment, in which we asked for "a synthesis of elements from the course selected and organized so as to inspire and inform your efforts in extending critical thinking beyond the course." We responded to students' concerns with some mini-lectures, handouts, and a sample manifesto. Yet we also persisted in conducting activities, promoting journaling, and assigning thought-pieces through which students might develop their own working approaches to critical thinking. By mid-semester students who had been quiet or lacked confidence in their critical-thinking abilities started to articulate connections with their work as teachers and professionals.

We had reassured those who worried about the manifesto assignment that they would have something to say, but we were surprised by how true that turned out to be. For example, the student who was not the "critical thinking kind" began her manifesto with perceptive advice:

"If there is one basic rule to critical thinking that I, as a novice, have learned it is
DON'T BE AFRAID!"

She continued: "**Don't be afraid** to ask questions and test ideas, ponder and wonder... **Don't be afraid** to have a voice and use it!... **Don't be afraid** to consider other perspectives... **Don't be afraid** to utilize help..." She finished, "Above all, approach life as an explorer looking to capture all the information possible about the well known, little known and unknown and keep an open mind to what you uncover." Another student wrote a long letter to her seven year old: "To give you a few words of advice, yes, but mostly to remind me of what I believe I should practice in order to assist you with your growth." These and other manifestos displayed admirable self-awareness. In finding their own critical thinking voices the students had taken risks and opened up questions, had experienced more than they were able at first to integrate and had sought support, and ended up seeing themselves differently (Taylor 2001a).

In retrospect, I saw that the students' confidence had begun to rise during classes involving various approaches to empathy and listening (Elbow 1986, Gallo 1994, Ross 1994, Stanfield 1997). I suspect that listening well helps students tease out alternative views. Without alternatives in mind, it is difficult to motivate and undertake scrutiny of one's own evidence, assumptions, and logic, or of those of others. Being listened to seems to help students access their intelligence (in a broad sense of the term)—to bring to the surface, reevaluate, and articulate things they already know in some sense (Weissglass 1990). The resulting knowledge seems all the more powerful because it is not externally dictated (Friere 1970, Weissglass 1990). These are conjectures—I look forward to opportunities for more systematic exploration of the ways different people experience listening and being listened to in relation to their critical thinking.

3. Understanding by placing things in tension with alternatives

A colleague recently challenged me by asking why, even though the critical thinking course ended positively, the student had been afraid in the first place. The force of this question led me to another: Had I been afraid about my ability to bridge the gaps between my own thought processes and those of different students? Had I composed mini-lectures and handouts as if to say to students, "I have written down the lessons clearly, now it is your responsibility to understand the material"? Once fear was raised as an issue that teachers should consider, I began to realize that it is a deep one. I want to leave it stirring in the background and instead take up the other thought about making lessons explicit.

Whatever I say about the power of students coming to their own reconceptualizations, I still feel tempted to use the more conventional approach for inducing re-seeing, namely, to spell out critiques of dominant views. I have written, for example, about the consequences of using natural selection to explain the evolution of organisms' adaptations to their environment. One consequence has been that the dynamics of the development and ecology of organisms get squeezed out (Taylor 1998). When I taught undergraduates in a program on biology in its social context, I led them through this and other critiques. (This was in the 1990s before I moved into the graduate education program, so my story is going backwards in time here.) The first few years there would be some evaluations that claimed my course required students to accept the "dogma according to Taylor." These accusations disappeared, however, when I re-framed the purpose of raising alternative ideas. I started to ask students not to accept the alternative ideas, but to consider them in contrast to standard ideas so as to check that they understood those ideas clearly (Taylor 2002a). For example, people often talk about DNA as a "blueprint" "coding for" an organism's traits, as if this molecule directed the rest of the organism's biological processes. I would ask students to explore alternative metaphors for the development of organisms and they came up with ideas such as improvisational dance, cheese making, and a casual conversation in an elevator. After playing around with metaphors that do not connote centralized control, many of the students saw for themselves the need to be more careful or precise about the actual functions of DNA.

The pedagogical shift—from critiquing dominant views to raising alternatives—led me in 1995 to compose the following view of students' developing as critical thinkers:

> In a sense subscribed to by all teachers, critical thinking means that students are bright and engaged, ask questions, and think about the course materials until they understand well-established knowledge and competing approaches. This becomes more significant when students develop their own processes of active inquiry, which they can employ in new situations, beyond the bounds of our particular classes, indeed, beyond their time as students. My sense of critical thinking is, however, more specific; it depends on inquiry being informed by a strong sense of how things could be otherwise. I want students to see that they understand things better when they have placed established facts, theories, and practices *in tension with alternatives* (Taylor 1995a).

The pivotal role of re-framing the pedagogical role of alternatives is evident in the way this paragraph continued:

> Critical thinking at this level should not depend on students rejecting conventional accounts, but they do have to move through uncertainty. Their knowledge is, at least for a time, destabilized; what has been established cannot be taken for granted. Students can no longer expect that if they just wait long enough the teacher will provide complete and tidy conclusions; instead they have to take a great deal of responsibility for their own learning. Anxieties inevitably arise for students when they have to respond to new situations knowing that the teacher will not act as the final arbiter of their success. A high level of critical thinking is possible when students explore such anxieties and gain the confidence to face uncertainty and ambiguity.

Let me make some observations about my own journey before returning to the idea of understanding ideas by placing them in tension with alternatives. Retrospectively, I can see that the journeying metaphor for critical thinking was already forming four years before it occurred to me. It seems that reconceptualization is preceded by a phase in which the person on the journey has, so to speak, shot rolls of film, but the photos have not yet been processed and printed. Indeed, the next paragraph of the 1995 account of critical thinking began:

> There are few models for teaching critical thinking, especially about science... Just as I expect of my students, I have experimented, taken risks, and through experience am building up a set of tools that work for me. Moreover, I have adapted these teaching tools to cope with the different ways that students in each class respond when I invite them to address alternatives and uncertainty, and when I require them to take more responsibility for learning (Taylor 1995a).

I now see that writing the statement of my teaching philosophy from which these excerpts have been drawn precipitated a phase of self-conscious pedagogical exploration and identity formation. This exploration led four years ago to my moving to a graduate education program and has continued in this new position (Taylor 2001b). I had the opportunity in 1999 to participate in a faculty seminar on "Becoming a teacher-researcher." The focus I chose was a graduate course in which students undertake their own research projects directed, usually, towards some educational change. Let me describe my teacher-research because it extends the idea of understanding by placing in tension with alternatives.

In the research course I encourage considerable intra- and interpersonal exploration in defining and refining research direction and questions. An important part of this exploration comes through written and spoken dialogue around written work and successive revisions. For many students, such dialogue and revision are fraught; some strongly resist being weaned away from the familiar system of "produce a product and receive a grade." The specific teacher research began a month into the course with students writing their expectations and concerns in working under the "revise and resubmit" process. In the faculty seminar we digested the students' responses and used them as a basis for brainstorming about qualities of an improved system and experience. We clustered the large post-its on which we had written suggestions and ended up with five themes: "negotiate power/standards," "horizontal community," "develop autonomy," "acknowledge affect," and "be here now."

Back in class I discussed the students' responses with them and drew attention to the tension among the different themes (see Figure 1). "Develop autonomy" stood for digesting comments and making something for oneself, neither treating comments as dictates nor keeping one's work to oneself to insulate oneself. "Negotiate power/standards," on the other hand, recognized that students made

assumptions about my ultimate power over grades translating into expectations that students would take up my suggestions. "Horizontal community" stood for building relationships other than the "vertical" one between professor and student.

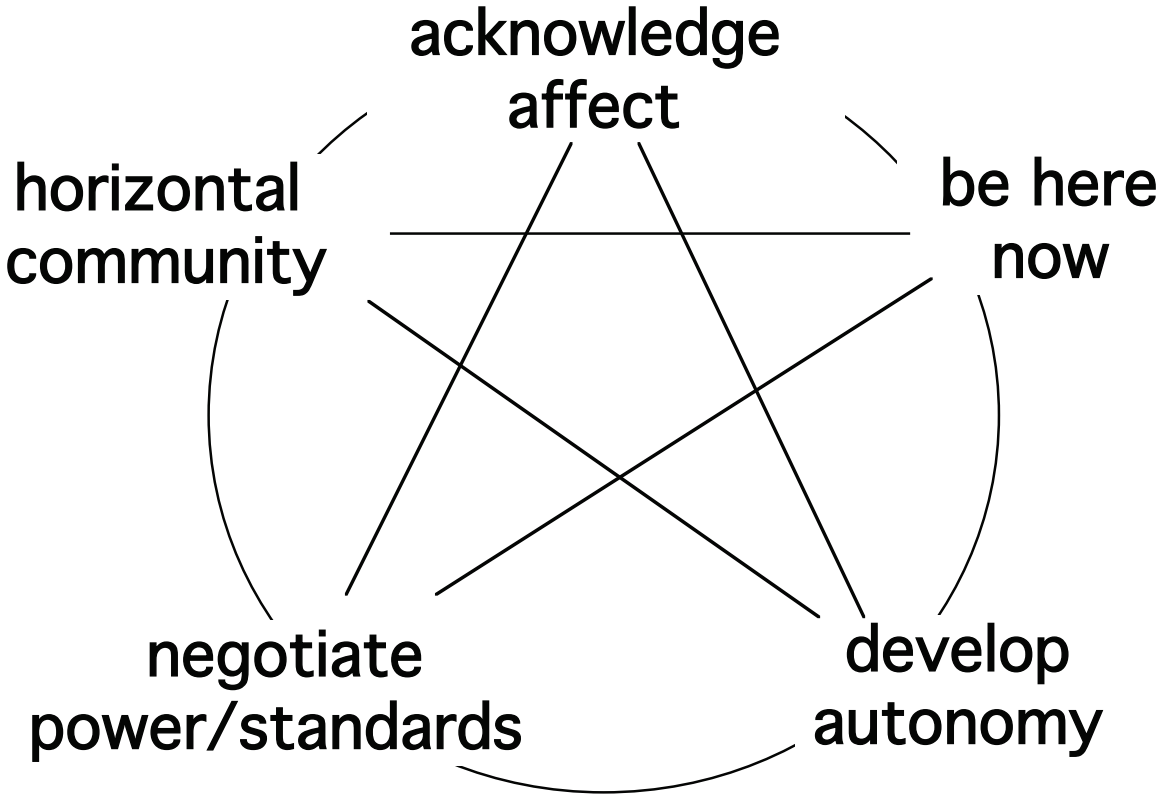

Figure 1. Five themes about improving the experience of dialogue around written work

During the rest of the research course we continued to refer to these themes and tensions. A substitute was needed for "autonomy" (or, equivalently, "independence") because some students construed this as going their own way and not responding to comments of others, including those of professors. When "taking initiative" was suggested to me by my wife, I realized that it applied to all five themes. I emailed my students: "[The challenge is to] take initiative in building horizontal relationships, in negotiating power/standards, in acknowledging that affect is involved in what you're doing and not doing (and in how others respond to that), in clearing away distractions from other sources (present & past) so you can be here now." A longer phrase soon emerged: "Taking initiative in and through relationships." That is, don't expect to learn or change on one's own. Build relationships with others. Don't expect to learn or change without jostling among the five aspects.

Of course, the "mandala" of themes-in-tension had not specified how to teach and support students to take progressively more initiative. Nevertheless, I believe that it helped the students in that course recognize themselves and take more initiative in their learning relationships (Taylor 1999a). I expect, however, it would be helpful for each new cohort to create their own mandala. I like to present

the insights from the original group (sometimes adding "explore difference" as a sixth theme), but I also wonder how much the power of any summary lies in creating it oneself.

4. Opening up questions

The research project course was a suitable venue for encouraging students to be more self-conscious about learning relationships. In other critical thinking courses I have had less time to explore the tensions captured by the mandala. Like most teachers, I feel the pressure to cover "content," that is, to move through the relevant body of material. (This pressure applies even though my current courses do not cover pre-formulated critiques, but move through a series of activities designed to help students place ideas in tension with alternatives.) Let me introduce a tension in the content side of my teaching (one I also wrestle with in my contributions to environmental research Taylor 1999b) that extends the theme of the previous passage, namely, that understanding comes by placing things in tension with alternatives.

The tension I have in mind is between attending to complexity and particularity versus presenting simple accounts. On the complex side, in the early 1980s I adopted the anthropologist Eric Wolf's image of structures—in his case, societies or cultures—as contingent outcomes of "intersecting processes" that involve diverse components and span a range of spatial and temporal scales (Wolf 1982, 385-391). Not surprisingly, I was attracted to the research emerging in the late 1980s that explained cases of environmental degradation, such as soil erosion or deforestation, in terms of processes that linked changes in local agro-ecologies, labor supply and the organization of production, and wider political-economic conditions (Watts and Peet 1993). During the same period I was stimulated by sociologists of science who highlighted scientists' heterogeneous linguistic, material, and institutional "resources" and whose concept of scientific work encompassed many activities (Latour 1987; see also citations in Taylor 1995b). On the "simple" side, however, I have to recognize the rhetorical power that simple environmental themes have, most notably variants of "Natural resources need to be privatized because resources held in common are inevitably degraded," and "Population growth will lead to environmental degradation." Similarly, simple themes about how science works, such as "Convince others of what is really going on," have more impact in discussions about science and society than analyses of the specific networks of resources in particular cases.

Instead of resolving the simple-complex tension, I try to render the tension productive, a response that emerged from developing activities for interdisciplinary courses in which material must be accessible to a wide range of students. For example, in environmental courses I have students play out a scenario involving two countries. Each country has the same amount and quality of arable land, population size, level of technical capacity, and 3% annual population growth rate. I ask students to look ahead at the declining land area per household and decide what they would do in that situation. Their answers usually revolve around reducing consumption or using contraception. Then I tell them that country A has a relatively equal land distribution, while country B has a typical 1970s Central American land distribution: 2% of the people own 60% of the land; 28% own 38%, which leaves just 2% of the land

for the poorest 70%. Five generations before anyone is malnourished in A, all of the poorest class in B would already be—unless they act to change their situation. I divide the students into the wealthy, middle, and poor classes of country B and ask them again what they would do. Linking their impending food shortages to inequity in land distribution, the poor often propose taking over the underutilized land of the wealthy. The wealthy, anticipating this possibility, sometimes propose paramilitary operations that target leaders of campaigns for land reform. The middle class suggest investing in factories that employ the land-starved poor, or promoting population control policies for the poor. And so on. Although students do not learn the details of political, economic, or sociological analysis—that would require a course for specialists—the activity teaches them that the crises to which actual people have to respond come well before and in different forms from the crises predicted on the basis of aggregate population growth rates (Taylor 1997).

This simple, two countries scenario points to the need for more complex analyses of the dynamics among particular people who contribute differentially to environmental problems. As I make explicit to students, the scenario invites us to consider that the analysis of causes and the implications of the analysis would change if uniform units were replaced by unequal units, subject to further differentiation as a result of their linked economic, social, and political dynamics. I call this kind of proposition an "opening up heuristic"—simple to convey, but always pointing to the greater complexity of particular cases and to further work needed to study them (Taylor 1999b).

Opening up heuristics are simple to dictate to students and to demonstrate to other teachers. At this stage, however, I am not sure that many students or teachers have added the heuristics to their tool-box and applied them to open up questions in other areas. I used to fret about this, but now see that I should not expect fast-track reconceptualization. My current, more modest pedagogical rationale is that tools placed in a toolbox may get buried for some time, but can eventually be reached for. Helping this happen I suspect is a matter of patience and persistence—listening to, acknowledging, and supporting the diversity of students' thinking about particularity and complexity.

5. Translocal knowledge in participatory settings

> We did make a terrible lot of mistakes... So we had a little self-criticism, and we said, what we know, the solutions we have, are for the problems that people don't have. And we're trying to solve their problems by saying they have the problems that we have the solutions for. That's academia, so it won't work.
> So what we've got to do is to unlearn much of what we've learned, and then try to learn how to learn from the people.
>
> Myles Horton (1983), describing the early days of the Highlander Center

The final passage of this essay concerns a variant of the simple-complex tension. In the previous passages my ideal student or audience member appears to be a person who would be stimulated by my critical thinking activities to seek more *complexity* in their own understandings of the world. A contrasting image, however, is of people who can make good use of more *straightforward knowledge*, as long as that

can be brought to the surface. This tension has run through my environmental research, but only recently have I articulated it in the terms to follow.

I have long been inspired by participatory action researchers, such as Myles Horton, who shape their inquiries through ongoing work with and empowerment of the people most affected by some social issue (Greenwood and Levin 1998, Taylor 2002b). Yet my own environmental research has drawn primarily on specialist skills in quantitative modeling and analysis. For example, in a formative experience at the end of the 1970s, I was contracted by a government agency to undertake a detailed analysis of the economic future of a salt-affected Kerang irrigation region in south-eastern Australia. I completed this at a distance—both geographically and institutionally—from those most directly affected by the region's problems. The sponsors homed in on a finding in the final report that confirmed their preconception that the price charged for irrigation water could be increased. They were, however, unable to implement this change and nothing more resulted from the study (Taylor 1995b).

In contrast, let me draw some material from the phase of pedagogical exploration since 1995 mentioned earlier. Part of this has involved training in group facilitation with the Canadian Institute of Cultural Affairs (ICA). ICA's techniques have been developed through several decades of "facilitating a culture of participation" in community and institutional development. Their work anticipated and now exemplifies the post-Cold War emphasis on a vigorous civil society, that is, of institutions between the individual and, on one hand, the state and, on the other hand, the large corporation. ICA planning workshops elicit participation in ways that bring insights to the surface and ensure the full range of participants are invested in collaborating to bring the resulting plan to fruition (Burbidge 1997, Spencer 1989, Stanfield 1997, Taylor 2000).

Such participant "buy-in" was evident, for example, after a community-wide planning process in the West Nipissing region of Ontario, 300 kilometers north of Toronto. In 1992, when the regional Economic Development Corporation (EDC) enlisted ICA to facilitate the process, industry closings had increased the traditionally high unemployment to crisis levels. Although the projects resulting from the planning process are too numerous to detail, an evaluation five years later found that they could not simply check off plans that had been realized. The initial projects had spawned many others and the community now saw itself as responsible for these initiatives and developments, eclipsing the initial catalytic role of the EDC-ICA planning process. Still, the EDC appreciated the importance of that process and initiated a new round of facilitated community planning in 1999 (West Nipissing Economic Development Corporation 1993, 1999).

When I learned about the West Nipissing case, I could not help contrasting it with my own experience in the Kerang study. Detailed scientific or social scientific analyses were not needed for West Nipissing residents to build a plan. The plan built instead from straightforward knowledge that the varied community members had been able to express through the facilitated participatory process. The process was repeated, which presumably allowed them to factor in changes and contingencies, such as the start of the North American Free Trade Association and the declining exchange rate of the Canadian dollar. And, most importantly, the ICA-facilitated planning process led the community members to become

invested in carrying out their plans and had enhanced their capacity to participate outside of that process in shaping their own future.

A difficult question has been opened up by the contrast between scientifically detailed analysis and participatory planning. Could a role in participatory planning remain for researchers to insert the "translocal," that is, their analysis of dynamics that arise beyond the local region or at a larger scale than the local? (Harvey 1995) For example, if I had moved to the Kerang region and participated directly in shaping its future, I would still have known about the government ministry's policy-making efforts, the data and models used in the economic analysis, and so on. Indeed, the "local" for professional knowledge-makers cannot be as place-based or fixed as it would be for most community members. I wonder what would it mean, then, to take seriously the creativity and capacity-building that seems to follow from well-facilitated participation, yet not to conclude that researchers should "go local" and focus all their efforts on one place.

Although West Nipissing versus Kerang symbolizes a longstanding tension in my research, I have seen something analogous in my teaching when I have tried to extend students' critical thinking into reflective practice. On one hand, experiences such as those recounted in this essay lead me to assume that students know more than they are prepared, at first, to acknowledge. Facilitation training leads me to assume also that students will become more invested in the process and in the outcomes when insights emerge from themselves. On the other hand, when I explicitly adopt a facilitator's role, should I keep quiet if I see that a crucial insight is not emerging? How much will it stifle the group process if I, the teacher, contribute as well? In any case, even if I put on a facilitator's hat and keep quiet, I cannot ensure that I am perceived simply as a non-directive supporter of their process. I cannot completely erase the students' sense of me as a teacher with whom they need to negotiate power and standards (Taylor 2000). Decentered pedagogy cannot avoid active, charged, and changing relationships among all concerned (Palmer 1998, 74).

Coda

The tension between acting as a facilitator and being more directive is evident not only in my teaching, but in the writing of this essay. In the spirit of the epigraph about dialogue "that neither party could have imagined before starting," I have endeavored in various ways to keep matters open, even ambiguous. The sequence of passages was intended to evoke a continuing pedagogical journey that "involves risk, opens up questions, creates more experiences than can be integrated at first sight, requires support, and yields personal change." I decided to tease out multiple strands, rather than follow one thread, hoping to allow different readers the chance to choose which strands to pull on during their own journeys (see also Taylor 2001c). I have exposed tensions; while not the path of maximum comfort, this seemed one way to model a process of keeping tensions active and productive. Yet, notwithstanding these attempts to open conversations, as author, I have necessarily spoken first and set many terms of any discussion that ensues. Rather than play down this as an unavoidable tension, let me present a summary of this essay's themes in both a didactic and a dialogic spirit. The themes to follow need to be

addressed, I would propose, in order to provide space and support for others in their critical thinking journeys. At the same time, I hope readers draw me into discussion that leads to new ways of addressing and conceptualizing the challenges I have been opening up.

The central challenge addressed in the essay is that of helping people make knowledge and practice from insights and experience that they are not prepared, at first, to acknowledge. Some related challenges for the teacher/facilitator are to:

a. Help students to generate questions about issues they were not aware they faced.

b. Acknowledge and mobilize the diversity inherent in any group, including the diversity of mental, emotional, situational, and relational factors that people identify as making re-seeing possible.

c. Help students clear mental space so that thoughts about an issue in question can emerge that had been below the surface of their attention

d. Teach students to listen well. (Listening well seemed to help students tease out alternative views. Without alternatives in mind scrutiny of one's own evidence, assumptions and logic, or of those of others is difficult to motivate or carry out; see also point i, below. Being listened to, in turn, seems to help students access their intelligence—to bring to the surface, reevaluate, and articulate things they already know in some sense.)

e. Support students on their journeys into unfamiliar or unknown areas. (Support is needed because these journeys involve risk, open up questions, create more experiences than can be integrated at first sight, and yield personal change.)

f. Encourage students to initiative in and through relationships, which can be thought of in terms of themes that are in some tension with each other: "negotiate power/standards," "horizontal community," "develop autonomy," "acknowledge affect," "be here now," and "explore difference."

g. Address fear felt by students and by oneself as their teacher.

h. Have confidence and patience that students will become more invested in the process and the outcomes when insights emerge from themselves.

i. Raise alternatives. (Critical thinking depends on inquiry being informed by a strong sense of how things could be otherwise. People understand things better when they have placed established facts, theories, and practices *in tension with alternatives*.)

j. Introduce and motivate opening up heuristics, that is, propositions that are simple to convey, but always point to the greater complexity of particular cases and to further work needed to study those cases.

k. Be patient and persistent about students taking up the alternatives, opening up heuristics, and other tools and applying them to open up questions in new areas. (Experiment and experience are needed for students—and for teachers—to build up a set of tools that work for them.)

l. Take seriously the creativity and capacity-building that seems to follow from well-facilitated participation, while still allowing space for researchers to insert the "translocal," that is, their analysis of changes that arise beyond the local region and span a larger scale than the local.

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Notes

[1] A revised version of this paper has been published as "Developing Critical Thinking is Like a Journey," pp. 155-169 in Teachers and Teaching Strategies, Problems and Innovations. Ed. G. F. Ollington. Hauppauge, NY: Nova Science Publishers, 2008.

[2] I have chosen not to highlight paradigms and conventions in this essay because only towards the end of the journey described did educational theory begin to become part of my voice. Readers who wish to know my intellectual location might find it valuable to read a brief autobiographical contextualization of my environmental and science studies research, where I am more self-conscious about theoretical positioning, http://www.faculty.umb.edu/pjt/abstracts.html#93a (viewed 21 November 2001).

[3] Email questions and comments to reseeing@googlegroups.com and view http://googlegroups.com/groups/reseeing to read what others have said. For example, one reader of the manuscript challenged me to acknowledge the paradigms and conventions that inform my thinking (see note 1) and to undertake more "memory work" to recover the roots of my pedagogical tensions, including why I like to contribute to students having "more experiences than can be integrated at first sight" (see section 2).