P. J. Taylor (2005)
Unruly Complexity:
Ecology, Interpretation,
Engagement
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Epilogue: Three Stories

The conceptual exploration presented in this book began with the question of how ecologists could account for order arising out of the complexity of situations that build up over time from heterogeneous components and are embedded within wider dynamics, and in which there is ongoing restructuring—what I have come to call unruly complexity. An important aspect of the progress I have made toward answering this question is a shift in emphasis from the word "account" to the word "how"—from representations of complexity to representing-engaging—from product to process. At the beginning of the journey, I envisaged that an answer would take the form of a theory or models that provided an explanation of ecological complexity. At the end, I am inviting researchers who want to reconstruct the unruly complexity of ecological and social situations to become more self-conscious about their engagement within the complexity of the situation studied and of the social situations that enable them to do their research. The intersecting ecological, scientific, and social processes in the work of researchers involve diverse components and agents and span a range of spatial and temporal scales—the boundaries of unruly complexity are problematic. As both a conceptual and a practical matter, the framework of the last chapter had to leave as an "exercise for readers" the challenge of using your knowledge, themes, and other awareness of complex situations and situatedness to contribute to "a culture of participatory restructuring of the distributed conditions of knowledge-making and social change."

With this ending, the book as a whole becomes an opening-up theme. The book does not provide a theory to explain unruly complexity in any specific field or situation, but opens up issues about addressing complexity in ways that point to further work that needs to be undertaken to deal with particular cases. On some occasions, I have attempted to motivate

this theme in the space of a single lecture through a rapid presentation of the framework of the last chapter. On other occasions, however, I have found myself adopting an approach that amplifies the moves in section C.1 of chapter 6; namely, to use certain stories to convey some meaningful things that researchers might work on with and within the framework. Although I have been wary of ways in which the narrative form tends to reinforce our experience of ourselves as concentrated agents,[30] I am learning that stories like those that make up this epilogue can keep distributed agency in view as we seek to grapple conceptually and practically with unruly complexity ...

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A. Participation

I now have an image of critical reflection on practice in which ecological researchers and interpreters of science are able to respond to developments—predicted and surprising alike—by continually reassessing their knowledge, plans, and actions, as well as the engagements that make them possible. As mentioned earlier, this is an ideal inspired by participatory action researchers, who shape their inquiries through ongoing work with and empowerment of the people most affected by some social issue.[31] Since I learned about a particular participatory Kenyan agroforestry project in 1988, I have often spoken of it to others, using the case to illustrate the ideal of bridging the divide between an outside analyst and the subjects whose social and ecological situation is being analyzed.

In the mid-1980s, CARE, an international aid and development organization, decided to respond to the excessive removal of trees in agricultural areas in western Kenya. It embarked on a project to establish an extension system that would promote and provide support for tree planting by farmers on their holdings. CARE sought to overcome the shortcomings of previous agroforestry projects in the Sahelian region of Africa, which had largely failed—one estimate of the average cost those projects had incurred for each surviving tree was $500. At the same time, CARE wanted a research component built in to analyze systems of farm production—not only of crops, but also of things necessary to basic household needs, such as energy, shelter, and water. The research aimed to tease out the trade-offs, constraints, and benefits of growing trees within those systems (Vonk 1987).

The leaders of this development project, agroforesters Remko Vonk and Louise Buck, identified one reason for the previous failures: the community-based nurseries and plantations of previous projects had left the beneficiaries of the tree products and timber ill-defined (Vonk 1987).

Many of the local participants saw the tree planting as someone else's project, and thought the benefits would be unlikely to come their way. Vonk and Buck reasoned that if trees were planted on individual farms, the ownership would be clearer; the local Kenyans implementing the project would also be the ones reaping the benefits. Moreover, the project leaders aimed to facilitate local participation in the design and evaluation stages of the project. In pursuing this goal, they drew on their experience in a pilot project and on the experience of others in previous health care extension projects.

This combination of local and outside influence characterized the project as it developed. First, CARE entered only those farming communities that invited it. Initial interviews were conducted to learn about the existing uses of trees on and off the farms: Which trees are being used; which had been used; which could be used? What are the reasons for not planting trees? Much of the interviewing was conducted by extension workers, whom CARE directors trained not to transmit information, but instead to "Respect, Encourage, Ask, and Listen." In response to information emerging from the interviews, CARE's preliminary plan of planting four species was modified to allow for selections from a menu of forty-eight species. The techniques of cultivation that the researchers adopted, using indigenous systems as a starting point, were understandable to the farmers and could be managed by them within their labor and other seasonal constraints. In turn, the extension agents' connection with farmers helped them plan, monitor, collect data on, and analyze the different tree-planting arrangements.

The resulting agroforestry practices and results differed markedly from those of previous systems and from the approaches of CARE's agroforestry specialists, which had focused on trees that would directly serve agriculture, for example, by fixing nitrogen and making it available in the soil. The case of *Markhamia platycalyx* is illustrative. This species, virtually unmentioned in the agroforestry literature, was the most commonly found species in cropland in the district. The tree did not enhance crop growth, but, as interviews with the farmers revealed, *M. platycalyx* grew quickly and so was used to demarcate family compounds and plots. Reduction in crop production because of shading and root competition could be minimized if the trees were pruned regularly. The leaves became a source of mulch and compost, and scattered trees contributed to soil conservation and had a windbreak effect that protected the crops in the fields. The trees could be cut for poles when cash income was needed. They could also be used to provide timber or shade. Finally, the leaves were used in preparing food and in medicines. CARE research confirmed that farmers generally knew

how to manage the species well for these different uses. At the same time, CARE was able to help the farmers by contributing research results on the optimal time for harvesting of trees to be used for poles and on possible causes of seedling death.

In general, the trees that farmers favored turned out to have the following characteristics: They tended to require little management. They were intercropped with crops or even interspersed throughout the fields; they were not only planted as hedgerows. Their products, such as firewood and poles for building, sometimes compensated for the negative effect they had on the yields of adjacent crops. Over and above these characteristics, other factors influencing the use of different tree species on particular farms or more generally included the histories of different farms—in particular, where family compounds had been abandoned, leaving their traces in nutrients from feces and ashes, and how land had been subdivided among sons; the different needs of men and women; and the need for firewood in areas close to Lake Victoria in order to smoke or fry Nile perch (a species that, unlike the fish it has displaced since being introduced to the lake in the 1950s, is too oily to be sun-dried).

CARE's project involved researchers' collaboration not only with farmers, but also with community groups. For example, researchers worked with schools to establish seedling nurseries. When removal of seeds by termites became a problem, the project leaders insisted that pesticides not be used near schoolchildren and sought nontoxic solutions. Some control schemes suggested by the community members failed, but success was eventually achieved following some farmers' recommendation that seeds be surrounded with ashes. Again, in the spirit of collaboration, one CARE official's innovation of using plastic to avoid dampening the ashes when watering the crops reduced the number of times the ashes had to be reapplied.

This combination of local and outside influences occurred in many other varying ways. The extension workers CARE trained were young adults from the area, who would continue to live and work in the area after CARE withdrew. Yet CARE deliberately chose to train women and men in equal numbers, which would not have occurred if selection had been subject to the unequal gender norms of the community. CARE allowed local practices to form the focus of their research, but the CARE agroforesters also made observations and conducted trials to relate the seedling survival rates, growth rates, nutrient contributions, and cash values of products of different species to soils, planting densities, pruning and harvesting practices, and so on. The results of these investigations informed the advice they gave

to the local farmers and to agroforesters in other areas of the Sahelian region.

CARE's emphasis on achieving meaningful local participation stemmed from an awareness that a successful project would require a complex set of negotiations involving the project's funders and government bodies. Indeed, CARE deliberately located this project in an area without significant involvement by government forestry workers so that it could become established and visibly successful before it incited bureaucratic interference. In retrospect, CARE officials concluded that if this project were to be taken as a model for other areas, and if the extension networks they had established were to remain viable, they needed more government endorsement than they had sought. This reservation aside, the participatory approaches of subsequent CARE projects in agriculture, forestry, health care, and other areas drew heavily on the model of the Kenyan agroforestry project. The success of the agroforestry project was evident when, during the evaluation process, the farmers were asked: "Who decided which species to grow? Who owns the production process?" The answer to both questions was clear; the farmers exclaimed: "These trees are ours!"

B. Flexible Engagement

In the late 1990s, I attended some facilitation training at 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, on institutions between the individual and, on one hand, the state and, on the other hand, the large corporation (Burbidge 1997). ICA planning workshops involve a neutral facilitator leading participants through four phases: practical vision, underlying obstacles, strategic directions, and action plans (Stanfield 2002). These phases mirror and make use of the "objective, reflective, interpretive, decisional" steps of shorter ICA "focused conversations" (Stanfield 1997). The goal of ICA workshops is to elicit participation in a way that brings insights to the surface and ensures that the full range of participants are invested in collaborating to bring the resulting plans or actions to fruition (Taylor 1999a).

Such investment 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 rate to crisis levels. As well as desiring specific plans, the EDC sought significant involvement of community residents. Twenty meetings with over 400 participants moved through the first three phases—vision, obstacles, and directions. The results were synthesized by a steering committee into common statements of the vision (fig. E.1), challenges, and strategic directions. A day-long workshop attended by 150 community residents was then held to identify specific projects and action plans and to engage various groups in carrying out projects relevant to them.

In a follow-up evaluation five years later, the EDC found that it could not simply check off plans that had been realized. The initial projects had spawned many others; indeed, the EDC had been able to shift from the role of initiating projects to that of supporting them. It made more sense, therefore, to assemble the accomplishments under the headings of the original vision and strategy documents. Over 150 specific developments were cited, which demonstrated a stronger and more diversified economic base and a diminished dependence on provincial and national government social welfare programs. Equally importantly, 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 (chapter 4, section A). In that case, a detailed scientific analysis was conducted at some distance from those directly affected by the problems of salinization and economic decline. Projections of the economic and ecological future were straightforward as long as they preserved the basic structure of the situation. When innovative possibilities, such as reforesting abandoned land, were considered, the analysis became difficult. The audience for the final analyses was small and attention to the report short-lived. The Ministry was unable to implement the policy change it desired, and nothing more then became of the two or three person-years of research.

The West Nipissing plan, in contrast, built from straightforward knowledge that the varied community members had been able to express through the facilitated participatory process. The process had been repeated, which presumably allowed the participants to factor in changes and contingencies, such as the start of the North American Free Trade Agreement and the decline in the exchange rate with the United States.

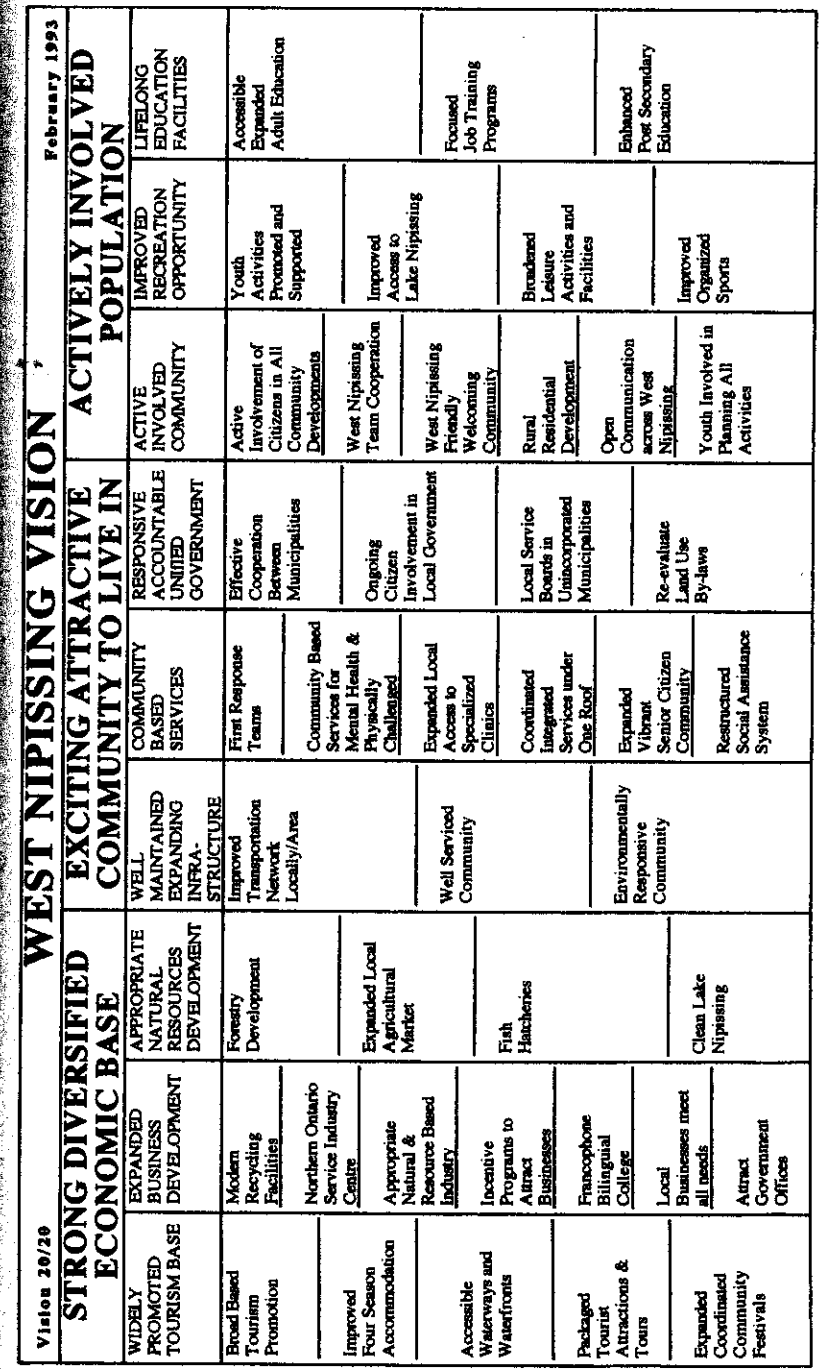

Figure E.1 The vision for the West Nipissing region in Ontario, Canada, produced by a community-wide planning process in 1992. (From West Nipissing Economic Development Corporation 1993.)

And, most importantly, the process had led community members to become invested in carrying out their plans and to participate beyond the ICA-facilitated planning process in shaping their own future.

Some difficult questions were opened up for me by this contrast, given that my own environmental research has drawn primarily on my skills in quantitative methods. What role remained for researchers in inserting the translocal—that is, their analysis of changes that arise beyond the local region or at a larger scale than the local—into participatory planning? For example, even if I had moved to the Kerang region and participated directly in shaping its future, I would still have known about the Ministry's policymaking 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. What would it mean, then, to take seriously the creativity and capacity-building that seems to follow from well-facilitated participation, but not to conclude that researchers should "go local" and focus all their efforts on one place?

When I first presented the West Nipissing–Kerang contrast (Taylor 2000b), I asked the audience to explore this question through some guided freewriting (note 29; chapter 6, section C1, move 7). Out of my own freewriting on that occasion, a new term emerged: "flexible engagement." This term seemed to capture the challenge for researchers in any knowledge-making situation of connecting quickly with others who are almost ready to foster—formally or otherwise—participatory processes and, through the experience such processes provide their participants, contributing to enhancing the capacity of others to do likewise. The term plays off the "flexible specialization" that arose during the 1980s, wherein transnational corporations directed production and investment quickly to the most profitable areas and set aside previous commitments to full-time employees and their localities. Would flexible engagement constitute resistance or accommodation to flexible specialization? This remains an open question.

C. Open Questions

In the years just before his death in 1988, the cultural analyst Raymond Williams wrote two books that built directly on his experience of moving from a childhood in the English-Welsh borderlands into a cosmopolitan world of intellectual exchange: the novel *Loyalties* (1985) and an unfinished set of episodes of environmental-historical fiction, *People of the Black Mountains* (1990, 1992). I was led to both these works through an essay by

geographer David Harvey, titled "Militant Particularism and Global Ambition" (Harvey 1995). In this essay, Harvey analyzes these works and earlier novels of Williams at the same time as he weaves in reflections on his own experience as a professor at Oxford University.

Harvey had arrived in Oxford in 1989 fresh from completing *The Condition of Postmodernity* (Harvey 1989)—a book that was to become widely read and influential. He was soon drawn in as a "big name" to co-edit a volume of contributions from union activists and academics (Hayter and Harvey 1993). The focus of the project was the decline of the Cowley car plants that had fueled the economy of Oxford since the 1920s—as well as serving as the locus of many significant industrial disputes. During the 1980s, the car plants had been subject to repeated cutbacks. Their closure and redevelopment of the land for a business park was a constant threat. Teresa Hayter, the volume's other editor, had tirelessly campaigned with other shop-floor militants to preserve the plants and the remaining jobs—without the support of the union leadership and local Labour council. When Harvey composed a concluding chapter that entertained other strategies for dealing with the plant closing and the economic future of Cowley, Hayter challenged him to define his "loyalties" (Harvey 1995, 71).

In the "Militant Particularism" essay, Harvey describes his position as wanting to chart a long-term trajectory when, in the short term, there were few alternatives for local workers if the remaining jobs were lost. The situation did not lend itself to a simple reckoning of his loyalties: the working conditions at the plant were deteriorating; the plant's paint shop was a serious source of pollution; working-class solidarities around the plant were weakened and broader coalitions were needed; excess production capacity for cars prevailed in Europe, and indeed, worldwide; Cowley produced Rovers—luxury cars for the wealthy; and the corporate owners of the plant were making decisions based on fluctuations in stock-market and property values. Intellectually, Harvey wanted these issues to be raised so that readers of the volume could "consider active choices across a broad range of possibilities," yet he recognized that "the impetus for the campaign, the research, and the book did not come from [himself, but] arose out of . . . a tradition of union militancy emanating from the plant." He wanted political discussion to be guided by abstractions at spatial and temporal scales larger than the local and immediate, yet felt uneasy—disloyal—about imposing that "upon people who have given their lives and labor over many years in a particular way in a particular place" (Harvey 1995, 73).

Williams's *People of the Black Mountains* resonates strongly with the project of analyzing socio-environmental change in terms of differentiated

agents situated in intersecting processes (chapter 5, section C), but it was the novel *Loyalties* that kept me thinking about Harvey's dilemma. Through its central characters, in particular the Welsh Gwyn and his English birthfather Norman, *Loyalties* explores the tension between solidarities forged through working and living together in particular places—"militant particularism"—and translocal perspectives or abstractions. Moreover, it adds a temporal, trans-generational dimension that is especially significant given my interest in "self-conscious knowledge-making and social changing" (chapter 6), or, in Williams' words, in "looking, in [an] active way, at the whole complex of social and natural relationships which is at once our product and our activity" (Williams 1980, 83).

When the middle-aged Gwyn and elderly Norman finally meet, Norman pushes Gwyn to acknowledge that his scientific career has taken him away from his birthplace and enabled him to see more about ways the world is changing than people who remained in the Welsh towns. Political involvement, Norman argues, cannot be a simple matter of Gwyn staying loyal to his roots. Given the "powerful forces" that shape social and environmental change, we can "in intelligence" grapple with them "by such means as we can find" and take a deliberate path of action, but "none of us, at any time, can know enough, can understand enough, to avoid getting much of it wrong" (Williams 1985, 357–58). Or, in the words of Norman's close intellectual and political colleague, Monkey Pitter, if we "go on saying the things we learned to say and it will be just strange talk, in a strange land" (161).

Rather than view these conclusions nihilistically, Williams, in another text that looked toward the future, expressed his hope for "detailed, participat[ory], consciously chosen planning" and opposition to the crisis management and "politics of temporary tactical advantage" he saw ascendant in the 1970s and 1980s (Williams 1983, 11–12). He would, I suspect, have been impressed by what has been achieved in West Nipissing, yet may have expressed uncertainty about its wider implications. To what extent could such local planning mitigate adverse decisions made by governments and corporations operating in a larger spatial and temporal arena? In what ways would it be important to incorporate the knowledge-making of nonlocal or translocal researchers—people who did not share experience of and commitment to livelihood in one place?

When I first read *Loyalties,* I was struck by its resonance with the spirit of my explorations of the construction and reconstruction of unruly complexity. "When inquiries are oriented and guided by themes," the draft introduction of this book manuscript at that time read, "it should be kept in mind that they will break down when applied too far out of the domain in

which they were formulated. On the way, however, the explorations enable new terms, questions, models, and relationships to be derived." *Loyalties* has two short passages as "bookends": At the beginning, Jon, a grandson of Norman, is invited to work on a documentary project ostensibly about the politically subversive past in which Norman was implicated. Jon comes to realize that the project is very much connected with political machinations in the present. At the book's end, the final exchange comes after Jon has declined the producer's invitation (Williams 1985, 378): "'As I said at the beginning,' [the producer] shouted, 'you'll cut and run.' Jon stood holding the door. The edge of the wood was between his fingers. 'I told you. I have these questions to ask. Open questions.'"