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Diversity, Globalization, and “Growing Up Digital”: Navigating Interdisciplinarity in the Twenty-First Century

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Abstract

Three main challenges face interdisciplinary practitioners in the humanities, social sciences, and professional education: (1) the difficulties and opportunities posed by diversity, (2) the challenges posed by globalization, and (3) the challenges posed by an environment shaped by information technology and the impact of new generations who “grew up digital.” The theoretical literature on interdisciplinarity has focused largely on defining interdisciplinarity or establishing its acceptability as a mode of academic knowledge production. I argue that we can better understand the challenges interdisciplinary practitioners face by analysing specific interdisciplinary projects rather than by focusing on interdisciplinarity as a generic whole. I see interdisciplinarity as an integral part of the knowledge-production system: a normal part of the processes of fragmentation, synthesis, and recombination of knowledge (Salter & Hearn, 1996). Consequently, generational and environmental changes are part of these normal processes and must be understood as such. By exploring ethnic studies and women’s studies in North America, I attempt to illuminate the historicity of interdisciplinary projects and how they change over time. This in turn demonstrates our need for criteria to assess the success of interdisciplinary projects that go beyond institutionalization, which, to date, has been too often the only criterion of success.

Introduction

The complex challenges involved in navigating interdisciplinarity in the twenty-first century require us to end our search for universal and timeless characteristics of interdisciplinarity and instead to see interdisciplinarity (hereafter I-D) as manifested in particular historical contexts in which different types of I-D projects emerge. Three main challenges face I-D practitioners in the humanities, social sciences, and professional education fields: (1) the difficulties and opportunities posed by the challenges of diversity, (2) the challenges posed by globalization, and (3) the challenges imposed by an environment shaped by information technology (hereafter IT), including the impact of new generations who “grew up digital.” With several exceptions, the theoretical literature on interdisciplinarity has focused on defining I-D or its acceptability as a mode of academic knowledge production. I argue that we can better understand the challenges I-D practitioners face from analysis of specific interdisciplinary projects rather than of I-D as a generic whole. I see I-D as an integral part of the knowledge-production system: a normal part of the processes of fragmentation, synthesis, and recombination of knowledge

(Salter & Hearn, 1996). Consequently, generational and environmental changes are also part of these normal processes and must be understood as such.

As Westbrook (1999) observes, I-D involves projects that "purposefully inter-weave knowledge from two or more disciplines" (p. 26) or fields within academia, or from beyond. While we use the same terms to describe I-D projects such as "women's studies" or "ethnic studies," what those terms mean can vary significantly from context to context, especially in the humanities and social sciences. By exploring ethnic studies and women's studies in North America, I attempt to illuminate the historicity of I-D projects and how they change over time, demonstrating how the character of I-D projects can change. This in turn demonstrates our need for criteria to assess the success of I-D projects beyond simply their being given an institutional home in the academy, which, to date, has been too often the only criterion of success.

In the humanities, social sciences, and professional education, I-D practitioners may face problems not encountered in science or engineering. The first challenge I identified, for example, involves diversity resulting from the fragmentation that is a normal part of the scholarly process of specialization, synthesis, and recombination. They share this challenge with those working on science and engineering projects. But diversity challenges also result from fragmentation caused by people rejecting Enlightenment universalism (the idea of a single "master narrative") and by the impact of new generations who bring with them new goals. In some I-D projects, fragmentation also results from demands for programme autonomy. I will focus mainly on the latter two aspects.

The second set of challenges relates to the effects of globalization on I-D projects, especially the globalization of discourse. Globalization challenges how academic work is organized. For example, it reveals that the division of knowledge production into disciplines such as English and Anthropology often reflects European attempts to comprehend the diversity of experiences encountered under colonialism. New transnational and "post-disciplinary" movements have emerged, including discourse analysis and cultural studies, which are more formal and abstract and work by stripping context from the subjects studied. Other I-D responses, such as post-colonialism, work through cross-cultural comparisons. Transnational movements of Indigenous peoples around the world, which resist homogenization — the epistemic centrality of Europe — also produce new knowledge modes and new I-D projects, which in turn pose new challenges.

The third set of challenges is posed by the new IT environment, in particular by new knowledge-seekers who are "growing up digital" (Brown, 2000). While these new generations are better able to "do" I-D technically, it is increasingly harder for them to "do" I-D work well because of the difficulty of evaluating the quality, trustworthiness, and authority of I-D knowledge claims. This demonstrates the need to develop better ways of assessing the quality, reliability, and trustworthiness of I-D knowledge claims.

General Theme

My general theme is that practicing I-D successfully in the twenty-first century requires that one recognize the challenges posed by diversity, the effects of globalization, and the impact of new generations of I-D practitioners who are "growing up digital." To navigate the rapids these challenges represent, we must recognize that inherent in each challenge are both positive and negative effects, and that we must understand I-D projects in the historical context within which

each emerged and operates. In the West, knowledge making has been much affected by four “posts” — post-modernism, post-positivism, post-colonialism, and post-structuralism. The physical and biological sciences are affected to some degree — diversity and globalization, for example, challenge science to integrate traditional environmental knowledge (TEK) and non-western (Arab, Chinese, African) scientific knowledge. But the humanities and social sciences have been even more seriously affected, as have the fields of professional education, which draw heavily on them. While disciplines are affected, the challenges are strongest in I-D projects that draw on both the social sciences and humanities, such as ethnic studies and women’s studies, which developed in symbiosis with social and political movements. Moreover, in some I-D projects based on “self-studies,” fragmentation and recombination also result when new groups of knowers demand agency and theoretical autonomy. Post-modern I-D projects, therefore, face somewhat different challenges than modern I-D projects, which have the goal of universally valid knowledge.

In the second part of this paper, I explore the three main challenges captured in my title: diversity, globalization, and “growing up digital.” I base my analysis on evidence from several sources: a survey of the recent literature in English about specific I-D projects, and my own experiences.¹ I assert that I-D projects in the humanities, social sciences, and the professional education fields associated with them involve especially complex challenges of diversity as modernist assumptions of universalism are challenged by globalization, and especially by the globalization of discourse. Challenges posed by the new IT environment, I observe, are complicated by the presence of new generations who have “grown up digital.”

While generational transitions are always challenging, this is particularly so in these I-D projects. Yet, although many I-D projects are now on their second or third generation, we know little about how to assess their success overall and in terms of specific goals. Are they useful in helping us formulate questions and problems? What is it that I-D projects help us do better than disciplinary projects? Without a sense of what constitutes success, it is difficult to disentangle the negative and positive aspects of the challenges involved in I-D work. We must push the theoretical literature on I-D beyond its focus on establishing its acceptability as a way of producing academic knowledge. Although our collective instinct is to try to find a common pattern among a bewildering multiplicity of texts about individual I-D projects, I argue that we can better navigate these challenges through a bottom-up analysis of many specific types of I-D projects, rather than through a continued focus on abstract generalizations.

Some Definitions and Assumptions

Following Klein (1990; 1996) and Salter and Hearn (1996), I assume that I-D is an *integral part* of professional knowledge-production systems. It is a product of two normal processes: fragmentation resulting from specialization and deepening expertise; and recombination, restructuring, and sometimes synthesis. These occur in limited ways, such as in approaches to an individual research problem, or in broader ways that create a hybrid specialty; or they may congeal as a distinct interdiscipline, eventually even becoming institutionalized as a new discipline.

I find Lynn Westbrook's conceptualization of interdisciplinarity as “a purposeful weaving together of two or more disciplines . . . to reach a new understanding, create a new academic

end product, or advance research on a particular question" (1999, p. 26) a valuable starting point. In common with Salter and Hearn, however, I understand I-D to be broader than academic knowledge — that is, to also include knowledge production outside of the academy. Further, I-D may also draw on knowledge cross-culturally. But Westbrook's idea that I-D involves projects that *purposefully* interweave knowledge drawn from different contexts of knowledge production is especially useful. So I conceptualize I-D as involving any project in which practitioners purposefully inter-weave knowledge from two or more disciplines or fields either from within academic settings or from sites outside of the academy, and which may include cross-cultural knowledge transfers as well.² I conclude that for a project of borrowing — or border-crossing, as Klein (1996) calls it — to produce successful I-D results, the knowledge involved must be commensurable, at least in principle.

I have categorized specific I-D projects along two axes according to the kind of I-D activity they employ. (See Table 1: Types of Interdisciplinary Activity.) I include some multi-disciplinary, transdisciplinary, and anti-disciplinary movements in my conception of I-D. I use the term I-D *projects* deliberately to stress three things illustrated in Table 1.

- First, that I-D projects vary according to the type of knowledge-making activity they involve. By focusing on *the kind of activity*, rather than the setting or program where the activity is undertaken, we can trace *changes* in the *nature of the activity* over time. Moreover, we can also locate I-D activity within disciplinary settings, now especially important as, more and more, the practices of "deliberate interweaving" characterize disciplinary as well as I-D projects, blurring old distinctions as IT makes disciplines more open to outsiders who can access their "products" without credentials or permission.
- Second, by focusing on specific I-D *projects* and types of I-D *activity*, we can demonstrate how they are historically shaped by where and when they were initiated and the circumstances of their development. For example, an I-D project may begin with efforts to transform society but change over time into a more narrowly academic kind of activity. Home economics is an example of a project with radical beginnings and conservative ends.
- Third, by focusing on specific I-D projects, we are also able to distinguish among a number of different goals that projects may adopt but which may change over time. This allows us to demonstrate how and why the goals of a specific I-D project may change over time and show that projects often have multiple goals and may share goals with disciplinary projects.

Table 1:

	Types of Interdisciplinary Activity: With Some Tentative Placements *					
Goals of Some Specific I-D Projects	Co-operation	Cross-fertilization	Fusion / synthesis	Explanation	Transformation of knowledge	Transformation of society (critical I-D)
Solve research problem(s)	Biochemistry	Ethno-linguistics	Political economy		Biophysics	
Solve societal problem(s)				Urban studies		Black studies
Theoretical Development			Cultural studies			
Specialized Training			Art history			Social work
Self-Studies	Ethnic studies			Women's studies	Women's studies	Women's studies
Action Research based on self-studies				Critical race theory	Anti-racist projects	
Institutionalization of I-D knowledge	Ethnic studies				American studies	
Improve delivery of professional / quasi-professional services	HMOs; I-D clinics					

* Detailed exploration of case studies shows multiple placements for some I-D projects, not for others

My thesis is that many I-D projects are specific to how they emerged and developed, and that they are shaped by where and when and by whom they are practiced. Although we use the same labels —“ethnic studies” or “women’s studies” — to describe projects developed in different places and times, these words mean different things across place or time. While this is certainly the case for critical I-D projects and for self-studies projects, it is not clear if it also applies to less culturally contextualized projects.

Arthur Kroker (1980) distinguished between critical and vacant I-D, defining critical I-D as “a collective deliberation on public problems” (p. 3). He sought a critical reinvention of Canadian discourse and defined critical I-D as the activity of rejecting the “bourgeois episteme” of the disciplines in favour of a “public, discursive and archaeological” style of scholarship. Critical I-D, he believed, would employ a “vigorous pluralism” requiring “an active migration beyond the disciplines to a critical encounter with different perspectives on the Canadian situation” (p. 3). On the other hand, he rejected as “vacant” I-D work “which mechanically applies the bland integrons of normalization” (p. 3). The goal of critical I-D would be an

intellectual discourse based on rediscovery, rethinking, resocialization, and reconceptualization; it would discover lost discourses on Canada and foster a vigorous pluralism. Klein and others have adopted Kroker's concept of "critical interdisciplinarity," which emerged as part of the first wave of Canadian-based Canadian Studies. It could also describe other "studies" which operated in a left-wing framework and used the nation-state as their unit of analysis; however, the concept is not unproblematic. What Kroker valorized was not "critical" in 1980 in relation to women, Indigenous people, or "race" more generally, as its main focus was the relationship of the Canadian nation-state to U.S. imperialism. It ignored other I-D projects that involved the "self-studies" of women, Blacks, other people of colour, gays, and people with disabilities. These projects also involved drawing knowledge from academic and non-academic social movement sites and then weaving the different strands together. Whether or not a project is "critical," therefore, may change across time and place. Hence, we must always ask for whom the I-D project is "critical."

I have used the concept of *self-studies* (1984; 1992) to capture critical I-D projects that are characterized by particular goals and types of activity. Self-studies involve the researcher consciously observing him/herself and mobilizing knowledge from various sites, including from action research that is designed to transform society and to achieve the researcher's self-emancipation. The most familiar self-studies are women's studies, native studies, queer studies, disability studies, and Black studies. But labels may be misleading; for example, Canadian Studies can take the form of self-studies, but it is also an area study for everyone from the Spanish to the Chinese. There are four main characteristics of self-studies: agency, authenticity, autonomy, and activism. Agency refers to scholarship in which the researcher is both subject and object of the study so that his/her status and condition are implicated in the transformations of knowledge and society sought. Agency involves the demand that previously marginalized researchers become the heroes of their own stories. Authenticity is the issue in self-studies of who can do the research: for example, can men "do" women's studies? Is the study of disability legitimately undertaken only by those who experience disablement? Another example is the divide that exists in Aboriginal Studies or Native Studies between scholarship that has Native peoples as its object versus scholarship that is carried out by Native scholars, is Native-centred, and uses concepts and frameworks generated by Indigenous peoples. Autonomy is an important demand of I-D self-studies projects, and it also triggers fragmentation since those involved wish to recreate knowledge with the self at the epistemological centre and also want to be in charge of the organization surrounding such studies. The desire for autonomy resulted in the resistance of some women's studies practitioners to being located in universities; in Italy, for example, feminist institutions such as bookstores or women's centres were the preferred sites, while in Latin America, feminist NGOs and large-scale conferences were chosen because male-dominated universities would not permit autonomous programmes.

Finally, there is a lively debate in professional fields concerning whether I-D practice is necessarily tied to activism or action research, with some arguing that I-D practice by definition requires reflexivity, action research, and democratic accountability (Romm, 1998). S. L. Payne (1998), however, observed a division on this point, with some practitioners believing action research must always characterize I-D work, while for others "I-D is . . . a relatively unproblematic pursuit of merely selecting appropriate methods" (n.p.).

Some Case Studies

What complicates the issue is that projects that begin as “self-studies” with the goal of transforming society and with a firm commitment to action research can change over time, while the label stays the same. To look beyond labels, therefore, to understand the type of activity and the goals involved in a specific project at a specific time, we also need to understand how and why projects change as goals change over time. Home Economics is a good case of how the activities associated with labels change over time. Home Economics began over a century ago as an I-D project of research and education associated with the first wave of the White majority women’s movement in North America. Its goals were to professionalize “women’s work” in the home by focusing on things such as safe food production and scientific child rearing and to valorize the work done by White middle-class women. Home Economics drew on many disciplines, but it was the movement's critiquing of society’s assigning low status to women at home and to their work that gave the project its focus. Those of us who took “HomeEc” in high school in the 1950s realize that the critical, transformative aspects of the project mostly had vanished over the century of the field’s operation. There was some revival in the 1970s, but the second wave (majority) women's movement largely rejected women's maternal and domestic roles, becoming instead anti-natal and focusing on women's participation in the public realm, not on valorizing “women's work.” Home economics was seen as a conservative project by women who defined liberation as doing the same work as men in the public sphere and *not* doing “women's work” at all. Nonetheless, home economics remained a long-standing I-D project, in tension often with the more recent (and more radical) I-D women's studies project. Ironically, home economics also provided public sector careers (as dieticians, textile chemists, etc.) for women who chose not to marry, thereby professionalizing “women's work” but only in the public sector and for pay.

To make sense of the historic trajectories of I-D projects like home economics, we must go beyond and behind labels and focus on goals and activities, and on how they change over time. Several useful questions to ask about specific projects are: (1) What kind of I-D activity is being practiced here? (2) What is the goal (or goals) of this project that requires an I-D approach? (3) Have the activity and goal(s) of this project changed over time? If so, how? We also need benchmark questions so that we can assess whether or not a project is a success. For example, we might ask if the project attracted (and retained) a critical mass of practitioners and whether it could survive the infusion (or the intrusion, as some would see it) of a new generation of practitioners.³

A second case study, that of ethnic studies, may help to illuminate some of the normal processes of change within an I-D project over time and will set the stage for my discussion of future challenges. Ethnic studies as a North American phenomenon developed somewhat differently in Canada than in the United States. I will focus first on the U.S. projects. In 1990, ethnic studies existed in 800 U.S. sites as an umbrella field composed mainly of (1) Black or African American Studies, (2) Asian American Studies and Pacific Islander Studies, (3) Hispanic, Chicana/o, Latina/o, or Puerto Rican American Studies, and (4) Native American/American Indian Studies. Each area was an original I-D project of self-study. In

addition, there were about 200 autonomous Black Studies sites that rejected the ethnic studies structure and label, insisting instead on autonomy. Critical mass is a persistent problem in retaining autonomy for self-studies projects; indeed, the problem of achieving a critical mass sufficient to achieve institutionalization was the main reason for program reorganizations under the ethnic studies label beginning around 1990. The "fit" has not always been comfortable, however, as many practitioners with a self-studies orientation clearly find being under the ethnic studies umbrella constraining. Nonetheless, many accept it as a necessary cost of the institutionalization and even survival of their projects. The question many pose is whether under the ethnic studies umbrella their projects can retain a critical approach or if depoliticization is also the price of survival. Native American scholars in particular resist becoming "just another ethnic group" in a multicultural framework, preferring an autonomous anti-colonial framework that is more explicitly political.

If we trace the evolution of ethnic studies in the U.S., several things of note emerge. The field had its origins in an era of vigorous self-studies in the 1960s and 1970s stimulated by social movements — especially the civil rights movement — demanding change. Minority, ethnic knowledge products for teacher education were mandated by court decisions, and government funding stimulated programmes and materials responding to them. In the late 1970s, however, many projects failed because of lack of focus or institutional neglect. These projects were primarily about people of colour, although there was also a smaller strand of minority studies that focused on White immigrant ethnicity and religious minorities. Those that survived were refined and strengthened. But a political backlash in the Reagan era reduced funding and increased student demand for programmes that would train them for jobs. In this context, programme autonomy weakened and self-studies projects suffered.

In the 1990s, there was a stronger emphasis on "mainstreaming" ethnic studies knowledge and methods and professionalizing them for use in education, law, and social services and in the training of teachers, medical personnel, lawyers, social workers, and other professionals. New theoretical approaches to dealing with "ethnicity" in the curriculum emerged and most surviving self-studies programmes were institutionalized; their action research components were reduced or even eliminated altogether in some cases. John M. Liu (1989), examining the relationship between Asian American Studies and ethnic studies (into which it was integrated), concluded that the resulting combination of institutionalization and mainstreaming resulted in the depoliticization of Asian American Studies. Indeed, many scholars report that the self-studies component of each project under the ethnic studies umbrella is weaker than in earlier decades when each was autonomous. But it is not clear that the critical dimension (Kroker's usage) has been eliminated; that is, it is not clear that critical I-D and self-studies are necessarily linked. The author of the introduction to the Garland directory *Ethnic Studies in the United States: A Guide to Research* (Bataille, Carranza, & Lisa, 1996) concludes that "[m]ost departments and programs have successfully **outlived** these original [political] purposes and, although faculty and students are still eager to transform society, most programs have adopted a stronger academic or **practical** focus to replace earlier political motivations" (p. ix, my emphases). Nor is it clear that such changes in focus or diminished radicalization would not also have happened in projects that retained autonomy, as in the case of home economics.

Despite this history of being institutionalized, ethnic studies continues to be influenced by other critical I-D projects, including women's studies, queer studies, cultural studies, and especially the more recently developed critical race theory. Critical race theory is a powerful force because ultimately demographics shape ethnic studies in the U.S., which makes the project different from ethnic studies in Canada, since Canada's demographics are different. In the near future, an estimated 50% of university and college students in the U.S. will come from "minority" backgrounds and will have some interest potentially in the projects under the ethnic studies umbrella. The demand for the new, mainstreamed knowledge of the sort generated by ethnic studies, therefore, is increasingly in demand for teacher education, social work, and other professional education fields. By contrast, in Canada, the ethnic studies project is based on a much smaller population base and is related more to (White) ethnic experience than to Black, Afro-centric knowledge. So far, it lacks the stimulation from social movements or court decisions that triggered both consolidation and expansion in the U.S.

This example shows that projects with the same name can vary quite significantly both from place to place and over time.⁴ Their goals change along with the main activity of specific projects. The key, then, is to focus on the type of activity and the goals in each project, conceptualized in its own time and place, and then to make comparisons among them.

The Three Challenges

Within this framework, I will outline the three kinds of challenges that face I-D projects in the humanities, in social sciences, and in professional education. First I will explore the challenges posed by diversity. These challenges are not new, but their causes and impacts are changing and intensifying. Recall first that some I-D projects are formed as part of the normal processes of specialization, recombination, and synthesis. But both disciplines and interdisciplines are also vulnerable to fragmentation flowing from the rejection of Enlightenment universalism, especially when new groups of knowers, both within and outside of the academy, press to have their self-understandings recognized as legitimate knowledge. Most disciplines were forged in the intellectual and epistemological framework of modernity, which makes them better able to resist the effects of this kind of fragmentation. By contrast, many interdisciplines emerged as part of the transition to post-modernity in which the homogeneity and universal applicability of knowledge are under challenge. Therefore, I-D projects are especially vulnerable to the pressures of fragmentation resulting from critical I-D and self-studies, especially when new knowers demand major transformations of intellectual frameworks. Activist forms of I-D, which aim at broad social, as well as intellectual, transformations, promote strong linkages with groups outside the academy. These groups and movements often foster values of consensus and collective decision-making, which conflict with academic knowledge norms.

Some of the challenges that may result from diversity claims and responses to them include:

- fragmentation from increasing diversity claims within I-D projects;
- diminished critical mass resulting from diversity-driven fragmentation;
- diminished solidarity within I-D projects as a result;
- conflicts between knowledge developed inside and outside the academy;
- competition among critical I-D frameworks within projects;

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- conflicting interpretations, which weaken influence on policy-makers;
- diminished political support, funding, and resources as a consequence;
- political and academic backlash against diversity claims;
- chilly climate resulting from backlash, discouraging faculty and students;
- depoliticization resulting from institutionalization/institutional reorganizations;
- conflict resulting from generational change and value conflicts.

These challenges mostly affect I-D projects in which critical approaches and/or self-studies have predominated. Projects such as women's studies and ethnic studies have been especially vulnerable. They are less likely to affect I-D projects resulting from research problems involving recombinations, such as ethno-linguistics or biochemistry. But some large I-D fields, such as urban studies, have been less affected, perhaps because their origins are not in self-studies. Canadian Studies and American Studies have been less affected when practiced as area studies than when practiced as self-studies.

The impact of diversity challenges is especially clear within women's studies. In North America, the project was originally organized around the concept of an undifferentiated "woman" portrayed as struggling against an ahistorical concept of patriarchy (Dhruvarajan & Vickers, 2002). This powerful ideological framing involved the proposition that women's knowledge was different from men's knowledge. But it also homogenized women's experiences and manifestations of male dominance, which it assumed existed universally. The project has grown and changed considerably, and part of the process involved challenges to this concept of a universal, undifferentiated "woman" as women of colour, lesbians, women with disabilities, and others initiated their own "self-study" projects, some under the women's studies umbrella, others not. For example, traditionally-oriented Aboriginal women challenged the right of majority-culture women to include them in the undifferentiated, universal "woman," rejecting feminism as a White colonial ideology.

The women's studies example involved challenges based on diversity of identity that led to new demands for autonomy, decreased solidarity, and competition for resources and political support. But the process of creating knowledge of and for women by drawing on multiple sources — both within the academy and outside — also produced challenges based on "multiple truths," which also undermined the goal of a shared, universally valid knowledge to replace male-centred knowledge. Peruvian feminist Virginia Vargas uses this idea of multiple truths to conceptualize conflicts between feminist knowledge-makers working in universities and those working in women-controlled organizations (1993). Most ways of thinking about I-D method assume that fragments of knowledge "borrowed" from other disciplines or contexts eventually will fit together like pieces of a well-designed jigsaw puzzle, creating a picture that can be explained by the latest post- or transdisciplinary theory. By contrast, Vargas suggests that the process of trying to weave together knowledge from different sources may result in multiple truths that do not fit together but present confusing, even conflicting realities. While the post-modern rejection of single, universal truths may reassure academics in such situations, one result was the exclusion or delegitimization of non-academic women's knowledge, which was often discarded when it conflicted with the knowledge of academics.

This challenge of multiple truths is very much evident in the field of knowledge about violence against women. Here, the process of calling on multiple disciplines to explore the causes of violence results most often in a jigsaw in which conflicting, multiple "truths" do not fit. Jacqueline Campbell, in "Interdisciplinarity in Research on Wife Abuse: Can Academics and Activists Work Together?" (1998), writes about the multiple and conflicting truths about violence against women drawn from different disciplines, from women's studies, and from professionals and activists in the field. I will sketch the conflicting pieces of the jigsaw briefly to illustrate the problem.

Activists in the anti-rape and battered women's movements operate within a framework based on the ideas of two generations of women working with those experiencing violence. Campbell (1998) outlines the premises of the framework: (1) the personal is political, (2) the rapist/batterer is always entirely to blame, (3) male violence is part of patriarchy, and (4) self-help and survivors helping survivors works best. Their agenda is (a) to "break the silence" about violence and femicide, (b) to protect women against both male violence and male power (e.g. police), (c) to ensure the punishment of perpetrators, and (d) to get funding for shelters.

By contrast, there are at least five distinct approaches within the academy. In sociology, many use the language of family violence, which has the result of separating rape (mainly by other than domestic partners) and battering (mainly by domestic partners). The dominant framework assumes that wife abuse is like child abuse and so is best explained by a framework focused on dysfunctional families. Favoured policy recommendations focus on getting professionals to work with families. There are also feminists working within sociology, however, who critique this framework based on a feminist approach. But as Campbell reports, "family violence" is the dominant approach. In psychology, psychometric scales have been used to assert that husband abuse is as prevalent as wife abuse, which has been used to discredit estimates of incidence of abuse made by feminist activists and theorists, and especially to minimize the impact of verbal abuse. Another approach within psychology asks why battered women stay with their batterers, which resulted in the concept of learned helplessness as a response to post-traumatic stress. This created a victim image, which was then popularized by the media and used in feminist legal defences of women who killed abusers. Women of colour and other women who did not "fit" the helpless victim model were considered "bad" cases; they also resisted this assignment to them of the victim label.

In fact, women's studies as an I-D field faces the difficult problem of how to fit together so many conflicting perspectives. The field's approaches have varied over time. Early on, many drew mainly on the perspective of anti-violence shelter activists, reflecting the high priority it placed on experience as the basis of knowledge. But third-wave feminists — the new generation in women's studies — using Naomi Wolf's distinction between victim feminism and power feminism, assert women's agency and capacity to resist. Hence, some conclude that "she could resist if she wanted to" and reject the idea of women as victims. Black and ethnic minority women have critiqued the assignment of all blame to all men, and instead see male violence as part of the "race" violence general in society. Some resist criminalizing perpetrators of violence; for example, some Aboriginal women explain violence as part of continuing colonialism and support community healing approaches instead of incarceration. Others seek separate, culturally sensitive shelters. Lesbian critics and women with disabilities have also challenged

the belief that women only experience violence from men. There are also views on violence developed in professional settings such as nursing, social work, the law, and other health professions. Moreover, these positions have also changed over time (Vickers, 2002).

These multiple truths reflect generational, occupational, and locational differences, as well as "race," ethnic, and other cleavages. But most especially, the divisions are between those whose knowledge is produced in community-based movements and shelters and those located within the academy. These conflicts have produced cognitive dissonance. The process of weaving fragments of knowledge into an I-D whole is challenged by an overload of diversity from many sources. This kind of diversity challenge, moreover, also occurs **within** individuals, as we experience multiple aspects of identity. While such cognitive dissonance could produce creative transformations and new ways of framing issues, it can and does also result in paralysis. Such conflicts also can limit the influence of I-D knowledge on policy makers, when those apparently working in the same field produce conflicting policy solutions.

Although I have stressed the possible negative results, diversity challenges also present important opportunities. Indeed, the whole self-studies movement, which is based on diversity challenges, has stimulated many creative I-D projects. Nonetheless, the process of weaving together conflicting knowledge is very complex and demands more theoretical skills than I-D practitioners usually employ. Not surprisingly, therefore, confusion and retreat to "separate tables" or home disciplines has been the result in many cases.

The Challenge from Globalization

Since 1990, challenges reflecting the acceleration of globalization have affected existing I-D projects and created new transnational and "post-disciplinary" movements. I understand globalization as fostering two contradictory trends: first, toward homogenization and the dominance of capitalism and Western-style culture, democracy, and human rights regimes; second, toward movements that resist homogenization and Western dominance, producing, for example, new waves of nationalism and political uses of religion in reactive fundamentalist movements. I date the acceleration we now conceptualize as "globalization" from 1990, which was marked by the collapse of the U.S.S.R. and state socialism in eastern Europe, and the end of apartheid as a legal regime in South Africa. I see four main political trends. First, the end of apartheid allowed for a refocusing of anti-racism projects, as the constrained "race relations" framework based on criminology and on sociological theories of "race" became less tenable. Now that South Africa is no longer a pariah, but one example among many of racist regimes resulting from colonialism, comparative studies of "race" regimes and colonial and post-colonial movements are becoming more common. Second, the crisis of the left resulting from the collapse of the U.S.S.R. produced an ideological vacuum, especially in Europe and Latin America, with little to challenge the triumphalist account of democratization and capitalism spreading worldwide. Third, in the "third world," political Islam emerged to challenge this account. The old cold-war division of the world into three parts, with a first, second, and third world framework, was discredited. The North/South framework now often used to replace it also has problems, since neither the Muslim world nor the Indigenous "fourth world" fit the new framework. Fourth, we can observe an increasing *globalization of discourse* such that inter-relationships among the various components that made up the old frameworks can no longer

easily be denied. Although Western knowledge still operates largely as if this globalization has not taken place, denial is increasingly difficult. (These trends parallel economic and technological aspects of globalization.)

Some of the major potential challenges which globalization poses for I-D projects are: (a) diversity claims increase exponentially, (b) globalization can increase the support of international organizations to strengthen some I-D projects,⁵ and (c) globalization can increase critical mass for some transnational I-D projects, such as the transnational networks of Indigenous scholars, who in North America are tiny minorities.

The globalization of I-D scholarship and of discourse generally is likely to have three further effects. First, it will likely favour formal I-D approaches such as systems theory and discourse analysis, which work largely by stripping historical and cultural context, although more culturally embedded approaches may also prove successful as regional approaches, as in the case of cultural studies, in the English-speaking world. Second, globalization will weaken the claims of critical I-D and self-studies to offer comprehensive explanations. For example, with many diverse networks of women speaking for themselves transnationally, there is no room for a global, undifferentiated "woman" in feminist explanations. This likely will favour I-D projects focused on concrete, cross-cultural research problems. The third likely effect is that I-D will become increasingly a requirement of vocational and professional training. While professional fields still often cling to the requirement (and still have the power to enforce it) that only those trained in the country, state, or province may practice as professionals, there is also pressure to de-nationalize professional education by developing portable credentials. This may result in the spread of American approaches to professional education, including the use of I-D training models, for professionals who seek to be "winners" as the globalization of services proceeds.

Globalization is also increasing the multicultural nature of most countries, especially through the movement of people across borders and the impact of diaspora communities made possible by IT and rapid transportation. This may also affect I-D projects such as ethnic studies and increase the need for I-D knowledge in education and quasi-professional training. Genuine cross-cultural scholarship, however, currently eludes most non-scientific I-D fields, as the problem of "multiple truths" remains unresolved, even within a single society.

Challenges Resulting from the New IT Environment

My discussion of the challenges for I-D practitioners posed by the IT environment is divided into two parts. First, I explore some issues for the current transitional generation. I then speculate on how IT will affect I-D projects in the hands of practitioners who are "growing up digital." The challenges posed by the new IT environment are different for the two generations, but only knowledge-seekers who have grown up digital will significantly change how I-D is practiced, thereby raising the stakes involved in conflicts between the generations.

First, how will the IT environment impact I-D projects? Technically, it will be easier to "do" I-D projects using IT, because of easier access to information online, especially for "high-scatter" fields.⁶ It is also now easier to do collaborative I-D and to create critical mass for I-D projects because physical proximity is no longer required. Push technology, listservs, and digital databases make multiple source searches much easier. BUT, the tidal-wave of information which results often causes information overload; I-D practitioners experience difficulty

assessing the quality of the information now so easily gathered, and they find it increasingly difficult to assess the authority and currency of information drawn from multiple contexts. New generations who have grown up digital, moreover, are often also growing up untrained in how to test the quality of the information they gather. They commonly adopt bricolage (cut and paste) as their method, assembling knowledge without testing it for quality, authority, or currency. New generations, therefore, may have less difficulty dealing conceptually with multiple truths, but they are also less able to recognize the problem of cognitive dissonance and how to respond to it.

a) Challenges of the IT environment for transitional generations

For the pre-IT generations, the challenges of the new IT environment are mostly a matter of keeping ahead of the latest usage imposed on us by our field, our department, our university, and the granting agencies: conference proceedings may now only be available on the web; students insist on sending proposals by e-mail; departmental memos have vanished to be replaced, if at all, by digital newsletters. But research on IT usage shows some interesting patterns of use and resistance. Historians, for example, resist using listservs or push technology, but have succumbed to e-mail. Although the technology makes it easier to undertake team research and team publishing, historians rarely use it this way. That is, IT is not transforming discipline-specific behaviour for transitional generations. Where fields or disciplinary culture supports co-operative work, the technology helps the process. Where the culture is individualist, IT has not changed it — YET.

These findings about use and resistance are mostly about the current cast of characters who did not grow up digital. The transitional generation may accept the promise of the technology, which they also experience as a mixed blessing. Lynn Westbrook (1999) concludes that in a high-scatter I-D field like women's studies, IT creates "a tsunami or tidal wave" which puts practitioners on a roller coaster ride that is exhausting and really uncontrollable, yet the new environment has dispelled most of the earlier beliefs that I-D is too hard to practice. This new environment simultaneously is enticing and fraught with problems for practitioners of the transitional generations. Julie Klein explains, "The majority of people engaged in I-D work lack a common identity. As a result, they often find themselves homeless, in a state of social and intellectual marginality" (1990, p. 13). For some, the release from disciplinary strictures was sufficiently invigorating and empowering to make the isolation and marginality bearable. They spent the added energy needed to build structures within which they could be "at home," accepting the additional energy costs as part of doing I-D work. IT suddenly made it possible to build on-line communities and create critical mass around I-D projects, often for the first time, with relatively little energy. It has proved to be of particular value for I-D practitioners because most I-D projects, in terms of information gathering, are high-scatter projects. Most disciplines, by contrast, are medium- or low-scatter because they have well-developed frameworks, a well-organized body of literature, and a fairly well-defined subject matter that is limited in scope (Westbrook, 1999). So the energy needed to scan for information on many research projects is fairly low, except on the cutting edge. Moreover, teamwork is much easier within disciplines because disciplinary principles are well known and shared (although unstated) and because

disciplinary literature is usually well organized. Nonetheless, I-D becomes much more doable in an IT world.

The characteristics of high-scatter fields are that the "the number of different subjects is greater, the type of problem to be faced [is] subject to greater variation, and the organization of the literature [is] almost non-existent" (Westbrook, 1999, p. 171).⁷ Use of IT is harder in high-scatter fields, mainly because of a lack of standard categories across databases and the lack of theoretical organization of the field. Nonetheless, the promise of IT use is also the greatest in high-scatter fields, especially where academic culture or other circumstances limit co-operative team research. For those of us who have laboured to do work in high scatter I-D fields and have invested much energy to develop organizational tools such as bibliographies and databases, the promise of technologies such as listservs, push technology, electronic bibliographies, and databases online is particularly alluring *until the tsunami of information overload hits*. Similarly, using electronic channels for collaborative work, pre-publication text sharing, and virtual research teams seems to make it possible to overcome our cultural suspicion of co-operative work. Yet there are already many horror stories of the crises in such ventures, resulting often from the problem of losing face-to-face warning cues and problems of succumbing to the intimacy of the Internet. One problem I have experienced involved criticizing work online without the limits we would impose on ourselves when dealing with colleagues face-to-face. Cross-cultural and cross-disciplinary communications, always complex, are especially vulnerable to such problems.

The literature reveals that scholars face many problems in using IT for research. The problem most difficult for I-D scholars, in my view, is the difficulty of assessing the quality of information delivered through IT. Westbrook concludes that "Internet-based information generally lacks reliable indicators of quality" so that "retrieving relevant information which is authoritative in its field from an increasing mass of irrelevant information" (1999, p. 4) can be a nightmare. She also notes that "listservs are poor controllers of the quality of authorities" (p. 4); for example, almost anyone can join the political science/women's studies lists I am on. Moreover, the "trail of minds" represented by hyperlinks among web documents are used as indices of authority, but what authority do they represent in fact? Usually, they represent that trail of minds an individual web designer considered the most interesting. But like any other trail of breadcrumbs, they may or may not lead you to grandmother's house (or where you want to go).

What is new is that the Internet makes it possible for people to tap into pools of authoritative knowledge without a formal entrée (or qualifications), becoming connected to strangers *en masse* without the training previously considered necessary to understand the unstated assumptions of a discipline or field. This changes how we balance our assessments of the quality of information and inference against the convenience of information gathering. This has always been a problem for I-D scholars, but the new IT environment means that tests of information for quality must now be done almost exclusively by the end user. That is, the technology has magnified many times the non-standardized character of indicators of authority, accuracy, depth, and timeliness. Our new slogan might well be "let the end-user beware." Westbrook concludes, "the sheer quantity of information needed [for I-D work] may force

scholars to use clues that are shallower than is ideal" (1999, p. 36), affecting the overall quality of I-D projects and increasing the problem of "pieces" that don't "fit."

b) How will these problems affect the generations who are "growing up digital"?

John Seely Brown introduced the concept of "growing up digital" in an article in *Change* (2000). He argues that the Web changes work, education, and how people learn in fundamental ways so that IT becomes a **transformative** learning technology for the new generations who "grow up digital." For them it is not just an add-on, as it is for transitional generations who base use and resistance decisions on other values and norms. He argues that IT, as a learning medium, honours multiple forms of intelligence. He believes it is a two-way medium, unlike books, TV, or other media through which non-digital generations learned, which he considers to be one-way. Especially interesting is the research Brown marshalled on how digital learners actually learned. (Table 2, drawn from Brown's (2000) article, summarizes shifts in media and learning.)

Table 2:

Some Cyberage Shifts (From Brown 2000)				
PRE-IT				CYBERAGE
TEXT	LITERACY	TEXT + IMAGE	LITERACY	INFORMATION NAVIGATION
BEING TOLD (AUTHORITY BASED)		LEARNING		DISCOVERY, EXPERIENTIAL
DEDUCTIVE (LINEAR)		REASONING		BRICOLAGE + JUDGEMENT (LATERAL)
DON'T KNOW WON'T TRY		ACTION		DON'T KNOW LINK, LURK & TRY
LEARNING TO LEARN IN SITU IS THE KEY				

The key ideas Brown advances are that digital learning is: (a) about information navigation; (b) discovery-based, not didactic; (c) based on bricolage (cut and paste) rather than deductive and abstract; and (d) has a bias toward action – getting in there, lurking and watching, giving it a try. Digital learners, in fact, are very much like I-D learners, both with regard to their strengths and with regard to their weaknesses. Consequently, the IT environment, on balance, will make I-D projects easier to do, but it will make it harder to do them well. A key conflict between transitional I-D practitioners and the "grown up digital" generations will be that the former hold ideas of quality, accuracy, and authority in knowledge that their successors do not understand.

Conclusion

I-D is becoming an increasingly common approach, and it embodies methods used within disciplines as well as in specifically I-D projects. Yet how to do it, and especially how to do it well, is rarely taught or even considered worth considering. Two decades ago, the goal of those within the I-D archipelago outside of the sciences and congealed interdisciplines was to get their projects legitimized and to ensure some degree of stability for them. Now, the normal processes of fragmentation and cross-fertilization have been speeded up, with new stresses added by globalization and especially by the impacts of information technology. It is now quite easy to "do" I-D tasks, but it has become increasingly difficult to produce the reliable knowledge that makes I-D projects productive.

To meet these challenges, I have argued that we need to know far more about the nature of individual I-D projects and how they change over time. We also must identify and teach the skills needed to deal successfully with multiple truths that do not "fit" and to perceive and respond to the cognitive dissonance resulting. Klein's brilliant image of the archipelago offered the prospect that eventually there would be enough links among the discrete projects so that both critical mass and concern for quality and validity in I-D knowledge production would result. Instead, technology-driven information retrieval and bricolage increasingly are the techniques used. Brown concludes that the cultural changes embodied in the new IT-shaped culture mean that "learning to learn in situ is the key" (2000, p. 13).

Increasingly, then, I-D practitioners will learn in situ without anyone more experienced than themselves to teach them how. If this is the case, it becomes critical to ensure that they are equipped with generic skills — that they have a general understanding both of the general knowledge-production process and of how I-D projects work specifically. This means that limiting training to discipline-based methodologies increasingly becomes a hazard, since almost everyone who is "growing up digital" will use the information to which the technology leads them. It is critical that we develop the skills to assess and evaluate the rich diversity of realities we can now uncover.

Notes

1. I would like to acknowledge the assistance of Judit Fabian in preparing this paper.
2. My doctoral work was a study of systems theory and the movement of systems concepts from biology and physics into political science. My mid-career I-D work was in women's studies and Canadian studies. I now do I-D work within political science, in particular, comparative I-D work on gender and nationalisms. I have also been involved in creating a new hybrid field of feminist political science, and I am now working on the politics of "race," importing concepts from critical race theory to adapt them for political analysis.
3. As my discussion of globalization will show, incorporating the challenges of translation and understanding of knowledge drawn across civilizations, or across diverse cultures, may expand the concept of I-D too far.
4. Stress resulting from generational transition is especially threatening to I-D projects because new generations often have goals different from those of founding generations, and I-D projects often lack the reproductive capacity disciplines enjoy. Disciplines control the education and socialization of new generations, which I-D fields are less likely to have the resources or energy to do.

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5. Demography is a key element in the differences in this case. The large size of some minorities in the U.S. creates critical mass for projects like Black Studies. (Blacks comprise about 15% of the U.S. population).
6. For example, UNIFEM and the UN increased support for international and transnational women's networks and women's studies. Women got violence against women defined as an offense against human rights through a transnational "women's rights are human rights" campaign.
7. "Scatter" refers to the range across which information resources on a subject are dispersed. "High scatter" equals widely dispersed, making searches the most difficult. IT makes high-scatter searches more feasible, eliminating the gathering devices earlier generations depended on and spent much energy creating.
8. Congealed interdisciplines such as Art History or Political Economy that are more discipline-like are mostly medium-scatter.

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