

Running head: ACADEMIC WRITING AT A CROSSROADS

Academic Writing at a Crossroads: Implications for Teaching and Writing

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Abstract

With the advent of widely available electronic access to scholarly journals, scholarly academic writing has become a staple teaching resource in university courses across many disciplines. This has benefits for both students and faculty, but various characteristics of academic writing as a genre may make it poorly suited for intensive use as a teaching resource, ill serving students as readers and as learners of both their discipline and the craft of writing. A review of a range of literature, on academic writing as a genre, on adult learners, and on human cognition, helps to explain the genre's weaknesses as educational material. Looking critically at the genre of academic writing, this paper explores how and why it often fails to meet students' cognitive needs. Finally, it considers how scholarly writers and publishers might seize the moment to make some shifts in the form and priorities of their genre, in keeping with its evolving position and uses in the academy.

Academic Writing at a Crossroads: Implications for Teaching and Writing

With the advent of widely available electronic access to scholarly journals, combined with the high price of textbooks, academic writing of the form used in journal articles, has become a staple resource in university courses across many disciplines. There are benefits to both students and faculty in this arrangement, among them that articles are readily available, effectively free to students through university library subscriptions to journals and databases, and instructors' promotion of articles in this way benefits authors by improving their citation statistics.

But is heavy reliance on such material - writing by mature scholars intended specifically for a readership of their peers - the unmixed blessing it may seem? As a graduate student with experience in a program that uses journal articles extensively, as well as long experience in various contexts that emphasize other teaching and learning methodologies - from traditional textbooks to practical experience to mental imaging - I have come to believe that various characteristics of academic writing make it poorly suited for intensive use as a teaching resource, ill serving students as readers and as learners both of their discipline and of the craft of writing. These relate to its features and purposes as a genre, to the characteristics and motivations of adult learners, and to the nature of human cognition.

Context and Conundrum

Before I begin, I must acknowledge my position and some assumptions and biases of my own - the ones I am aware of, anyway - and explain the context for writing this paper. The idea for it originated in my own frustration with what I experience as the frequent inaccessibility and impenetrability of academic writing. I consider myself an intelligent and reasonably sophisticated reader, and have often been told that I write well. I've spent many years as a

student in various forms of higher education in various disciplines at several Canadian universities. So I don't consider the content (cosmology and its siblings aside!) beyond me. Yet I've come to the point that, faced with a syllabus full of scholarly articles, I'm overwhelmed by an urge to flee... suddenly I simply *must* clean the venetian blinds: it cannot wait a moment longer.

In reading such material, I often find that I've skimmed the last three paragraphs while thinking about something utterly else; my eyes have touched every word, but my brain has registered none. And by the start of class my recollection of readings done more than a few hours before class is vague at best. This applies whether the topic itself is of interest to me or not; exceptions have to do with the type and style of the material. Perhaps I have just hit what you might call my 'natural academic limit', and have no business going any further? If I really belonged here, would I not work easily with these readings? Yet I have heard from fellow students of their similar experiences, and I assume we are not alone, either in my own program or more generally. I have done no research on this, and cannot quantify the level of dissatisfaction there may be, but I believe our experience raises some issues that should be of interest and concern to educators. So I am raising it as a topic of academic conversation.

I acknowledge also the contradiction in the fact that this is the style, broadly, in which I will write. Though I consciously stretch some of the boundaries of that form, I always remember that any paper I write in this milieu serves the twin primary purposes of helping me to meet the requirements of the academy for a credential, and helping the academy ensure that its requirements, as currently defined, are met. These purposes together have the greatest influence on what and how I write. Nor can I afford the time (which equals money, in tuition and foregone wages) to explore by example new ways of working with knowledge in my discipline: for me, as

for many adult learners in professional-type programs, practical concerns take firm precedence over scholarship for its own sake, no matter whether I yearn for the latter. And, somewhat regretfully, I admit that it has become habitual through years of reinforcement. But I am well aware of the tension implicit in arguing, as a student, in academic language and form, for re-examination of how these are used in an educational setting.

Let me also make clear that I know there is a great deal of scholarly writing that is a joy to read. I wish to make a distinction between *academic writing*: the genre and its priorities, conventions, etc. - and *academics, writing*: scholars writing, in whatever genre or milieu, about their work - which is often also their passion. The former may too often constrain the latter - but I suggest it doesn't have to.

The Literature

A vigorous search produced no research specifically on the efficacy of using scholarly writing as a teaching resource (for subject matter specifically, rather than solely in teaching writing), nor could any be suggested by faculty members in English at Simon Fraser University and in Education at the University of British Columbia whom I consulted. Is it because using it this way seems so natural as to pass without comment? In the absence of literature specifically on my topic, I will bring together work on what I see as three fundamental aspects of this issue, in order to explore some background in each and establish the relevance of each of these to this specific question. These areas are: the nature and purposes of academic writing; characteristics and needs of the adult learner; and understanding of human cognition.

Literature: the nature and purposes of academic writing

Bioethicist David Resnik (2011), in his article *A Troubled Tradition*, briefly traces the origin of the peer review system from its formal development in the mid 1700s to address

problems with quality of material submitted to the editors of the Philosophical Transactions of the Royal Society of London. Although it took until the mid-1900s to become firmly entrenched, and has undergone changes in form, peer review, Resnik writes, still “serves two distinct functions: It ensures that work is published only if it meets appropriate standards of scholarship and methodology, and it helps authors improve their manuscripts” (p. 24).

Meanwhile, academic writing was developing its distinctive characteristics. A valuable resource on the genre is Janet Giltrow’s (2002) book *Academic Writing: Writing & Reading in the Disciplines*. Giltrow begins with the premise “that style is meaningful” (p. 9), then delves into how and why academic style has meaning, how that meaning is created, what it is, and how it is accessed by readers. She places her approach to academic writing within the continuum of language using the simple equation “form + situation = genre” (p. 24). Characterizing academic writing as genre (rather than simply style or convention) is significant. As Richard Coe (2002, p. 198-200) explains in his three basic principles for teaching with genre theory:

- Genres embody socially established strategies for achieving purposes in rhetorical [for which we may read also *disciplinary*] situations
- Genres are not just text types; they imply/invoke/create/(re)construct situations (and contexts), communities, writers and readers (that is, subject positions)
- Understanding genre will help students become versatile writers, able to adapt to the wide variety of types of writing tasks they are likely to encounter in their lives

Further, Giltrow makes clear that academic writing is the embodiment of a (scholarly) culture: “The social and cognitive behaviours which attend the production of scholarly utterance are scholarly behaviours” (p. 11). A key feature, especially relating to accessibility, is *abstraction*: the compression of complex conceptual meaning (p. 49). Though recognizing the

difficulties it can present to readers, especially the uninitiated. Giltrow defends its place and importance: “we asked what benefits come from long expressions which many measures would estimate as cognitively costly (hard to read) . . . the answer: cognitive cost at the level of sentence and phrase for a profit at the level of textual coherence” (p. 228). She acknowledges the resulting “possibility that scholarly language is exclusionary: non-experts can’t understand what experts are saying” (p. 344). (Since my ultimate interest here is the use of academic writing by people who are not experts, I consider this possibility important, and ideas related to cognitive cost will appear again.)

Yet some scholars are concerned by what they see as problems with academic writing. Biber and Gray (2010), in reporting on their study of characteristics of academic writing in 429 research articles, conclude that while “academic writing is fundamentally different from conversation in its grammatical characteristics . . . those differences do not conform to the stereotypes of academic writing as structurally elaborated and explicit” (p. 3). In fact, they conclude,

the ‘compressed’ discourse style of academic writing is much less explicit in meaning than alternative styles employing elaborated structures. These styles are efficient for expert readers, who can quickly extract large amounts of information from relatively short, condensed texts. However, they pose difficulties for novice readers, who must learn to infer unspecified meaning relations among grammatical constituents. (p.2)

Others point out some less commonly discussed purposes of the genre within this context, such as Ken Hyland (2011) does in exploring how informal aspects of academic writing may figure in the creation of an author’s identity. Among these he considers how thesis acknowledgements, doctoral prize applications and biographical statements (each less formal,

anonymous and impersonal than most academic writing) figure in formation of academic identities, which are not limited to purely scholarly matters, for in “the academic practice of reciprocal gift giving . . . the expression of thanks is not an entirely altruistic business” (p.12).

Giltrow argues eloquently and persuasively for the importance of academic writing as we know it, insisting that the needs of scholarship and research cannot be served by a less complex form or use of language. She explores in depth the nature of that complexity, both the characteristics that contribute to its effects, and those that make it difficult for writers and readers to gain fluency in it.

Literature on characteristics and needs of adult learners

A common theme throughout the theoretical literature on adult learning in various contexts is *definitions*, especially of the fundamental terms *adult* and *adult learner*. In his introduction to the *International Encyclopedia of Education* (2010), Kjell Rubenson finds implicit in most definitions of adult education that adults are “persons regarded as adult by the society to which they belong” (from UNESCO 1976), or “persons whose major social roles are characteristic of adult status” (from Darkenwald & Merriam, 1982). Yet neither definition addresses *how* societies determine adulthood, or how this may differ even in varying contexts within a single society; these issues pose a dilemma for educators as well. They also don’t acknowledge the delay or suspension of adult roles often inherent in being a student.

Catherine Hansman and Vivian Mott (2010) cite Patricia Cranton in saying that *adult learners* should be characterized as “those adults who engage in learning activities that may promote ‘any sustained change in thinking, values, or behavior’ (p. 15)”, and conclude that “[b]ecause involvement in adult learning is so broad and diverse, it is difficult to describe and define a ‘typical’ adult learner” (p. 13). This interpretation is supported, they say, by increases in

participation in everything from university degree programs to casual interest groups. As well, demographic representation is changing; for example, participation of women over age 35 in educational activities (of all sorts) has increased 500% over the past 30 years (p. 19). Hansman and Mott conclude that

Adult educators should question "generic" and often stereotypical descriptions of adult learners, realizing that the diverse groups in formal adult education classrooms - different in age, race, class, gender, sexuality, and ability - have divergent learning needs to which adult educators must attend. (p. 21)

Such definitions also all depend to some degree on age, but Stephen Brookfield (1995) is particularly critical of educational theorists' preoccupation with age as a fundamental criterion of differences in learning experience and needs, which he says results in blindness to other factors that may be deeply significant and which are among important issues that must be addressed if research in adult learning is to have any real relevance to practice. Similarly to Hansman and Mott, he includes effects of culture, gender, social construction, and emotion and cognition.

Yet in designing any educational program some assumptions must and will be made - consciously or not - about who it is to serve, and these can have a profound influence on the nature of the program. Malcolm Knowles (1980), in *What is Andragogy*, chooses a different set of assumptions altogether. As his real interest is in what makes the education of adults different from the education of children, he defines *adult* from a psychological and developmental perspective: adulthood is a state of self-perception leading to preparedness for certain social roles, which in turn creates the necessity and the readiness to grow (by learning requisite skills and knowledge) into these roles. Knowles asserts that differences between adults and children make traditional pedagogical scholarship ineffective for adults, because their learning needs are

inherently different from those of children. He offers the alternative of andragogy, an approach to education specific to the psychological and developmental characteristics of adults. But again adults are imagined as an essentially homogeneous group, and Knowles doesn't give much time to the possibility that other factors may be as or more important in determining learners' needs, individually or collectively.

By contrast, Knud Illeris (2002) posits that “*learning simultaneously comprises a cognitive, an emotional and psychodynamic, and a social and societal dimension*” (p. 19), and he organizes his work around the idea that “learning and every single learning process is stretched out between three angles or approaches which are typically represented by Piaget, Freud and Marx”. These three dimensions create between them a tension field, which Illeris illustrates as a triangle, with a dimension - and one of these theorists - at each vertex.

Approaching the adult learner conundrum from a practical angle (and herself a reader of Knowles), Joan Gorham (1985) researched the reported and actual beliefs and teaching practices of teachers teaching both adults and ‘pre-adults’ at the university, community college and public school level, looking at the extent to which observed practices were congruent with self-reported beliefs about learners’ needs at these levels, and with self-reported differences in teaching practice by level. She concludes that “differences among teachers, in both adult and pre-adult classes, were more pronounced than differences between the adult and pre-adult classes of the same teachers”, and that “the most cogent prescription might be to define responsive teaching techniques as the approved practice for educators at all levels, focussing on lifelong learning . . . rather than on developing a separate theory applicable only to adults” (p. 207).

Hunting for examples of studies on effectiveness of specific teaching methods, I struck a rich vein in Nursing (e.g. Magnussen, Ishida & Itano, 2000; Robert, Pomarico, & Nolan, 2011;

White, Amos, & Kouzekanani, 1999). Research is a way of life and of practice in medical disciplines, and the pressures of doing more with less, while compromising neither quality of education nor patient care and safety, mean that promising new ideas about teaching are quickly tested, and the effective ones implemented. The studies and articles reflect this motivation; they rarely result in theory or even generalization, comprising instead a sort of collective log of educators' own exploration and honing of their practice. They may not gain recognition in the field of Education but because they are targeted very specifically to applied aspects of adult learning, they are relevant to this inquiry. A valuable benefit of these studies is information from adult learners themselves about their needs and preferences: students emphasize their desire for experiential learning, help connecting theory with practice, and contact with practitioners in the field, from alumni of their own program to established experts, as well as recognition of non-academic concerns of adult learners such as recognition of other demands on their time, difficulty of group work, and the need for program flexibility (Robert et al, 2011, p. 16).

Although such studies are highly context-specific, they help to better understand the "adult learner". In fact, these real-world studies reinforce that any solution - if one can be found - to our original problem of defining 'adult learners' should specifically acknowledge that one of their distinguishing characteristics is their variety, of motivation, needs, and circumstances.

Literature on the nature of human cognition

Yet while adult learners must be defined in multiple dimensions, my interest here is particularly in the cognitive, and specifically those elements that appear most relevant to the choice and effectiveness of textual teaching resources. I suggest that ultimately the effectiveness of textual materials *for teaching* hinges on their ability to engage the reader's mind

in learning, to stimulate the brain in ways that will result in comprehension and retention of new concepts.

Writing on this issue comes from various traditions, including literature, linguistics, cognitive science, and neurobiology. Coming from the cognitive linguistics field, George Lakoff and Mark Johnson (1980) have had wide influence with their foundational argument that “[o]ur ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature” (p. 3). Lakoff and Johnson are primarily interested in the role and use of metaphor the making of meaning in a cultural context, rather than in the functioning of the mind, but nonetheless recognize that metaphorical conceptualization has deep implications for sharing knowledge and for learning; of particular significance for sharing and creating knowledge is their conclusion that “metaphor provides a way of partially communicating unshared experiences” (p. 225).

For the most part Lakoff and Johnson focus on existing metaphors which are culturally embedded and form a largely unconscious element of thought; once learned they can be invoked to provide meaning as needed. Earl Mac Cormac (1985) pursues a more specifically scientific exploration of the relationship between metaphor and cognition. Although Mac Cormac disagrees with Lakoff and Johnson in some respects, he agrees with the central role of metaphor in making meaning, and he emphasizes that the connection to personal experience is basic:

“The inventor of a metaphor retrieves from the long-term memory combinations of words that are not normally associated . . . Although the semantic memories of various individuals may differ according to what they have learned - one person’s vocabulary may be greater than another person’s - an even greater divergence of experiences can be found in the episodic memory. By allowing the episodic memory to fuse with the

semantic memory in long-term memory storage, the origin of metaphor creation may lie in personal experience and not just arise from the semantic aspects of language learning fixed in the memory.” (p. 129-130)

So Mac Cormac’s *inventor of a metaphor* is a departure, and a pivotal one. To fully explore its significance, we need to consider the nature of metaphors as *stories, writ small*; encapsulated, for ease of consumption, and all about quick results, not flavour. But there is a lot of conceptual power contained within. Lakoff and Johnson might have seen Mac Cormac’s *inventor of metaphor* as a sort of cultural dispensing chemist, but Mark Turner (1996) would know her for a storyteller. And on the cognitive significance of story, there is no one better than Turner, who writes that

[n]arrative imagining - story - is the fundamental instrument of thought. Rational capacities depend upon it. It is our chief means of looking into the future, of predicting, of planning, and of explaining. It is a literary capacity indispensable to human cognition generally. (p.4)

The sum effect, Turner contends, is that the human mind is essentially literary. He emphasizes that the significance of this goes far beyond what we normally think of as literary, though, as when story is combined with projection to produce parable:

This classic combination produces one of our keenest mental processes for constructing meaning. The evolution of the genre of parable is thus neither accidental nor exclusively literary: it follows inevitably from the nature of our conceptual systems. The motivations for parable are as strong as the motivations for colour vision or sentence structure or the ability to hit a distant object with a stone. (p. 5)

Turner shows the power of story in creating knowledge through connections within an individual's mind, between current and prior experience. Learning - making meaning - depends on these connections, and also upon connections made between the learner's prior experience and the learning situation. And the greatest significance of this is that meaning is "alive and active, dynamic and distributed, constructed for local purposes of knowing and acting. Meanings are not mental objects bounded in conceptual places but rather complex operations of projection, binding, linking, blending, and integration over multiple spaces" (p. 57).

Cognitive psychology introduces some new elements and ideas, but they can be similarly expressed as forming connections that facilitate understanding and learning. Foundational work in this area, Paivio's (1991) dual coding theory (DCT) explains that verbal and visual (including mental imagery) information are processed differently and distinctly in the brain, creating separate cognitive representations which can support and reinforce each other. In effect imagery acts "as an integrative mechanism in associative memory and as an additive supplement to the verbal code in item memory" (p. 276). Paivio distinguishes between the relatively higher and lower visual effect of concrete and abstract words, and their consequent differing capacity to evoke images.

Cognitive load theory incorporates DCT and builds from it, creating a model in which working and long-term memory interact in the processing of information and development of new understanding. Different types of information make different demands on cognitive systems, resulting in situations and material that are more or less difficult to understand. As Paas, Renkl and Sweller (2003) explain,

the extent to which relevant elements interact is a critical feature. Information varies on a continuum from low to high in element interactivity. Each element of low-element

interactivity material can be understood and learned individually without consideration of any other elements. . . . The elements of high-element interactivity material can be learned individually, but they cannot be understood until all of the elements and their interactions are processed simultaneously. As a consequence, high-element interactivity material is difficult to understand. (p. 1)

Research confirms that the essence of cognition is found in connections formed between distinct systems, both in the brain and in the mind: “mental image and language are two distinct modes of mental representation, one being symbolic and the other analogic . . . based on segregated neural networks” (Mazoyer, Tzourio-Mazoyer, Mazard, Denis, & Mellet, 2002, p. 205). Memory also relies on dual systems, working and long-term memory, to facilitate complex cognitive processing that would be beyond the capacity of working memory alone (Paas et al, 2003). Working together these modes and systems enable building complex meaning and moving it between contexts.

It may seem we’ve wandered a long way from our initial discussion of academic writing and its uses, but in fact we’ve been making a circle that is closed by the recognition of metaphor and narrative as vehicles for imagery. This accounts for their power in learning and discovery: in effect, the use of metaphor, analogy, and story in exploring complex and unfamiliar subjects engages both the learner’s long-term memory and personal experience to reduce cognitive load. To the dual coding of verbal representation and mental imagery can also be added existing personal and cultural context as further points of access. If, in teaching complex and/or unfamiliar concepts, we can draw them closer to existing knowledge, we can engage all these forms of coding - visual representation, mental imagery, and personal points of reference - to help in sense-making and retention.

Critique

In summary, we have found that academic writing is essentially complex, abstracted, particularly suited to the aims of scholars and researchers as members of an academic culture, and often inaccessible to ‘outsiders’. We have found that adult learners are very diverse, in their features and needs as well as their educational contexts; in fact, their variety can be considered one of their distinguishing characteristics. And they are psychologically, developmentally, and socially different from children. And we have found that human cognition is complex and involves various neurological mechanisms, which respond to different types of informational stimuli, and contribute differently - and cumulatively - to the creation of meaning.

I have suggested that academic writing ill serves the needs of adult learners, and I believe that the reasons for this are [twofold]: first, there are characteristics of adult learners - particularly in programs such as education - that have so far received little attention; and second, because academic writing isn’t entirely or solely as we have so far seen. I will look at each of these in turn, and finally at how these intersect, and the implications for students.

There are characteristics of adult learners - particularly in programs such as education - that have so far received little attention

The literature we’ve looked at so far suggests that agreement on a definition of adult learners will be difficult, probably for the very good reason that none could be broad enough and yet serve any real purpose. But there are things known about them that deserve more attention, and their very diversity is one.

Among the factors contributing to adult learners’ great variety are differences in culture, language, prior education, and motivation for study. Each of these is relevant to this discussion. Internationalization notwithstanding, the academic culture that dominates scholarship around the

world at the beginning of the 21st century is English-based, with its roots in Western culture and reflecting its values; consequently it is a tool best suited to the type of inquiry, explanation, and argument privileged in this tradition. Yet it also stands apart from the society within which it has evolved, and every student, regardless of background, must negotiate a working relationship with it. The classroom is a different cultural context again from scholarship and research (and their writing), and students inhabit a different milieu than do career academics/researchers.

In general, academic culture assumes all students are on a trajectory toward eventual assimilation. Yet in fact most students will leave for yet other cultures, not academic, and this anticipated departure is significant as well. Motivation has been included in various definitions of adult learners (e.g. Hansman & Mott, 2010; Knowles, 1980), generally in the sense that adult learners are self-motivated to pursue their studies. But the nature of their motivation can vary enormously: perhaps it reflects desire for scholarship for its own sake, or need for greater earning potential, or desire for prestige. An ever-greater number of students, especially in professional-type programs, come to universities with careers already begun, and will return to those careers as soon as their studies are done (or are maintaining them while at school). These people are not academics and have no aspirations to be (fortunately, for the academy could not absorb them all!). So although scholarship for its own sake is at the heart of academia, most students' studies are a detour en route to a destination elsewhere. Changes in both work and education have affected motivation for pursuit of graduate studies. Access to better pay and/or jobs is a frequent motivator, especially in a field like education; in this respect a Master's degree is to many students (and careers) what a Bachelor's degree was a generation ago, or a teaching certificate a generation before that. Degrees are now offered in many fields in which post-secondary education did not exist, or was firmly in the purview of community colleges, until quite recently,

and this “credential inflation” (see Fisher & Rubenson, 1998; Pappano, 2011) will only increase. In fact, as the title of Pappano’s article - *The Master’s as the New Bachelor’s* - suggests, it is a mistake even at the graduate level to assume all students are scholars in the purest sense of the word.

One effect of this is that students who are ‘passing through’ and have a focused agenda (such as specific courses or skills, or a credential) often have a stronger need to see relevance to their situation in the material they study. Another is the amount of effort they are willing or able to expend on various aspects of their studies, and how they prioritize when time and energy are running out. Based on my experience and what I have observed, I think it safe to generalize that family and work come before school; the apparently relevant comes before the apparently irrelevant; and the readily accessible comes before the obscure.

Also somewhat lost in the struggle to define adult learners is that they are above all human, and that today’s adult learner was yesterday’s child learner. Every adult learner is heir both to essential human cognitive function, and to its potential for variation. Every adult learner also brings to her studies all her cumulative personal experience, educational and otherwise. And if learning presented unique challenges to her as a child, it probably still does in adulthood. Although our academic system privileges and best serves students who are most at home with the written word, and best able to learn the academic dialect and internalize the academic genre, these are not the only people who walk its halls.

Academic writing isn’t exactly/solely as portrayed so far: What else is going on in academic writing, and in how it is used?

‘I quite agree with you,’ said the Duchess; ‘and the moral of that is—“Be what you would seem to be”—or if you’d like it put more simply—“Never imagine yourself

not to be otherwise than what it might appear to others that what you were or might have been was not otherwise than what you had been would have appeared to them to be otherwise." (p. 85)

Lewis Carroll, Alice in Wonderland

To re-examine academic writing, let us recall Janet Giltrow's equation "form + situation = genre". The equation is sound, but the nature of 'situation' shapes the genre, and for academic writing 'situation' is not entirely as she portrays it. The "university situations" Giltrow invokes are "located in research institutions", and are the domain of "people who are trained as researchers and who read and write research publications" (p. 27). The genre reflects both the authors' training and what they do. But how well does this situation relate to academic writing used in the classroom? While students may be increasingly numerous among readers of this work, they are not its intended audience. The vast majority of student readers have a different relation to the academic community than that occupied - or invoked - by authors of scholarly articles. As Patricia Bizzell (1988) emphasizes, "The understanding that prior knowledge conditions language use is of the utmost importance". In this situation, it is vital to remember that students are "beginners in academic discourse, trying to find a way to use language for their own purposes in a community whose knowledge they do not yet fully share" (p 146).

Giltrow defends academic writing's complexity and density - including the use of abstraction - as being how the genre packs complex meaning for 'portability' through an extended argument. Academic vocabulary, grammar, and syntax reflect the prioritization of a high degree of precision in the explication of ideas, description of research, and explanation of theory, and if the result is, as Giltrow has said, "cognitive cost at the level of sentence and phrase

for a profit at the level of textual coherence”, it’s a cost scholarly readers are willing to absorb.

But not everyone agrees they’re getting what they pay for. Biber and Gray (2010) found that

a consideration of the meaning relations among structural elements shows that academic written texts are not explicit at the grammatical level. Rather, the ‘compressed’ discourse style of academic writing is much less explicit in meaning than alternative styles that employ elaborated structures. This generalization holds for a wide range of different grammatical devices that are especially common in academic writing . . . (p. 3)

Biber and Gray examine various grammatical devices in detail, showing how they reduce explicitness; for example:

Nominalizations and passives which are both common in academic writing, entail reduced explicitness because they omit certain elements (see Halliday, 1979; Halliday & Martin, 1993/1996). Thus compare:

- a) someone manages hazardous waste >>
- b) hazardous waste is managed >>
- c) hazardous waste management

In the passive construction (b), we no longer know who the ‘agent’ is. In the nominalized construction (c), it is not even explicit that an activity is occurring. Nominalizations are also inexplicit about the time reference of activities. Thus, (a) and (b) are marked for tense and aspect (compare someone managed hazardous waste and hazardous waste has been managed). However, there is no possibility of expressing tense and aspect in the nominalized version (c); the time reference is implicit and must be inferred by the reader.

(p. 11)

I suggest also that students' challenges in negotiating the use of academic language goes beyond the forms of the situation. Although most scholars discussing academic language refer to it as *genre*, it also meets the criteria to be considered *dialect*. In fact, though they may not do so consciously, Giltrow and Coe both contribute strong points for its being understood as such - as it has in fact been by many others over at least the past 30 years (e.g. Bizzell, 1988; Brodkey, 1972; Coleman, 1997; Zwiers, 2006). It fits the definition of dialect found in *Dialectology* (Chambers and Trudgill, 1998), as “varieties [of a language] that are grammatically (and perhaps lexically) as well as phonologically different from other varieties” (p. 5), and that used by the British Columbia Ministry of Education in its *English as a Second Language Policy and Guidelines* (2009), which defines a dialect as “a regional or social variety of language distinguished by specific features of vocabulary, grammatical structure, pronunciation, and discourse that differ from other varieties” (p. 17). Looking at it this way may make it easier to appreciate the challenges it can pose to many students, both as readers and as learning writers.

Considering how academic writing can be characterized as genre and/or as dialect is more than playing semantic marbles: each has its own implications, both culturally and cognitively. Coe (2002) reminds us that “the various versions of genre theory are themselves motivated and situated. The new genre theories vary significantly . . . in large part because they were developed in different sites to serve different pedagogical and social purposes” (p. 198). Dialects, strictly speaking value-neutral subdivisions of language, are as often related to social locations as to geographic ones, yet either way contrast with genre in that they have features that are under varying degrees of self-conscious control (see Chambers & Trudgill, sect. 7.4). This presents challenges in learning dialect that are not encountered in genre. Students learning a new genre take (by and large) the language they have and deliberately use it in specific new ways.

Students learning a new dialect acquire any or all of new vocabulary, new syntax, new grammar, new prosody, and new idiom, even while often unconscious not only of the subtleties of new dialect but also of the one they've used all their lives . And students learning both genre and dialect must manage both these processes. Yet it is assumed all graduate students are fluent and comfortable in the academic dialect from the start of their program, while in reality many have trouble with it, and even those who are able to write in it probably don't think in it - a further step of 'translation' necessary when they write. Nor may it serve as the best (or even a reasonably good) medium of expression for all the ideas and concepts they wish to explore.

For simplicity's sake I will continue to use *genre*, however, and in addition to its stylistic characteristics we've considered so far, there are a couple of others I suggest are particularly relevant to students: intertextuality, and the use of peculiarly academic metaphors. Perhaps surprisingly, the two are related.

Intertextuality is the backbone of academic writing, connecting scholarship within and across disciplines in an ever-expanding web. Its purposes include making explicit the continuity and the pedigree of ideas: both their evolution and their creators must be acknowledged. Among other results, this makes in-text referencing a high priority, even if it occurs (somewhat ironically) at the expense of readability and continuity of ideas. References in electronic media sometimes use less obtrusive forms that are possible through hyperlinking, but on the whole in-text references can and often do leave papers frustratingly fragmented. (And readers who are struggling with the language or concepts to begin with will be more adversely affected by this.) It also reinforces novice readers' outsider status: teachers, academic advisors, institutional researchers, recruiting officers and the like returning mid-career to school in hope of a bigger paycheque or a better shot at promotion have little or no familiarity with the names that speckle

academic articles, each one scholarly shorthand for a complex set of ideas. This may certainly be their loss, but it is also their - and their instructors' - reality.

Although academic writing tends to eschew metaphor in explaining concepts and developing arguments, it is very much part of the genre. Academic writers have a multitude of metaphors for what they do, and how they do it. They *examine claims*, *develop frameworks*, *unpack* ideas, *ground* theories, *construct* meaning, *position* and *defend* their *arguments*, and *locate* their writing. Thinking in Lakoff and Johnson's (1980) terms, what emerges is a metaphor of *tangible knowledge*; *material fact*; of ideas as concrete, structural, portable, and vulnerable to potentially threatening opposition or incursion. This is effective in reinforcing an author's situation in the academic citadel, much more than in aiding development or elucidation of her subject.

So what connects intertextuality with academic metaphors of knowledge? Both reflect the importance of the idea - and the fact - of intellectual property. Academic writing is fundamentally shaped by the paradigm of knowledge as commodity. This is certainly understandable in a culture that has become deeply preoccupied (both within and without the academy) with the idea of intellectual property, and in which education is becoming increasingly commodified and market-oriented - with attendant pressure on scholars to be production-oriented and to protect their stock-in-trade.

Whether this is good or bad, useful or obstructive, is beside the point: its significance is that it relegates other purposes of scholarly writing - including accessibility to novice scholars - to lower priority. Again, any value judgement entirely aside, this is a reality with powerful implications for the use of scholarly writing in the classroom. As an example, consider a

professor¹ who uses journal articles heavily for course readings, and has students search out and download all of these articles themselves, and explains the approach thus: students need practice with their library research skills, and having individual students obtain the articles themselves boosts the authors' citation statistics². The former is generally true, and the latter might seem no worse than a mild example of class self-interest, except that six of the roughly two dozen articles on the syllabus (in several disciplines) were chosen specifically as examples of significantly flawed research and/or reporting. All six were published in peer-reviewed journals, and their having been passed by knowledgeable reviewers was not part of the class discussion of their shortcomings. Writing about a range of problems with the peer review system, David Resnik (2011) confirms that "[o]ne of the best-documented issues is inefficacy: Reviewers may miss errors, methodological flaws or evidence of misconduct" (p. 25). In the case I describe, these authors were rewarded for their substandard work with enhanced access statistics, and the reviewers' inept decisions made to look sound. This should be of concern to everyone in the academy, but of particular concern to educators should be the presentation of flawed methods, poor writing, etc., as exemplary of the genre, usually passing without comment on such shortcomings - or why the piece was published in their spite. Students observe and imitate, and the cycle continues³.

1:Who shall remain nameless because doubtless not unique in approach or rationale for it, and offered here as representative of a principle.

2:Neylon and Wu provide a [thorough explanation and examination of journal and article level metrics](#).

3:And students may be justifiably irked when they receive poor grades on papers they know are no worse than some they've read in peer-reviewed journals.

What we know about cognition suggests that academic writing is poorly suited to teaching, regardless of students' characteristics

The story - from Rumpelstiltskin to War and Peace - is one of the basic tools invented by the human mind, for the purpose of gaining understanding. There have been great societies that did not use the wheel, but there have been no societies that did not tell stories.

Ursula K. LeGuin

Before we look at these implications, let's briefly recall what we know about cognition, and relate it to our new ideas about adult learners and about academic writing.

Scholars like Lakoff and Johnson, Mac Cormac, and Turner (among others) tell us that the mind-as-container receiving knowledge as pay-load paradigm is flawed, in ways that make it counter-productive for learning. Scarcity of metaphorical language in academic writing directly contradicts what we know about the nature of cognition and of knowledge: that verbal and visual information processing are separate, yet connections between them allow them to be complementary and cumulative. Complex verbal, non-visual material is more difficult to process, and engages only one form of coding.

Memory likewise consists of two interconnected systems, enabling cognitive functioning far beyond what would otherwise be possible. Long-term memory, as Paas et al (2003) explain, “can contain vast numbers of schemas—cognitive constructs that incorporate multiple elements of information into a single element with a specific function (p. 2). This helps to explain what Hirsch (1983) discovered twenty years earlier: “that good writing makes very little difference when the subject is unfamiliar. . . . because we must continually backtrack to test out different hypotheses about what is being meant or referred to” (p. 163). Hirsch concluded that “reading

and writing skills are content-bound”, and refers also to a study by Richard C. Anderson in which Anderson and his colleagues “concluded that reading is not just a linguistic skill, but involves translanguistic knowledge beyond the abstract sense of words. . . . reading involves both ‘linguistic-schemata’ (systems of expectation) and ‘content-schemata’ as well” (p. 165). But course material often has few correlates in long-term memory to work with - no familiar schemas to help understand the complex concepts in the material they encounter - and precious little time to form them. Consider the following passage:

This paper adds to these efforts to investigate the *global dynamics of knowledge flows* by exploring how a professor from a *marginal Anglophone nation* might induce learning in research students from China using that country’s intellectual heritage when s/he knows so little about their scholarly resources but recognizes the importance of such intellectual interconnections. . . . In doing so, it furthers the dialogue . . . regarding the *internationalization of postgraduate supervisory pedagogies* in terms of the challenges for *deparochialising research education*. (Singh, 2009, p. 186; emphasis added)

Each of the italicized passages has a specific and complex meaning and background in the discipline; those with no correlates in the reader’s prior knowledge will likely be glossed over or guessed at. Without full background knowledge a reader has little hope of either deriving the full meaning of this text, or carrying it forward to future cognitive contexts.

What are the implications of this disconnect for students?

A man’s reach must exceed his grasp, else what’s a metaphor?

*Marshall McLuhan*⁴

⁴<http://www.geography.ryerson.ca/jmaurer/609moreonMcLuhan.htm>

Implications for students fall into four general areas: implications for cognitive access to ideas in their readings; for their sense of the relevance of their education to their lives and to their specific reasons for study; for their sense of their own situation within the academy; and for their development as writers themselves, especially for the expression of ideas that fall outside the cultural milieu of the university. Each student will be more or less affected by any or all of these, depending on their situation - and as we've seen, their situations are widely diverse. In looking at these implications, I will assume the situation of a graduate student in a program likely to attract people with a non-academic career focus (though I believe they are probably more universally applicable than that). In doing so I should also state that observation suggests it is entirely possible to earn a bachelor's degree in many disciplines without becoming fluent in the academic genre or dialect, especially as a writer, as many incoming graduate students are not.

Implications for cognitive access to the material are the most broadly applicable, as they apply to everyone at least when they are new to academia. We have seen that academic writing is complex and abstracted, and substantially prioritizes the verbal over the visual. When content is first encountered it may have few reference points in the reader's long-term memory or existing knowledge. The cumulative effect is, as Biber and Gray (2010) state, that "the compact, inexplicit discourse styles of research articles are difficult for novice students [who] lack the specialist knowledge that would allow them to readily infer the expected meaning of compact, inexplicit constructions" (p. 18-19). If students are novices in the academic dialect as well as the genre, their cognitive load increases. New vocabulary must be learned, familiar words are used in unfamiliar ways, the discursive and grammatical ways of a lifetime are unsuitable to the tasks at hand. This type of learning does present its own cognitive challenges, and these are not entirely a matter of lexical flexibility. And if the content is also wholly new, yet another variable

complicates the equation: “as psycholinguists have shown, the explicitly stated words on the page often represent the smaller part of the literary transaction. . . . without appropriate, tacitly shared background knowledge, people cannot understand [a genre] . . . a certain extent of shared, canonical knowledge is inherently necessary . . .” (Hirsch, 1983, p. 165).

The situation is often exacerbated by the sheer bulk of material assigned. Instructors and/or administrators may have clear aims in mind when designing curricula, that determine the number of articles or pages to be read, but I’ve never heard these articulated in a classroom, and I doubt most students ever know what they are. In fact, especially for extensive and/or very complex readings, it is debatable whether all instructors have a clear plan for what specific concepts, insights, etc., each article should contribute to students’ understanding of the course topic and know by course’s end whether students do in fact derive those specific things from their reading (subsequent class discussion aside). Observation and conversation with my peers lead me to believe many (especially those with jobs and families) do not read everything assigned, or read each piece superficially, and rely - generally with success - on class discussion to familiarize them with the content. If it is discussion, rather than reading, that really makes these concepts accessible to many students, what purpose do extensive reading assignments serve? Especially as that discussion cannot possibly elucidate every relevant point in three to five articles, totalling 50 or 60 pages or more, in the time available.

Among further implications for students, the situation may be exacerbated by lack of motivation or even resistance, if the learner sees no relevance in it for their situation and their specific reasons for study. If education is primarily a means to a non-academic end, if being a student is a minor part of the learner’s identity, there is unlikely to be any motivation to make the investment necessary to become fluent in a genre and dialect that will have no currency in the

learner's 'real life'. In fact, the learner may have trouble making a connection between the material itself and her reasons for being in school, possibly because little exists, but just as possibly because meaning is obscured by presentation. Either way, if the material fails a student's 'so what?' test, motivation will be low to get through any difficulties with form.

At this point there arise implications for universities as well. While Richard K. Vedder (as quoted in Pappano, 2011, ¶ 13), professor of economics at Ohio University and director of the Center for College Affordability and Productivity, calls the recent proliferation of career-oriented Master's degrees "evidence of 'credentialing gone amok'", he acknowledges that universities benefit from it, calling his own department's Master's degree in financial economics a "'cash cow', because it draws on existing faculty . . . and they charge higher tuition than for undergraduate work". It may seem natural to dismiss the frustrations of students who will never move beyond the periphery of academia as insignificant beside the primary scholarly and research concerns of universities, but these learners form a growing part of the student body. In an increasingly market-styled education system, highly motivated mid-career adults with plenty of disposable income are a precious resource for which universities avidly compete; having them leave disappointed is bad for business as well as for students.

But even students who have no long-term interest in academia and are just passing through can have a good experience. Key is whether they develop a sense of belonging during their stay. While everyone begins as an 'outsider', no one need remain so. Academia is on the whole a dynamic, enthusiastic, and welcoming culture, that assumes students want to assimilate and in most respects excels at helping them do so. Yet there's a contradiction between the inclusive nature of education and the exclusive nature of academic writing. This is reasonable, given that they serve different functions, and it doesn't matter, except when teaching relies

heavily or exclusively on academic writing, at which point the constant reinforcement of the insider/outsider dynamic can overpower the more inclusive but less imposing wider university culture. When students are immersed in academic writing they may become keenly and even oppressively aware that they lack Hirsch's "canonical knowledge", in reference to both form and content, which, as Bizzell (1988) says, "as a common possession of the group, helps the group to cohere, to distinguish itself from others, and to exclude or initiate outsiders" (p. 145).

Whether or not students make the shift to perceiving themselves as insiders depends on a variety of factors: how much they want to, of course, but also their reasons for study, the connections they form both academically and socially, how successful they are, whether they are comfortable with the culture and values of their program, and so on. Their ability to become fluent in the language and forms of academic writing is definitely a factor - though it is possible to earn even a doctorate without being a capable writer. Another is whether the language and forms allow them to fully express what is important to them. Academia embodies a contradiction in that it supports exploration and innovation and in many diverse fields, and holds an unchallenged monopoly on research in some (especially those that don't produce commercially profitable knowledge), but still embraces a relatively narrow range of expression as proof of academic credibility and accomplishment. As a result, people can be attracted to it for the opportunities and the community and the energy it offers, and yet find themselves unable to adequately manifest their vision within its norms.

Finally, there are the implications for students as learning writers. Whether study materials such as texts and journal articles are useful to students in helping them become competent writers may seem a matter of small importance in the broader scope of a graduate program in education, or sociology, or medicine, or law. Students are assumed to be basically

able to write when they arrive in graduate school; as they proceed through their course of studies, professors' notes in essay margins will provide minor corrections to a course laid by some imagined navigator in some earlier journey through academe. All that's needed is for the norms of their discipline to be imitated, until they become fully absorbed.

But this assumption is flawed. Few students write capably or comfortably by the end of their undergraduate program, and those who do not cannot hope to learn this complex set of skills incidentally, or through intensive exposure to mediocre writing - which a great deal of academic writing is. As we have also seen, most students are learning dialect as well as genre as well as content, simultaneously, from the same material, with the focus on content: the rest they are expected to absorb through immersion, imitation, and intuition. Theresa Lillis (1997) sees students struggling to come to terms with the dominant conventions of academic writing as manifested most commonly in two indirect forms of regulation. In the first, instructors comment on relatively minor deviations from academic convention, such as use of contractions; of this, Lillis says, "[i]f we listen to students, we will learn how such apparently insignificant dominant conventions may marginalise writers and readers, and ensure that only a particular type of writer-reader relationship is maintained in academia" (p. 197).

In the second, "student-writers, in inventing the university, draw on their previous and current personal and professional experience in education in order to establish what authorities within the institution want to hear" (p. 197), and then - no matter how accurate their surmise - muddle their way through creating this using the tools and experience they have. In this case they are doing their best to make genre-accurate decisions about both form and content, and are just as likely to leave valuable experience out as to bring it in. Lillis reports that in her study,

even though students were encouraged to include their lived experience in their writing, this was often edited out. There is clearly a need, at the least, for students to be told of the range and diversity of political perspectives within academia if we are to create spaces for their voices to be heard.

When learning writing is addressed directly, the emphasis is on writing within the specific disciplinary context: as Wendy Strachan (2008), director of the Centre for Writing-Intensive Learning (CWIL) at Simon Fraser University, relates, “professors did not see themselves as writing teachers; they [used] written work as a means of assisting and assessing student learning. They assigned writing for their own purposes in the genres they valued and that they themselves largely defined” (p. 8). Writing intensive courses can help, but not all faculty see their value, and of those who do, many either lack the knowledge and support needed to create and implement effective curricula, or “have wrong-headed ideas about how to help their students become better writers” (Krebs, 2008, p. xii).

And even a writing-intensive approach is still dominated by genre. Strachan explains how an essential part of the CWIL program was their ability to uncover professors’ “often tacit knowledge, bringing it forward to a discursive level that helped us in identifying genres important for their students’ initiation into the discipline, and in revealing the relevant textual regularities of those genres” (p. 7). Yet this helps students better reproduce their disciplinary norms, rather than becoming better writers across disciplines or without regard to them. This isn’t bad, but is incomplete: students are being given a potentially very versatile tool, but taught only one way of using it. As a result, these students may leave university able to write only in the particular genre of their major, without a broader sense of the context of disciplinary genre: how it shifts between fields, and how to read, follow, understand, critique, and perhaps resist

those shifts. They have in effect learned a highly localized dialect - but most of them will soon return to their occupational village and need to resume its language norms. Ironically, they may find that an academicized written style isn't always an asset there: it is out of kilter with what they need to say, and who they need to say it to.

A genre-based approach also fails to address problems within the genre. Biber and Gray (2010) point out that

a major problem for the novice writer seemingly not addressed in the style manuals is how to balance those two concerns: producing discourse that is compact and economical, with the consequence that it is inexplicit in the signaling of grammatical relations, while at the same time still achieving 'clarity'. (p. 19)

As we have seen, this imbalance is a basic problem the genre presents for student readers as well, and their struggle to write in this style (or resistance of it) reflects the difficulty they have in reading it. It is not effective in meaning-making for them. Most students will become reasonably capable of producing the style that grading criteria demand - students are smart that way - but it will be a goal-oriented exercise in reproduction of form. Again, it is unlikely that most will need or want to write this way outside the university. Yet, recalling Giltrow's formula - form + situation = genre - as long as students are being taught solely genre-based writing, the given academic situation dictates the form, and their writing skills will have minimal applicability in other situations.

Ideas for Change

"What do you call a sleeveless dress costing twenty cents? - A paradigm shift."

Bill Richardson (on CBC Radio, ~2005)

Cognitive psychologists Richard Mayer and Roxana Moreno (2003) are convinced that “effective instructional design depends on sensitivity to cognitive load which, in turn, depends on an understanding of how the human mind works” (p. 50): different, complementary and mutually reinforcing modes of information processing enable a richer and firmer grasp of complex concepts. Good teachers know how this translates into an instructional environment, and fields that are primarily practical offer some of the clearest examples. One such is California Superbike School founder Keith Code (1997), whose explanation of *attention* in his book for aspiring motorcycle racers, *A Twist of the Wrist*, illustrates both his own talent in evoking visual metaphor, and what goes on in learners’ minds when faced with too much competing input and an inadequate frame of reference for coping with it. Code likens each person’s total available attention to a ten dollar bill, and explains the attention required to perform each task on the motorcycle and in competition as requiring some draw on that limited budget:

When you first began to ride you probably spent nine dollars of your attention on how to let the clutch out without stalling. Now that you’ve ridden for years . . . you probably spend only a nickel or a dime on it. . . . Whenever a situation arises that you do not understand, your attention will be fixed upon it . . . panic costs \$9.99 - you may even become overdrawn. (p. xii).

Such imagery is taken for granted in educational contexts such as Code’s, where his impressive list of champions taught and coached attests to the effectiveness of his methods⁵. But it can work just as well in academic subject matter, as Brian Greene (1999) proves, in his engaging, accessible explanations of complex concepts including the principle of relativity, the

⁵<http://www.superbikeschool.com/champions/>

speed of light, and their effect on time, even quantum mechanics - all using scenarios that begin, “Imagine...”.

Imagine that a few hundred feet of garden hose is stretched across a canyon, and you view it from say, a quarter of a mile away . . . From this distance, you will easily perceive the long, unfurled, horizontal extent of the hose, but unless you have uncanny eyesight, the *thickness* of the hose will be difficult to discern. From your distant vantage point, you would think that if an ant were constrained to live on the hose, it would have only one dimension in which to walk In reality, we know that the hose does have thickness. . . . by using a pair of binoculars you can zoom in on the hose and observe its girth (p. 186)

So Greene begins to explain Theodor Kaluza’s theory that the universe in fact may contain more than the three dimensions we commonly experience, and how it is that these dimensions, like those of the garden hose, may lie hidden by vast differences of scale. Greene understands that he “[i]magining a structureless, primal state of existence, one in which there is no notion of space or time as we know it, pushes most people’s powers of comprehension to their limit” (p. 378), and yet manages, through his use of story, visual metaphor, and analogy, to extend those limits, while evoking the tensions, perplexity, slogging, exhilaration - and imagination - involved in achieving breakthroughs in physics.

I suggest there should also be greater awareness of and openness to the ideas of contrastive - or intercultural - rhetoric, which as Ulla Connor explains, “draws on theories and research methods from second language acquisition, composition and rhetoric, anthropology, translation studies, linguistic discourse analysis, and genre analysis” (Connor, 2004, p. 291), in

considering genres as linguistic variation and *ways of learning* as constituting cultural variation within a single language.

Gaps between academic and other cultures could be bridged by increasing students' access to meaning in the material they read: if its relevance is obscured by thickets of parentheses, brackets, jargon, quotations, and quotation marks serving a host of purposes, not to mention poor sentence construction, bad grammar, regrettable word choice, and just plain flawed argument, only the most determined reader will be able to hack his way through to it. Many will not make the effort, especially if they have no plans to take up residence in the ivory tower anyway: whatever sleeping princess may lie beyond is not of their world.

Scholarly writers can become more conscious of the grand metaphors they use to situate their work, and more open to using - as Greene does - visual metaphors and similar devices for cognitive rather than genre purposes. New media present exciting opportunities for meeting both scholarly and educational priorities. Purely functional ones include increased development and use of word processing software functionality that allows turning in-text citations off or on, as readers choose; hyperlinks from text passages instead of insertion of traditional references; interactivity, 'layers' and varying ways of presenting content according to user's priorities; and facilitating concept tracking through and across documents. Bigger ideas with much broader implications include articles written specifically with students in mind, and journals or databases devoted to these; boundary and genre-bridging open access that promotes (among other things) the reconception of audience(s) for scholarly work; and student inclusion in developing new ways to present knowledge, as well as in its production⁶.

⁶If you find this sort of stuff exciting, you'll want to look up John Willinsky. I can't do his work and ideas justice with a brief quote: he inspires thoroughly non-genre-appropriate bouncing enthusiasm. But - I know my audience, and of course you know him.

All are of course dependent on authors and publishers engaging with and creatively using these features; hopefully they will see the value and potential in doing so. Education professor Kathleen Taylor (2006) concludes that learners who become aware of “what is” also discover “what could be”, and - in addition to benefits to themselves - tend to be “more deliberate, responsible, and competent in working toward the health of the commons. . . . [W]e turn enthusiastically toward research that may support us in encouraging this kind of awareness in our adult learners and ourselves” (p. 84). Wendy Strachan agrees that the implications of this sort of change can be far-reaching:

In the writing classroom, roles and purposes shift, new values emerge and adjust to new standards; relationships to subject matter are reconceived. New pedagogies in these classrooms may make a significant difference to the students in particular courses, but these pedagogies need to be part of much more widespread shifts in values, norms, and structures if they are to transcend individual behaviors. A new curriculum at the institutional level that applies across disciplines establishes the intention of a larger social purpose. (p 5)

A new awareness of students will serve well, too: the adult learner seems to be indefinable as a demographic variable, but can perhaps be understood as a moving point in a series of cognitive, experiential, and educational dimensions - like Brian Greene’s ant on its garden hose.

And - learning from scholars such as Greene, and many others - the genre must relearn that it’s okay to have fun. Bacteriologist Hans Zinsser (1934) knew this when he wrote *Rats, Lice and History*, both a scholarly treatment of the effects of epidemic disease, particularly typhus, on human history, and a witty, irreverent delight. Zinsser cheekily declares that the main

attraction of his work is “that it remains one of the few sporting propositions left for individuals who feel the need of a certain amount of excitement. . . . The dragons are all dead, and the lance grows rusty in the chimney corner” (p. 8). Yet too rarely are the energy, the excitement, the fervour and commitment, the wit and humour, that are so palpable in the atmosphere and the people of any university found in the writing of the academy. The same researchers and theorists who, in the classroom and the laboratory and the quadrangle, are doing scholarship with passion and with love, when they sit down to write squinch their eyes shut and think resolutely of England.

Conclusions and Suggestions for Research

Academic writing as a form and genre has a long history, and has evolved to serve specific purposes of researchers and mature scholars. Cognitive science supports experience and observation that students’ educational needs both for access to content and as learning writers are not well or fully met by academic writing as found in scholarly journals, etc., in its current form..It should therefore be used sparingly and critically, in a mix with other forms of teaching resources.

Yet journal articles and similar examples of the genre will likely continue to be used (and increasingly heavily) for instructional purposes, because of their abundance and inexpensive availability to students, and the professional and monetary advantages to their producers (both authors and publishers).

Will the genre acknowledge this contradiction? How might it better fulfil its evolving and expanded range of purposes? Development in this direction is likely to be mostly an organic process of successive adjustments to changing circumstances, but research into students’ use of and benefits from different types of teaching resources could be helpful. Foci for such studies

could include learners' absorption and retention of concepts using scholarly articles only, as compared with other traditional resources; absorption and retention when students are involved themselves in planning and design of teaching material to be used by their peers; effects on students' academic identity of working solely with scholarly articles, as compared with using other resources; and effects on ease with which students are able to shift between genres in their own writing, depending on what teaching resources they encounter in their (non-writing intensive) education. These would all be challenging, not least because no teaching environment exists in a vacuum, but could nonetheless be informative.

In the meantime I hope that educators will become increasingly aware of the difficulties often presented to their students by academic writing, and open to exploring different ways of approaching its use, to help mitigate the exclusiveness, inaccessibility and narrow cognitive range of the academic genre.

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