REVIEWS

M. Elizabeth Sargent and Cornelia C. Paraskevas. *Conversations about Writing: Eavesdropping, Inkshedding, and Joining In.* Ontario: Nelson, 2005. Pp. xv111+459. ISBN: 0-17-541498-3. \$56.95 (CAD) or, for schools, \$5.00 (CAD)

Conversations about Writing mentions Michael Polanyi only occasionally (203, 313, 331); from his son John, it includes a mere two brief pieces (313-4), both of them after-dinner talks. The nomenclature of Polanyian epistemology is absent from its pages. Still, this book is a significant contribution to Polanyi studies.

On first glance the book is merely another rhetoric/reader, one among myriads compiled for consumption in first-year composition courses. Such books (and courses) usually have the modest aim of manufacturing quasi-respectable academic essays and other papers. This book has the customary contents and apparatus – a "Quick Reference" on punctuation and another on clausal relationships, addresses of supportive web sites, contents in eight chapters (or "Conversations) of the two authors' writing advice and assignments, as well as their commentaries bracketing a wide variety of published essays by established writers (with a few sample student essays thrown in). Such fare typically is intended to give composition students well-intentioned guidance on writing and topics to write in their own essays. As a typical textbook, this one invites a few trivial quibbles: I wish the essays had a type face a bit different from the authors' contexts; it can be difficult to tell which is which. To signal an ellipsis, what might be the difference between "*" and "***"? The epigraphs which open each Conversation as well as in-text citations are included in the bibliography, but I wish they were in the index as well.

Such quibbles aside, this is an important book,

and no initial glance can begin to do it justice. The very title hints the book's significance, as does its subtitle, "Eavesdropping, Inkshedding, and Joining In." Beginning with an OED-informed "Riff on Eavesdropping," readers are invited to become "a bold someone trying to stay dry outside in the cold while listening for useful news or stories or information..." (v) But we are quickly invited to become "inkshedders" also, doing "an informal kind of writing-to-learn, throwaway writing that you do in order to make something happen inside your head or inside the heads of others as you try to figure something out." (4) And "joining in" is an invitation to us indeed to join in, to join in a conversation about writing, especially our own. We hear, remarkably and refreshingly, "You are the only true expert on your own writing [though you] may not yet fully and consciously know what you know (or trust it); you may not yet be in full possession of your expertise." (2, emphasis in original) The subject of this book is not just "writing"; its essays are not merely "about" writing (and language). The intent instead is indeed to engage us in conversations whose subject is writing, conversations informed by recent thought and scholarship, conversations whose intent is that we reflect on our writing, both its processes and its products, such that we do writing with ever-greater competence and confidence in our own expertise.

In academic circles, serious conversations on writing and writing pedagogy are only some forty years old, as Sargent and Paraskevas rightly indicate. Until recently, the business of writing instruction (one could hardly call it a "field," much less an academic "discipline") has been dominated by a view of writing left over from the Enlightenment: writing was essentially if not exclusively "managerial," a matter of putting into acceptable words and sentences matters whose "truths" had been somehow already established, prior to and independent of writing or any other acts of language. Of writing itself, there was nothing

much to be known. Thus, anyone could teach writing; writing teachers found themselves clinging tenuously to the lowest rungs of the academic ladder, poorly paid gate-keepers to cleanse the academic world of those whose usage might be linguistically embarrassing. (In the early 70's, for instance, I was summoned to a state-wide assemblage of Composition Directors. As a "get acquainted" activity, each of us was asked for the flunk-out rates of our first-year English courses. As quickly became apparent, the guiding assumption was that the *higher* a failure rate, the *better* job that institution must be doing.) As one early scholar of those times lamented in print, first-year composition was the course where students were not taught how to write better, but merely expected to.

Through recent decades, however, among circles of teachers and scholars the conversations on writing have become remarkably insightful, sustained, and important. These contemporary conversations (which also turn out to be ancient conversations, as we learn to read the old Greek and Roman texts with newlyopened eyes) undergird the "writing-across-the-curriculum" (or "writing-to-learn") movement in American higher education. We are learning to re-see writing, not merely as arrangements of scribal marks on a page, but as distinctive and vitally-important human action. In the essays it includes, the guidance and the bibliography which its authors provide, Conversations about Writing offers practicing and prospective teachers, of whatever disciplines, an efficient and fine way to "eavesdrop" on such important conversations. What's more, the tone is refreshingly Canadian: the book is both more earnestly attentive to the dynamics of actual writing and less arcane or agonistic than similar works in the United States have tended to become. While the book takes its bearings from the work of important recent scholars - among them Janet Emig, Nancy Sommers, Sondra Perl, and especially Peter Elbow - it does not genuflect before mostcurrently-fashionable of scholarly mavens of the field. (In the United States at least, a field's emerging academic respectability does have its price.) Instead, via the pieces it anthologizes, the book offers its readers an apprenticeship from practicing, serious (but never self-important) writers reflecting on the writing they do.

The primary audience for the book is *students*; its basic intent, to teach them (or, much more accurately, to help them *learn*) to be better writers, taking seriously and building upon their natural abilities as language-using persons. Students are guided through eight chapter-length "Conversations" In each, students are invited to "eavesdrop" by reading pertinent professional (and some student) essays. There are no "questions at the end" to check on students' comprehension. Instead, preceding the essays are prompts for pertinent "inksheddings." That is, a vital dimension of each Conversation is to evoke what students bring to it, from their own lived experience, expertise, and articulation. Each Conversation ends with "Essay Ideas" pertinent to that section and, more important, "New Practices to Take Forward"; that is, exemplary writing practices that students have now exercised and are invited to make habitual. Throughout the book and without any hint of condescension, the intent is to draw students into serious conversations about writing, by listening into (and joining into) written conversations that professionals have been having about student writing and by articulating their own experiences with and insights into writing, thereby fashioning their own expertise.

The novel and vital presumption is that it is via such conversations, with others whom we meet in print and still others with whom we meet more immediately as members of a community of inquirers and with ourselves, that we learn.

The eight Conversations begin, instructively, with one on "Life Without Language." There among others we hear from Helen Keller (and her teacher Anne Sullivan); from Malcolm X, on his deliberate acquisition of *written* language; from Eva Hoffman, reflecting decades later on her arrival in Canada as a small child speaking only Polish. (In her newly-learned English words "the signifier has become severed from the signified.... 'River' in English is cold – a word without an aura. It has no accumulated associa-

tions for me, and it does not give off the radiating haze of connotation. It does not evoke.... I have no interior language, and without it, interior images, — those images through which we assimilate the external world, through which we take it in, love it, make it our own – become blurred too" [42-3]).

Succeeding Conversations are predictable in their succession of topics, from the writing process, exploratory writing and invention, issues of avowedly academic writing, of grammar, of organization and genre, and finally on distinguishing between revision and proofreading. But each Conversation challenges, asking us to entertain perspectives which will be new to most students and to many instructors. Thus for instance the Conversation on "academic writing" begins by asking, "Do you know what your theory of knowledge is?" It then briefly presents a view of knowledge as socially constructed by arguing There is no knowledge anywhere that was not shaped, created, or upheld by human beings) (177, emphasis in the original). In doing so, the conversation invites us to consider academic writing as involving us in "a web of social obligations" (179). Similarly, the Conversation on "grammar" cites some of the voluminous research on the futility of isolated grammar exercises in improving student writing, invites us to consider the innate grammar each of us has re-invented by virtue of being human, and offers us ways to consider "grammar" as ranges of stylistic and rhetorical choice we can exercise with increasing effectiveness. And the Conversation on "Organization and Genre" invites us to think of a writing's organization in terms of time rather than as some spatially-based structure.

I have acknowledged that *Conversations about Writing* barely mentions the name "Polanyi," yet I have also claimed that the book is a significant contribution to Polanyi studies. That it is, and in two respects. One of this book's authors, Elizabeth Sargent, in addition to being a thoroughly dedicated teacher and scholar of writing, is also a remarkably able scholar of Michael Polanyi's thought. (See her article, Elizabeth Wallace *et al.*, "Polanyian Perspectives on the Teaching of Literature and Composition," *Tradition and*

Discovery, 17 (1990-91), 4-17.) Via the authors' words and the anthologized essays, informing Conversations about Writing throughout are such central Polanyian concepts as indwelling, inquiry, community, and of course, articulation. Though its debts to Michael Polanyi remain tacit, this book is deeply informed with Polanyi's work.

I well recall the complaint which Polanyi himself voiced at the 1972 Dayton conference: scholars gathered there were spending their efforts attending to his work rather than from it; he urged them instead to be seeking out his work's implications and applications in their respective areas of inquiry. Conversations about Writing does that; it thoughtfully attends from Polanyi's philosophy. In doing so, Conversations about Writing offers readers of this journal an extended pedagogical example which they would find instructive, no matter the field of their own writing and teaching.

This book significantly contributes to Polanyi studies in another arena as well, that of teachers and scholars of writing and writing-across-the-curriculum. Many such readers will find much of this book's advice familiar; though informed here (tacitly) by Polanyi, it has also been hard-won through recent decades' teaching, reflecting and, yes, conversing. Their pedagogical – and epistemic – battles remain far from won in the halls of academe. Many of these practitioners are so consumed "in the trenches" of their arduous teaching that they are largely ignorant of their work's philosophic foundations, and they face opponents who can be quick to claim that there are none. Conversations about Writing helps give the lie to such presumptions. There are important philosophical foundations for much of the best that writing teachers do, and much of those foundations is to be unearthed in the insights of Michael Polanyi.

One of those foundations is, quite simply, conversation. While for over a decade I worked with faculty from across my own university campus, one colleague in particular kept reminding me: what next steps can we take to keep the *conversations* going? That is a key question for all of us; it is a challenging one, one to which *Conversations about Writing* represents a significant contribution.

Sam Watson sdwatson@email.uncc.edu Robert B. Laughlin. *A Different Universe: Reinventing Physics from the Bottom Down.* New York: Basic Books, 2005. Pp xviii+254. ISBN 0-465-03828-X. \$26.00, hardback.

A book by the physicist awarded the Nobel Prize for his work on the fractional quantum Hall effect? It sounds like it might be insightful, but also probably dry and daunting. Well, it is extremely insightful and sometimes challenging, but certainly not dry or inaccessible. Laughlin, a Professor of Physics at Stanford, writes much more in the light-hearted spirit of Richard Feynman than in the turgid prose of too many physicists. And like Feynman's books, this is an important work.

One question that Laughlin engages throughout this work is whether physical law emerges from principles of organization, or whether organization is the product of these laws. He mentions discussing this issue with his father-in-law while "working on a couple of gin and tonics in order to escape discussing movies of emotional depth with our wives" (xi). Laughlin recognizes this is a sort of chicken and eggs problem, but he argues passionately and, I think successfully, that empirically observable organization gives us a far more reliable fix on reality than reason relying on laws or an analysis of parts. "Law instead follows from collective behavior, as do things that flow from it, such as logic and mathematics" (209). Laughlin can thus be seen as a highly sophisticated adherent of British and American empiricism in contrast to continental rational-ism.

A Different Universe demonstrates that physics need not be reductive in its approach. When we know the laws through which some collective, emergent level works, the laws of the deeper levels upon which the emergent whole depends can be ignored. Laughlin states that "science has now moved from an Age of Reductionism to an Age of Emergence, a time when the search for ultimate causes of things shifts from the behavior of parts to the behavior of the collective" (208).

Well, many have joined Polanyi in trumpeting the importance of emergence, but what makes Laughlin's book stand out is the experimental evidence of many sorts he brings to bear on the issue. For a physicist, he claims, accurate measurement is the key to meaningful insight.

For example, at an accuracy of one part in one hundred thousand, one discovers that the length of a brick is not the same from one day to the next. A check of environmental factors reveals this to be due to variations in temperature, which cause the brick to expand and contract slightly. The brick has become a thermometer. . . . But at an accuracy of one part in one hundred million, the weight of the brick becomes slightly different from one laboratory to the next. The brick is now a gravity meter, for this is an effect of slight variations in the force of gravity due to differing densities of rock immediately below the earth's surface. (11)

Through increased precision, one gains different sorts of insights and exposes falsehood. Such measurements uncover a quite limited number of constants, like the speed of light or the Rydberg constant, "the number characterizing the quantization of light wavelengths emitted from dilute atomic vapors and responsible for the astonishing accuracy of atomic clocks" (15). Laughlin rejects the notion that these constants are basic building blocks of the universe we have to accept simply as primitive facts. He adduces evidence to show that they must be seen as collective effects even if we do not fully understand their components. Collective effects have the property of overcoming all sorts of impurities, and as the sample increases in size, one approaches asymptotically a lawful or structural constant. "Microscopic uncertainty does not matter, because organization will create certainty later on at a higher level" (19).

The continually unfolding history of breaking down matter into ever smaller parts – from atomic and subatomic particles down to quarks – cautions one to the danger of proclaiming any entity to be the ultimate building block from which all is constructed. Laughlin was awarded his Nobel Prize for constructing the first mathematical description of the fractional quantum Hall effect, a discovery revealing that "ostensibly indivisible quanta – in this case the electron charge e – can be broken into pieces through self-organization of phases. The fundamental things, in other words, are not necessarily fundamental" (77).

The chapter on the phases of matter is particularly effective in revealing Laughlin's take on the world. Solids, liquids and vapors are organizational phenomena that generate

many everyday examples of exactness. Liquids have the defining property of not tolerating pressure differences between any points except those due to gravity, which is why hydraulic machinery works (36). But of course the properties of a gas or liquid disappear when one moves from a large collection of molecules to a few or only one molecule. The issue of scale is a serious factor in considering collective phenomena. "One might say that small samples contain elements of all their possible phases—just as a baby contains all the elements of various kinds of adulthood— and that the system's identity as one phase or the other develops only after some properties are pruned away and others enhanced through growth" (146). The histories of large systems describe emergent simplicities, whereas those of small systems deal with pedantic detail (90).

Laughlin is enchanted by instances of symmetry and simplicity in nature. "In a world with huge numbers of parts the unusual thing is not complexity but its absence. Simplicity in physics is an emergent phenomenon, not a mathematically self-evident state from which any deviation is a worrisome anomaly" (130). As already noted, he argues that things conventionally considered to be fundamental are collective phenomena. A rather startling example of this thesis is that the properties of empty space "show all the signs of being emergent phenomena characteristic of a phase of matter. They are simple, exact, model-insensitive, and universal" (105). The apparent emptiness of space is an emergent phenomenon, but space itself "is more like a piece of window glass than ideal Newtonian emptiness" (121).

How do new entities emerge from systems that have acquired order and simplicity? Laughlin discusses "spontaneous symmetry breaking" as one generator of newness. Symmetry breaking occurs when "matter collectively and spontaneously acquires a property or preference not present in the underlying rules themselves" (44). Matter gets oriented in some specific way on the basis of some otherwise insignificant initial condition or external influence, a notion exploited in complexity theory. Once so oriented, it becomes part of the factuality of the world influencing subsequent orientations. Symmetry breaking demonstrates how nature can become richly complex even though obeying underlying rules that are simple.

Laughlin's work is replete with richly suggestive ideas. He makes such terms as entanglement, antitheory, the Dark Corollaries, and Barriers of Relevance come alive. But I convey the wrong impression if it is thought that the book's outcome is to lead the reader to deep and esoteric secrets about the world. Even though honored for his mathematical astuteness, he argues against the notion that we might be able to gain mastery of the universe through mathematics or logic alone. "The world we actually inhabit, as opposed to the happy idealization of modern scientific mythology, is filled with wonderful and important things we have not yet seen because we have not looked, or have not been able to look at due to technical limitations. The great power of science is its ability, through brutal objectivity, to reveal to us truth we did not anticipate" (xvi). In this last sentence we see the similarity between the path followed by Laughlin and the route earlier taken by Polanyi, although of course Laughlin's path builds upon experimental evidence not available to Polanyi. But one would not be too far off base to see A Different Universe as a Polanyian extension.

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Gerald van Koeverden. *The Child's Secret of Learning*. New York: iUniverse, Inc. Pp. ix + 236. ISBN: 0-595-34615-4. \$19.95, paper.

According to the biographical information given on the back cover, Gerald van Koeverden has "survived 23 years of schooling to work in a range of professions on three continents." He does not tell us what those professions are, but he has clearly been in conversation with philosophy, the sciences, and some theology. His most extensive conversation partners are Noam Chomsky, from whom he draws in his discussion of language, and Michael Polanyi, from whom he draws most notably the phrase, "dwelling in." Koeverden writes for "impractical playful" persons who simply enjoy the challenges of working through problems (23) in order to offer clues about and insights into when and how learning can occur (7). Koeverden writes in a style and spirit consistent with this intended audience: his style and the second half of the book touches suggestively on a wide range of intellectual debates.

Koeverden takes as his paradigm of learning that of developing skills such as driving, typing, and speaking (Chs. 1-7). He makes two major claims about the learning of skills. The first is that skills integrate ideas and emotions smoothly and seamlessly, for the most part, so that "the body drives the car with no direct instructions from the thoughtful mind. It is as though the movements of our eyes, hands, and right foot are woven together, smoothly functioning in coordination with their interpretation of the traffic rules and the road situation" (13). Like Polanyi, Koeverden realizes that a slight shift of focus or increased self-consciousness about what one is doing will cause the integration to collapse (e.g., 14, 42-43). His second claim is that such skills, like all learning, emerge in a process marked by a rhythm of leaps and plateaus (e.g., 41-42, 46) and influenced by a mix of both external pressures and internal initiatives (125).

From reflection on the process of learning, Koeverden then turns to reflection on the learner (Chs. 8-10). He characterizes the learner as made up of a quartet of four singers. The first is the artist, who serves as the antennae, sensitive to emotions. The second is the theorist, who translates raw emotions into perceptions. The third member of the quartet is the empiricist, who takes the ideas generated by the theorist and tests them against the evidence. Finally, the fourth member, the idealist, synthesizes emotion, idea, and evidence for the sake of purposive action (see 5-6, 106-114, 143-145, and 212). As Koeverden describes these members of the quartet and the challenges and joys of teaching them to harmonize, he makes three important observations. The first is that they all unite emotion and thought because of how sensory organs are biologically connected to both cognitive and emotional centers in the brain (93-96). The second claim is that creativity permeates the process in the work of each member of the quartet, as well as in the final synthesis (212). Koeverden's final point is that metaphor is central to all members of the quartet, the theorist as much as the artist (212-215).

In the remaining chapters of the book, Koeverden uses these insights to explore both debates in the sciences and characters in literature. He suggests that harmonious functioning of the quartet can resolve misunderstandings of the nature of the sciences (Ch. 13), as well as a variety of current debates in physics (Ch. 14), about nature vs. nurture (Ch. 15), creation vs. evolution (Ch. 16) and reason vs. emotion (Ch. 17). He

explores the personality dynamics of Othello (Ch. 18) and Don Quixote (Ch. 19), before offering a two-chapter conclusion. Although he does not devote a distinct chapter to the topic, Koeverden also suggests that the division between arts and sciences that can create havoc in contemporary academic culture lies in tensions between members of the quartet (e.g., 4-5, 211).

The book's playfulness is both its chief strength and its major weakness. The book is an easy read; there is no ponderous prose to drive the reader away. The range of topics addressed prevents the reader from getting bored, partly because the topics are inherently important and interesting and partly because the subject shifts frequently. The playful style also frustrates, however, because it is hard to find clearly-stated conclusions. For example, by the end of the book, one is hard-pressed to articulate what the child's secret to learning is. The logic is often more impressionistic than rigorous. The insights are often more commonplace than profound. Some could, with good reason, argue that Koeverden claims to do too much in too little space. After all, can one really resolve the debate about nature and nurture in a single, short chapter?

Such criticisms valid as they may be, should not, however, blind readers to the value of the book. After all, Koeverden is honest about what he intends to accomplish. He does not intend to provide detailed, final answers to the secrets of learning—only clues. One such clue is that whatever secret to learning there may be, it is to be found in the integration of a quartet, an integration that comes naturally to the child, but less so for adults. Adults have to achieve it by dwelling in problems, questions, and the perspectives and insights produced by each member of the quartet (e.g., 24, 150). Koeverden also offers suggestions about what makes for successful teachers. At the very least, good teachers never forget the significant questions that drive learning (19-20) and understand that teaching should "initiate an emotional and physical dynamic that excites student effort and aspiration" (91). If one wants to learn how to do all that, Koeverden would respond by encouraging the reader to consult any number of available "how to" books on pedagogy. In the meantime, he calls the reader to wonder, joy, and play.

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