

CONSTRUCTING EXPERIENCE

CHARLES BAZERMAN

Southern Illinois University Press
Carbondale and Edwardsville

The Nature of Expertise in Writing

The term *expertise* is not a usual part of my conceptual vocabulary because it tempts us to think of a person's skills or accomplishments in a domain as a single coherent package, perhaps even closely congruent to the expertise packages of others accomplished in the same domain. *Expertise* almost suggests a plug-in, transferable module, if not at least a standard set of learnings that every novice must master. This, for reasons I will elaborate below, seems not to be a useful conception for thinking about writing.

The terms *skills* and *expert performance* fit more easily into my conceptions about writing competence. *Skills* are varied, separate, manifold, combinable, and capable of being complexly coordinated for specific tasks. *Expert performance* describes the whole act with all its potential variety and complexity, not a fixed procedure using a standard tool kit. Although expert performances in writing are capable in certain stabilized conditions of becoming standardized and even commodified into paraprofessional procedures or even mechanical or electronic devices, their most general form is open-ended, ill-defined, and novel.

However, as I read the most recent collection of papers on expertise (Chi, Glaser, and Farr), I saw the term applied in a nonreductionist way to ill-defined problems, and this reassured me. Writing appears to be an ill-defined problem, actually an infinite variety of ill-defined problems. How else would one account for the great variety of texts that count as writing? In the remainder of this statement, I will discuss how I see writing as ill-defined, or multidefined in various cases, often in uncontainable, unanticipatable, ever-shifting, multidimensional ways, such that expert performance, or writing expertise, consists in no one single set of skills but varies over time and across social boundaries. Localized spaces can become better defined and even formulaic; for example, a trivial solution to a trivial problem, such as filling out the address on an envelope for high school-educated, literate people in twentieth-century America for mailing within the United States postal system. If one wishes to send the letter to a country with a different

address structure or wishes to use an alternate carrier or does not enjoy the standard literate skills, the writing of an address may be far from a trivial problem. I will discuss how writing problems can become trivial, but I must distinguish trivialized writing from the more fundamental general issue of writing expertise. We must remember that in the ancient Near East, even inscribing cattle counts on clay tokens was at first hardly a trivial matter. The educational implication of my discussion will be that we need to decide on what level we are trying to develop expertise in literacy—whether within identified, fully routinized situations, fairly well-defined situations (business reports), ill-defined situations (literary essays), or most generally and most flexibly, all situations of all character.

First, we ought to notice that people who are identifiably experts in writing frequently are only remarkably competent within one limited domain of writing or other. They are novelists or poets or journalists or technical writers. Competence in one domain does not particularly indicate competence in another. People who do manage expert performances in more than one domain must learn or even reinvent the second domain after learning the first, often with idiosyncratic results, as we see in Hemingway's passage from journalism to the novel and Mailer's passage from the novel to journalism or, even more strikingly, Kafka's passage from bureaucratic report to the novel. Even more narrowly, poets who are masters of one style are not guaranteed of any success when they move to another. T. S. Eliot is expert at writing Eliot poems but not nearly so good at writing Yeats poems and certainly not Wordsworth poems. Among poets only a few have been successful at dramatic, lyric, and ceremonial; perhaps Shakespeare and Ben Jonson. In a more everyday example, consider the insurance claims adjuster who can reel off a damage report but can't write a letter to his daughter or even write a successful ad description of the same car that he efficiently described in a crumpled state. People who perform linguistic prodigies in one form or another, such as the Homeric performances of doctors describing their patients as they make their rounds, hardly perceive they have any competence in composition and certainly would not think they are ready to write for the *New Yorker*, unless they were Richard Selzer or Oliver Sacks.

A simple and common answer to this conundrum about the specificity of writing competence is that it is all a matter of local conventions that must be mastered, but I find such an answer hardly adequate. Perhaps the corporate engineer who sends dinner guests a map to his house with a letter beginning "Enclosed herewith is a figure represent-

ing . . ." lacks certain conventions. But how about the case of poet-novelists or of writers of internal corporate documents turning to public relations? In such cases we must look to the different kinds of problems posed by the different kinds of writing, the different dimensions on which the different kinds of writing work, the different skills necessary to accomplish the various kinds of writing—the differences in the expertise.

I will now consider three writers, all apparently within a single discourse domain, all what we now consider writers of science working within about a hundred years of each other: Otto von Guericke, Isaac Newton, and Joseph Priestley. I will suggest that they each were solving radically different problems in their writing, using very different skills, demonstrating very different kinds of expertise within their expert performances.

Otto von Guericke, a German engineer, civic leader, and natural philosopher in Magdeburg during and after the Thirty Years War, published in 1672 a compendious volume called *New Magdeburg Experiments*. In it he systematically describes the entire cosmos, including even the emptiness of the heavens, re-created through his most famous invention, the vacuum pump. His ultimate problem seems to be to produce a unified vision of life, a Protestant cosmology, with political/social ramifications in harmony with the natural order. The exigency of this problem arose with the Reformation, which overturned the Catholic cosmology and removed miracles from the contemporary world so that the divine order had to be found in a regular nature that had to cohere in its own terms with no extraordinary divine maintenance. The need for this cosmology was heightened by the political, social, and psychological disorder following the Thirty Years War. There was a need to reestablish authority within disordered polity but only in terms consistent with Protestant views of the individual conscience and the importance of individual experience. Von Guericke was aware that he was creating a new natural philosophy distinctly different from that of his Catholic colleagues with whom he remained in correspondence. He was also aware of the problem of establishing authority within his political community, his role as *Burghermeister*, and the use of publicly displayed wonders as a form of asserting charismatic authority. There are many other unusual aspects of his work, but let this suffice.

To carry out his project he needed some rather specific writing skills. He needed to be able to construct a massive coherent intellectual frame-

work and then be able to search widely for phenomena that could be seen as consistent and iconically representative of the system. He needed to be able to dissociate phenomena he describes from other names and conceptual frameworks and then to redescribe these events within his own cosmology. He needed to be able to translate philosophic issues into engineering tasks, and then he needed the manual skills of an engineer to construct devices that would serve as mechanical microcosms of the natural macrocosm. He needed a technical writer's descriptive competence to describe the construction and operation of these devices. He needed to know how to present his work so as to increase the wonder of his audience, which in turn required him to understand his community's belief system and to gauge their perceptions of demonstrations.

The socially specific rhetorical problem he perceived and his idiosyncratic set of skills resulted in a unique book that seems to set natural philosophy on a very different path than that we are familiar with, the path that came out of the English Royal Society in the same period. Isaac Newton was a key figure in those developments within British science. Newton's expert performance of the *Opticks* was an entirely different kind of achievement calling on very different skills.

Newton seemed driven to share his vision of life, which once he set his mind, was held confidently and tenaciously. For a variety of reasons upon which scholars have speculated, he wanted others to see things precisely as he saw them and held that his theories were no different than his observations. When he presented his optical findings to his peers within the forum of the Royal Society and the affiliated journal of *Philosophical Transactions*, however, he found that others were recalcitrant in perceiving what he perceived, doing the experiments as he did, performing the experiments in the precise way he felt they ought to, in observing results as he would have them do, interpreting those results in the way he thought appropriate, and concluding what he thought they ought to conclude. Over a series of exchanges, he developed a new style of argument that not only compelled assent but compelled thought, perception, empirical experience, and interpretation within a closed universe of experience and logic that he built up from first principles. In creating this rhetorical juggernaut, Newton reconfigured his peers as his subordinates whom he intellectually dominated. Thus, in book 1 of the *Opticks*, he presents a powerfully closed text that grabs ahold of the mind and imagination of the reader, who is put through Newtonian paces.

There are many skills he needed to do this. He needed to be able to

recognize and heighten the specialized forum within which he worked rhetorically. He needed to be able to construct shared goals and criteria and to recognize where the shared universe he was creating might potentially come into conflict with prior commitments and concepts of his readers so that he could head off such difficulties that might cause his readers to decrease involvement in his system. In the course of developing his form of argument at various times, he showed skill at narrative manipulation to create a Baconian ethos, at generation of many variations of experiments, at carrying out experiments with great manipulative precision, at reasoning mathematically, at reordering experiments sequentially within a reasoning framework, at distinguishing among apparently similar terms, at analyzing opponents' arguments to see precisely how they were perceiving his to then intervene to reorient their perceptions, at reducing theories to empirical issues, at arguing cleverly with metaphors so as to discredit them, at presenting his work with a compellingly confident tone, and at a thousand other things that were not at all the same as von Guericke needed, working at almost exactly the same time. Their two books as a result are very different.

A century later, Joseph Priestley saw an entirely different set of rhetorical problems and employed an entirely different set of writing skills to produce a very different expert performance of his book *History and Present State of Electricity*. Rather than creating a coherent world view or advancing a single persistent vision, Priestley wanted to coordinate the work of all investigators democratically so as to maximize the communally available experience, make that experience the basis of mutual understanding and agreement, and increase the progress of our knowledge based on the mutually available and agreed-upon foundation. Among his skills were abilities at accurate and sympathetic summary and synthesis, a synoptic grasp of the sweep of history, control of complex organizations of material, a sense of overall plot within a complex, detailed narrative, an openness to anomaly, an awareness of the social dynamics of knowledge production, an ability to explain concepts simply and to induce neophytes to become more engaged, the knack of drawing generalizations from many particulars, a means of investing technical activities with larger moral significances, an awareness of how different narrative styles create divisions or community between author and reader, a sense of the variety of participants within the endeavor of science, and mastery of how to speak to all the needs, knowledges, and commitments.

All three authors were obviously very creative individuals, responding to unique situations out of their own previous skills, backgrounds,

and conceptions. As the literature on ill-defined problems points out, how a person gives definition to an ill-defined problem is strongly influenced by the framework of prior knowledge the person brings to the problem. Von Guericke's experience as a student in a central European Reformation university and then his experience as an engineer and citizen during a time of religious and military turmoil obviously bore on how he would perceive his philosophic investigations and their dissemination in print throughout Europe. Newton's great confidence, early support, and social recognition, as well as theological and perhaps mystical beliefs, along with the ambient meliorist Restoration political climate, which would repress other kinds of more direct debates on fundamental theological issues in which Newton had strong interests, all had something to do with his certitude and tenacity of argument that drove the development of the Newtonian style within certain contained spheres of semipublic debate. Priestley's democratically millenarian, communitarian beliefs and experiences not only led to commitments to certain notions of community to be realized through his texts but also likely provided him a large background of human relationships realized through certain styles of communal coparticipation. That is, through his church and political groups, he probably already had highly developed linguistic skills of cooperation and mental constructs of democratically participatory communities.

The diversity of the rhetorical accomplishments are made even more complex in that each performance was carried out on a multidimensional social space. Unlike such socially simplified games as chess, which create a single universal playing space that in effect excludes all concerns, history, and social dynamics other than those that specifically occur over that board, rhetoric is always implicated in social complexity. This is particularly evident in these three cases. Von Guericke's work was tied up with the politics, theology, general intellectual and artistic culture, economics, and psychological mood of Reformation Germany. His "science" cannot be extricated from his project to create order out of the experiential world, and his presentation of himself as knower cannot be extricated from the world of Renaissance magic and maguses; his performance of demonstrations cannot be separated from the public production of wonders and his charisma as a political leader; his experiments cannot be seen as independent of their roles as tokens of his power and microcosmic icons of the macrocosmic vision of universal order with implications for political and spiritual order.

As recent historians of science have been investigating, Newton's classic scientific statements cannot be seen as separate from his involvement

in corpuscular theory, philosophic speculation, mathematics, dissident religion, and perhaps a hermetic tradition and wisdom literature, at the same time as he had to make way for himself and his ideas within a newly moderate polity that discouraged radical religious views and fostered the Royal Society as a safe haven for limited debate, held within an anti-ideological Baconian set of ground rules. Priestley's scientific program was quite explicitly only part of a multifronted Enlightenment program of social change, involving dissident Unitarianism, educational reform, a new historical consciousness, democratic politics, and revolution; even in the scientific sphere, Priestley was aware that he was working within a complex socioempirical realm involving not only discoveries but machines and experiment doers, readers of the literature and booksellers, neophytes and apprentices, theoreticians and experimentalists, wonder seekers and philosophic projectors. Not only was each of these three producing very different performances, they were doing them in radically different complex worlds.

Before I leave the topic of the variety and complexity of expert performance in writing, I want to make explicit one more issue that I have been implicitly suggesting throughout. The complexity and variety are not only in the purely symbolic realm of words that go between people, but they are also in the procedures by which words are brought into relation to other behaviors. At issue are such things as how the report of an experiment gets generated out of particular laboratory and social behaviors as well as how certain forms of debate drive the needed for certain experiments to be generated to carry forward the discussion. How does the physical destruction of one's city and one's role in rebuilding walls relate to certain philosophic projects and an ethos projected in texts? How does attempting to replicate all the experiments you read of in the literature influence your own experimental productions and representations of those experiments? How does involvement in one kind of investigative project with certain resources of data collection and transformation into symbolic terms present different rhetorical possibilities and require different linguistic skills than involvement in a different kind of investigative project?

Admittedly within certain modern discourse fields, there has been sufficient stabilizing of the rhetorical playing field through various social institutions and the regularizations of styles and genres so that one can anticipate a certain degree of similarity among the expert performances of the skilled and thus the expertise needed for competent performance. As one gets drawn into the small world of high-energy physics, many of the other worlds one is part of get left behind, but even

there the walls around the lab are hardly impermeable, as evidenced by the cultural differences noticed by Sharon Traweek in her anthropological comparison of American and Japanese accelerator teams.

Modern American education, particularly at the primary and secondary levels, does provide a certain uniformity of situations and tasks so that we likely can specify some generally useful skills; similarly, as we move into some regularized professional domains, we can at least specify some skills of courtroom legal argumentation or contract drafting. University life often stands in a very confusing middle between standardized education and specialized worlds of disciplines and professions. But even as we are able to define some general kinds of expert performances and expertise in writing that may sort of hold in particular domains, we need to keep in mind the great variety always at the doorstep. The most expert are likely to be the most flexible and innovative, and even within apparent similarity, we should be open to noticing small, but significant variation. Consider, for example, the area of perception within revision about which John Hayes has presented a paper at this symposium. My experience tells me there are many kinds of revision-directed perception occurring in what we might call different mental revision spaces, differently constructed by individuals for their rhetorical needs. When I examined the physicist A. H. Compton's drafts, I saw him revising (and thus perceiving textual difficulties) not according to the standard criteria of freshman composition but with respect to considerations such as precision, epistemic level, and the presentation of the self as doer of the work. These revisions required the text to be read against very particular frameworks, such as the distinction among ontological object, its theoretical account, the visible trace left by the object, and the photographic record of that visible trace. At each mention of ray or track or electron, Compton had to question the precise level of reality he was talking about. Thus, he had to be perceiving the reality level embedded in the word, the reality level of the argument at that point, and the transformation of epistemic levels throughout the text. In what way is this revision perception similar to or different than identifying wordy phrases? In what way are revision perceptions and procedures for evaluating the use of a metaphor in a lyric poem different than the evaluation of the adequacy of the explanation of an idea; or even the perception and evaluation of a metaphor in a popularization of a technical subject? Is an E. E. Cummings metaphor to be perceived and evaluated differently than a Rilke metaphor? Can you even imagine what Robin Williams's revision space looks like? If someone like Newton was interested in heading

off any stray or contrary thoughts and holding a reader to a single path of experience, thought, and perception, what would be the mental construct within which that writer revised and what would be the salient perceptual units?

There's a lot to learn about writing. And I think we are lucky to gain any kind of competence in any limited domain of it. This is not to say that it shouldn't be studied and that we shouldn't identify as much order and regularity in how we do it, on biological and psychological and social and linguistic bases, and how we might do it better. The kinds of processes that the cognitivists are studying are unquestionably crucial elements within the production of writing. I personally find the investigation of how perception might be instrumental in revision an extremely promising line of inquiry and certainly very stimulating to my own thought. It may even lead to some understanding of the biological machinery with which we write and therefore suggest some general psychological parameters within which the variety of writing occurs.

However, I will remain cautious about every particular finding about expertise because expertise in writing is so many different things, even within the production of a single expert performance. As a card-carrying Vygotskian, I view all such higher psychological functions, such as those employed in writing, as the result of each individual's unique pathway of interactions with other individuals as they all move through a sociohistorical terrain created by the mutual interactions of all. In living our lives among others, each of us is highly creative, even if what we sometimes create looks a lot like what others have created. Those who are recognized as most expert are the most successfully creative. Even humdrum expertise must be re-created by each individual. So the problem remains of whether we can talk of expertise as though it were a coherent thing, or even an incoherent thing or even just a thing. Yet I am sure we still have much to learn from those whom we socially identify as experts and those productions we admire as expert performances, for after all, those people are just those who have figured out how to do such wonderful things, which we all would like to be able to do.