THE ROLE OF PRECONSCIOUS THOUGHT IN THE COMPOSING PROCESS

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Pausing, or the act of reflection during writing, is one step in the composing process that many protocol analysts now agree helps distinguish good writers from poor writers. Good writers pause longer and more often than poor writers, yet manage, in the same amount of time, to write more words than poor writers.¹

One protocol analyst, Sharon Pianko, calls pausing "the single most significant act of the composing process."² Yet the protocol analysts' revelations about exactly what goes on during pauses have been sketchy. Protocol analysts are primarily concerned with the number of pauses and with the varying lengths of the pauses, rather than with the precise cognitive operations that occur during this "significant" step. Here, for example, are a few of the most detailed summaries available from protocol analyses:

The pauses in his composing seemed to be filled with the formation of his next sentence or phrase, or often with a struggle to find a more specific word to express what he wanted to say . . . he also expressed a conscious effort to "flower up" his writing because he thought it would otherwise be too dull. (Mischel)³

... the good writers said, "Putting into words what I want to say so that I make it sound right," or "Communicating my idea to others . . . choosing the right words to
communicate with,” “getting it on paper.” Writers chosen at random said things like, “Getting my ideas across,” or “Putting what I mean into words.” (Stallard) 4

Some students explained that the great majority of their pauses were for planning ahead—what to write next. . . . Some of the pauses were simply for a “breather-space.” . . . But other students explained that most of their pauses were for diversions or for hoping that the correct spelling, correct word, or what to write next would appear to them. (Pianko) 5

Two other protocol analysts, Linda Flower and John Hayes, however, have recently outlined a model of the composing process that provides a better understanding of the cognitive activities that take place during pauses. Flower and Hayes stress the cognitive dynamics of composing, explaining that writers must juggle “a number of simultaneous constraints” as they write; they mention “planning, retrieving information, creating new ideas, producing language, and revising. . . . also drawing inferences, creating concepts, developing an image of the reader, testing what they’ve written against that image and so on.” 6 In their December 1981 CCC article, “A Cognitive Process Theory of Writing,” Flower and Hayes explain that the processes of generating ideas and evaluating the written translation of those ideas into language “appear to have the power to interrupt the writing process at any point—and they frequently do;” Flower and Hayes go on to say that this “allows for a flexible collaboration among goals, knowledge, and text.” 7

Many protocol analysts echo Michael Paull (who is not a protocol analyst) in describing the cognitive processes that take place during pauses as the movement from “sensation (the sensory awareness of a given experience) to perception (the selecting of certain stimuli from that experience) to concept formation (the structuring of those various selections into a coherent, in the sense of communicable, whole).” 8 But how, more specifically, can we begin to describe these complex mental operations that occur during pauses?

The brain scientists’ reports about the kinds of cognitive operations that occur during other creative tasks have some perti-
nent parallels to the thinking processes that take place during composing. Here it helps to underscore the correlation between composing and other "creative" tasks. As defined, for example, by brain researchers Steve McCallum and Sharon Glynn, creativity is "the process of generating, implementing, and communicating efficient strategies for acquiring novel, useful information." This definition would seem to correspond quite closely with what we expect students to do as they compose.

Keeping in mind, then, this parallel between composing with language and other "creative" tasks, let us examine three such "efficient strategies" often emphasized by brain scientists in reporting on many other similar creative tasks. And, in the following pages, I hope to show how these three activities, all functions of preconscious thought, undoubtedly account for much of the time spent pausing during writing.

**FOCUSING**

The ability to focus on the writing task at hand can be both an asset and a liability. About the importance of initially narrowing one's writing topic, Lee Odell says, "To respond to any phenomenon, we have to segment the continuum of phenomena." He compares this process to a camera zooming in to let us see a character in relation to what surrounds him. What matters, though, is keeping the character as our center; thus, what becomes significant through the camera's eye is how the character is affected by or affects his surroundings. Similarly, the writer must examine his ideas for writing with some "center" in mind, some subject of focus.

Focusing, as Odell goes on to point out, does not always mean conscious thought. Recent studies by creativity researchers W. J. J. Gordon and Tony Poze on the interdependent roles of conscious, preconscious, and subconscious thought support this assertion. In one of the most significant articles to date on the cognitive dynamics of creative thought, Gordon and Poze outline the following process of making a metaphor. First a verbal description of the subject at hand is reduced to "one functional essence." This is entirely a left brain or conscious task. The parallels between left brain and consciousness and right brain
and subconsciousness are made by Gordon and Poze themselves in this article. Preconsciousness they see largely in terms of thought that observes both words and images coming together, the place where shuttling between left and right brains occurs, where communication between consciousness and subconsciousness is most possible. (See W. J. J. Gordon and Tony Poze, “Conscious/Subconscious Interaction in a Creative Act,” The Journal of Creative Behavior, 15 (First Quarterly, 1981.) The second step is to establish a nonverbal image of that functional (verbal) essence—a movement from left to right brain, involving preconscious thought. Next the right brain takes over. It transforms the nonverbal image into one that’s different but similar. The fourth step is linking that image to a name, or, a passing through preconsciousness again, moving back from right to left brain. The last step belongs to the verbal analyzer, the left brain, which compares the new image to the original to determine the quality of the fit. For example, if one were asked to make a metaphor for a new moon, he or she would probably begin by imagining a visual image of the sliver of yellow moon. This functional essence would then be transformed into a similar image, something else that is slightly wedge-shaped and yellowish. After a new visualization emerges, say an image of a lemon slice, it moves to the left brain and in so doing, receives a name—“lemon slice.” Finally, the left brain analyzes this new image to see how well it resembles the original subject.

These five steps involve both a deliberate and conscious focusing and an equally deliberate and conscious unfocusing, a purposeful employment of ambiguity, which I will soon look at in greater depth. Focusing, we can conclude, becomes a liability when one cannot unfocus, when one holds so tightly to the original subject that it cannot blur, that it cannot become an “other” capable of generating more original, emotive, or insightful ideas.

This recursiveness of thinking, or the “shuttling” between consciousness and subconsciousness which occurs frequently during composing, may no doubt account for the often heard comment that Stallard mentions: “I’m trying to find the right words to fit this idea.” The emergence of subconscious wordless ideas through preconsciousness to consciousness defines in a sense the way one discovers meaning—by naming or by trying to name one’s thoughts.
The steady movement between conscious verbal thought and subconscious wordless thought might be analogized to a child’s see-saw. Successful composing might then be equated with the establishment of some kind of balance between those two kinds of thinking; and the fulcrum or point of stability might be equated with preconscious thought, the mediator between consciousness and subconsciousness. And, as on the see-saw, the closer to the center (preconsciousness) one remains, the more easily the see-saw maintains a balance, an equilibrium. John Gazzaniga, a brain researcher, speaks of preconsciousness as the place where hemispheral “cross-talk” occurs, where we can, in a sense, pause in the midst of both left and right brain “conversations.” What may also be important about this analogy is that both left and right brains are joined through that middle point. They are connected.

Another aspect of focusing that would appear to jeopardize the kind of balance I’ve just mentioned is the “trying too hard” syndrome. This common beginning writers’ problem has two probable sources. One, a kind of exaggeration of the “I’m trying to find the right words to fit this idea,” occurs when students prematurely insist on labeling that subconscious wordless image as it tries to make its way into consciousness. Instead of allowing the thought to reveal itself fully enough to “earn” a label, they rush to fit it to words. The second source of trouble is the flip-side of the first. It may be attributed to trying too hard to hold on to the original idea in consciousness, that is, trying to depend on logical, analytic methods of examining it; those methods students often recognize for themselves are uninteresting, unoriginal, unmotivating, and frustrate their “getting on” with the paper. Both of these problems disturb the cognitive balance, both weighing down heavily on the left brain, on consciousness.

It would be an oversight not to look also, though briefly, at the inability to focus. Why are so many beginning writers unable to keep their writing subjects in view? Problems may arise from poor motivation, lack of knowledge, or the presence of extraneous emotional concerns. This kind of unfocusing, then, does not seem entirely a cognitive dysfunction. If, on the other hand, the writer is focusing on some subconscious image, he or she may occasionally become carried away by a succession of images, which eventually become fantasies. At this point, the
writer would rather not go back to a conscious focus on the writing task's subject. These two problems also indicate the need for a better balance between relaxation and attention.

**AMBIGUITY**

Generating ideas or information for the writing task depends, in part, on unfocusing or deliberately bringing about ambiguity. J. P. Guilford was among the first to stress the so-called "creative person's" higher tolerance for ambiguity, a willingness to remain suspended in a chaos of wordless thoughts and images. Other studies in cognition have concluded that those less comfortable with mental chaos are apt to choose one image very quickly, perhaps too quickly, from the confusion of images and to begin at once to work consciously—moving back to the analytic left brain—to *make* that image work. This concept, part of the larger theory of cognitive dissonance, holds that such people depend largely on processes of logic and reason to force certain images and ideas into more effective verbal constructs. And, though these constructs *are* often effective, researchers in creative thinking are quick to point out that the longer one is able to tolerate cognitive chaos, the better one's chances for initially choosing a more easily workable and interesting image or idea to contribute to the task at hand. Or, as Gordon succinctly puts it, "Ultimate solution to problems are rational; the process of finding them is not." 1

Remaining in a state of ambiguity where indistinct images and wordless thoughts proliferate may again be likened to remaining at that fulcrum between left and right brains, between consciousness and subconsciousness. Seeing this point of balance between left and right brains as a fulcrum helps us to understand what brain scientists think occurs in preconsciousness. Lawrence Kubie asserted the importance of preconscious processes for creative thought several years ago. He believed preconsciousness to be that place between logical and a-logical thinking where ideas were reshuffled, compared, and amalgamated in original ways:

In the preconscious use of imagery and allegory many experiences are condensed into a single hieroglyph, which expresses in one symbol far more than one can say slowly
and precisely, word by word, on the fully conscious level.\textsuperscript{14}

The ability to bring about ambiguity intentionally is also one on which Gordon and his synectic think-tank associates at Harvard rely heavily. Gordon points out that "extreme formlessness immediately precedes the emergence of the [new image]."\textsuperscript{15} But what does this have to do with the composing process or with pauses in particular? The answer seems obvious. A break in such a consciousness-demanding activity as putting words on paper indicates that purely conscious thought is taking a "time-out." This may help to explain what many call taking a "breather," a time to instigate, intentionally or unintentionally, preconscious thought, to unfocus so as to better accommodate refocusing.

\textit{MEMORY}

The deliberate ambiguity-making processes of preconscious thought also occur as a necessary prerequisite for successful memory scans. And memory scanning is, of course, a necessity in generating ideas and information for writing. Says Charles Stallard:

\begin{quote}
[The writer begins with a search of] his storehouse of knowledge, concepts, attitudes and beliefs, selecting those that have the potential to contribute to the topic area of his message. \ldots The initial search of cognitive structure promotes a chain of events. The result is a series of searches, each going deeper and becoming more thoroughly exhaustive of the potential within the changing cognitive structure.\textsuperscript{16}
\end{quote}

Many researchers have come to believe that successful cognitive searches must employ effective search models. In the left brain, search models are believed to be primarily verbal, since the information stored there is verbal. Our conscious search models help us find the right words, remember grammatical rules, and arrange syntactical units. But because the right brain is primarily non-verbal, the search model employed there must also be non-verbal. Gordon explains that the subconscious, or right brain,
contrary to what brain scientists earlier believed, operates, like the left brain, as an analyzer. But it analyzes differently. "It analyzes on the basis of imagery because it is dealing with so many potential bits of information that it can only organize by forming images. . . . You can't evoke creative subconscious activity unless conscious verbal thinking is converted into an image," and due to the impressionistic nature of the blurred image, Gordon and Poze point out, the search model "has more analogical potential than a clear precise one."17

But again, establishing that balance between conscious and subconscious thought is important in activating such imagistic search models. One must be, according to Gordon and Poze, "in charge of supporting subconscious activity which develops a visual, metaphorical haze and transforms [the] previously precise image. If the image had been kept perfectly intact, it would not have been the basis for successful scanning in the subconscious because nothing could have been found except another image [that was exactly the same]."18 This means the writer must be on guard against possible conscious interruption of the subconscious memory scan, in which case the non-verbal search model will probably be lost.

We may briefly summarize what may also account for pauses in the writing process, then, as breaks in purely conscious thought that allow the writer to construct images in preconsciousness, and then to employ those images in subconsciousness, where they become even fuzzier, as search models for new information. Such imagistic search models, as Guilford explains, make it possible for us to retrieve information "aside from responding to only those cues with which it was learned."19 But the right brain search model is by nature fairly unpredictable, since, as the image blurs and becomes increasingly formless, "feelings and empathy replace the visual image."20

The unpredictability of what the search model will find can be frustrating as well as rewarding. Much would seem to depend, as mentioned earlier, on one's patience. But also importantly, much depends on how flexibly information was originally classified and stored, that is, how easily the search model can discover useful information in several neural storage sites. Encoding flexibility means great decoding flexibility, and consequently an in-
crease in the odds for discovering information with fewer scanning attempts.

Moreover, pausing may result from the failure of short-term memory, which is generally thought to involve primarily verbal, conscious thought processes. As Colette Daiute points out, "Because so much is going on in memory during writing, and since writing is slower than speaking or reading, the recoding units may be smaller than during the other language behaviors." Similarly, Charles Britton remarks:

What has just been written, and what is still to be written, can only be held in the short-term memory to a very limited extent. For someone just learning to write, the number of words in the short-term memory may be even fewer. . . . If . . . the teasing out of the thought becomes particularly difficult, all the resources of the short-term memory may have to be concentrated on a few words. That is when a writer may lose track of his thoughts, omit, or repeat words, disconnect or blunder in some way.

Even good writers, however, experience the frustration of beginning to write a well thought-out sentence and forgetting the middle or end of it. The short-term memory can hold only a small amount of information at any one time, and thus may have to depend on reconsciousness as a kind of repository for information retrieved from subconsciousness but not sent on to the conscious short-term memory for verbal processing.

Focusing, the purposeful employment of ambiguity, and successful memory searches all seem to depend, then, on a kind of rhythmic movement between consciousness, preconsciousness, and subconsciousness. This idea has been suggested before, though with a much different emphasis. Ross Winterowd was among the first to claim that "the fluent writer is a hemisphere hopper." But the kind of rhythm of which I'm speaking is not so much a matter of moving back and forth between brain hemispheres, as an ability to stay in between, to remain in a kind of "holding pattern" where the cross talk of both conscious and subconscious thought can be overheard. Preconsciousness is that
state of remaining in between. It is no doubt because we can remain at this kind of equilibrium that we are able, as Flower and Hayes say, to "juggle" those complex constraints writing demands. And perhaps we may even discover further that the better one's balance in this sense, the more constraints one can juggle, and the more smoothly.

This theory of preconsciousness as the balance point between the brains—the kind of thinking I'm suggesting accounts for much of the time spent pausing—differs from earlier theories of brain hemispheric functions during composing. Until recently it was assumed that we simply needed to teach students, if such a thing is possible, to work more in one brain or the other. This notion was based on the belief that we simply leap from one brain to the other as we compose. Much of this mistaken emphasis on brain lateralization of "hemisphericity" may be explained as the result of the nature of early brain research. Since most of those early experiments were performed exclusively on patients who had had one hemisphere or the other removed, or had had them surgically separated, naturally one brain hemisphere or the other could be shown to "dominate."

The confluence of left and right brain thinking that researchers now believe occurs in preconsciousness is, I think, a subject that deserves and is receiving closer scrutiny, and such researchers' findings may soon give us more explicit information about what actually goes on as a writer pauses.

It is most helpful, too, to understand this idea of one's "thinking" rhythm in the larger context of one's "thinking-writing" rhythm. Sondra Perl concludes in one protocol study, for instance, that students' over-concern for correct working and mechanics "interrupts so often and to such a degree that it breaks down the rhythm generated by writing. When this happens, students are forced to go back and recapture the strands of their thinking once the editing operation has been completed." Such a premature concern for editing, then, seems to undermine a student's ability to remain focused on what he or she is trying to write, which undoubtedly accounts for many beginning student writers' frustrations with writing.

This thinking-writing rhythm, though naturally not the
same for all writers, is one writers acquire with practice and gradually internalize. That is, by experiencing it often enough, they know what it feels like to slip into it, and are then better able to aim for it deliberately as a way of more easily facilitating effective writing. Many good writers, maybe even writing teachers, undoubtedly take their own composing rhythms for granted and, consequently, may not realize that developing writers have yet to understand how to find a balance between such diverse tasks as generating ideas and assessing their relevance, between holding ideas in one's memory and translating and recording them into verbal constructs, and between thinking ahead to new strategies while at the same time remembering what has gone before, and writing itself. Pauses, in short, indicate the balance upon which the rhythm rests has tilted, and all the energies have shifted toward thinking.

It also seems reasonable to assume why—if much of the thinking that goes on in pauses is not “conscious”—students are unable to verbalize to protocol analysts exactly what has been going through their minds in these pauses. As mentioned before, subconscious and preconscious thought do not rely primarily on verbal symbols. Therefore, protocol analysis does seem to have its drawbacks in assessing accurately the content of some components of the composing process. Also, if writers must speak aloud as they compose, how can those writers really be said to be writing “normally?” The added constraint, a very consciousness-demanding one, of having to verbalize aloud what one is thinking can not and should not be likened to the way we ordinarily write. And what effect might such thinking aloud have on a writer's ability to pause, uninterrupted, in preconscious thought? But, as Flower and Hayes admit, “typically, protocols are incomplete since many processes occur during the performance of a task which the subject can’t or doesn’t report;” Flower and Hayes go on to say that protocol analysts are allowed only glimpses of the underlying mental processes that take place during composing, but that their task is “to infer the course of the process from these brief traces.”

Perhaps it is time now to begin complementing the protocol analysts' reports with more of the findings of brain researchers and those involved in psychological studies of creativity, as well as with writers' discussions of their own composing pro-
cesses. (About the latter, see for example Bertagnolli and Rackham's *Creativity and the Writing Process.*) And perhaps it is also time to begin experimenting with applications of these findings in the classroom. Maybe we can start by more keenly observing students' composing processes and by more willingly advising and suggesting changes in those processes.

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NOTES


5 Pianko, "A Description," p. 10.


17 Gordon and Poze, p. 6.

18 Gordon and Poze, p. 4.


20 Gordon and Poze, p. 8.

21 Colette Daiute, "Psycholinguistic Foundations of the Writing Pro-


