

Temporality and the Process of Written Composition

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Abstract

After a discussion of the need for objective research on the process of written composition, an experiment is described which investigates their process by means of a technique simple enough to be applied in the classroom. Writers were timed under two conditions: writing graphemes where no thought was required, and writing a short composition. Results indicated that two composing styles could be discerned: one which was relatively fluent and did not require much thought time over mere writing time, and the other which was significantly slower, requiring comparatively greater thought time. No direct relationship was found between these composing styles and the quality of text produced, as assessed by competent, independent judges. Implications of these findings for teaching are discussed, and suggestions offered for further research.

In E.F.L., much has been published on the subject of native language habits, but usually with reference to interference and facilitation in the language learning process. Indeed, although the validity of the Contrastive Hypothesis is now seen as considerably more limited than had originally been expected (Wilkins, 1982), contrastive studies of native and target languages still form part of the essential professional armoury of a whole generation of E.F.L. teachers. However, although being sensitive to these cross-linguistic differences which influence certain areas of student performance, many language teachers may overlook the more holistic implications of native language performance. A very simple example of this is where a student may not be a highly articulate, or fluent, or forthcoming speaker in his native language and yet, in the foreign language class, is required to be just that, in a context far more demanding than that of his normal native language encounters. When we turn to writing, teacher-awareness of the influence of such characteristic native language behaviour patterns becomes even more remote. This situation is not surprising when viewed against the fact that, even within the Context of the native language interest in writing, at the level both of research and teaching, has tended to focus on the written product itself. For evidence of this, one has only to consider the plethora of disciplines dealing with different aspects of text analysis: literary criticism, stylistics, discourse analysis, rhetoric. Until fairly recently, the process of writing, or how the writer actually approaches the task of writing, has not enjoyed the same degree of systematic study, so that virtually no organized body of information is available on the habits, preferences, attitudes and strategies of individual writers vis a vis the writing process and how this affects the end product.

A recent, informal study which deals with this very subject does, in fact, yield interesting insights. This was conducted in the form of a questionnaire on attitudes to writing administered to the entire academic staff of University college, London (Lowenthal and Wason, 1981). Those who replied to the questionnaire seemed to fall into two radically opposed groups: those who loved writing and those who hated it. (Apparently it is an activity to which no one professed himself neutral!) Further revelations by the respondents to the questionnaire showed that those who enjoyed writing seemed to use the process as a means to creativity, during which new ideas are born and already existing ones become clearer. Those who disliked writing generally reported a more planned approach where their ideas were already crystallised and the details worked out before they started the composition proper. Respective composition methods of the two groups seem to uphold this polarity, with those having positive attitudes to writing claiming a tendency to write out complete drafts without stopping to check or revise as they write, and with the negative group apparently editing and monitoring as they proceed. What the study unfortunately ignores is just how much subsequent editing is required by the respective approaches. Does one approach, for example, lead more directly to an acceptable standard in the finished text than the other? Obviously, the study is highly subjective, resting as it does on the retrospective introspections of those various academics who were sufficiently interested to take the time and trouble to reply to such a questionnaire. Nevertheless, assuming a more stringent research method, empirical questions which seem suggested are: ⁽¹⁾ would such dichotomies in composing styles be found in writers in general? and ⁽²⁾ assuming they are, is there any relationship between composing style

and quality of output? These seem to be questions fundamental to the teaching process, whether within the context of the native language or the foreign language.

The key expression just used was "a more stringent research method". For such a requirement, the more formal studies have to be scanned for a suitable means of assessment. Since the descriptions of the two composing styles rest basically on how fluently the writer writes, an obvious approach would be based on measures of writing fluency. In spontaneous speech, studies based on pausing (i.e. where the speaker is **not** speaking) have yielded significant insights into the relationship between planning and fluency, the thesis being that such gaps in the articulatory outflow are taken up with cognitive activity directed at planning subsequent stretches of the utterance (Goldman Eisler, 1968). It would not seem unreasonable, therefore, to adopt a similar approach in the study of writing. In fact, studies that have done so are open to certain criticisms on procedural validity. For example, one team had subjects verbalize aloud about their thoughts as they paused in the course of writing (Flower and Hayes, 1981). This seems a somewhat artificial procedure, performance at which may, in itself, be a confounding factor in the interpretation of results. In addition, it overlooks the fact that not all pauses as they occur naturally are of sufficient length to allow for introspective analyses. More appropriate seems to be Matsuhashi's technique (1981) of videotaping and timing writers in order to determine the length of pauses. Again, however, certain dissatisfaction make themselves felt. Thus, apart from including all pauses regardless of length occurring before sentences, pauses at all other locations were included for analysis only if they lasted for one second or longer. Goldman Eisler, (1968) has, however, shown that, in spontaneous speech, pauses of 250 milliseconds and upwards have significance for cognitive planning. By setting one second as the shortest pause time to be studied, it would seem that much of the evidence of cognitive planning is being lost. This wastage is all the more striking in the light of Matsuhashi's own statement that 91% of the pause times between words were actually less than half a second. Herein, however, lies a very basic procedural problem. What is to be considered a pause in writing? The speed of operations in speech is such that a break of 250 milliseconds does constitute, on an oscillograph, a clear-cut gap in the flow of sound. In writing, the speed of operations is slower, and even to move across from the end of one word to the beginning of the next - to say nothing of moving from one line to another, or from one page to another - takes time. There is the strong possibility, therefore, that even in the normal, fluent writing process, the time taken to move from one word to the next may be sufficient to effect some cognitive planning. The situation becomes all the more complex when it is taken into account that, even within words, opportunity for cognitive planning may be created simply by slowing down to a degree not possible in speech. It is obvious, therefore, that an analysis based on pausing as a measure of writing fluency will not tell the whole story, particularly if the lower limit of pause time to be studied is set at a duration which is relatively easy for the experimenter to cope with (say, as in Matsuhashi's study, one second). On the other hand, finer measures - covering both shorter gaps in the flow of writing and actual on-line writing rate - would undoubtedly lead to a very time consuming and unwieldy analysis. Although it must be admitted that, for a thorough study of the writing process, such considerations would have to be accommodated (particularly where interest is fo-

cussed on locational implications of pausing), it seems, nevertheless, reasonable for a preliminary study to seek a simpler procedure. The experiment reported below rests on this very idea. In addition, the experimental method provides an easily-administered technique for classifying writing students, not requiring sophisticated laboratory conditions and so well-within the scope of the classroom teacher.

The Experiment

Hypotheses

- I. That, taking measures of temporality in composing as an indicator of composing style, writers will be dichotomised into two groups corresponding to the self descriptions reported by the academics in the Lowenthal and Wason study (1981). Specifically, this involves the prediction that one group will write quickly, without showing much pausing, while the other group will be slower, interrupting their composing with a relatively greater degree of pausing.
- II. Assuming the validity of the first hypothesis, that there is a relationship between the process styles in composition and text quality.

Subjects

Nine female students comprising a class on Essay Writing in the Department of English Language and Literature, University of Kuwait acted as subjects in this experiment. All were native speakers of Arabic studying for a B.A. in English and were in the third year of their studies in the department, after having passed either the preliminary Placement Test or Remedial Courses designed to bring them up to the required entrance standard. Since the experimenter was the course instructor, the experiment was conducted late on in the semester, by which time a high level of rapport existed between students and teacher. This was felt to be important to allow the subjects to be as relaxed and natural in the experimental situation as possible. To further ensure this, it was carefully stressed that the experiment was in no way connected with students' grades or academic work in general.

Method

Subjects performed the experiment in turn, each working alone in the room with the experimenter. Paper was supplied, but subjects used their own pens. They were first required to write down the names of the numbers in English, orthographically, across the line (i.e. one two three four etc.), as if they were writing normal prose. They were instructed to write at a normal comfortable pace, making no attempt to speed up or slow down. When they had understood, the experimenter said "start" and, timing by means of a stopwatch, said "stop" after exactly one minute. It was then possible to calculate the number of seconds each subject required to write one grapheme (letter). In this way, a measure was obtained levelled purely at the speed of the motor skill of writing, with no cognitive component involved.

Subjects were then given a 3"x4" card face down on the desk and told that on the other side was a topic about which they would be required to write. On being told to do so, they were to turn over the card and, as soon as they had read it, were to lift their pen, at which point the experimenter would start timing them. When they felt they could write no more on the topic, they should put their pen back on the desk. Once again, it was emphasized that they should write at a speed which was natural to them, there being no 'advantage' to writing faster or slower than they usually did. When the instructions were fully understood, the signal was given to turn over the card. On it was written:

Imagine that you have met a man from Mars. On his planet there is no such thing as **milk**. write a short composition in which you try to explain and describe to him what milk is. Write at your normal, comfortable speed.

When each subject lifted her pen, the timing of the experiment by means of a stopwatch began, and ended when the subject replaced her pen on the desk.

Once again, the number of seconds required per grapheme was calculated for each subject, the measure this time incorporating the thinking time inherent in the composing task.

Findings

I. Composing Style:

Table I shows the number of seconds required per grapheme for the two conditions: writing only and composing (or writing plus thought). As can be seen, the mean time per grapheme required for composing was almost double that required for writing-only. Furthermore, standard deviations show that times for writing-only indicate much less variability within the sample than for writing plus thought. It would appear, then, that the skill component of writing was conducted at a fairly uniform rate by these subjects. As soon as the element of thought is introduced into the task, individual times show a much wider degree of scatter. It may be of interest to note that the times recorded here for the writing-only task were considerably lower than those reported by Wing (1979). His subject achieved on average 4 graphemes per second, while our subjects' average was 2.32. Although it may be tempting to attribute this relative slowness on the part of the present subjects to interference from their native language script habits, it should also be borne in mind that these subjects were, after all, third year university students, well-practised in the mechanics of English handwriting. A more likely explanation rests on the nature of the experimental task. Our subjects, in writing the names of the numbers, performed a handwriting task involving a wide range of graphological operations. Wing's subjects were asked to write single letters or single words over a number of trials. It is not surprising, therefore, that in repeating such a limited range of operations, his subjects acquired some speed. Thus the rate at which graphemes are formed on paper by a writer, at

the purely mechanistic level of merely recording characters, is a measure which does not remain constant regardless of task. Where the cognitive load of composition is added to the graphological operations, then it seems likely that such a sensitive measure would be affected by the ebb and flow of inspiration. An on-line study of the speeding-up and slowing-down of grapheme production was beyond the scope of the present investigation but is one which future researchers may find worth attempting.

The figures obtained in the present experiment indicate that, over the whole composition, average times required per grapheme were about double those required merely to write down letters. Column 3 in Table I shows the differences between times for writing and times for composing, this difference being a temporal measure of the subject's propensity to suspend or retard the flow of graphological operations in order to think. It is a much more variable measure than merely recording graphemes, and inspection of the data reveals a clear-cut division of the subjects into two groups. This is shown in the bar diagram of subjects' thought times in Figure I. The data were further subjected to statistical analysis. The variances of the two groups were tested for homogeneity. With $F = 5.846$, $df = 4.3$, significance was not reached. The assumption of common variances could therefore be made, allowing the application of a t-test using the pooled variance method for small samples (Chase, 1967). With $T = 10.52$, $df = 7$, this allowed rejection of the null hypothesis ($P < .001$).

Table 1

Seconds/Grapheme for each subject under two conditions			
Subject	1 Condition I Writing Only	2 Condition II Writing+Thought	3 Difference (=Thought)
Sa	0.44	0.59	0.15
He	0.41	1.05	0.64
Am	0.47	1.09	0.62
Kha	0.33	0.84	0.51
Ma	0.44	0.66	0.22
Di	0.39	1.02	0.63
Re	0.45	0.95	0.50
Fa	0.49	0.66	0.17
Ha	0.43	0.61	0.18
	$\bar{X} = 0.43$ $s^2 = 0.044$	$\bar{X} = 0.83$ $s^2 = 0.192$	$\bar{X} = 0.40$ $s^2 = 0.191$

Tables and Figures

Tables

1. Seconds/Grapheme for each subject under two conditions.
2. Judges' Scores for text Quality.
3. Text Quality vs. Thought Time.

Figures

1. Composing Fluency
2. Composing Fluency and Output Quality.

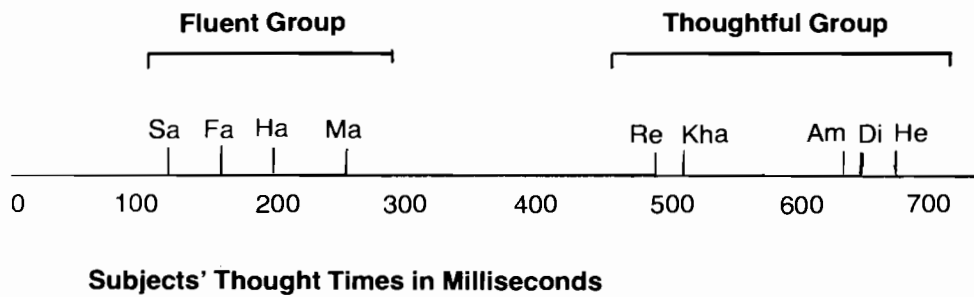


Figure 1 Composing Fluency

It is, therefore, felt that the data obtained do provide evidence for believing that the writers in this experiment fall into two distinct groups as regards the temporal measures underlying their composing process styles and that these groups correspond to the Lowenthal-Wason dichotomy. The first hypothesis is, therefore validated.

II. Composing Style and Text Quality

In view of the establishment of the two distinct types of writer from the basis of their composing fluency, it next became reasonable to test Hypothesis II, namely that there is a relationship between composing style and text quality. On both common sense grounds, and from the findings of Goldman Eisler (1968) on spontaneous speech, a further experimental prediction could be made, namely that those subjects who exhibited high thought times would produce texts superior to those produced by fluent subjects who did not require much additional time for thought.

To investigate this possibility, the unedited texts of the compositions were typed out and given to two independent judges, unaware of the goals of the experiment, to read and assess. These judges were experienced teachers of writing in the English Department at the University of Kuwait, accustomed to performing similar tasks as part of their normal teaching duties. They were instructed to give each paper one score out of ten for the quality of the language used and another for content (i.e. relevance of points put forward, originality of ideas, coherence, organisation). Judges' scores are presented in Table 2. As can be seen, correlations between judges' scores are significant for both measures ($P < .01$ in both cases). In view of this, comparisons between thought time and text quality are based on the combined scores of the two judges. Table 3 shows the correlation coefficients obtained for thinking time and quality, whether the latter be of language, of content, or of these two measures combined in an over-all assessment. In no case was a significant correlation established. Figure 2 shows thought times plotted against scores for quality and indicates clearly that both groups' scores on quality range from very high to very low.

Table 2
Judges' Scores for Text Quality

Subject	Score for Language		Score for Content		Combined Scores	
	Judge A	Judge B	Judge A	Judge B	Judge A	Judge B
Sa	4	6	4	6	8	12
He	6	8	9	9	15	17
Am	6	6	4	3	10	9
Kha	3	3	4	4	7	7
Ma	8	7	8	6	16	13
Di	1	2	1	2	2	4
Re	2	3	3	3	5	6
Fa	2	4	2	2	4	6
Ha	6	8	5	6	11	14
	r=0.88 p<0.1		r=0.93 P<.01		r=0.97 P<.01	

Table 3
Text Quality vs Thought Time

Subject	Thought Time (secs)	Text Quality		Over-all
		Language	Content	
Sa	0.15	10	10	20
He	0.64	14	18	32
Am	0.62	12	7	19
Kh	0.51	6	8	14
Ma	0.22	15	14	29
Di	0.63	3	3	6
Re	0.50	5	6	11
Fa	0.17	6	4	10
Ha	0.18	14	11	25
		r=-0.12 n.s.	r=0 n.s.	r=0.02 n.s.

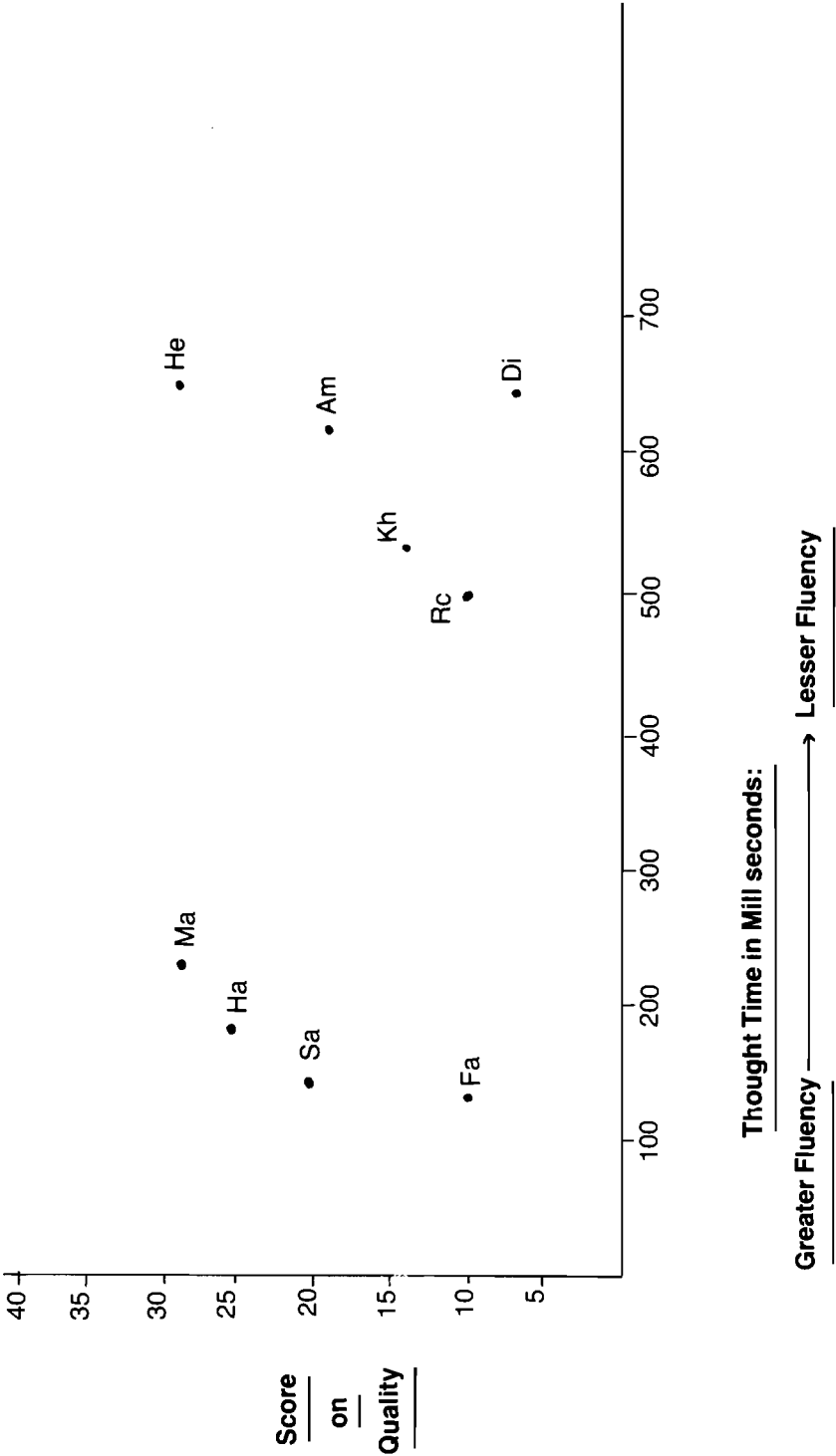


Figure 2 Composing Fluency and Output Quality

Thus the data do not support the view that writers who inject a comparatively high degree of thinking time into the task of composing thereby achieve a superior end-product over those writers who are relatively fluent. Hypothesis II must, therefore, be rejected.

Discussion

These findings seem to open up several lines of thought.

1. Teachers involved in writing, whether in the context of the native language or the foreign language, have traditionally been concerned with scales which separate writers into skilled vs. novice, or expert vs. remedial, and have tailored their instruction to fit these typologies. Many of these teaching approaches rest on free-writing heuristics such as "Start writing and keep writing", "Don't go back to revise or re-world" (Elbow, 1973). Others rest on more conventional procedures like planning and outlining. Whichever approach is favoured, the basic assumption seems to be that it will prove effective with all writers. The findings presented here provide grounds for disputing this. In fact, particular teaching methods may 'go against the grain' with some writers whose writing is of acceptable standard already. Such may be the case, for example, where a competent, fluent writer is urged to produce a plan of what he is going to write before embarking on the essay proper, or where an equally skilled, 'thoughtful' writer is enjoined to follow such advice as Wason (1980, a and b) gives his students. He feels that "the important thing in writing is to keep going" and suggests that the writer should initially write down his thoughts as they occur to him without editing or monitoring them. It now seems indicated that some kind of preliminary classification of writers may be worth doing before advocating any particular approach across the board in writing instruction. Indeed, the efficacy of the respective types of instructional advice applied to writers of naturally different composing styles is an area calling out for objective, controlled investigation.
2. By design, this study was based on a composition situation in miniature. Although this required the writers to attend to matters of lexis, syntax, ideas, sequence etc., they were not confronted with the rhetorical problems inherent in more extended composition. What seems to be pinpointed here are very basic individual differences attached to the recording of thoughts on paper. A further question, then, needs to be answered, namely, how far these tendencies would be upheld in the context of long compositions.
3. The writings obtained in this study could be considered as first drafts. Nothing is known, therefore, about the revision practices of the two types of writers and this would seem to suggest some interesting questions. For example, does the fluent writer automatically operate on the basis that he will revise his work and, if given the opportunity to revise, how many revisions will he make? Wason 1980 reports that after his "uncritical exteriorisation of thought", he undertakes a second separate stage of critical editing, while Lowenthal (1980) reports an editing through-

ness that extended to his making six drafts of a book he was writing. On the other hand, Hartley (1980) claims that Wason's technique is idiosyncratic, a view apparently upheld by some of the participants in the Wason-Lowenthal survey. These writers claim that, when they revise a piece of writing, they make it worse, a statement which might lead to the speculation that they fall into the group of slow, careful writers who edit and monitor as they go along and whose first draft is already polished and of high quality.

4. A more basic question centres on the relationship between the individual's performance as a speaker and as a writer. All other things being equal, are fluent speakers, for example, also fluent writers, and vice versa? Pausing in speech has been shown to be a feature falling within the area of general expressive behaviour associated with personality types (Ramsay, 1966; 1968) and the idea that composing styles and personality factors may also be related seems irresistible. (Ramsay 1966; 68) has shown that the speech of introverts characteristically shows longer pauses than the speech of extraverts and it is tempting to hypothesize that measures of temporality in writing may also correlate with scores on the introversion - extraversion scale. The introvert, for example, is characteristically described as one who "tends to plan ahead, 'looks before he leaps', and distrusts the impulse of the moment" (Eysenck and Eysenck, 1963). Given the miniaturisation of the concept of future planning as applied in the task of writing, it is not difficult to see parallels between this description and that of some writers.
5. The research method used here was, by design, very simple. As has already been mentioned, the rationale for this lay in its ease of application as a technique whereby a classroom teacher might classify students' basic approaches to writing. As such, it seems to yield the required information. However, such information is, necessarily, limited. Teachers, as well as psycholinguists, may wish to know more about where, and for how long, a writer pauses. Such locational and durational aspects of pauses would be of considerable interest in clarifying the relationship between planning and lexical search, syntactic formulation, concept development etc. in writing. From our earlier discussion, it is obvious that any such analysis must also include measures of the relative slowing down and speeding up of handwriting. A daunting task, but one which seems likely to yield interesting results!

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