# Native and non-native students' interaction with a text-based prompt

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## A R T I C L E   I N F O

## A B S T R A C T

The present study aims to continue in a vein of research which examines the effects of essay prompts on examinees' writing performance by closely investigating 40 student essays produced from a university-wide reading-to-write test. Quantitative and qualitative results of this study show that native and non-native writers at different proficiency levels exhibit variety in their selection of lexical items and propositional material from the background reading. Among other things, it is found that the higher-rated native group outperformed the other groups in their ability to identify topical information and in a better sense of what details from the source text to include. The two non-native groups, although able to locate superordinate propositions of the source text, lack native writers' ability to readjust their selection of material according to the author's epistemological stance. The lower-rated native writers paid little attention to the source text and merely used the substance of the text as a "springboard" to elicit their own opinions in response to the topic. Possible explanations for these results and their implications for writing pedagogy and assessment are also discussed.

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## 1. Introduction

In the past few decades, there has been resurgent interest in assessing writing proficiency through the use of direct tests. Such tests are preferred over the traditional multiple-choice measures mostly

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because they are considered more communicative and authentic in that they require examinees to produce actual writing samples instead of asking them to demonstrate their grammatical and lexical knowledge alone. However, with the increased use of direct measures of writing ability, there have come serious concerns about the reliability and especially the validity of these measures. To resolve the validity issue, a great number of studies have attempted to identify and investigate the factors apart from writing ability which may influence examinees' writing performance. (See, for example, the reviews by Charney, 1984; Hamp-Lyons, 1990; Huot, 1990a, 1990b.)

Of the factors that have been researched empirically, great attention has been paid to the prompt variable. Research in this area has attempted to investigate the effects of prompt variations on scores and textual features of the essays. In his review of the large body of literature on this issue, Huot (1990b) identifies three areas where the prompt variable has been manipulated or controlled as a means of observing its effects on ratings and written products. These three areas are discourse mode (e.g. Brown, Hilgers, & Marsella, 1991; Carlson, Bridgeman, Camp, & Waanders, 1985; Cumming et al., 2005; Nold & Freedman, 1977; Plakans, 2008, 2010; Quellmalz, Capell, & Chou, 1982; Reid, 1990), rhetorical specification (e.g. Brossell, 1983; Hult, 1987; Redd-Boyd & Slater, 1989; Yu, 2009), and wording and structure of writing prompts (e.g. Brossell & Ash, 1984; Hoetker & Brossell, 1989; Smith et al., 1985; Yu, 2009).

Of particular relevance to the present study is an emerging strand of research which has identified some relationship between the characteristics of writing prompts and textual features of writing by different groups of writers. In a study investigating the effects of three different prompt types: an open-structure response, a response to a single text, and a response to three texts on the same topic, Smith et al. (1985) found that the structure of the prompt appeared to make a difference in the quality, fluency, and total number of errors in essays composed by students at different writing proficiency levels. Reid (1990) analyzed a corpus of TWE essays and found that there were significant quantitative variations on several features of student texts written across different topic types and by writers from different language backgrounds. In a similar vein, Cumming et al. (2005) compared 216 essays written by 36 examinees for independent essays (i.e., the TOEFL Essay) and integrated reading–writing and listening–reading tasks (i.e., the TOEFL iBT). Their results not only demonstrated that the essays produced in response to these two prompt types differed significantly in lexical complexity, syntactic complexity, rhetoric and pragmatics; the results also showed some interesting correlation between language proficiency and examinees' verbatim uses of source texts. Compared with the most proficient writers, who tended to summarize the substantive issues raised in the source text, for example, the midrange writers were reported to rely heavily on paraphrases or verbatim phrases from the source text.

Research into the effects of the prompt variable has investigated not only the written products but also the writing processes of test takers when completing various writing tasks. Weasenforth (1993) showed that particular textual qualities in protocols, such as the choice of vocabulary and the ordering of propositional material in texts, appeared to be promoted by prompt differences. In a series of studies focused on reading-to-write tasks, Plakans (2008, 2009, 2010) and Plakans and Gebril (2012) analyzed the think-aloud protocols, post-writing interview data and written products from groups of L2 writers. Among other findings, their studies interestingly revealed how, despite individual differences, reading-to-write tasks could engage these L2 writers in the sub-processes such as discourse synthesis and mining texts.

Although research examining textual differences in students' essays or thinking processes due to prompt variations has helped us better understand how prompts affect writers, many of these studies have yielded inconclusive, and sometimes even conflicting, results. As Hamp-Lyons (1990) notes, "the 'topic variable' is itself a complex of variables" (p. 74). Until these variables are systematically identified and investigated, the complex interactions between prompts and writers may always remain unclear. The need to carry out more studies that would identify topic-related performance differences cannot be overemphasized.

The purpose of this study is to continue ongoing research on the effects of task/prompt on examinees' writing performance. However, instead of manipulating the task/prompt variable as most of the previous studies have done, this study takes a closer look at students' writing resulting from a reading-to-write test, with a specific focus on how this type of writing task may affect native and non-native

writers of different writing abilities in constructing their test essays. The reading-to-write task has been chosen for this study for three reasons. First, although a number of investigations have claimed that reading-to-write tasks are very common in the field of academic writing (e.g. Barks & Watts, 2001; Campbell, 1987, 1990; Cumming et al., 2005; Johns, 1991; Leki & Carson, 1997; Weigle, 2004) and the process itself has direct relevance to the development of critical literacy (e.g. Flower, Stein, Acerman, Kantz, & Peck, 1990; Leki & Carson, 1997; Plakans, 2009; Plakans & Gebril, 2012), there are relatively fewer large-scale studies which have investigated examinees' writing performance related to this type of task. Second, of the studies which have examined the relationship between examinees' writing performance and the reading-to-write tasks, the majority have focused on the *quantity* of the use of the source text rather than the *quality* of source integration (cf., Plakans & Gebril, 2012). Additionally, while some studies have looked at the differences in the use of the source text by students at different proficiency levels, very few studies have examined the differences in the use of the source text by L1 and L2 writers.

To address the question of how a test-oriented reading-to-write task affects the writing performance of native and non-native English speakers with different writing abilities, two areas of investigation have been selected for this study: (1) the use of lexical items from a given prompt and background reading in the examinees' writing, and (2) the use of propositional material from a given prompt and background reading in examinees' writing. These two areas of investigation are considered important because previous studies on the effects of source texts on students' writing (e.g., Campbell, 1987, 1990; Cumming et al., 2005; Frodesen, 1991; Plakans, 2009; Plakans & Gebril, 2012; Spivey, 1983) and those on the relationship between reading and writing in terms of summarization or recall of text (e.g., Connor, 1984; Connor & McCagg, 1983, 1987; Johns & Mayes, 1990; Winograd, 1984; Yu, 2009) have shown varied and interesting patterns of source text use in essays by native and non-native writers or writers at different proficiency levels. In addition, the two areas under investigation also represent the exact abilities (i.e. synthesis writing ability and analytical reading ability respectively) required to successfully accomplish this kind of writing task.

## 2. Methodology

### 2.1. Database

The database for this study[1] is 40 student essays which were written for the University of California Subject A Examination in May, 1992. The Subject A Examination (now the UC Analytical Writing Placement Examination) is an exam required of all students entering the University directly from California high schools. The exam consists of a background reading text (700–1000 words) and a prompt based on the text. When taking this exam, students are allowed two hours to read the text and write an essay in response to a given prompt.

The background reading text for the 1992 Subject A Examination is a 996-word text adapted from an essay, *Some Close Encounters of a Mental Kind*, by Stephen Jay Gould. In addition to the background reading text, the whole reading package includes a brief introductory note at the beginning, explains the source and the writer of the text, and furnishes a prompt at the end. This prompt requires students to summarize the reading text and respond to a central argument in the text by drawing on their own experience, observation, or reading. (For the 1992 Subject A Examination, please visit http://www.ucop.edu/elwr/sample1992.html.)

In the Subject A Examination, all the essays are holistically rated by two independent readers on a 1–6 point scale. Each essay then receives the combined score of both raters, with a combined score of 8 set as the minimum score for passing the exam. In cases where an essay receives scores that are two or more points apart or scores of 3 (non-passing) and 4 (passing) from the two raters, a third reading is done.

The 40 student essays used in this study were selected based on the principle of stratified random selection determined on the basis of essay scores. They include 10 high-rated essays (with a composite

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[1] An earlier version of this paper was presented at the 1996 American Association for Applied Linguistics (AAAL) Annual Conference, Chicago, Illinois, March 23–26.

**Table 1**
Mean number of words per essay, standard deviation, and range of words.

| Group | Mean number of words per essay | Standard deviation | Range of words per essay |
| --- | --- | --- | --- |
| HN | 750.7 | 96.05 | 617–888 |
| HNN | 701 | 158.41 | 432–978 |
| LN | 416.5 | 115.77 | 287–616 |
| LNN | 566.5 | 138.94 | 300–800 |

score of 10 or above) written by native English students (HN), 10 high-rated essays (with a composite score of 8 or above) written by non-native students (HNN), 10 low-rated essays (with a composite score of 5 or below) written by native English students (LN), and 10 low-rated essays (with a composite score of 5 or below) written by non-native students (LNN). The mean scores of the HN, HNN, LN, and LNN groups are 11, 8.5, 4.8, and 5 respectively, with the standard deviation ranging from 0 to 0.82.

As the mean scores suggest, the HN group and the HNN group did not receive comparable holistic scores, with the scores of the HN group generally being higher than those of the HNN group. This is due to the scarcity of higher-rated essays which were written by non-native speakers with no more than five years of residency in the US, a criterion which was applied in selecting the ESL essays used in this study.[2]

To increase the generalizability of the results of the study, the first languages of the subjects in this study were not controlled. The native languages of the subjects include Chinese, French, Hebrew, Japanese, Korean, Russian and Vietnamese.

### 2.2. Data analysis

The background reading text with the prompt (hereafter the background reading material) and the student essays selected for this study were all word-processed, with no changes or corrections made to the spelling, grammar, and vocabulary errors in the student essays. To provide more background information about the subjects, the total number of words for each essay and the average number of words for each essay group were calculated. Table 1 shows the results of the mean number of words, the standard deviations, and the range of words per essay for each essay group.

The 40 student essays were analyzed in two stages to address two questions: (1) How do examinees use lexical items from the background reading material? (2) How do examinees use propositional material from the background reading material? At the first stage, the word-processed student essays and the background reading material were compared through the use of a computer program,[3] which, after matching two texts (e.g. the background reading material and a student essay), is able to identify and boldface any two or more consecutive words if they are used in exactly the same form in both texts.[4] With the boldfaced words/phrases as cues, students' essays were then carefully compared to the background reading material at a phrase-by-phrase level by the researcher. Following Campbell (1987, 1990) and modifying her categories and operational definitions of them, examples of students' use of information from the background reading material were categorized as one of the following three types: *quotation*, *mechanical copies*, and *paraphrases*. The category *quotation* is self-explanatory. *Mechanical copies* refer to (1) instances of direct quotations without punctuation marks, or (2) instances where synonyms or synonymous phrases were used for one or two content words. *Paraphrases* involve syntactical rearrangements of the original sentence to a greater extent, such as an active structure

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[2] Five years of residency or less in the US was used as a criterion to select the non-native groups (the HNN and LNN groups) because according to Cummins' (1981) study, some immigrant students begin to approach native speaker norms in cognitive/academic language proficiency after a minimum of five years.

[3] This program was implemented by C programming language and was written by R. Lin and Chien-chung Wu for the purpose of this study.

[4] To find out instances where the lack of matches may occur due to spelling errors in students' essays or changes in referential expressions (e.g. "I" in the background reading text and "he" or "the author" in student essays), all the mapped student essays were scrutinized again by the researcher. These instances were added to cases in which lexical items/propositional material in student essays were considered as borrowed from the background reading and the prompt.

**Table 2**
Borrowing ratios of student essays of the four groups.

| Group | Borrowing ratio | Standard deviation | Range |
|---|---|---|---|
| HN | 9.72% | 0.0708 | 0.98–24.64% |
| HNN | 14.06% | 0.0790 | 3.04–26.06% |
| LN | 9.02% | 0.0763 | 0.97–28.03% |
| LNN | 11.70% | 0.0966 | 3.15–32.95% |

**Table 3**
Frequencies and proportions of tokens of three usage types across the four groups.

| | HN | HNN | LN | LNN |
|---|---|---|---|---|
| Copies | 23 (17.56%) | 44 (38.94%) | 12 (27.27%) | 43 (53.75%) |
| Quotations | 46 (35.11%) | 44 (38.94%) | 11 (25%) | 30 (37.5%) |
| Paraphrases | 62 (47.33%) | 25 (22.12%) | 21 (47.73%) | 7 (8.75%) |
| Total | 131 | 113 | 44 | 80 |

changed to a passive one. (See Appendix B for examples of these three categories from the student essays.)

The examples, which had been categorized, were then tabulated on a tally sheet where the background reading material was broken down into small segments. Based on this tally sheet, the researcher calculated (1) the borrowing ratios of student essays, defined as the number of words borrowed from the background reading material[5] relative to the total number of words in each essay, (2) the frequencies and proportions of tokens of the three usages (i.e. *quotations*, *mechanical copies, and paraphrases*), and (3) the number of students using each text element.

## 3. Results and discussion

### 3.1. The use of lexical items from the background reading material

Table 2 displays the borrowing ratios of the essays of the four groups. Since the borrowing ratio is defined as the proportion of the number of words borrowed from the prompt and background reading text to the total number of words in each essay, the higher the borrowing ratio of an essay is, the less original the essay can be considered. As shown by the results of Table 2, the two non-native groups (the HNN and LNN groups) had higher borrowing ratios than the two native groups (the HN and LN groups). Of the two non-native groups, the borrowing ratio of the HNN group was higher than that of the LNN group. These results suggest that, despite individual variations within groups, as a whole, the two non-native groups, especially the HNN group, relied more on the background reading material in terms of lexical choices than the two native groups.

In addition to the different amounts of vocabulary borrowed from the background reading material, the use of the background reading material manifested itself differently in the texts produced by the four groups. As seen in Table 3, the HN group used proportionately the most *paraphrases* of the three usages. In contrast, the two non-native groups used proportionately the least number of *paraphrases* and large proportions of *mechanical copies*. Of particular interest is the LN group. Although this group used proportionately more *paraphrases* than other types of borrowing – just as its native counterpart group did (i.e., the HN group) – it was also similar to the two non-native groups in that a large proportion of *mechanical copies* or inappropriate borrowings were found in their essays.

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[5] These include the number of words in the examples of *quotations, mechanical copies,* and a few words in the category of *paraphrases* which were used in exactly the same way as the background reading material.

To test the significance of the results in Table 3, we assumed that the token counts are Poisson distributed. Since the sample sizes are small, we used the *E*-test for comparing Poisson means by Krishnamoorthy and Thomson (2004), identified as attaining greater power in such testing scenarios.[6]

Essentially, the *E*-test is set up very similar to a *t*-test where we gauge the standardized difference in the Poisson means, standardized by a standard error of this difference. However, as we are dealing with discrete counts in this case, the *t*-test theory is a potentially poor approximation. We thus follow the standard procedures of the *E*-test to compute the *p*-value based on the distribution theory for discrete random variables (see Krishnamoorthy & Thomson, 2004). The analyses were performed in the statistical package R.

Among other findings, the analyses show that:

- the HNN group used significantly more *mechanical copies* than the HN group and the LN group respectively ($p = 0.005$ and $p < 0.0001$).
- the LNN group used significantly more *mechanical copies* than the HN group and the LN group respectively ($p = 0.007$ and $p < 0.0001$).
- the LN group used significantly the least number of *quotations* of the four groups ($p = 0.002$).
- the LNN group used significantly fewer *quotations* than the HN group and the HNN group respectively ($p = 0.05$).
- the HN group used significantly the most number of *paraphrases* of the four groups ($p < 0.0001$).
- the LNN group used significantly the least number of *paraphrases of the four groups* ($p = 0.005$).

In view of the lexical borrowing patterns of the HN group as opposed to those of the three other groups, the results seem to support the findings from previous research (Britton, Burgess, Martin, McLeod, & Rosen, 1975; Campbell, 1987, 1990; Winograd, 1984) that the ability to use written sources appropriately is developmental, with increased language proficiency leading to fewer mechanical reproductions from a source text. Nevertheless, given that the quantitative results suggest that the HNN and the LNN essays in this study seem to exhibit very similar lexical usage patterns (i.e. the high borrowing ratio and the higher frequency of *mechanical copies* and the lower frequency of *paraphrases*), questions arise as to how language proficiency affects the non-native writers in terms of their rhetorical use of lexical items borrowed from the source text. A closer investigation of the essays from these two groups reveals that a great difference seems to lie in the ways the materials from the source text were integrated in their essays.

Consider, for example, the following excerpts from two essays, the first from the HNN group and the second from the LNN group, both of which exhibit the highest borrowing ratios within each group. Note that although both excerpts are replete with references to the source text, how these references were used and integrated into the essays differ significantly. In Excerpt 1, although the writer shows a high degree of reliance on the source text, he was able to identify the sentences containing topical information, to make necessary syntactic changes, and eventually to combine these sentences/clauses and produce a summary with overall topical coherence. Instead of simply replicating individual sentences/clauses from the source text, this higher-proficiency non-native writer demonstrated the ability to transform and condense the gist of the text. In contrast, the writer of Excerpt 2 seems to have followed what Flower (1981, p. 154) calls the "survey strategy", using the available sources that the writer had collected from the reading passage without adapting them to fit his/her own writing purpose. In the second paragraph, for instance, this writer included several long-copied chunks from the original text. Despite the heavy use of conjunctions, such as "first of all", "in addition", and "moreover", this paragraph does not cohere; the three long quoted sentences were included without being connected

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[6] For an analysis of the token counts data, the standard probability model is that of a Poisson distribution and the hypothesis test of interest is that of comparing Poisson means. Classical tests for such comparisons date back to the early part of the 20th century, and they fall in the realm of conditional tests of which the famous Fishers exact test for contingency tables is an example. However these tests have been found to be less powerful (in a statistical sense), and particularly in our small sample setting undesirable. We thus resorted to a variation on these classical tests called the *E*-test developed by Krishnamoorthy and Thomson (2004, JSPI) as a more powerful alternative for comparing Poisson means.

**Excerpt 1: (HNN, Ber, 5, 5)[8]**

**Stephen Jay Gould**[9] tried to **shake our belief in the credibility of what we see or remember seeing**. He presents us with a striking example from his own life – his "**specially vivid memories of an observation at Devils Tower, Wyoming**." He also brings evidence from an experiment performed by **Elizabeth Loftus**, to strengthen his credibility.

Gould attempts to **shake our belief** through evidence from scientific experiments and theories. He admits that "**the human mind is the greatest marvel of nature**" but, at the same time, is "**the most perverse of all tricksters**." He brings evidence from **Eyewitness Testimony**, by **Elizabeth Loftus**, who after performing an experiment where she showed that students "**compromised later judgment between their actual observation and the largely subliminal power of suggestion in the first questionnaire**," concluded that there are "**three levels of potential errors in supposedly direct and objective vision**," and she identifies them as "**misperception of the event itself, and the two great tricksters of passage through memory before later disgorgement – retention and retrieval**." Her evidence is irrefutable but her conclusion, since it is so bold and somewhat outraging, might be rejected.

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**Excerpt 2: (LNN, Glo, 3, 2)**

**Stephen Jay Gould**, a professor **at Harvard University, attempts to shake our belief in the credibility of what we see or remember seeing** by defining what the certainty is and by explaining the Loftus' book and his experiment. He also introduces to his travel experience which he found the falseness of his memory.

First of all, Gould states "**Certainty is both a blessing and a danger. Certainty provides warmth, solace, security-an anchor in the unambiguously factual events of personal observation and experience**." After reading this statement, I realized how certainty of my mind is keeping me secure. That includes my religion, Christianity, which is the hope of going to heaven after my death. In addition, Gould also writes "**But certainty is also a great danger, given the notorious fallibility – and unrivaled power – of the human mind**." This is so true that many people experience this in their daily lives. Everybody has their conscious mind but sometimes, we tend to ignore the mind and do things to please ourselves or for benefits. Moreover, Gould states "**The human mind is both the greatest marvel of all tricksters**." When I think about this sentence, it makes me wonder how a mind can be different in various situation. In a way, mind can be the wonderful **marvel of nature**. That includes observation and personal feelings about certain things. Maybe the difference beings in the value of one's mind. For example, let's say that my best friend, Laura and I saw the flowers. I like the red roses more than the pink roses but she says that pink roses are better. From that example, we can see that the mind is tricksters and wonderes.

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by any clear controlling concept. Instead, they served merely as springboards for the writer to express her own thoughts on the propositions of these individual sentences. These two excerpts, therefore, exhibit very different textual discourse types as a result of different patterns of integration of the lexical items from the source text: The HNN essay molded the borrowed phrases to fit the writer's purposes and exhibit what Johns (1985) terms "tangled discourse", whereas the LNN essay appear to show little coherence and is composed of three self-contained, "island-like" segments, each headed and triggered by a long quotation from the reading passage.

It is worth noticing that the inclusion of long-copied chunks from the source text was found to be a distinctive and unique textual feature of the LNN essays and seems to have been employed as a strategy by the less-able non-native writers to accomplish the required writing task under the

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[8] The two numbers in the parenthesis are the scores that the essay received from two independent raters on a 1–6 point scale.

[9] The boldfaced words are those which were used in a manner identical to the source text.

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**Excerpt 3: (LNN, Da, 3, 2)**

Student writing

    My second story was going movie with my friend. From the film which is "Power of teaching", **I absolutely know that I saw** it. **The picture in my mind of that distinctive profile, growing in size, is as strong as any memory I possess**. After watching this film, my both eye and mind worked well. My eye saw what happened from the film. And my mind stored and recalling it like computer when I and my friend discuss this film. And my memory is really worked well. From this film remind me to remember my old biology teacher who is living at Vietnam. . .

(Boldface mine)

The corresponding source text

    Now I know, **I absolutely ''know'' that I saw** this visual drama, as described. **The picture in my mind of that distinctive profile, growing in size, is as strong as any memory I possess**. . .

(Boldface mine)

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**Excerpt 4: (LNN, da, 3, 2)**

Student writing

    My third story watched my home video which record from Vietnam. This video also made me to remind where I lived before. From the video, my eye saw my old home, garden, kitchen. And so on. Especially, I really loved seeing my old bedroom. I saw it many time. In my old bed room, my mind really forgotten where is my bed? Where is my desk? Where is my bookcase? This video remind me to answer these question. From this point, my story like Gould's story when he made a western trip. I hope I revisited my old bed room. Because this room made many memory in my mind.

    And now **I still see** my old bed room **in my mind**. **I see it as surely and as clearly as ever, although I know that** my **memory is** really **fase** now.

(Boldface mine)

The corresponding source text

. . .And yet **I still ''see''** Devils Tower **in my mind** when I think of that growing dot on the horizon. **I see it as clearly as surely as ever, although I** now **know that** the **memory is false**.

(Boldface mine)

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two-hour time constraint. Aside from the "thought-provoking" function as discussed earlier, long-copied chunks appear to have been incorporated in some LNN essays for a lexical reason, which may entail struggle and attempt on the part of less-proficient writers to increase sophistication of their otherwise simple language, as shown in Excerpts 3 and 4. These two excerpts were taken from a five-paragraph LNN essay, Excerpt 3 from the third paragraph and Excerpt 4 from the fourth paragraph. In both paragraphs, the writer was trying to present his personal experiences in support of one of the themes of the source text, namely, the theme that human beings are always fooled by their eyes as well as their minds. Note that in these two excerpts, there are a few sentences which were taken almost verbatim from the original reading passage. However, unlike Excerpt 2, these sentences were not used at a propositional level, but at a lexical level: Instead of relying on the propositions of the borrowed sentences to trigger his response, the writer appears to take "writing-with-others'-words" as a rhetorical strategy to ease and facilitate the task of expressing himself in a foreign language. It should be noted that although this strategy has also been employed by the higher-proficient non-native writers, as seen in Excerpt 1, the results are different. With a stronger organizational ability and a better grasp of foreign-language vocabulary and structure, the HNN writers are usually able to make necessary syntactic and semantic modifications to produce coherent quality writing. In contrast, probably hindered by insufficient writing ability, the LNN writers made only a few, as well as more local, semantic changes in the borrowed phrases and very often failed to integrate these items into their essays appropriately. As evidenced in Excerpt 3, not only were the borrowed sentences hard to interpret within the new context but there was also an apparent lack of match in terms of the style and the level of sophistication of language between these borrowed sentences and the writer's own sentences.

**Table 4**
Number of text elements used by 40% or more than 40% of the writers within each group.

|  | HN | HNN | LN | LNN |
|---|---|---|---|---|
| # of text elements which were used by 4 (40%) writers per group | 5 | 6 | 0 | 4 |
| # of text elements which were used by 5 (50%) writers per group | 2 | 1 | 1 | 0 |
| # of text elements which were used by 6 (60%) writers per group | 3 | 0 | 0 | 0 |
| # of text elements which were used by 7 (70%) writers per group | 1 | 0 | 0 | 1 |
| # of text elements which were used by 8 (80%) writers per group | 0 | 1 | 0 | 0 |
| Total | 11 | 8 | 1 | 5 |

The four groups, therefore, exhibit different degrees of reliance on the background reading material at a lexical level: The HN group used the least amount of lexical items and the two non-native groups used the greatest amount, with the LN group in the middle of the continuum. Noteworthy is that although both non-native groups appear to have relied on the source text heavily, the HNN writers seem to have benefited more from using lexical items from the provided reading passage, in large part because of their better organizational and writing ability.

### 3.2. The use of propositional material from the background reading material

### 3.2.1. Consensus on what text elements to select from the background reading material

The relationship between reading and writing skills has long been documented in both the L1 and L2 literature (e.g., Carrell, 1987; Eisterhold, 1990). Analytical reading ability has been considered as particularly important in accomplishing a reading-to-write task because before producing one's own text, a writer has to be able to identify topical information and to distinguish relevant from trivial material in the reading text (Kintsch & van Dijk, 1978). Several studies have demonstrated that reading ability affects the quality of summaries and syntheses (Kennedy, 1985; Spivey, 1983; Winograd, 1984). Other studies have shown some differences between native and non-native English speakers' selection of what they perceive as important and relevant propositions from a given text when carrying out a reading-to-write task (Connor, 1984; Connor & McCagg, 1983, 1987).

Like these previous studies, the present study has also found very different selection patterns in the essays across the four groups. One of the most striking differences relates to the issue of whether consensus exists among the students in the four groups as to what to include from the background reading material. To explore this issue, a tally sheet was obtained by tabulating the number of students using each of the text segments from the background reading material, as noted in Section 2.2. Although the original design was to investigate which segments were used by at least 50% (hence the majority) of the writers in each group, a careful examination of the results revealed that setting the cutoff criterion at 40%, rather than 50%, would yield more informative data, as there appeared to be natural, clear-cut differences in text selection among the four groups of writers at this cutoff point.

Table 4 provides the results of the number of text segments selected by 40% and more than 40% of the writers in each group. As the results suggest, the two lower-proficiency groups (the LN and LNN groups) generally behaved in a more idiosyncratic fashion in selecting text elements than the two higher-proficiency groups (the HN and HNN groups). For example, while there were 11 and 8 text elements selected by no less than 40% of the students in the HN and HNN groups respectively, the LN and LNN groups had only 1 and 5 such elements respectively. Additionally, the HNN group and the LNN group were similar in that there was an apparent increase in the number of text segments selected by the writers at the 40% cutoff point.

The text segments that were used by no less than 40% of the writers within each group are displayed in Table 5. As Table 5 shows, although there are a few text segments that were commonly selected across groups, overall, the four groups differ greatly in terms of the actual text segments included in their essays.

**Table 5**
Specific text elements used by 40% or more than 40% of the writers (in order of preference).

| HN | HNN |
|---|---|
| 1 to scrutinize (70%) | 1 Gould attempts to shake our belief in the credibility of what we see or remember seeing (80%) |
| 2-1 (the human mind) is the most perverse of all tricksters (60%) | 2 misperception of the event, retention, and retrieval (50%) |
| 2-2 the subliminal power of suggestion (60%) | 3-1 (the human mind) is the most perverse of all tricksters (40%) |
| 2-3 We must also struggle to stand back and to scrutinize our own mental certainties (60%) | 3-2 (She identifies) three levels of potential errors in supposedly direct and objective vision: misperception of the event itself. . .retention and retrieval (40%) |
| 3-1 asked half of them "was the leader of the 12 demonstrators. . .a male?" (50%) | 3-3 the subliminal power of suggestion (40%) |
| 3-2 compromised later judgment between their actual observation and the largely subliminal power of suggestion in the first questionnaire (50%) | 3-4 We are easily fooled on all fronts of both eyes and mind (40%) |
| 4-1 Gould attempts to shake our belief in the credibility of what we see or remember seeing (40%) | 3-5 seeing, storing, and recalling (40%) |
| 4-2 Loftus showed 40 students a 3-minute videotape of a classroom lecture disrupted by 8 demonstrators (40%) | 3-6 the monument that rises from the plain. . .is Scotts Bluff, Nebraska (40%) |
| 4-3 She gave the students a questionnaire (40%) | |
| 4-4 and the other half, "was the leader of the 4 demonstrators. . .a male?" (40%) | |
| 4-5 one week later (40%) | |

| LN | LNN |
|---|---|
| 1 Gould attempts to shake our belief in the credibility of what we see or remember seeing (50%) | 1 Gould attempts to shake our belief in the credibility of what we see or remember seeing (70%) |
| | 2-1 Certainty provides warmth, solace, security (40%) |
| | 2-2 We are easily fooled on all fronts of both eyes and mind (40%) |
| | 2-3 seeing, storing, and recalling (40%) |
| | 2-4 We must trust the human mind with respect (40%) |

### 3.2.2. Comparison of the commonly selected text segments across the four groups

To investigate the differences as well as similarities in greater depth, it is essential to compare Table 5 to the analysis of the hierarchical content structure of the background reading text in Fig. 1.

The analysis of the content structure of the background reading text is based on the responses to a questionnaire from three native English ESL experts, all of who had served as raters at the University of California Subject A Exam or exams of a similar nature. It is important to note that the content structure analysis of the background reading text in Fig. 1 does not mean to provide an exhaustive list of the propositions of the text. Nor does it mean to suggest that the significant elements of a text have independent ontological status, i.e., that they can be objectively recognized regardless of the reader's objectives, purposes, agendas, etc. Rather, it is an attempt to provide a comparative reference of what more mature writers/readers identified as the main structure of the text for the purpose of fulfilling this particular test task.

On the basis of the three experts' input, the propositions directly relating to the main thesis/theses of the text were identified and then classified into three levels, namely, superordinate propositions, subordinate propositions, and details. For the purpose of this study, superordinate propositions are defined as the propositions constituting the main thesis/theses of the essay. Subordinate propositions and details both refer to the propositions in support of the main thesis/theses: While the former include the higher-level propositions, such as generalizations or conclusions from the provided examples, the latter involve the specific examples or illustrations themselves.

Table 6 provides a further breakdown of the commonly selected text segments by the four groups, on the basis of a comparison of these text segments and the hierarchical content analysis of the background reading text.

(Superordinate Propositions)
  • Although vision is powerful, we should not be so certain about what we see or think.
  • The human mind is a severe "trickster".
  • The human mind is fallible.
  • We must stand back and scrutinize our mental certainties.
  • Paradox: But with what?

    (Subordinate Propositions)
  • By illustrating the subliminal power of suggestions, Loftus' experiment debunks the credibility we often give to personal observation and highlights the potential problems with eyewitness accounts.

        (Details)
  • Students saw 8 demonstrators.
  • Questionnaires suggested 4 or 12.
  • Students compromised their judgment with the input from a questionnaire.

    (Subordinate Propositions)
  • Author's recollection of one trip in his youth illustrates the problems with visual memories.

        (Details)
  • Author traced trip.
  • What he saw was Scotts Bluff, not Devils Tower.
  • But when he taps his memories, he still sees Devils Tower even though he know she is wrong.

**Fig. 1.**  A hierarchical content analysis of the background reading text.

Several observations can be made regarding the results of Table 6. One of these relates to the unanimous selection of one prompt sentence (i.e. "Gould attempts to shake our belief in the credibility of what we see or remember seeing"): Across the four groups, this sentence was selected by no less than 40% of the writers. This finding is not surprising, given that the prompt sentence provides a clear thesis of the source text and suggests a definite and "safe" initial position for the writers to take. What is unexpected is the observation that there are proportionately fewer HN writers who included this sentence in their essays (40% as opposed to 80% of the HNN writers, 50% of the LN writers, and 70% of the LNN writers). These results suggest that while the less proficient writers tended to rely on the lexis, ideational content, and discourse schema supplied in the prompt, the HN writers were less bound to the prompt sentence itself and showed more confidence in presenting alternative frameworks to address the topic.

It needs to be noted that although the HNN group, the LNN group, and the LN group all had the greatest number of writers selecting the prompt sentence, the LN group was different from the other two groups in that the prompt sentence was the only text segment that was selected by no less than 40% of the writers. In examining the data further, it was discovered that one explanation for this is that the LN essays generally fell into two unique patterns, neither of which required much use of the background reading material. In the predominant pattern, except for a quick mention of the topic in the introduction, the essays seldom referred back to the background reading text. Rather, the writers concentrated exclusively on their own opinions or personal experiences. In the second pattern, the essays are composed primarily of a superficial and cursory summary of the reading passage, usually through the writers' own words. Noteworthy is that these two patterns both conform to what Scardamalia and Bereiter (1987) refer to as "knowledge-telling" processes of less mature writers. That is, instead of

**Table 6**
Categories and frequencies of the text segments that were commonly selected by the four groups.

| | | Prompt | Superordinate propositions | Subordinate propositions | Details | Other |
|---|---|---|---|---|---|---|
| HN | Used by 40% writers | 1 | –[a] | 1 | 3 | – |
| | Used by 50% writers | – | – | 1 | 1 | – |
| | Used by 60% writers | – | 2 | 1 | – | – |
| | Used by 70% writers | – | 1 | – | – | – |
| | Used by 80% writers | – | – | – | – | – |
| | Subtotal | 1 (9.09%) | 3 (27.27%) | 3 (27.27%) | 4 (36.36%) | 0 (0%) |
| HNN | Used by 40% writers | – | 1 | 1 | 1 | 3 |
| | Used by 50% writers | – | – | – | – | 1 |
| | Used by 60% writers | – | – | – | – | – |
| | Used by 70% writers | – | – | – | – | – |
| | Used by 80% writers | 1 | – | – | – | – |
| | Subtotal | 1 (12.5%) | 1 (12.5%) | 1 (12.5%) | 1 (12.5%) | 4 (50%) |
| LN | Used by 40% writers | – | – | – | – | – |
| | Used by 50% writers | 1 | – | – | – | – |
| | Used by 60% writers | – | – | – | – | – |
| | Used by 70% writers | – | – | – | – | – |
| | Used by 80% writers | – | – | – | – | – |
| | Subtotal | 1 (100%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| LNN | Used by 40% writers | – | – | – | – | 4 |
| | Used by 50% writers | – | – | – | – | – |
| | Used by 60% writers | – | – | – | – | – |
| | Used by 70% writers | 1 | – | – | – | – |
| | Used by 80% writers | – | – | – | – | – |
| | Subtotal | 1 (20%) | 0 (0%) | 0 (0%) | 0 (0%) | 4 (80%) |

[a] To highlight the other results and to increase the readability of the table, "–" is used here when the count data in the cell is zero.

constantly interacting between content knowledge and discourse knowledge and forming an overall plan accordingly (i.e., "knowledge-transforming" processes), the LN writers often generate texts by simply unloading whatever knowledge they have about the topic, whether directly relevant or not.

Another important feature that distinguishes the four groups in Table 6 is the differences in the number of commonly selected propositions and the distributions of these propositions across groups. As Table 6 shows, the HN group outperformed all the other groups in the number of commonly selected propositions in three categories – superordinate propositions, subordinate propositions, and details – suggesting a superior ability not only to identify higher-level information but also to select and include sufficient details in their summaries. In comparing the three other groups, although the HNN writers as a group failed to identify some of the propositions which were commonly regarded as important and relevant by the HN writers, they were nonetheless capable of selecting a number of propositions relevant to the central concept of the background reading text. By contrast, the two lower-rated essay groups either lacked a consensus on what propositions to include in their own essays, as the LN group did, or seemed to have a different view of what constitutes the central propositions in the background reading text, as revealed by the exclusive selection of the propositions under the category of "other" by 40% of the LNN writers.

The most notable difference between the native and the non-native writers in this study relates to the exclusive selection of a few text segments by 40% or more than 40% of the HNN and LNN writers (i.e. the eight text segments under the category of "other"). Note that although seven out of these eight segments were also selected as important by at least one ESL consultant, none of these segments were included or considered relevant in their analyses of superordinate versus subordinate propositions. (See Appendix D for more detailed information on the ESL consultants' selection of important text segments.) Tables 7 and 8 display respectively the specific text segments and the original sentences from which these text segment were taken.

**Table 7**
Text segments that were used by the majority of HNN and LNN writers only.

| HNN | LNN |
| --- | --- |
| 1 misperception of the event, retention, and retrieval (50%) | 5 Certainty provides warmth, solace, security (40%) |
| 2 (she identifies) three levels of potential errors in supposedly direct and objective vision: misperception of the event itself. . .retention and retrieval (40%) | 6 We must trust the human mind with respect (40%) |
| 3 We are easily fooled on all fronts of both eyes and mind (40%) | 7 We are easily fooled on all fronts of both eyes and mind (40%) |
| 4 seeing, storing, and recalling (40%) | 8 seeing, storing, and recalling (40%) |

**Table 8**
The original sentences in the background reading text.

(a) Certainty provides warmth, solace, security – an anchor in the unambiguously factual events of personal observation and experience.
(b) She [i.e. Elizabeth Loftus] identifies three levels of potential error in supposedly direct and objective vision: misperception of the event itself, and the two great tricksters of passage through memory before later disgorgement – retention and retrieval.
(c) We are easily fooled on all fronts of both eye and mind: seeing, storing, and recalling.
(d) Of course we must treat the human mind with respect – for nature has fashioned no more admirable instrument.

In examining the four sentences in Table 8 further, it was found that these sentences have at least three characteristics in common. First, the four sentences all contain macro-level information, such as a generalization or conclusion. In addition, they are structurally or rhetorically salient. For example, sentences (a) and (d) occur in structurally more salient positions, i.e., in the introductory and the concluding paragraph of the text respectively. Sentences (b) and (c) involve enumerations, which are surface manifestations of seemingly significant rhetorical moves. Although the first two common characteristics (i.e., macro-level information and rhetorical/structural salience) may be what appealed to the non-native writers, these sentences share another important characteristic, i.e., that they lack direct relevance to the central thesis of the text, which makes it less appropriate to have these sentences included in one's essay. Note, for example, that sentences (b) and (c), with a focus on the issue of <u>how</u> people may be fooled by their minds, were presented only as a background or sub-topic to the major thesis about the untrustworthiness of the human mind. Similarly, sentences (a) and (d) do not constitute the central arguments of the background reading text but were merely used as a rhetorical strategy to highlight the author's problematization,[7] namely, to show that the prevailing assumption that vision is powerful and trustworthy needs reexamination, and to provide a ground for the development of more specific theses of the text.

The characteristics of the text segments that were commonly selected by the non-native writers thus give us more clues to what made a difference in the performance between the native and non-native writers in carrying out this reading-to-write task: In addition to insufficient synthetic writing ability, the non-native writers also suffered from a less-developed analytical reading ability. In comparison of the HN writers, the non-native writers in this study seem to have relied more heavily on various surface linguistic cues when identifying and incorporating information from the task's background reading. As Carrell (1987) points out,

> Reading comprehension is not solely an analysis problem, a bottom-up process of constructing meaning from the linguistic cues in the text. Rather, reading comprehension is an interactive process between the content and formal, hierarchical structure of the text and the reader's prior knowledge structures, or schemata, for content and form (p. 49).

Although the use of the textual cues may have helped the non-native writers identify some important text segments, reading the source text without a critical understanding of the author's

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7 Barton (1993) defines *problematization* as a rhetorical strategy to show that "a prevailing assumption, idea, view, or situation needs reexamination, reconceptualization, or reevaluation of some kind" (p. 748).

epistemological stance is nevertheless misleading and has led these writers to select propositions which, by good native writers' standards, are irrelevant and thus should not have been included in the essays.

The HNN writers in this study, however, did appear to exhibit better comprehension of the background reading text than the LNN writers: While the HNN writers in general seemed to understand the central concept of the background reading and were able to identify some of the relevant propositions, the LNN writers seemed to have some difficulties in decoding the meanings and uncovering the unifying thread in the reading text and were led astray by the surface linguistic cues in their attempt to use information from the background reading text in their own writing. The four groups thus exhibit very different patterns in selecting propositional materials from the background reading text – differences which seem to have both delimited and been delimited by their reading and writing proficiency.

### 3.2.3. Summary

In this section, we have examined the use of propositional material from the background reading material across the four groups. The results suggest that the HN writers not only were able to identify topical information from the background reading text but also had a better sense with regard to how many and which details to include. By contrast, the two non-native groups, with the HNN group doing so to a lesser degree, showed heavier reliance on linguistic cues and suffered from insufficient ability to readjust their selection of material according to the author's epistemological stance or the central notion of the text. The LN group is the most unique group in that these writers paid very little attention to the background reading text and merely used the substance of the text as "springboard" to elicit their own opinions or experiences in response to the topic.

## 4. Limitations

Before concluding this paper, several limitations in this study need to be recognized. A particular limitation of this study is its relatively small sample size (i.e., 10 for each essay group). Even though caution has been exercised and the results were presented mostly in descriptive statistics and were only be discussed in terms of statistical significance when the numbers justify it, the results were still recognizably limited in their generalizability. Furthermore, due to the limitation of the availability of the samples, the HN group mean in this study exceeded that of the HNN group, as noted earlier. The cause for the difference in textual features observed in the essays of the two groups could therefore be confounded by two factors – the native/non-native difference and the different mean proficiencies. That is, the different features could be attributed as a product of how the high-achieving natives differ from the high-achieving non-natives in performing this test task, or could be argued to be incidental to the different mean proficiencies manifested in their scores. A replication study based on a larger, generalizable sample would help shed light on these issues and overcome these limitations.

## 5. Conclusions and implications

In conclusion, this study has investigated the effects of one specific writing task, i.e. a reading-to-write test task, on native and non-native English writers at different proficiency levels, finding interesting similarities and differences in how these writers used lexical items and propositional materials from the given background reading material. Most significantly, the HN writers were observed to rely less on the background reading material in terms of wording or ideational content. They did, however, demonstrate a superior ability to make appropriate selection of propositional materials from the text to produce strong and coherent writing. By contrast, the two non-native groups are similar in their selection of certain lexical and propositional materials from the reading text and in the manifestation of these materials in their essays. Additionally, their selectional patterns differ from those of the HN group's in several aspects, probably due to a combination of limitations in writing and reading abilities, as discussed earlier. Among the four groups, the LN group is observed to be the most unique. Although these writers used a certain number of lexical items from the reading text, what they really relied on seems to be the topic of the text, which provided a springboard for them to compose based on their general background knowledge.

In view of these differences among the four groups, this study has several general implications for writing assessment as well as for writing pedagogy. First, this study demonstrates that discourse analytic research on prompt-related performance differences is promising and pedagogically useful because it seems to shed light on the unresolved issue of how prompts affect writers' performance. Future research along this line may try to identify other textual features in examinees' essays which may vary when examinees at different proficiency levels or with different cultural backgrounds carry out the same writing task.

Results of this study also provide insights into the nagging concern about the validity issue inherent in the use of reading-to-write tasks in placement tests, namely, whether this type of writing task taps into genuine academic literacy skills, such as synthesis writing ability and analytical reading ability. Results of this study provide evidence that a reading-to-write task can indeed assess these two abilities at once because, as discussed earlier, the different ways in which the four groups incorporated the propositional materials from the background reading text seem to have both delimited and been delimited by their reading and writing proficiency.

Finally, the propositional analysis of the examinees' essays in this study has revealed interesting differences in patterns of text selection across groups. Some hands-on experiences and training in this type of analytical skill may help composition instructors better understand and diagnose their students' weaknesses and difficulties in accomplishing this type of task.

## Acknowledgements

## Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.asw.2013.01.001.

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## Some Close Encounters of a Mental Kind

Certainty is both a blessing and a danger. Certainty provides warmth, solace, security—an anchor in the unambiguously factual events of personal observation and experience. But certainty is also a great danger, given the notorious fallibility—and unrivaled power—of the human mind. How often have we killed on vast scales for the "certainties" of nationhood and religion; how often have we condemned the innocent because the most prestigious form of supposed certainty—eyewitness testimony—bears all the flaws of our ordinary fallibility.

Primates are visual animals *par excellence*, and we therefore grant special status to personal observation—to being there and seeing directly. But all sights must be registered in the brain and stored somehow in its intricate memory. And the human mind is both the greatest marvel of nature and the most perverse of all tricksters.

Eyewitness accounts do not deserve their conventional status as ultimate arbiters, even when testimony of direct observation can be marshaled in abundance. In her sobering book *Eyewitness Testimony* (Harvard University Press, 1979), Elizabeth Loftus debunks, largely in a legal context, the notion that visual observation confers some special claim for veracity. She identifies three levels of potential error in supposedly direct and objective vision: misperception of the event itself, and the two great tricksters of passage through memory before later disgorgement—retention and retrieval.

In one experiment, for example, Loftus showed 40 students a 3-minute videotape of a classroom lecture disrupted by 8 demonstrators (a relevant subject for a study from the early 1970s!). She gave the students a questionnaire and asked half of them: "Was the leader of the 12 demonstrators . . . a male?"; and the other half, "Was the leader of the 4 demonstrators . . . a male?" One week later, in a follow-up questionnaire, she asked all the students: "How many demonstrators did you see entering the classroom?" Those who had previously received the question about 12 demonstrators reported seeing an average of 8.9 people; those told of 4 demonstrators claimed an average of 6.4. All had actually seen 8, but compromised later judgement between their actual observation and the largely subliminal power of suggestion in the first questionnaire.

Thus, we are easily fooled on all fronts of both eye and mind: seeing, storing, and recalling. The eye tricks us badly enough; the mind is infinitely more perverse. What remedy can we possibly have but constant humility, and eternal vigilance and scrutiny?

At the age of fifteen, I made a western trip by automobile with my family: I have specially vivid memories of an observation at Devils Tower, Wyoming (the volcanic plug made most famous as a landing site for aliens in *Close Encounters of the Third Kind*). We approach from the east. My father tells us to look out for the tower from tens of miles away, for he has read in a guidebook that it rises, with an awesome near-verticality, from the dead-flat Great Plains—and that pioneer

families used the tower as a landmark and beacon on their westward trek. We see the tower, first as a tiny projection, almost square in outline, at the horizon. It gets larger as we approach, assuming its distinctive form and finally revealing its structure as a conjoined mat of hexagonal basalt columns. I have never forgotten the two features that inspired my rapt attention: the maximal rise of verticality from flatness, forming a perpendicular junction; and the steady increase in size from a bump on the horizon to a looming, almost fearful giant of a rock pile.

Now I know, I absolutely *know* that I saw this visual drama, as described. The picture in my mind of that distinctive profile, growing in size, is as strong as any memory I possess. I *see* the tower as a little dot in the distance, as a mid-sized monument, as a full field of view.

In 1987, I revisited Devils Tower with my family—the only return since my first close encounter thirty years before. I planned the trip to approach from the east, so that they would see the awesome effect—and I told them my story, of course.

In the context of this essay, what follows will be anticlimactic in its predictability, however acute my personal embarrassment. The terrain around Devils Tower is mountainous; the monument cannot be seen from more than a few miles away in any direction. I bought a booklet on pioneer trails westward, and none passed anywhere near Devils Tower. We enjoyed our visit, but I felt like a perfect fool. Later, I checked my old logbook for that high-school trip. The monument that rises from the plain, the beacon of the pioneers, is Scotts Bluff, Nebraska—not nearly so impressive a pile of stone as Devils Tower.

And yet I still *see* Devils Tower in my mind when I think of that growing dot on the horizon. I see it as clearly and as surely as ever, although I now know that the memory is false.

Of course we must treat the human mind with respect—for nature has fashioned no more admirable instrument. But we must also struggle to stand back and to scrutinize our own mental certainties. This last line poses an obvious paradox, if not an outright contradiction—and I have no resolution to offer. Yes, step back and scrutinize your own mind. But with what?

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**ESSAY TOPIC**

How does Gould attempt to shake our belief in the credibility of what we see or remember seeing? To what extent does his essay convince you to doubt what people perceive and remember? To develop your essay you should discuss specific examples from your own experience, your observation of others, or your reading—including "Some Close Encounters of a Mental Kind" itself.