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# *Cultural Representations of Rhetorical Conventions: The Effects on Reading Recall*

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This study explores whether culture-specific rhetorical conventions affect the reading recall of Chinese EFL college students at two grade levels. Four English passages verified as using Chinese rhetorical conventions were modified into four counterpart versions reflecting English rhetorical conventions. One hundred twenty Taiwanese freshmen and 120 seniors read two of the four passages, one in each rhetorical convention. After each reading, students completed a passage perception questionnaire and an immediate-recall test. One week later, participants completed a delayed-recall test and a topic assessment questionnaire. Although students failed to perceive rhetorical differences, different rhetorical convention had a significant overall effect on Chinese students' reading comprehension in both immediate and delayed recall. Moreover, post hoc comparisons revealed that two topics among the four reflected in the eight passages showed more impact from rhetorical convention than did the others. Analysis of questionnaire data suggested that factors such as topic interest and topic familiarity moderated the effect of rhetorical convention. The study concludes with suggestions for future research and classroom implications.

The question of whether discourse conventions affect reading comprehension has become increasingly important in an era of international telecommunication dominated by texts that use English or Western rhetorical conventions—typically foregrounding focal topics and supported by discourse markers specifying a linear flow of ideas and a text intent. Given the very different rhetorical strategies identified as characteristic of non-Western cultures, some researchers have speculated that comprehending texts written in rhetorical conventions unfamiliar

to the reader may hinge, in part, on familiarity or unfamiliarity with a text's communicative styles (Eggington, 1987; Hinds, 1984; Kaplan 1966; Ricento, 1989). To address this issue, the present study looked at whether rhetorical style, in and of itself, affected the recall of Chinese students reading otherwise identical English language texts.

## RESEARCH ON EFFECTS OF RHETORICAL CONVENTIONS

### Models of Reading Comprehension

Two of the most widely accepted models of reading comprehension, notably those of Rumelhart (1977) and Kintsch (1998), agree that comprehension is a multicomponential, interactive process. One result of such interactivity seems to be what Stanovich (1980) calls *compensatory processing*: “a deficit in any knowledge source [that] results in a heavier reliance on other knowledge sources, regardless of their level in the processing hierarchy” (p. 63).

For Kintsch (1998), the product of the comprehension can be a text base model, a situation model, or something in between, depending on task demands (p. 292). In this construction-integration model, readers assemble textual units in two ways: as recall and as situations applicable to their lives. In either case, when they experience problems in putting textual information into a coherent pattern, readers call on general knowledge and draw inferences, elaborating on the actual text base. Kintsch emphasizes that, although integrating prior knowledge with textual propositions still in working memory is automatic, it takes up mental capacity. Moreover, because the integration process allows for all sorts of knowledge to come into play, one feature of that process, spread activation, strengthens related items and suppresses unrelated ones (pp. 98–99).

The result is a text base that structures mental representation of micro- and macropropositions hierarchically. These propositions represent the reader's recall of corresponding text, and they enable reproduction tasks such as recall and summary. In the situation model, the information carried in the text has been modified and embedded into a reader's existing knowledge structure, resulting in learning. Although traces of the original propositions and structure of text have been lost (e.g., a reader might say, “I can't remember where I heard/read that”), the macrostructure or rhetorical logic the author has chosen influences the reader's original processing (Weaver & Kintsch, 1991).

Kintsch's (1998) insights suggest that the macrostructures or rhetori-

cal conventions in the text are not only vital to textual comprehension but also essential for the readers' intake of information and possible reconstruction of the text. Macrostructures do more than inform construction of macropropositions. They also enable retrieval of propositions and their integration into long-term memory (van Dijk & Kintsch, 1983). When readers process a text with unfamiliar macrostructures, this unfamiliarity might influence the construction of both text base and text situation. Whether the task facing readers demands recall or application, deficiencies in their knowledge of rhetorical conventions—the macrostructures that reveal textual organization—could overtax readers' synthesizing capabilities.

Another way in which Kintsch (1998) speaks to the significance of rhetorical conventions is by emphasizing that readers with a sense of coherence different from that suggested in the discourse features of the text might be connecting propositions in ways different from those intended by the author. Schnotz's (1984) subjects, who read two texts with the same content but contrasting thematic relationships, seem to illustrate Kintsch's assertion that readers introduce inferential changes to the text base when its content is reorganized. Schnotz describes these differences as two distinct types of organization from which a reader may choose. The processes resulting from that choice will result in "different knowledge structures for both organization types, although the text content may be the same" (p. 71). Similarly, Goetz and Armbruster (1980) conclude that connected discourse is easier to comprehend than unrelated and disconnected content because the reader is able to "organize and interrelate elements in the text" (p. 206). They suggest that the text's logical structure, when perceived by the reader, facilitates that reader's schematizing process. The reader is consequently able to anticipate text content and construct meaning in a relational framework, thereby retaining content in memory as an integrated story rather than as disconnected pieces.

## **Studies Examining the Impact of Rhetorical Structure on L2 Reading**

L1 research has established that whenever a mismatch between textual organization and reader expectations occurs, readers tend to distort a text's meaning, their processing efficiency is impaired, and their retention is short-circuited (Brennan, Connie, & Winograd, 1986; Kintsch & Yarbrough, 1982; Meyer, Brandt, & Bluth, 1980). With regard to L2 readers, research on the impact of rhetorical structure, sometimes referred to as *formal schema* (e.g., Barnitz, 1986; Carrell, 1984), also

supports the claim that familiarity with rhetorical conventions plays a role in recall. However, most studies on text structure in L2 reading have focused on how the logical organization of textual information, typical in Western writing, influences text processing and recall (Carrell, 1984). Tian (1990), replicating Carrell's 1984 study in Singapore, introduced the additional variable of home language group (Chinese, Malay, or Tamil). As in Carrell's study, differences in rhetorical structure affected the readers' recall. Their native language, however, did not seem to trigger a different recall pattern for different rhetorical structures. Tian conjectured that the homogeneity of the language environment in schools in Singapore leveled and neutralized the home language effects. However, Carrell (1992) found a relationship between her ESL Chinese, Japanese, Arabic, Malaysian, Turkish, Spanish, and Korean readers' awareness of text structure and their recall.

Considered as a whole, most studies on the effects of text structure have been conducted in an ESL context with a focus on the effects of logical organization rather than on the effects of rhetorical convention viewed as a cultural phenomenon. Whether L2 readers' experience with a culture-specific L1 rhetoric plays a role in L2 reading among readers at different proficiency levels has yet to be explored. Work comparing students' background knowledge and interest in a topic (Carrell & Wise, 1998) and the interaction between content schemata and formal schemata (Carrell, 1987) points in this direction. For this reason, the present study focuses on potential differences in recall of texts reflecting Western and non-Western rhetorical conventions.

Additionally, many studies of L2 reading comprehension suggest a positive relationship between increased language proficiency and ability to recognize discourse cues (e.g., Cooper 1984), thus avoiding the short-circuits that are more common among readers with deficient language skills (Clarke, 1980; Cummins, 1979). Therefore, this study included both college freshmen and seniors who were English majors.

## **RHETORICAL STRUCTURE IN CHINESE EXPOSITORY WRITING**

### *Qi-Cheng-Zhuan-He*

An approach to Asiatic writing, *qi-cheng-zhuan-he* (*ki-shō-ten-ketsu* in Japanese and *ki-sung-chon-kyual* in Korean) is a prevalent, though not the only, model used in analysis of Chinese texts. It was originally employed by Fan-heng, a scholar in the Yuen Dynasty, to analyze poetry and was later applied to structuring essays. Though relevant for narrative and

poetry as well as public speaking, it is most frequently applied in expository writing (Kojima, 1972). Literally, *qi* means beginning—the opening of a topic. *Cheng* means following—elaborating the opening. *Zhuan* means turning or changing. Here the writer expresses another point of view, turns to an example, or develops the idea further. *He* means wrapping up, when the writer provides the highest level of generalization.

*Qi-cheng-zhuan-he* is not a rigidly formalized structure; the number of words and paragraphs as well as the amount of information devoted to each of the four parts can vary disproportionately. As long as the order of presentation remains, the essence of the structure is there (Kojima, 1972). Hence *qi-cheng-zhuan-he* designates a conceptual/reasoning sequence in overall organization.

Because *qi-cheng-zhuan-he* is simply one model for rhetorical sequencing, texts that use this model also exhibit other features commonly found in Chinese writing. These features differ markedly from those common in Western writing (for examples, see Appendix A). A tally of such differences frequently starts with the Western preference for deductive style and the Chinese tendency toward inductive approaches, particularly in expository writing. The practice of putting the main thesis of a text before supporting ideas violates a Chinese reader's expectation for what Kachru (1998) calls a "delayed introduction of purpose" or "delayed topic statement" (p. 55).

Chen (1986), in comparing the expository discourse structure of English and Chinese passages, found that Chinese paragraphs tended to introduce more subtopics than did their Western counterparts. Kirkpatrick (1995), quoting Wu (1988), suggests how inductive reasoning might condition Chinese rhetorical schemata. Wu posits that inductive reasoning is felt to be "natural" whereas deductive reasoning requires an information sequence that goes against "a natural sequence" (p. 281) as perceived by Chinese readers.

A second difference researchers have noted between Western and Chinese rhetorical conventions is closely related to the way main and subordinate information is sequenced in each. Discourse cues for sentential and intersentential cohesion tend not to occur as often in Chinese as they do in English writing (Normant, 1986). Further compounding this Chinese tendency toward indirect rather than direct presentation of authorial intent, Jensen (1998) stated, is that subtlety, analogy, and metaphor, highly valued writing techniques in classical Chinese, tend to hide the writer's intents. He attributed this tendency toward indirect allusion to the Chinese cultural heritage in rhetoric.

As a result of these differences, researchers have predicted that Chinese EFL readers, because they have rhetorical expectations that differ from those of Western readers, might experience problems

comprehending a passage written with Western rhetorical conventions. Main ideas, for example, might not be recognized as such due to their early presentation and thus may fail to facilitate comprehension.

Consequently, Chinese EFL readers could be at a disadvantage when reading English texts written by native speakers of English. EFL readers who predict a Chinese discourse structure may find a mismatch between their expectations and the macrostructures (the organization of content and the sequence of ideas) presented in the Western text. This gap between the Chinese reader's anticipation of text development and the text's actual macrostructures might result in lower comprehension and retention of an English text written in an English rhetorical structure. Conversely, a text written in the rhetorical structure common in Chinese—that is, according to conventions such as those of *qi-cheng-zhuan-he*—might facilitate recall for Chinese readers by providing them with familiar organizational macrostructures.

## **The Role of Rhetorical Conventions in Taiwanese High Schools**

In the past, Taiwanese students' exposure to English reading and writing before they entered college focused more on the lexical and syntactic features of a passage than on its rhetorical conventions. Their reading in Chinese, on the other hand, frequently dealt with the schemata of Chinese rhetorical conventions. In terms of expository writing in their native language, the classical Chinese rhetorical structure, *qi-cheng-zhuan-he*, exerts a significant influence as a macrostructure for text analysis.

For the students who participated in this study, work with English language texts did not emphasize the macrostructures of those passages. Until 1999, when competitive marketing of textbooks was introduced, the traditional English textbooks commonly used in Taiwanese high schools offered little explicit training in the rhetorical organization of texts. Although reading formed the core component of these textbooks, exercises for reading passages emphasized word- and sentence-level meanings rather than rhetorical organization. Most of the readings were written originally by native speakers of English but were adapted or edited to control for length and to simplify vocabulary and syntax.

The reading aids that commonly accompanied the reading passages in the traditional textbooks were phonetic transcription and a glossary of vocabulary, translation, and interpretation of idioms and phrases. Coverage of the rhetorical aspect of the reading was limited. Reading and writing exercises typically consisted of cloze, vocabulary matching, phrase

substitution, translation, questions on factual content, and essay questions on content; exercises only rarely focused on the development of ideas and the discourse markers signaling the textual organization of those ideas. Importantly for this study, these textbooks did not explicitly call students' attention to rhetorical structures common in English writing.

In reading in Chinese, on the other hand, rhetorical structures play a significant role in secondary school instruction. High school students' courses in Chinese involve intensive reading of classical Chinese and memorization of classical texts as part of the literary tradition. A key practice is the paraphrasing of classical texts into modern Chinese. Because text reproduction tasks require the construction of a text base, students must inevitably attend to the global structure of the text, consciously or subconsciously, in the retention and retrieval processes. Possibly, then, students in this study developed robust text-structure schemata based on rhetorical conventions often found in Chinese writing, such as the above-mentioned *qi-cheng-zhuan-he*.

## **The English Major's Literacy Experience at College in Taiwan**

In Taiwan, English majors such as those who participated in this study enroll in content courses in linguistics and English literature, in which they use collections, such as *The Norton Anthology of American Literature* (Abrams, 1996), that have been compiled for native-English-speaking students. In the freshman year, most courses focus on language skills; a few are introductory courses in linguistics and literature. As students move on to the sophomore, junior, and senior years, the proportion of language skill courses decreases, and content courses in linguistics and literature increase. Because this study was conducted while the freshmen were in their first semester and the seniors in their seventh semester, the freshmen's exposure to authentic texts was much more limited than that of the seniors.

Regardless of grade level, the texts in linguistics and literature that English majors read in college are very different from those they read in high school English classes. The readings are considerably longer and more demanding in content and style. To increase their reading speed and their ability to cope with large quantities of EFL reading, English majors must either resort to translations or shift their reading style to a more macrotextual level.

Whether reading English texts in British or U.S. anthologies or Chinese translations of those texts, English majors in Taiwan are reading information presented in English rhetorical structure. After 3 years of such exposure, students in their senior year may well be able to process

these texts as efficiently as they can a text in Chinese rhetorical structure, particularly if the passage in question is expository or presents the author's point of view typical for a classical essay written in the style of *qi-cheng-zhuan-he*. No research has ever been conducted to test that assumption.

Chinese rhetorical structures found in the commonly used styles of expository texts contrast sharply with the rhetorical premises of Western writing. Consequently, the impact of culture-specific rhetorical structures on the reading comprehension of Chinese students may be particularly profound for this type of writing. Although researchers have looked at language proficiency (Carrell, 1991) and text structure (Carrell, 1992) as variables, to our knowledge no study has looked at both simultaneously.<sup>1</sup> This study examined the recall of readers at two different learning levels—freshmen and seniors—who read texts having identical content but representing two distinct, culture-specific rhetorical conventions. The study poses the following questions: (a) Does reading an L2 text that follows L1 rhetorical conventions affect EFL students' recall and perceptions of the text differently from reading the same text in L2 conventions? (b) Do effects of rhetorical convention depend on the reader's grade level?

## METHOD

### Participants

To establish text selection criteria and choose suitable measurements for the main study, we conducted a pilot study in June 1998 with freshman English majors at Providence University, a private university in Taiwan. A total of 240 English majors at the same university participated in the main study on a voluntary basis in December 1998. Half of the participants (98 females and 22 males) were recruited from four freshman sections, and half (102 females and 18 males) were from four senior classes. The freshmen had had at least 6 years of formal EFL language education in Taiwan, which, as noted above, focused more on language features than on the rhetorical aspects of English and included relatively limited access to extensive reading of naturally occurring English prose written by Western authors for Western readers.

In contrast, the seniors had had 3 years of extensive exposure to English texts written for native speakers of English in linguistics and

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<sup>1</sup> Work on the effects of rhetorical convention on reading comprehension has been done in other Asian languages, notably Korean (Eggington, 1987) and Japanese (Hinds, 1987; Ricento, 1989).

literature courses. Presumably, then, the seniors had not only greater L2 language proficiency than did the freshmen but also considerably more exposure to English rhetorical style. Both ESL groups had had a formal Mandarin Chinese education with a focus on classical Chinese while in high school and college and thus had been exposed to a rich L1 environment with texts featuring traditional rhetorical conventions.

## Materials

### *Reading Passages*

Four passages in English that followed Chinese rhetorical conventions (hereafter *C versions*) were selected from a Taiwanese bilingual magazine and modified to conform to English rhetorical conventions (hereafter *E versions*). All the passages (Hsiao, 1993a, 1993b, 1993c, 1994) were editorials originally written in Chinese by a Chinese author and translated into English for the magazine. Editorials were chosen because this genre tends to use conventions that reflect features of *qi-cheng-zhuan-he*. The passages were judged as representative of *qi-cheng-zhuan-he* by seven professors in the Department of Chinese Literature at a private university in Taiwan.

The four passages dealt with sociological issues of contemporary Taiwanese society: the unintended consequences of childcare for mothers with careers ("Childcare"; Hsiao, 1993c), the crisis one charity hospital in Taiwan faced because nonindigent patients abused its resources ("Charity"; Hsiao, 1993b), gender issues for male nurses in Taiwan ("Male Nurses"; Hsiao, 1994), and the legal problems facing parents who wanted to start alternative schools in Taiwan ("Schooling"; Hsiao, 1993a).

The E versions were developed in consultation with native-English-speaking faculty at a U.S. university. The second author revised the passages to cue the organization of information in line with Western rhetorical conventions. Revisions involved both the sequencing of textual chunks and the cueing of the ideas with discourse markers (for detailed descriptions of this process and the resultant texts, see Chu, 1999, pp. 137–159). The sequencing principles were

1. putting the topic or comment/thesis and argument at the beginning of the essay
2. putting background information about the topic at the beginning of the essay
3. modifying general statements so that the argument changed from inductive to deductive and was explicitly marked as such

In addition to textual chunks being rearranged, discourse markers explicitly linking local structures were added as follows:

1. Time markers were inserted to show contrast between macropropositions.
2. Key terms were elaborated or reiterated in context for semantic cohesion.
3. Pronouns and demonstratives were inserted to increase syntactic cohesion.

Not surprisingly, these naturally occurring passages required different amounts of modification to conform to English rhetorical conventions. In “Childcare” and “Charity,” discourse connectors were added between most paragraphs and several sentences. In “Male Nurses” and “Schooling,” changes were restricted largely to topical rearrangement. As is common in studies involving textual passages, we included a Passage factor in the data analysis to check for consistency of effects across passages. This check also allowed us to examine informally whether E versions that required more modifications produced effects similar to the others.

Altogether, the resultant eight passages ranged between 486 and 558 words in length, and received scores on the Bormuth Grade Level (Bormuth, 1969) ranging from 10.0 to 11.5. The scores of the C and E versions of the passages differed only slightly (.30) on this measure, so they can be considered equivalent in their readability (see Table 1).

### *Questionnaires and Recall Measures*

Two questionnaires (see Appendix B) and two recall measures were employed in this study. The Passage Perception Questionnaire assessed participants’ judgments of eight features of the passages (content interest, familiarity, concreteness, comprehensibility, memorability, clarity of argument, organization, and rhetorical identity characteristic of Chinese or English usage), each on a 5-point Likert scale with 1 the most negative and 5 the most positive ranking. The Topic Assessment Questionnaire was designed as a text-independent assessment of the Chinese student readers’ interest in and familiarity with the topics of the four passages. With the passage titles serving as prompts, the participants rated their interest and familiarity on separate 5-point Likert scales, again with 1 the lowest and 5 the highest ranking.

Free-recall tests were administered immediately after the participants read a passage and at a 1-week delay. Participants wrote their recall protocols in Chinese. Although the passages were presented in English,

**TABLE 1**  
**Readability of the Four Passages in Two Versions**

Measure	Passage							
	"Childcare"		"Charity"		"Male Nurses"		"Schooling"	
	C	E	C	E	C	E	C	E
Words	530	542	486	586	531	516	555	558
Characters	2,616	2,759	2,433	2,971	2,733	2,663	2,945	2,984
Paragraphs	10	8	13	14	8	6	13	10
Sentences	26	28	27	29	18	18	31	29
Mean sentences								
per paragraph	2.6	3.5	2.0	2.0	2.2	3	2.3	2.9
Mean words								
per sentence	20.3	19.3	17.8	20	29.5	28.6	17.9	18.5
Mean characters								
per word	4.7	4.9	4.8	4.9	5.0	5.0	5.1	5.1
Passive								
sentences (%)	11	7	11	13	22	22	16	13
Bormuth								
Grade Level	10.3	10.0	10.1	10.3	11.5	11.5	10.3	10.6

*Note.* C = Chinese rhetorical version; E = English rhetorical version.

the questionnaires and recall prompts were presented in Chinese to minimize possible confounding effects of language deficiencies (Lee, 1986).

## Design

This study employed a  $2 \times 2 \times 4$  mixed factorial design, with Rhetorical Convention (Chinese vs. English versions) as a within-subject factor and Grade Level (freshmen vs. seniors) and Passage (the four passages "Childcare," "Charity," "Male Nurses," and "Schooling") as between-subject factors.

The four passages yielded eight texts because each appeared in two versions, reflecting the two rhetorical styles, Chinese and English. Each student read and responded to only two passages, one in each rhetorical convention. Passage pairings were counterbalanced with rhetorical convention versions and passages, thus producing 24 passage-version pairs, which were randomly assigned to students within intact classes. Each passage-version pair was read by 5 freshmen and 5 seniors. Overall, then, with a total of 240 participants, 30 participants at each grade level read each passage in either its Chinese or its English version.

The Passage variable compared results for the four passages to see if their content or other features made them harder or easier to read.

Passage was designated as a four-level, between-subjects factor. This decision reflects the fact that, although individual participants read only two of the four passages, they did so in 24 groupings that had 24 different pairings of the four passages, all of which were counterbalanced with the order of passage topics and the order of rhetorical conventions. We adjusted the Passage variable statistically to account for a within-subject interclass correlation between any two of the four passages using the SAS Mixed Procedure so that the Passage could be assessed as a between-subject factor. The within-subject, intraclass correlations between the two passages were .6 for immediate recall and .7 for delayed recall.

The dependent variables were (a) scores on the immediate- and delayed-recall tests, (b) responses to the Passage Perception Questionnaire, and (c) responses to the Topic Assessment Questionnaire. The significance level for all statistical analyses was set at  $p < .05$ .

Rather than pretesting for interest and familiarity, we administered the Topic Assessment Questionnaire at the end of the experiment, as suggested by Spyridakis and Wenger (1991). In this way, we eliminated the chance that the questionnaire would prime content knowledge or a textual schema and thus enhance comprehension or recall. Further, to avoid having the interest and familiarity scores themselves confounded by participation in the experiment, we excluded responses for the passages that the participants had read; only responses for the two passages that the participants had not read were subjected to statistical analysis.

## Procedure

The study was conducted in two sessions either during regular class periods or at times scheduled by the researcher in 2 consecutive weeks. In the first session, each participant read the first passage for 15 minutes, then, with the passage removed, filled out a Passage Perception Questionnaire for 3 minutes, and immediately wrote a free-recall response for 25 minutes. The participants were instructed to write their free-recall responses in Chinese because writing in a foreign language may obscure evidence of comprehension or inhibit recall (Lee, 1986). They were reminded orally to write as much as they could remember and to adhere as closely as possible to information in the passage. This procedure was repeated for the second passage. One week later, the participants had a maximum of 40 minutes to complete a delayed-recall test for each of the passages and then took 5 minutes to fill out the Topic Assessment Questionnaire for each.

## *Scoring of Recall Protocols*

The recall protocols were scored using a pausal unit system developed by Johnson (1970) and validated by Bernhardt (1991). First, two native English speakers read the eight passages aloud to themselves and marked the boundaries of semantic units. Two native Chinese speakers fluent in English followed Johnson's procedures for resolving discrepancies in unit identification. They chose the narrower unit in all cases except when a larger unit corresponded naturally to a common four-character Chinese idiom or when specific syntactic or morphological language differences (e.g., treatment of possessives) made a larger unit more natural in Chinese. Care was taken to ensure consistency between the corresponding units in the C and E versions of each passage. The number of resulting pausal units for the eight passages ranged from 110 to 129 units ("Childcare": C version 122, E version 129; "Charity": C version 110, E version 126; "Male Nurses": C version 121, E version 120; "Schooling": C version 117, E version 119).

The first author of this study, a native speaker of Mandarin Chinese, scored student recall protocols for the presence or absence of each unit; no partial credit was given. To establish reliability, a second native speaker of Chinese scored 20 randomly selected recall protocols. The mean Pearson product-moment coefficient was .96 for the immediate-recall test and .95 for the delayed-recall test. Recall scores were reported as the proportion of total pausal units recalled for each passage.

## *Assumptions and Analyses*

Analysis of variance (ANOVA) and analysis of covariance (ANCOVA) were employed in this study. We expected that the three assumptions of ANOVA and ANCOVA analyses—normality, homogeneity of variance, and independence—were met based on the following observations. Students at each grade level were from a homogeneous background, and the sample size was large. Hence, we assumed that the dependent variables, eight passage perceptions and two types of recall, had a normal distribution within each group and, consequently, homogeneity of variance. For the third assumption, independence, the following design features and analysis procedures were observed. First, the participants were randomly sampled and randomly assigned to groups and the questionnaire, and recall data were taken independently from each participant to ensure independent sampling. Second, the dependent variables were analyzed separately; in other words, ANOVA was performed on each of the eight passage perceptions, and ANCOVA was performed on immediate recall and delayed recall, respectively.

A three-way ANOVA mixed procedure was first performed on the responses to each of the eight items on the Passage Perception Questionnaire to test the effect of Passage, Rhetorical Convention, and Grade Level on each of the eight perceptions. We did not adjust the significance level because these were all planned comparisons and subsequent correlational analyses served as a check on reliability. Five perceptions—interest, familiarity, comprehensibility, memorability, and organization—showed significant effects of Passage (see Appendix C).

To control for variance in recalls due to difference in passage perceptions, therefore, we entered these five perception scores as covariates in subsequent analyses of the recall data. A three-way ANCOVA mixed procedure was then performed on immediate- and delayed-recall scores with the five perception scores entered as covariates (see Appendix D). The correlation matrix for five perception variables was checked to avoid the inclusion of redundant variables in ANCOVAs. The results show correlations among variables ranging from .13 to .57, indicating weak correlations among covariate variables. Therefore, all five perception variables were judged relevant.

## RESULTS

### Recall Measures

The likelihood ratio chi-square values are 41.22 for the immediate-recall model and 58.53 for the delayed-recall model. Both are statistically significant at the .0001 level. Both Rhetorical Convention and Grade Level significantly influenced the participants' recall (see Table 2). Overall, students recalled significantly more of the passages in the C versions than in the E versions (adjusted mean percentage = 32.4 and 28.2, respectively) in the immediate-recall test,  $F(1,221) = 31.11$ ,  $p < .0001$  (see Appendix D). On the delayed-recall test, students also recalled a significantly higher percentage of pausal units in the C versions than in the E versions (adjusted mean percentage = 23.1 and 19.6, respectively),  $F(1, 221) = 39.94$ ,  $p < .0001$  (see Appendix D). In other words, at both test intervals, students remembered more of an English passage when it followed Chinese rhetorical conventions.

As expected, grade level also influenced recall. Seniors recalled significantly more than freshmen did (adjusted mean percentage = 35.2 and 25.4, respectively) on the immediate-recall test,  $F(1, 238) = 72.24$ ,  $p < .0001$ . On the delayed test, seniors again recalled a much higher average score than freshmen (adjusted mean percentage = 25.1 and 17.6, respectively) across rhetorical conventions,  $F(1,238) = 62.71$ ,  $p < .0001$ .

TABLE 2

## Immediate-Recall and Delayed-Recall Scores by Rhetorical Convention and Grade Level

Grade level	Passage version				<i>F</i> (1, 221)	<i>p</i>
	Chinese		English			
	Adjusted mean %	<i>SE</i>	Adjusted mean %	<i>SE</i>		
Immediate recall						
Freshman <sup>a</sup>	26.9	.96	23.9	.97	8.07	.0049
Senior <sup>a</sup>	37.8	.96	32.5	.96	25.45	< .0001
Both levels <sup>b</sup>	32.4	.68	28.2	.68	31.11	< .0001
Delayed recall						
Freshman <sup>a</sup>	18.6	.78	16.6	.78	5.62	.0186
Senior <sup>a</sup>	27.6	.78	22.6	.78	38.84	< .0001
Both levels <sup>b</sup>	23.1	.55	19.6	.55	36.94	< .0001

*Note.* Scores are mean percentages of total pausal units recalled for each passage, adjusted by within-subject correlation and by effects of five covariates: perceived interest, perceived familiarity, perceived comprehensibility, perceived memorability, and perceived organization.

<sup>a</sup>*N* = 120. <sup>b</sup>*N* = 240.

No significant interaction between Rhetorical Convention and Grade Level emerged for immediate recall. Both freshmen and seniors scored substantially higher in recall of C versions than of E versions (adjusted mean percentage = 26.9 and 23.9, respectively, for freshmen; 37.8 and 32.5, respectively, for seniors; see Table 2 and Appendix D). Accordingly, the effect size is a mean percentage of 3.0 for freshmen and 5.3 for seniors in immediate recall.

For the delayed-recall measure, however, a significant interaction between Rhetorical Convention and Grade Level emerged,  $F(1, 221) = 7.24$ ,  $p < .01$  (see Appendix D). Although the superiority of C-version scores held for both freshmen and seniors, the effect size for freshmen dropped from 3.0 percentage points in immediate recall to 1.9, as shown in Table 2. The senior effect size, 5.0, remained largely the same as that for immediate recall.

Overall, these results suggest that English rhetorical conventions were relatively unfamiliar to both freshmen and seniors. As for the diminished effect size on freshmen after a delay, the recall test may have proved so difficult for freshmen that any advantage of reading a text with familiar Chinese rhetorical conventions was lost. For seniors, higher language proficiency in the L2 did not result in a proportionately higher level of long-term retention of texts in the L2 rhetorical convention. Apparently the seniors, who had initially recalled more detail (presumably on the

basis of their greater language proficiency), lost an equivalent amount of detail in the delayed recalls for both the C and the E versions.

Although Passage did not produce a main effect on recall at either test interval, an interaction of Passage and Rhetorical Convention was significant for immediate recall,  $F(3, 221) = 4.06, p < .01$  (see Appendix D). Further comparisons on Rhetorical Convention for the four passages show that only the passages “Charity” and “Male Nurses” produced significantly greater differences between the C and E versions (see Table 3). For the “Childcare” and “Schooling” passages, although students appeared to recall more units for the C than for the E versions, these differences do not reach statistical significance. These results indicate that familiar rhetorical conventions offer no guarantee that comprehension will improve; a passage may be so easy or so hard that the familiar rhetorical conventions can have no additional effect.

In the effort to modify texts so that they would seem natural for native speakers of English, the passages “Childcare” and “Charity” needed more extensive insertion of cohesive devices (discourse markers) and reorganization than did “Male Nurses” and “Schooling.” Predictably, then, “Childcare” and “Charity” might be expected to show greater effects for Rhetorical Convention. However, further comparisons on Rhetorical Convention for the four passages on immediate and delayed recalls and the three text perceptions concreteness, comprehensibility, and memorability, as shown in the following section, did not bear out these predictions. Modification had an impact on “Charity” but not on

**TABLE 3**  
**Immediate-Recall and Delayed-Recall Scores by Rhetorical Convention and Passage**

Passage <sup>a</sup>	Version				<i>F</i> (1, 221)	<i>p</i>
	Chinese		English			
	Adjusted mean %	<i>SE</i>	Adjusted mean %	<i>SE</i>		
Immediate recall						
“Childcare”	31.4	1.29	28.6	1.30	2.48	.1165
“Charity”	33.3	1.28	24.9	1.31	23.59	< .0001
“Male Nurses”	34.3	1.31	28.5	1.30	10.34	.0015
“Schooling”	30.4	1.29	30.9	1.29	0.08	.7840
Delayed recall						
“Childcare”	21.5	1.01	19.2	1.02	2.72	.1008
“Charity”	24.1	1.01	18.7	1.03	14.41	.0002
“Male Nurses”	24.4	1.04	20.3	1.02	8.56	.0038
“Schooling”	22.3	1.01	20.4	1.01	1.69	.1946

Note. See note to Table 2.

<sup>a</sup>For each passage, *N* = 120.

“Childcare.” These findings suggest that modification for local cohesion did not have an effect on the recall and text perceptions of Chinese EFL readers. The changed location of topics and subtopics—macrostructures—not the insertion of local cohesion features, were the key readability factors.

In other words, students recalled more about texts in which the thematic focus appeared midway or later in the text and in which logical relationships were linked implicitly rather than expressed explicitly in organizational patterns (e.g., comparison-contrast or cause-effect) typically found more readable by both L1 (Meyer & Freedle, 1984) and L2 students (Carrell, 1984) from Western countries.

## Passage Perception Questionnaire

The likelihood ratio chi-square values for the eight perception variables were significant except for the value for Rhetorical Convention. None of the passage perception scores, even for items that related directly to text organization—clarity of argument, text organization, and rhetorical identity—showed main effects of Rhetorical Convention or of Grade Level. Apparently, then, the students, none of whom had an opportunity to compare two versions of a single passage, did not perceive rhetorical differences between the C and the E versions. Students gave identical scores (average = 3.1) for both versions when asked if the structure or organization of the passage they had read was more typical of Chinese writing or English writing style.<sup>2</sup>

Only one perception rating, memorability, reflected an interactive effect for Rhetorical Convention and Grade Level,  $F(1, 226) = 5.28, p < .05$  (Appendix C). Further comparisons on rhetorical convention for the two grade levels showed that freshmen found texts reflecting Chinese rhetorical conventions more memorable than passages modified to represent English rhetorical conventions ( $M = 3.4$  and  $3.1$ , respectively) whereas senior subjects did not perceive a significant difference ( $M = 3.3$  and  $3.4$ , respectively).

Three passage perception items did show an interactive effect of Rhetorical Convention and Passage: concreteness,  $F(3, 226) = 4.19, p < .01$ ; comprehensibility,  $F(3, 226) = 3.96, p < .01$ ; and memorability,  $F(3, 226) = 3.79, p < .01$  (Appendix C). As in the immediate-recall results,

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<sup>2</sup> For the Passage Perception Questionnaire, within-subject intraclass correlations accounted for in the eight ANOVAs were interest, .6; familiarity, .5; concreteness, .5; comprehensibility, .5; memorability, .6; clarity of argument, .5; organization, .4; and rhetorical identity .6. As noted in the Assumptions and Analyses section, five of the eight perceptions reflected an influence from Passage and were used as covariates in analyses of recall (see Appendix C).

further comparisons on Rhetorical Convention for the four passages indicate that the passages “Charity” and “Male Nurses” produced the most reliable effects due to Rhetorical Convention. For the “Charity” passage, students’ ratings were significantly higher for the C version than for the E version on concreteness ( $M = 3.7$  and  $3.4$ , respectively;  $F = 3.78$ ,  $p < .05$ ), comprehensibility ( $M = 3.8$  and  $3.4$ , respectively;  $F = 8.20$ ,  $p < .05$ ), and memorability ( $M = 3.3$  and  $2.9$ , respectively;  $F = 6.05$ ,  $p < .05$ ). For the “Male Nurses” passages, students rated the C version significantly higher for concreteness ( $M = 4.0$  and  $3.5$ , respectively;  $F = 6.86$ ,  $p < .05$ ) and memorability ( $M = 3.7$  and  $3.3$ , respectively;  $F = 6.24$ ,  $p < .05$ ). Overall, the preferences for the C versions of these passages correspond to the significant effects of rhetorical convention on immediate recall. (For a discussion of topic effects as measured by readers’ perceptions of a passage, see Chu, 1999, pp. 89–108.)

## Topic Assessment Questionnaire

The results of the recall measures and the passage perception analyses are consistent. Students recalled more from the C versions than from the E versions of two passages, “Charity” and “Male Nurses,” and they rated these passages more highly on concreteness and memorability than the other two passages, “Childcare” and “Schooling.” The results of the Topic Assessment Questionnaire were used in a follow-up analysis of the differences among the passages. The Topic Assessment Questionnaire asked participants to assess the interest and familiarity of the topics of the passages based on the title of the passage alone. As such, the topic items are independent of the content of the passage and indicate the readers’ baseline reactions to the general topics.

The “Childcare” and “Schooling” topics were rated as significantly more interesting and more familiar than the “Charity” and “Male Nurses” topics. For this analysis, we combined scores for the topics “Charity” and “Male Nurses” and for the topics “Childcare” and “Schooling.” “Childcare” and “Schooling” scored significantly higher than “Charity” and “Male Nurses” on interest—combined  $M = 3.9$  versus  $3.5$ ,  $F(1, 226) = 25.50$ ,  $p < .0001$ —and on familiarity—combined  $M = 2.9$  versus  $2.4$ ,  $F(1, 226) = 42.50$ ,  $p < .0001$ .

These results suggest that when students perceive topics as interesting and familiar, as the students in this study perceived “Childcare” and “Schooling,” they do not gain an advantage from familiar Chinese rhetorical conventions. In other words, students seem to have more difficulty coping with English rhetorical conventions when the topic of the passage is less interesting and familiar to them.

## DISCUSSION

### Effects of Rhetorical Conventions

The EFL students in this study recalled a significantly larger percentage of text units from the four English texts written in Chinese rhetorical convention than they did from the four parallel texts written in English rhetorical convention in both immediate recall and delayed recall. This result suggests a robust influence from an unfamiliar rhetorical convention on foreign language reading comprehension. If, as argued in this study, rhetorical convention as a characteristic cultural artifact is deeply rooted in many Chinese readers' schemata of how a text is structured, these readers' own familiar text structure exerts an influence when they read an English text written according to Western conventions. That influence apparently obscures macro- and microfeatures of texts written in the style of alternative, unfamiliar rhetorical conventions, inhibiting their comprehension by Chinese speakers. The findings therefore correspond to those of Hinds (1984) and Eggington (1987), both of which revealed that, for Oriental readers, texts written in Oriental rhetorical structure yielded significantly greater reading recall than did texts written in Western rhetorical structure.

Indirectly, the results of this study also correspond to Young's (1982) findings that Chinese oral discourse structure posed a problem for the listening comprehension of native English speakers. Parallel findings for spoken as well as written conventions suggest that, as a result of years of exposure to the conventions of Chinese rhetoric, on the one hand, and a pedagogical focus on the microfeatures of English texts for freshmen, on the other, macrostructures may also affect the way these readers process and reconstruct texts, especially if those texts are written according to the rhetorical norms of different cultures.

In a similarly indirect way, the findings of this study disconfirm Mohan and Lo's (1985) speculation that EFL students' problems in organizing writing in both the L1 and the L2 are attributable to cognitive development rather than to interference from L1 practice or cultural expectations. If such conjecture were the case, the seniors in this study should have developed more skills than freshmen in recognizing differences in rhetorical practice. Further, as cognitively more mature students, they would presumably have been more adept in using both L1 and L2 rhetorical conventions than would cognitively less mature freshmen participants—an L1 finding of Meyer et al. (1980). However, the findings in this study are inconsistent with that assumption. Although the comprehension of seniors was higher overall, negative transfer of L1 rhetorical convention seemed to affect reading recall in the L2 to a

similarly significant degree regardless of the participants' distinctly different developmental stages.

Given the facilitating effects of familiar rhetorical conventions in the recall and retention of texts about topics deemed unfamiliar by their readers, the results of this study support and extend the conclusions made in L1 reading studies (Meyer et al., 1980; Meyer & Freedle, 1984; van Dijk & Kintsch, 1983), as well as in L2 reading studies (Carrell, 1984; Tian, 1990), that readers capable of using text-based logical structures comprehended texts better than those who did not. On the other hand, data on readers' perceptions about the texts' content (in terms of interest, familiarity, concreteness, memorability, and comprehensibility) and texts' form (in terms of thematic clarity, organization, and rhetorical identity) revealed that readers were not conscious of these strategies.

The EFL participants in this study did not perceive an overall difference between texts using two distinctly different rhetorical conventions. This finding poses several intriguing questions: Do rhetorical structures influence comprehension at a level of automaticity? And would training in metalinguistic strategies improve that comprehension? If so, Carrell's (1984) suggestion that most ESL students, particularly non-Europeans, may not possess the appropriate formal schemata to identify rhetorical organization of an English text should be considered in a pedagogical light. If, as results from recall data in this study demonstrate, a familiar rhetorical convention aids in comprehending texts, then it follows that students might profit from practice in identifying rhetorical structures unfamiliar to them.

A reasonable inference from these findings is that unfamiliar rhetorical conventions interfere with an L2 reader's comprehension just as they do with an L1 reader's comprehension. In this sense, the findings also substantiate the conclusion that preferred rhetorical patterns of native languages seem to interfere with ESL readers' retention of English texts. Further, although student recall reflected the impact of rhetorical convention, readers could not distinguish between the rhetorical orientations of the texts. That finding suggests that perception and cognition may be working at two different levels.

The fact that effects of rhetorical convention held over time for seniors whereas the effects for freshmen declined slightly in delayed recall suggests that the sustaining of effects of rhetorical convention over time may correspond positively to language proficiency (Carrell, 1991). Such a conclusion is supported by the work of L2 researchers who have found that the higher the language proficiency of readers, the more they activate higher level processing (Cooper, 1984; Cziko, 1978, 1980; Devine, 1987; Hudson, 1988). Senior students may be able to create a more robust macrostructure during the reading process and retain a more powerful retrieval structure thereafter than freshmen readers can.

Whereas the freshmen perceived texts written in Chinese rhetorical convention as more memorable than those written in English rhetorical convention, the seniors rated texts in both conventions as equally memorable. This null result for the more proficient readers suggests that when readers understand much of the textual message, they perceive the C and E versions as equally memorable, no matter what rhetorical convention they are written in. On the other hand, when comprehension is less successful, as was the case for freshman readers, information conveyed in a familiar rhetorical convention apparently promotes the perception of memorability in readers.

## **Reader Factors Mediating the Effect of Rhetorical Convention**

In conjunction with the significant impact for rhetorical conventions that reflect different cultural traditions, this study's findings also suggest that rhetorical convention may have a more significant effect only when readers report significantly lower interest in and familiarity with the topic. Such indices were corroborated by the recall data because they correspond to the dimensions of familiarity and interest. The fact that topics rated lower in familiarity and interest show a rhetorical convention effect supports the proposals by Carrell (1987) and Roller (1990) that prior knowledge may interact with the effect of text structure. Further, these results echo studies assessing the relative effect of familiarity/knowledge and text features on comprehension (Goldman, Saul, & Côté, 1995; Salager-Meyer, 1994; Schnotz, 1984). In these studies, text variables were found to influence comprehension only when readers read texts for which their familiarity and prior knowledge were low. Stanovich's (1980) interactive-compensatory model, which proposes that deficits in one skill may interfere with or lead to greater dependence on other processing skills, might explain why we found no significant effects for students who read materials with more familiar content but less familiar rhetorical organization. Conceivably, text structure became more important when readers lacked appropriate content schemata and, as a result, they became more dependent on rhetorical cues to construct meaning.

## **IMPLICATIONS**

### **Future Research**

The caveats for this study suggest several avenues for replication and additional research. With regard to linguistic and cultural differences, the present study was a one-way street comparing the effect of Chinese

rhetorical conventions on speakers of Chinese. A study of these same effects on speakers of English would show whether these findings hold across cultures. Because the subjects in this study were all English majors and predominantly women, future work might explore effects on students in other subject areas or on male readers. Further, Chinese speakers not from Taiwan might respond differently to contrasting rhetorical use. The responses of other language groups reading English as an L2 would confirm or disconfirm the conclusion presented here that mental representations of textual rhetoric seem to be culturally conditioned.

Because the reading passages and their counterpart revisions are central to the findings in this study, several possibilities remain to be confirmed or disconfirmed. Possibly, rhetorical changes in other Chinese texts made along the lines suggested here would yield different results. Experts in discourse analysis might make other, more reliable revisions or characterize differences in rhetorical conventions in different ways (e.g., Beck, McKeown, Sinatra, & Loxterman, 1991; Britton, Van Dusen, Gulgoz, & Glynn, 1989). Further, it would be useful to know whether similar effects hold for different genres, such as poetry, fictional prose, and drama.

## **Rhetorical Structure and Cultural Thought Processes in the Classroom**

Phenomenological thinkers have long held that readers' preexistent, culturally conditioned ideas about the content and the presentational structures of a text influence their capacity to understand that text (Ingarden, 1973). These theorists suggest that what many in literary criticism now refer to as a reader's *horizon of expectation* (Jauss, 1982) is a cultural phenomenon, based on human cognitive capabilities that are regionally conditioned rather than ontologically given. As Kintsch (1998) elucidates, "Cultural needs drive the unfolding of mental representations" (p. 29). Our findings support philosophical and psycholinguistic claims that readability is anchored in cultural expectations rather than universally normed cognitive ones.

This study, in conjunction with those cited earlier in this article, points to the need to teach cultural expectations related to the rhetorical structures that seem to influence reading recall. In that sense, the findings support recent initiatives in Taiwan and ESL/EFL education elsewhere that stress recognition of main ideas and discursive features of texts. If Western rhetorical conventions are viewed as cultural phenomena rather than as absolute norms for readability that are hardwired in

the brain, this study adds to a growing body of evidence for teaching those conventions.

To teach culturally unfamiliar rhetorical practices, however, more than training in recognition of main ideas and discursive features may be necessary. Our study suggests that an essential first step may be to spend classroom time having students learn to distinguish between different rhetorical styles. Rather than identifying the main idea of only a single passage, such work would involve locating the main idea in both native and target language passages, in texts chosen for their differences in this regard. Students might then compare the placement of chief arguments or examples in the two texts, and distinguish between direct and less direct modes of expression. Awareness of such differences would help readers develop metalinguistic strategies to adjust their expectations about textual messages. If recall is a measure, readers' expectations in this study were influenced by rhetorical convention, whether they realized it or not.

Once ESL/EFL readers recognize differences in rhetorical structure, techniques for teaching them to apply those macrostructures in holistic text base reconstruction (e.g., Kern, 2000; Swaffar, Arens, & Byrnes, 1991) might prove useful in facilitating retention of information. These skills help students not only re-create but also articulate the messages of texts. Especially in an age of global communication, the ability to use the rhetorical conventions of another language may be a significant factor in successful exchange of ideas. Over time, the pedagogical implications of ongoing work in contrastive discourse analysis, represented in journals such as *Discourse and Society*, will help ESL researchers and teachers develop more definitive models for characterizing differences in rhetorical conventions by culture and genre. It behooves us in the TESOL field to keep abreast of these developments and to recognize the significance of their implications for reading recall.

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## APPENDIX A

### Rhetorical Conventions in Western Expository Style and *Qi-Cheng-Zhuan-He*

Texts A and B illustrate respectively the characteristics of Western expository style and of *qi-cheng-zhuan-he* with regard to (a) where the topic sentence is located, (b) how subsets of information are ordered, (c) whether or not discourse cues render explicit the hierarchy and relationships of ideas, and (d) whether explicit conclusions are drawn based on the foregoing.

#### Text A

There are three possible positions one can take about male and female creativity. The first is that males are inherently more creative in all fields. The second is that if it were not for the greater appeal of creating and cherishing young human beings, females would be as creative as males. If this were the case, then if men were permitted the enjoyment women have always had in rearing young children, male creativity might be reduced also. (There is some indication in the United States today that this is so.) The third possible position is that certain forms of creativity are more congenial to one sex than to the other and that the great creative acts will therefore come from only one sex in a given field. (Mead, 1979, pp. 167–170)

#### Text B

Of all kinds of flowers in the grass and on the trees in the world, many are very lovely. Tao Yuan-ming in Chin Dynasty favors chrysanthemum. Ever since the Lee and Tang Dynasties, worldly people favor the peony. I favor the lotus because it grows out of mud, but is not stained by mud and it is washed by the water and does not appear sensual. It is straight, going without branches. The farther the fragrance spreads, the more refreshing it is. Every single bud stands out straight. It is best to appreciate it from a distance but not to lay a hand on it.

I would say this. Chrysanthemum, the hermit of the flowers; peony, the opulent of the flowers; lotus, the gentleman of the flowers. Aye! the love of chrysanthemum is scarcely heard since Tao Yuan-ming; the love of lotus, who else but me? the love of peony, countless people. (Chou, 1998, pp. 52–53, translated by the first author)

#### Analysis

Readers unfamiliar with the rhetorical conventions of *qi-cheng-zhuan-he* may not have concluded what for most Chinese readers will be self-evident—namely, that Text B is a meditation on the relative merits of aesthetic concerns and material wealth. In Western writing, an explicit argument in a thesis statement is valued as good writing style (Mead's "three possible positions" in the initial sentence of Text A); in traditional Chinese writing, suggesting a thesis in an oblique reference is favored in order to leave the reader room for reflection (Chou's "I favor the lotus"—a metaphoric reference to that which is unstained and pure). In Text A, the writer states three options for thinking about gender and creativity. In Text B, an option is implied in the last sentence: Instead of pursuing fortune, people should reflect on the spirit of a hermit and a gentleman.

## APPENDIX B

### Questionnaires

#### Passage Perception Questionnaire (Translated From Chinese)\*

*Directions:* We are interested in knowing how you perceive the article you have just read. Please rate your perception of it based on your subjective feelings. Circle the number that best answers the question. Circle only *one* number for each question.

1. How interesting did you find this text to read?

Very uninteresting	Somewhat uninteresting	Neutral	Somewhat interesting	Very interesting
1	2	3	4	5

2. How familiar did you find the topic and content to be?

Very unfamiliar	Somewhat unfamiliar	Neutral	Somewhat familiar	Very familiar
1	2	3	4	5

3. How concrete did you find the content to be? That is, how easy or hard is it for you to form a mental image?

Very abstract	Somewhat abstract	Neutral	Somewhat concrete	Very concrete
1	2	3	4	5

4. How difficult was this article for you to read and understand?

Very difficult	Somewhat difficult	Neutral	Not too difficult	Very easy
1	2	3	4	5

5. How difficult do you think this text will be for you to remember?

Very difficult	Somewhat difficult	Neutral	Not too difficult	Very easy
1	2	3	4	5

6. How clear was the main line of thought or the main argument of the text?

Very unclear	Somewhat unclear	Neutral	Mostly clear	Very clear
1	2	3	4	5

7. How organized do you think the text was that you read?

Very unorganized	Somewhat unorganized	Neutral	Somewhat organized	Very organized
1	2	3	4	5

8. Is the structure/organization of this text more similar to that of Chinese writing or English writing?

Very much like the structure of Chinese writing	Somewhat like the structure of Chinese writing	Not sure	Somewhat like the structure of English writing	Very much like the structure of English writing
1	2	3	4	5

\*Items 1, 4, 5, 6, and 8 adapted from Reader Assessment of Text (Raymond, 1993).

# Topic Assessment Questionnaire (Translated From Chinese)

Age: \_\_\_\_\_ Gender: \_\_\_\_\_

Have you ever gone to schools abroad? \_\_\_\_\_ If yes, in which country? \_\_\_\_\_

When? \_\_\_\_\_ For how long? \_\_\_\_\_

We are interested in knowing how you think about the following four topics: Childcare problems for working mothers, abuse of charitable institutions, male nurses, and alternative schools. For each of the four topics, please rate your perception based on your subjective feelings. Circle the number that best answers the question. Circle only *one* number for each question.

## 1. Interest

### a. Childcare Problems for Working Mothers

Very uninteresting	Somewhat uninteresting	Neutral	Somewhat interesting	Very interesting
1	2	3	4	5

### b. Abuse of Charitable Institutions

Very uninteresting	Somewhat uninteresting	Neutral	Somewhat interesting	Very interesting
1	2	3	4	5

### c. Male Nurses

Very uninteresting	Somewhat uninteresting	Neutral	Somewhat interesting	Very interesting
1	2	3	4	5

### d. Alternative Schools (e.g. Forest School)

Very uninteresting	Somewhat uninteresting	Neutral	Somewhat interesting	Very interesting
1	2	3	4	5

## 2. Familiarity

### a. Childcare Problems for Working Mothers

Very unfamiliar	Somewhat unfamiliar	Neutral	Somewhat familiar	Very familiar
1	2	3	4	5

### b. Abuse of Charitable Institutions

Very unfamiliar	Somewhat unfamiliar	Neutral	Somewhat familiar	Very familiar
1	2	3	4	5

### c. Male Nurses

Very unfamiliar	Somewhat unfamiliar	Neutral	Somewhat familiar	Very familiar
1	2	3	4	5

### d. Alternative Schools (e.g., Forest School)

Very unfamiliar	Somewhat unfamiliar	Neutral	Somewhat familiar	Very familiar
1	2	3	4	5

## APPENDIX C

### Analysis of Variance for Eight Passage Perceptions

Perception	Source and <i>df</i>							$\chi^2$ (1)
	R (1, 226)	G (1, 238)	P (3, 226)	G × R (1, 226)	P × G (3, 226)	P × R (3, 226)	P × G × R (3, 226)	
Interest	1.75	2.77	6.52***	4.66	0.34	0.66	0.46	23.23***
Familiarity	2.29	0.10	8.34***	0.15	0.68	2.50	1.25	12.02***
Concreteness	1.14	0.26	2.56	0.01	0.13	4.19**	0.22	10.74***
Comprehensibility	0.58	0.79	3.32*	1.04	1.19	3.96**	0.93	14.96***
Memorability	2.81	0.35	4.91**	5.28*	2.38	3.79**	1.67	21.26***
Clarity	0.14	1.17	2.08	0.03	1.40	1.11	1.74	11.52***
Organization	1.81	0.01	3.36*	0.00	2.02	1.04	0.24	3.35*
Rhetorical orientation	0.00	0.30	0.21	0.14	3.88**	0.32	0.10	0.08

*Note.* Results are *F* ratios. R = Rhetorical Convention, G = Grade Level, P = Passage.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . \*\*\*\* $p < .0001$ .

## APPENDIX D

### Analysis of Covariance for Immediate and Delayed Recall

Effect	<i>df</i>	<i>F</i>	<i>p</i>
	Immediate recall		
Perceived interest	1, 221	4.04*	.0456
Perceived familiarity	1, 221	0.97	.3267
Perceived comprehensibility	1, 221	6.02*	.0149
Perceived memorability	1, 221	0.01	.9398
Perceived organization	1, 221	3.29	.0710
R	1, 221	31.11****	< .0001
G	1, 238	72.24****	< .0001
P	3, 221	1.36	.2557
G × R	1, 221	2.33	.1284
P × G	3, 221	0.04	.7520
P × R	3, 221	4.06**	.0078
P × G × R	3, 221	0.37	.7753
	Delayed recall		
Perceived interest	1, 221	6.11*	.0142
Perceived familiarity	1, 221	0.18	.6698
Perceived comprehensibility	1, 221	9.96**	.0018
Perceived memorability	1, 221	0.16	.6860
Perceived organization	1, 221	1.13	.2884
R	1, 221	36.94****	< .0001
G	1, 238	62.71****	< .0001
P	3, 221	1.54	.2041
G × R	1, 221	7.24**	.0077
P × G	3, 221	0.54	.6545
P × R	3, 221	1.20	.3120
P × G × R	3, 221	0.61	.6079

*Note.* R = Rhetorical Convention, G = Grade Level, P = Passage.  $\chi^2(1) = 41.22****$  for immediate recall and  $58.53****$  for delayed recall. Perceived interest, perceived familiarity, perceived comprehensibility, perceived memorability, and perceived organization are five covariates. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . \*\*\*\* $p < .0001$ .