

Figure 5.1. (continued)

The expository "Chemical Pesticides" passage was analyzed in an identical manner, even though established analysis procedures like Meyer's (1975) could have been used to make the resultant semantic hierarchies as equal as possible. Two independent raters judged participants' recall protocols and then determined which recalled sentences were contained in the formerly described semantic hierarchies. The scoring method was determined, and paraphrased versions of the sentences were scored as well. The reliability of the ratings was acceptable (93%) by a reverse-scoring procedure. Because the resultant

Symbols, 3.58; numbers, 3.42

hierarchies had unequal levels of information, and the last 15 sentences of each hierarchy were subordinate in scores were used.

Statistics, 3.57, 5.14

EEG data. Each second of EEG data was deleted. Fourier transform the remaining EEG data into bandwidths within the range of

Decimal fractions, 3.46

$r(59) = .87, p < .01$. (The probability of a Type I error was maintained at .05 for all subsequent analyses.)

Result
A Pearson product-moment correlation showed a substantial relation between alpha power scores, which were taken

Comma, 3.02

Therefore, the alpha power scores were averaged for each participant and served as the basis for dichotomizing participants into analytic and holistic groups. Those participants whose scores were below the median were classified as analytic; those whose scores were above the median were classified as holistic. This procedure has been used to classify analytic and holistic persons in past research (e.g., Hymes et al., 1977), which has demonstrated that alpha power scores are highly reliable.

Recall Data

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Math copy, 5.14

The proportional recall data were analyzed with a $2 \times 2 \times 2$ (Type of Processor \times Passage \times Level of Subordination) mixed analysis of covariance, with average reading time serving as the covariate and with passage and level serving as repeated measures. Although several main effects and two-way interactions reached statistical significance, they were of little interest because a significant three-way (Type of Processor \times Passage \times Level of Subordination) interaction was obtained, $F(1, 58) = 29.93, p < .01$. For ease of interpretation, Figure 1 shows this interaction as 2 two-way, (Passage \times Level of Subordination) interactions, one for each processing style. The three-way interaction indicates that analytic

Variables, 3.18

Back-to-back numbers, 3.44

Citing figures, 3.83

persons recalled proportionally more superordinate information from the logically structured expository text than from the high-imagery poetry. In contrast, the holistic group recalled more of the important information from the poem than from the expository passage. Simple-effects tests of the interaction showed that the analytic group's mean recall of important information from the expository text (.70) was greater than the holistic group's mean recall (.52). Furthermore, the holistic group recalled more important information from the poem than the analytic group did (.72 vs. .55).

Descriptive statistics appear in the figure (see section 3.57)

Decimal fractions, 3.46

Latin abbreviations, 3.24

EEG data

Reading data. The bilateral alpha power scores recorded during reading

Special characters, 5.02

occurred for the holistic group. In addition, the holistic group generally appeared to produce more alpha activity than did the analytic group, regardless of the type of passage. This finding was confirmed with Scheffé's post hoc tests ($p < .05$).

Recall data. The recall alpha data were analyzed in the same way the reading alpha data were analyzed. Type of processor was again found to be significant, $F(1, 28) = 5.70, p < .03$, with the holistic group's mean alpha score (2.30) being greater than the analytic group's (1.12). The two-way interaction was also significant, $F(1, 168) = 6.23, p < .03$, and followed a pattern similar to that found with the reading alpha data (see the bottom half of Table 1).

Discussion

The present data are congruent with the bimodal theory of processing (Deikman, 1971; Dunn, in press; Ornstein, 1977; Paivio, 1975) from which the analytic-holistic dimension was derived. As we hypothesized, the analytic group recalled more of the important information from logically structured text (cause followed by effect) than the holistic group did. On the other hand, holistic participants recalled more important information from the less structured and more metaphorical text (poetry) than analytic participants did. This finding is clearly indicated by the relatively poor superordinate recall of the poetry

Colon, 3.04, 5.11

Statistical copy, 3.57

Adverbs, 2.09

Discussing tables, 3.63

Descriptive statistics appear in the table (see section 3.57)

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