

Effects of Age on Detection of Emotional Information

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Figure 2.1. Sample One-Experiment Paper (continued)

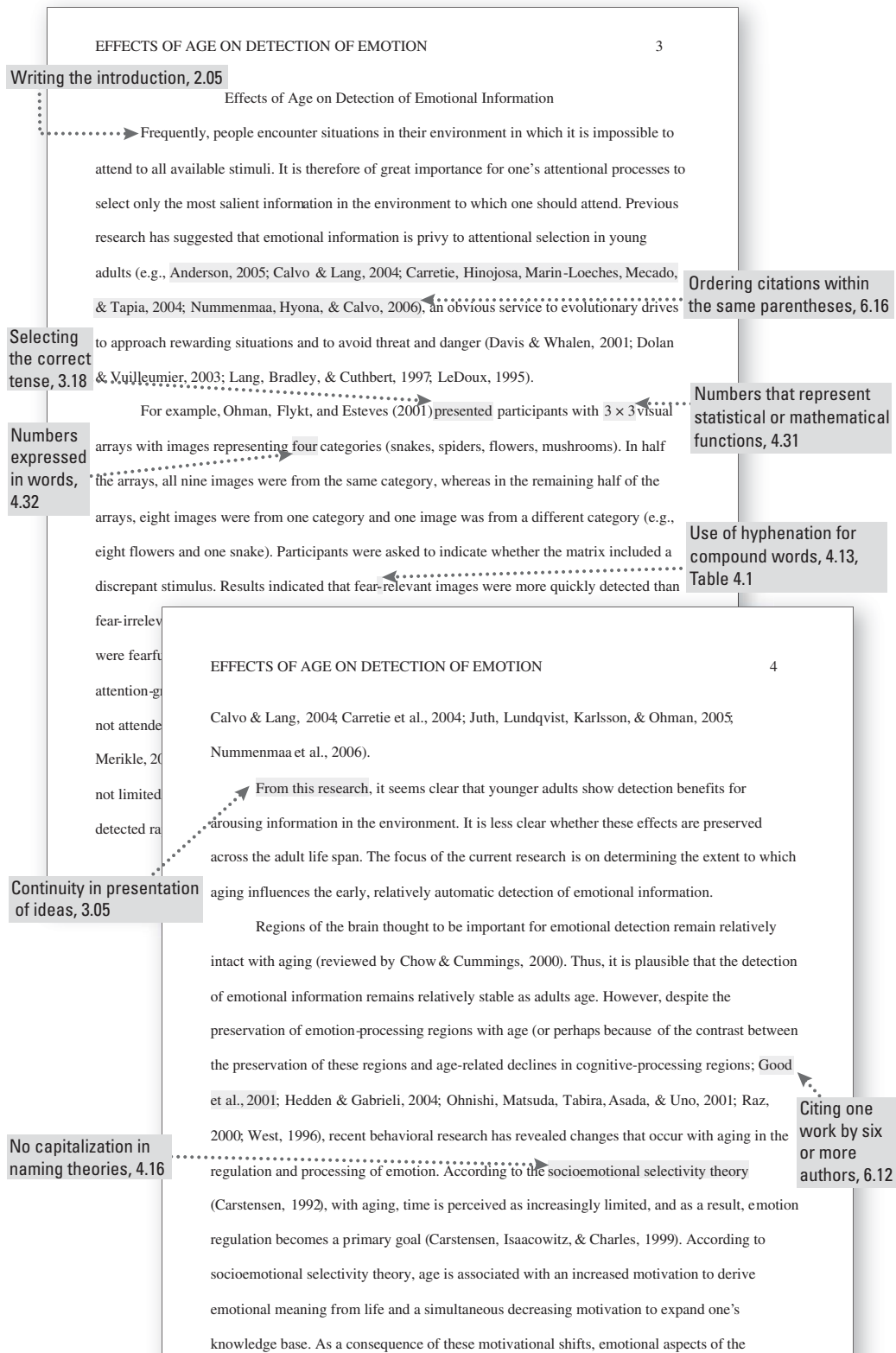


Figure 2.1. Sample One-Experiment Paper (continued)



Figure 2.1. Sample One-Experiment Paper (continued)

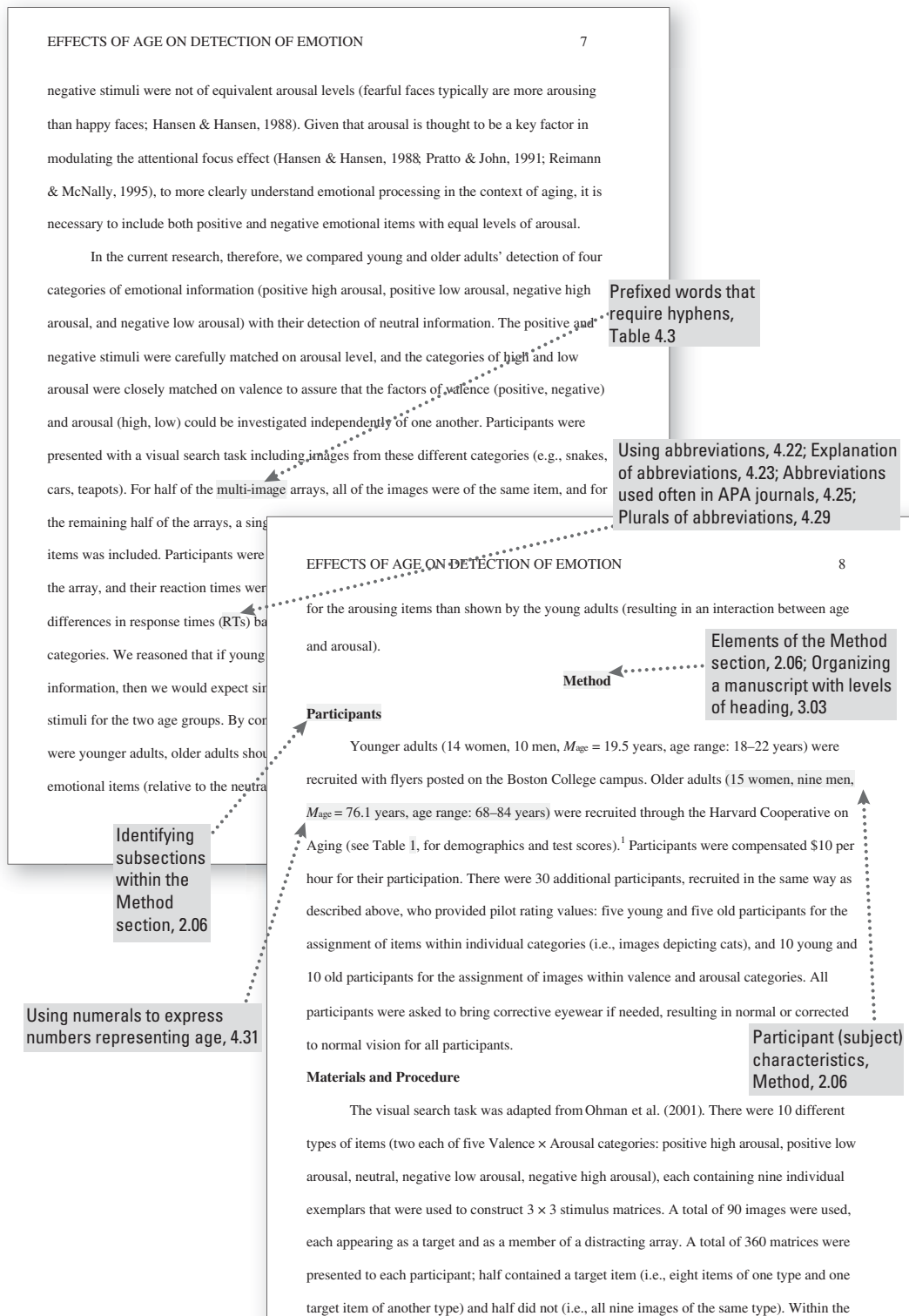


Figure 2.1. Sample One-Experiment Paper (continued)

matrix. Within the 180 target trials, each of the five emotion categories (e.g., positive high arousal, neutral, etc.) was represented in 36 trials. Further, within each of the 36 trials for each emotion category, nine trials were created for each of the combinations with the remaining four other emotion categories (e.g., nine trials with eight positive high arousal items and one neutral item). Location of the target was randomly varied such that no target within an emotion category was presented in the same location in arrays of more than one other emotion category (i.e., a negative high arousal target appeared in a different location when presented with positive high arousal array images than when presented with neutral array images).

The items within each category of grayscale images shared the same verbal label (e.g., mushroom, snake), and the items were selected from online databases and photo clipart packages. Each image depicted a photo of the actual object. Ten pilot participants were asked to write down the name corresponding to each object; any object that did not consistently generate the intended response was eliminated from the set. For the remaining images, an additional 20 pilot participants rated the emotional valence and arousal of the objects and assessed the degree of visual similarity among objects within a set (i.e., how similar the mushrooms were to one another) and between objects across sets (i.e., how similar the mushrooms were to the snakes).

Valence and arousal ratings. Valence and arousal were judged on 7-point scales (1 = *negative valence or low arousal* and 7 = *positive valence or high arousal*). Negative objects received mean valence ratings of 2.5 or lower, neutral objects received mean valence ratings of 3.5 to 4.5, and positive objects received mean valence ratings of 5.5 or higher. High arousal objects received mean arousal ratings greater than 5, and low arousal objects (including all neutral stimuli) received mean arousal ratings of less than 4. We selected categories for which both young and older adults agreed on the valence and arousal classifications, and stimuli were

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overall similarity of the object categories ($p s > .20$). For example, we selected particular mushrooms and particular cats so that the mushrooms were as similar to one another as were the cats (i.e., within-group similarity was held constant across the categories). Our object selection also assured that the categories differed from one another to a similar degree (e.g., that the mushrooms were as similar to the snakes as the cats were similar to the snakes).

Procedure

Each trial began with a white fixation cross presented on a black screen for 1,000 ms; the matrix was then presented, and it remained on the screen until a participant response was recorded. Participants were instructed to respond as quickly as possible with a button marked *yes* if there was a target present, or a button marked *no* if no target was present. Response latencies and accuracy for each trial were automatically recorded with E-Prime (Version 1.2) experimental

Figure 2.1. Sample One-Experiment Paper (continued)

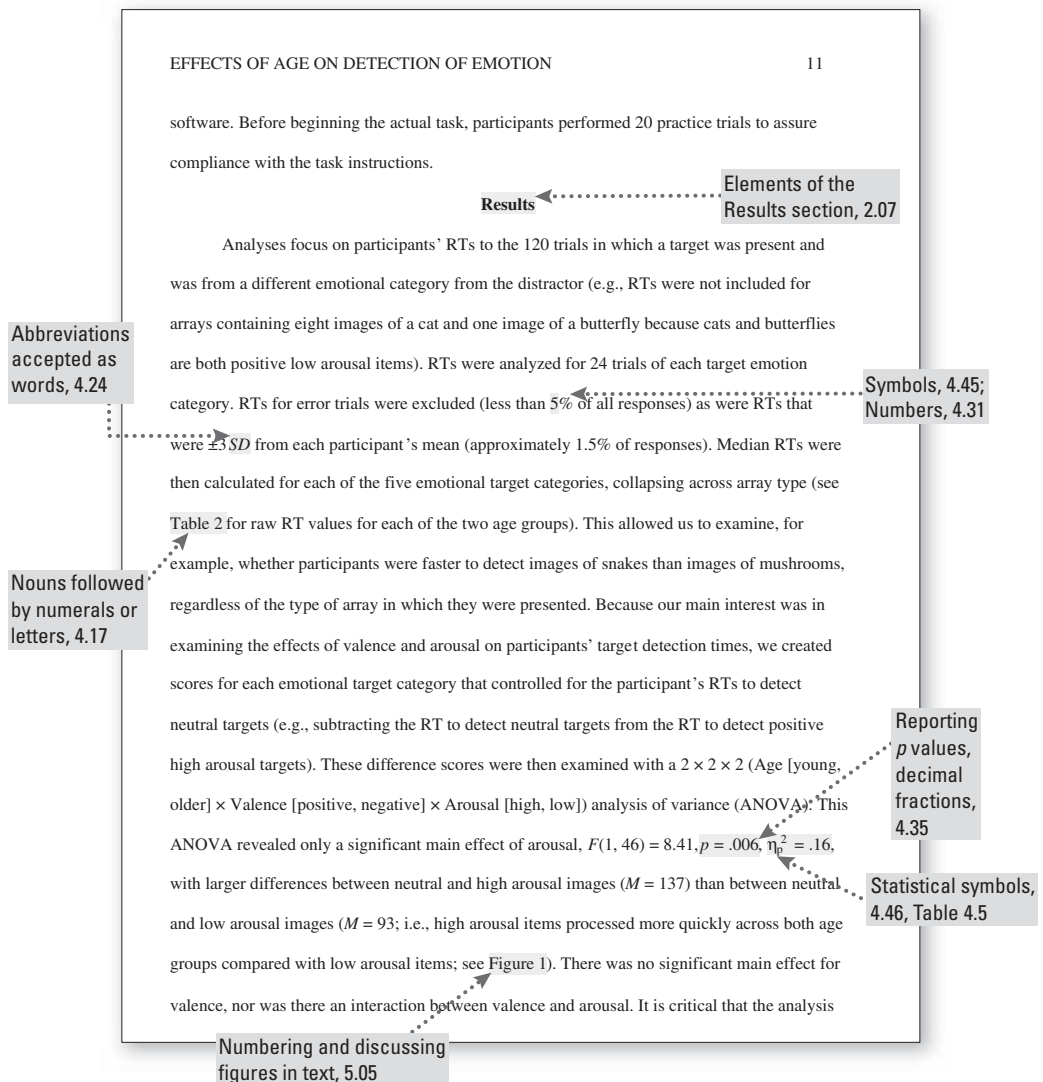


Figure 2.1. Sample One-Experiment Paper (continued)

revealed only a main effect of age but no interactions with age. Thus, the arousal-mediated effects on detection time appeared stable in young and older adults.

The results described above suggested that there was no influence of age on the influences of emotion. To further test the validity of this hypothesis, we submitted the RTs to the five categories of targets to a 2×5 (Age [young, old] \times Target Category [positive high arousal,

Statistics
in text, 4.44

positive low arousal, neutral, negative low arousal, negative high arousal]) repeated measures ANOVA.² Both the age group, $F(1, 46) = 540.32, p < .001, \eta_p^2 = .92$, and the target category,

Spacing, alignment,
and punctuation of
mathematical copy, 4.46

$F(4, 184) = 8.98, p < .001, \eta_p^2 = .16$, main effects were significant, as well as the Age Group \times Target Category interaction, $F(4, 184) = 3.59, p = .008, \eta_p^2 = .07$. This interaction appeared to

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or variables when
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reflect the fact that for the younger adults, positive high arousal targets were detected faster than targets from all other categories, $t_s(23) < -1.90, p < .001$, with no other target categories differing significantly from one another (although there were trends for negative high arousal and negative low arousal targets to be detected more rapidly than neutral targets ($p < .12$). For older adults, all emotional categories of targets were detected more rapidly than were neutral targets, $t_s(23) > 2.56, p < .017$, and RTs to the different emotion categories of targets did not differ significantly from one another. Thus, these results provided some evidence that older adults may show a broader advantage for detection of any type of emotional information, whereas young adults' benefit may be more narrowly restricted to only certain categories of emotional information.

Elements of the
Discussion section, 2.08

Discussion

As outlined previously, there were three plausible alternatives for young and older adults' performance on the visual search task: The two age groups could show a similar pattern of enhanced detection of emotional information, older adults could show a greater advantage for

Figure 2.1. Sample One-Experiment Paper (continued)

emotional detection than young adults, or older adults could show a greater facilitation than young adults only for the detection of positive information. The results lent some support to the first two alternatives, but no evidence was found to support the third alternative.

In line with the first alternative, no effects of age were found when the influence of valence and arousal on target detection times was examined; both age groups showed only an arousal effect. This result is consistent with prior studies that indicated that arousing information can be detected rapidly and automatically by young adults (Anderson, Christoff, Panitz, De Rosa, & Gabrieli, 2003; Ohman & Mineka, 2001) and that older adults, like younger adults, continue to display a threat detection advantage when searching for negative facial targets in arrays of positive and neutral distractors (Hahn et al., 2006; Mather & Knight, 2006). Given the

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processing, given that no effects of valence were observed in older adults' detection speed. In the present study, older adults were equally fast to detect positive and negative information, consistent with prior research that indicated that older adults often attend equally to positive and negative stimuli (Rosler et al., 2005). Although the pattern of results for the young adults has differed across studies—in the present study and in some past research, young adults have shown facilitated detection of positive information (e.g., Anderson, 2005; Calvo & Lang, 2004; Carretie et al., 2004; Juth et al., 2005; Nummenmaa et al., 2006), whereas in other studies, young adults have shown an advantage for negative information (e.g., Armony & Dolan, 2002; Hansen & Hansen, 1988; Mogg, Bradley, de Bono, & Painter, 1997; Pratto & John, 1991; Reimann & McNally, 1995; Williams, Mathews, & MacLeod, 1996)—what is important to note is that the older adults detected both positive and negative stimuli at equal rates. This equivalent detection of positive and negative information provides evidence that older adults display an advantage for the detection of emotional information that is not valence-specific.

Thus, although younger and older adults exhibited somewhat divergent patterns of emotional detection on a task reliant on early, relatively automatic stages of processing, we found no evidence of an age-related positivity effect. The lack of a positivity focus in the older adults is in keeping with the proposal (e.g., Mather & Knight, 2006) that the positivity effect does not arise through automatic attentional influences. Rather, when this effect is observed in older adults, it is likely due to age-related changes in emotion regulation goals that operate at later stages of processing (i.e., during consciously controlled processing), once information has been attended to and once the emotional nature of the stimulus has been discerned.

Although we cannot conclusively say that the current task relies strictly on automatic processes, there are two lines of evidence suggesting that the construct examined in the current

Figure 2.1. Sample One-Experiment Paper (continued)

research examines relatively automatic processing. First, in their previous work, Ohman et al. (2001) compared RTs with both 2×2 and 3×3 arrays. No significant RT differences based on the number of images presented in the arrays were found. Second, in both Ohman et al.'s (2001) study and the present study, analyses were performed to examine the influence of target location on RT. Across both studies, and across both age groups in the current work, emotional targets were detected more quickly than were neutral targets, regardless of their location. Together, these findings suggest that task performance is dependent on relatively automatic detection processes rather than on controlled search processes.

Although further work is required to gain a more complete understanding of the age-related changes in the early processing of emotional information, our findings indicate that

young and older adults
study provides further
of emotional images and
(Fleischman et al., 2004)
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Use of parallel construction
with coordinating conjunctions
used in pairs, 3.23

Discussion section ending
with comments on
importance of findings, 2.08

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Construction of an accurate and
complete reference list, 6.22;
General description of references, 2.11

Figure 2.1. Sample One-Experiment Paper (continued)

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Figure 2.1. Sample One-Experiment Paper (continued)

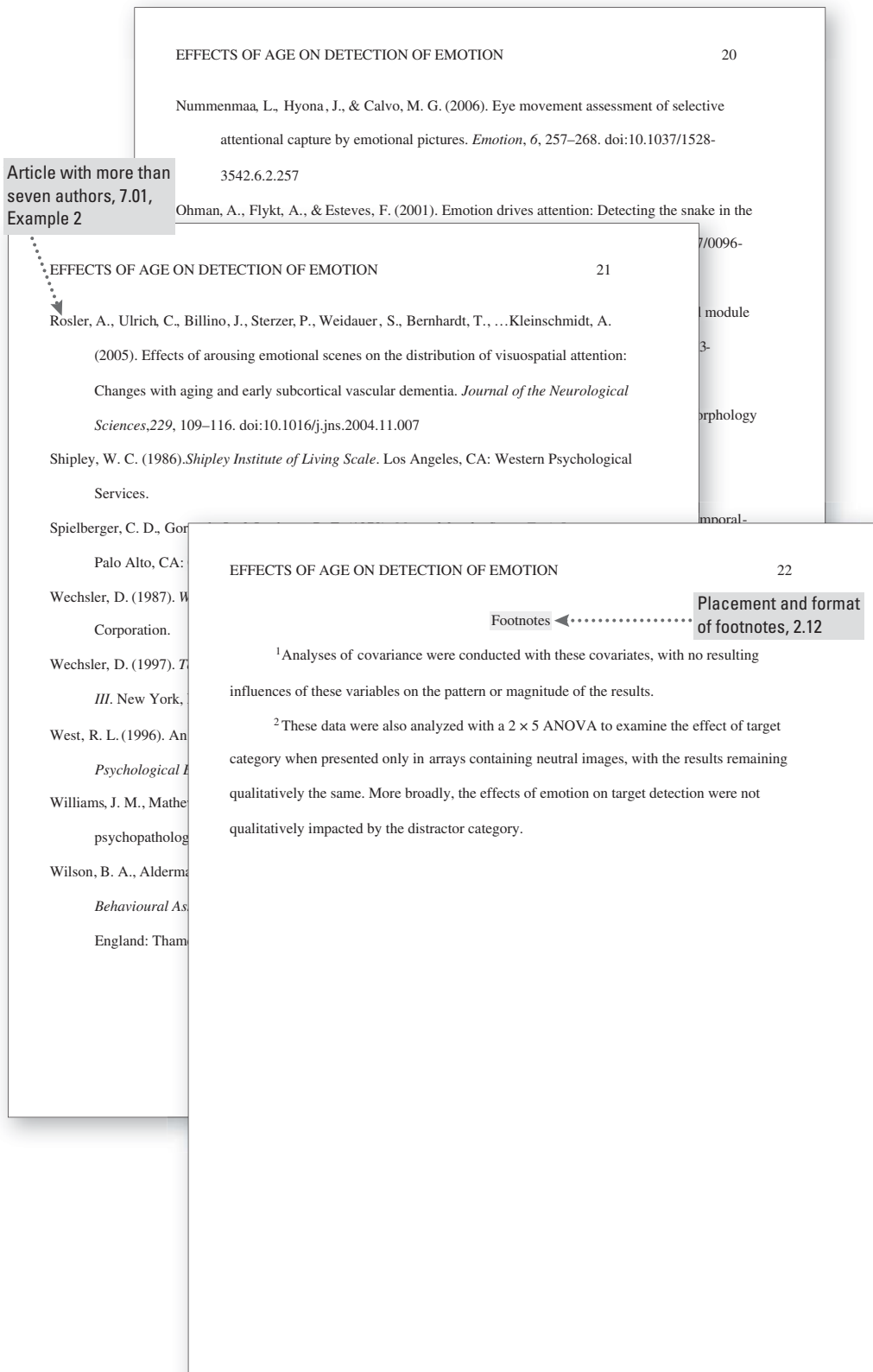


Figure 2.1. Sample One-Experiment Paper (continued)

EFFECTS OF AGE ON DETECTION OF EMOTION

23

Table 1

Participant Characteristics

Measure	Younger group		Older group		<i>F</i> (1, 46)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Years of education	13.92	1.28	16.33	2.43	18.62	<.001
Beck Anxiety Inventory	9.39	5.34	6.25	6.06	3.54	.066
BADS-DEX	20.79	7.58	13.38	8.29	10.46	.002
STAI-State	45.79	4.44	47.08	3.48	1.07	.306
STAI-Trait	45.64	4.50	45.58	3.15	0.02	.963
Digit Symbol Substitution	49.62	7.18	31.58	6.56	77.52	<.001
Generative naming	46.95	9.70	47.17	12.98	.004	.951
Vocabulary	33.00	3.52	35.25	3.70	4.33	.043
Digit Span-Backward	8.81	2.09	8.25	2.15	0.78	.383
Arithmetic	16.14	2.75	14.96	3.11	1.84	.182
Mental Control	32.32	3.82	23.75	5.13	40.60	<.001
Self-Ordered Pointing	1.73	2.53	9.25	9.40	13.18	.001
WCST perseverative errors	0.36	0.66	1.83	3.23	4.39	.042

Selecting effective presentation, 4.41; Logical and effective table layout, 5.08

EFFECTS

Table 2

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Note. The Beck Anxiety Inventory is from Beck et al. (1988); the Behavioral Assessment of the Dysexecutive Syndrome—Dysexecutive Questionnaire (BADS-DEX) is from Wilson et al.

(1996); the State-Trait Anxiety Inventory (STAI) measures are from Spielberger et al. (1970);

and the Digit Symbol Substitution, Digit Span-Backward, and Arithmetic Wechsler Adult

Intelligence Scale—III and Wechsler Memory Scale—III measures are from Wechsler (1997).

Generative naming scores represent the total number of words produced in 60 s each for letter

F, *A*, and *S*. The Vocabulary measure is from Shipley (1986); the Mental Control measure is

from Wechsler (1987); the Self-Ordered Pointing measure was adapted from Petrides and Milner

(1982); and the Wisconsin Card Sorting Task (WCST) measure is from Nelson (1976).

All values represent raw, nonstandardized scores.

Elements of table notes, 5.16

Figure 2.1. Sample One-Experiment Paper (continued)

Principles of figure use and construction, types of figures; standards, planning, and preparation of figures, 5.20–5.25



Figure 1. Mean difference values (ms) representing detection speed for each target category subtracted from the mean detection speed for neutral targets. No age differences were found in the arousal-mediated effects on detection speed. Standard errors are represented in the figure by the error bars attached to each column.

Figure legends and captions, 5.23

Figure 2.2. Sample Two-Experiment Paper (The numbers refer to numbered sections in the *Publication Manual*. This abridged manuscript illustrates the organizational structure characteristic of multiple-experiment papers. Of course, a complete multiple-experiment paper would include a title page, an abstract page, and so forth.)



Figure 2.2. Sample Two-Experiment Paper (continued)

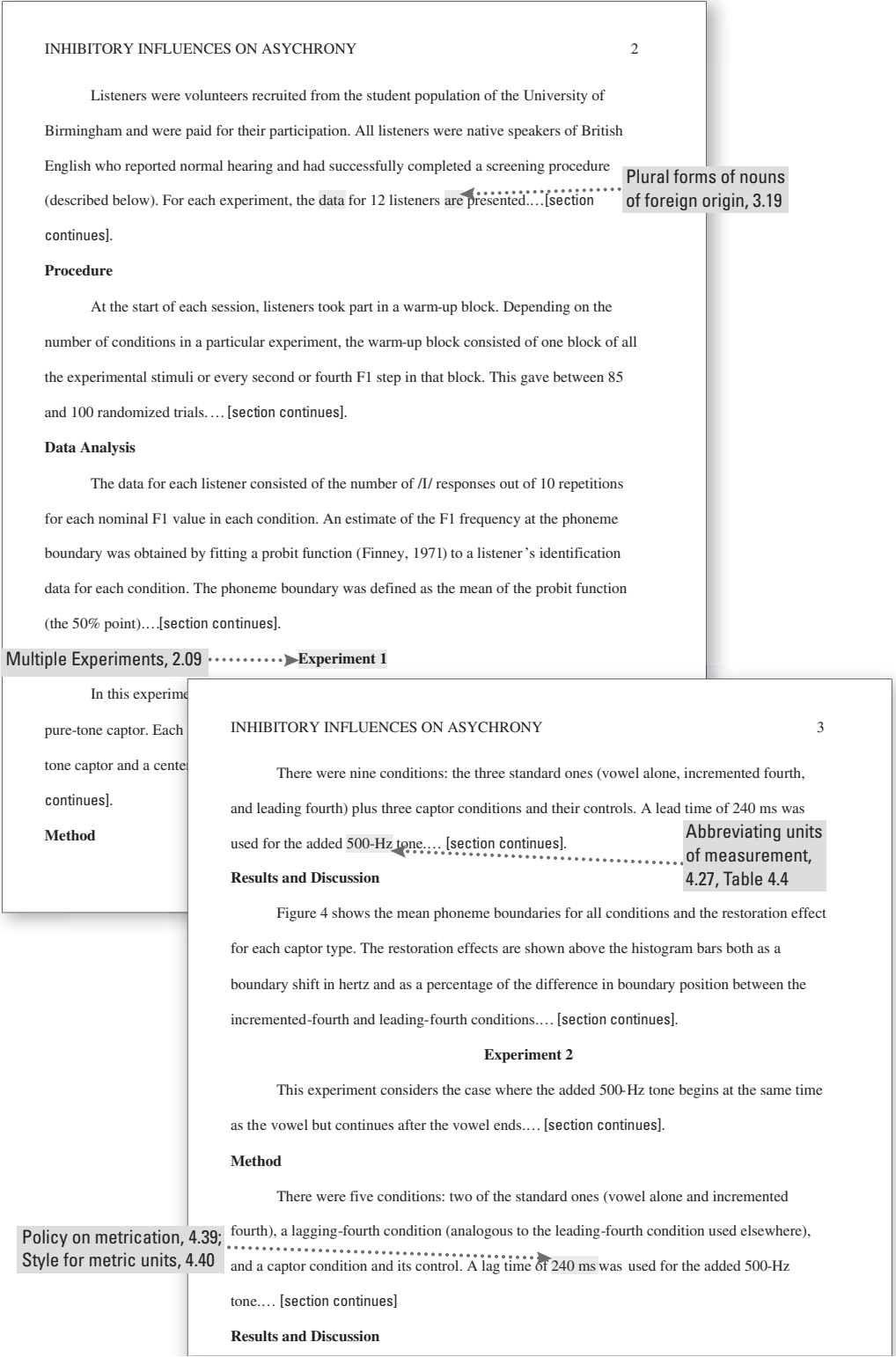


Figure 2.2. Sample Two-Experiment Paper (continued)

INHIBITORY INFLUENCES ON ASYNCHRONY

4

1984; Roberts & Holmes, 2006). This experiment used a gap between captor offset and vowel onset to measure the decay time of the captor effect ...[section continues].

Method

There were 17 conditions: the three standard ones (vowel alone, incremented fourth, and leading fourth), five captor conditions and their controls, and four additional conditions (described separately below). A lead time of 320 ms was used for the added 500-Hz tone. The captor conditions were created by adding a 1.1-kHz pure-tone captor, of various durations, to each member of the leading-fourth continuum....[section continues].

Results

Figure 6 shows the mean phoneme boundaries for all conditions. There was a highly significant effect of condition on the phoneme boundary values, $F(16, 176) = 39.10, p < .001$. Incrementing the level of the fourth harmonic lowered the phoneme boundary relative to the vowel-alone condition (by 58 Hz, $p < .001$), which indicates that the extra energy was integrated into the vowel percept...[section continues].

Discussion

The results of this experiment show that the effect of the captor disappears somewhere between 80 and 160 ms after captor offset. This indicates that the captor effect takes quite a long time to decay away relative to the time constants typically found for cells in the CN using physiological measures (e.g., Needham & Paolini, 2003)...[section continues].

Summary and Concluding Discussion

Darwin and Sutherland (1984) first demonstrated that accompanying the leading portion of additional energy in the F1 region of a vowel with a captor tone partly reversed the effect of the onset asynchrony on perceived vowel quality. This finding was attributed to the formation of

Use of statistical term rather than symbol in text, 4.45

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a perceptual group between the leading portion and the captor tone, on the basis of their common onset time and harmonic relationship, leaving the remainder of the extra energy to integrate into the vowel percept... [section continues].

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Figure 2.3. Sample Meta-Analysis (continued)

THE SLEEPER EFFECT IN PERSUASION

3

was satisfactory (Orwin, 1994). We resolved disagreements by discussion and consultation with colleagues. Characteristics of the individual studies included in this review are presented in Table 1. The studies often contained several independent datasets such as different messages and different experiments. The characteristics that distinguish different datasets within a report appear on the second column of the table.

Dependent Measures and Computation of Effect Sizes

We calculated effect sizes for (a) persuasion and (b) recall-recognition of the message content. Calculations were based on the data described in the primary reports as well as available responses of the authors to requests of further information....[section continues].

Analyses of Effect Sizes

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THE SLEEPER EFFECT IN PERSUASION

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place over time....[section continues].

In light of these requirements, we first examined whether discounting cues led to a decrease in agreement with the communication (boomerang effect). Next....[section continues].

Ruling out a nonpersisting boomerang effect. To determine whether or not a delayed increase in persuasion represents an absolute sleeper effect, one needs to rule out a nonpersisting boomerang effect, which takes place when a message initially backfires but later loses this reverse effect (see panel A of Figure 1)....[section continues].

Average sleeper effect. Relevant statistics corresponding to average changes in persuasion from the immediate to the delayed posttest appear in Table 4, organized by the different conditions we considered (i.e., acceptance-cue, discounting-cue, no-message control, and message-only control). In Table 4, positive effect sizes indicate increases in persuasion over time, negative effect sizes indicate decay in persuasion, and zero effects denote stability in persuasion. Confidence intervals that do not include zero indicate significant changes over time. The first row of Table 4 shows that recipients of acceptance cues agreed with the message less as time went by (fixed-effects, $d_+ = -0.21$; random-effects, $d_+ = -0.23$). In contrast to the decay in persuasion for recipients of acceptance cues, there was a slight increase in persuasion for recipients of discounting cues over time ($d_+ = 0.08$). It is important to note that change in discounting-cue conditions significantly differed from change in acceptance-cue conditions, (fixed-effects; $B = -0.29$, $SE = 0.04$), $Q_B(1) = 58.15$, $p < .0001$; $Q_E(123) = 193.82$, $p < .0001$[section continues].

Summary and variability of the overall effect. The overall analyses identified a relative sleeper effect in persuasion, but no absolute sleeper effect. The latter was not surprising, because the sleeper effect was expected to emerge under specific conditions....[section continues].

Figure 2.3. Sample Meta-Analysis (continued)

Moderator Analyses

Although overall effects have descriptive value, the variability in the change observed in discounting-cue conditions makes it unlikely that the same effect was present under all conditions. Therefore, we tested the hypotheses that the sleeper effect would be more likely (e.g., more consistent with the absolute pattern in Panel B1 of Figure 1) when...[section continues].

Format for references included in a meta-analysis with less than 50 references, 6.26

References

References marked with an asterisk indicate studies included in the meta-analysis.

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... [references continue]

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... [references continue]

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