The Effects of Syntactic Complexity on Advertising Persuasiveness

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Three experiments investigated the effects of syntactic complexity on the persuasiveness of advertising. Experiment 1 showed that, in a broadcast advertising context, syntactic complexity affects recall and recognition but not the persuasiveness of the advertising. However, Experiment 2 indicated that, in a print context, persuasiveness of an advertisement is affected by syntactic complexity. Finally, Experiment 3 demonstrated that motivation to process information interacts with syntactic complexity to determine the persuasiveness of print advertising. These results imply that the impact of syntactic complexity on advertising effectiveness is more complicated than previously thought.

Simple is best. At least when it comes to creating advertisements, that is what copywriting guidelines suggest (Percy, 1982; Rogers, 1988). Typical recommendations are to avoid complex syntax such as long headlines (e.g., "Sooner or later you'll break down and join AAA"), negations (e.g., "Orange juice is not just for breakfast anymore"), and passive constructions (e.g., "Advil is recommended by more doctors"). As these examples make clear, however, advertisements often violate these guidelines, and the advertising may be considered quite successful.

The question becomes, then, under what conditions, if any, is simple always best? The "simple is best" concept derives to a large extent from psycholinguistic research on reading comprehension. This research clearly indicates that simple text is better comprehended than complex text (Anderson & Davison, 1988). However, in many respects, advertising is ultimately about persuasion, of which comprehension is but one component. Most of the copywriting guidelines appear to assume that better comprehension always leads to greater persuasion. The questions of

whether and how syntactic complexity affects persuasion in an advertising context are empirical and have yet to be answered. The experiments reported here investigate this issue.

PSYCHOLINGUISTICS

Psycholinguistics addresses the use and understanding of language, including the comprehension of text. Syntactic complexity is one aspect of language that has important implications for comprehension processes.

Syntactic analysis (parsing) is concerned with grammatical relations between words. Parsing skills enable readers to determine the actors and actions being conveyed in a sentence. Parsing relies on several cues, including word order, word class (e.g., nouns, verbs, etc.), word function (e.g., determiners, quantifiers), and word meaning (for a detailed discussion of these cues, see Just & Carpenter, 1987). Multiple cues are usually necessary to analyze syntax successfully. In fact, these cues are interdependent.

Particular syntactic structures that have been shown to reduce the comprehensibility of text include negation, passive construction, and left-branching sentences—for example, "Because it's high in fiber, Brand X is a healthy choice for breakfast" (left-branching) versus "Brand X is a healthy choice for breakfast because it's high in fiber" (right-branching). For example, response latencies are slower and more errors are made when processing negative or passive sentences than when processing affirmative or active sentences (Clark & Chase, 1972; Gough, 1965; Mehler, 1963; Miller, 1962; Wason, 1959). Finally, several studies have found that left-branching structures can overload working memory, particularly in children and older adults. Even for adults with normal capacity, such structures can cause processing difficulties when combined with other factors that place demands on short-term memory (Anderson & Davison, 1988).

The processing requirements of each of these structures, alone and in combination, can exceed the capacity of working memory. Readers immediately process each word encountered individually, as verified by eye-fixation studies (Just & Carpenter, 1987). Thus, any unexpected word causes a startle effect resulting in regressive fixations (i.e., backward glances). This startle effect can be caused by ambiguous words or erroneous syntactic interpretations. In summary, the studies have found that sentences with complex syntax are harder to read (i.e., require more regressive fixations), produce longer response times and a greater number of errors, and are less easily recalled than are sentences with simple syntax.

Psycholinguistics and Advertising Research

The very little advertising research that has utilized a psycholinguistic framework has focused on semantic issues such as abstract versus concrete words (Rossiter &

Percy, 1978) and the misleading nature of copy that invites readers to make inferences (Harris, 1977; Harris, Dubitsky, & Bruno, 1983). One study investigated the effects of increasing the average reading level of advertising (Macklin, Bruvold, & Shea, 1985), but reading level was increased primarily through vocabulary, not sentence structure. At least one study has specifically addressed syntactic issues. Jacoby, Nelson, and Hoyer (1982), examining corrective advertising, found that affirmations are better comprehended than negations, replicating previous findings in psycholinguistics (Gough, 1966; Miller, 1962; Slobin, 1966).

Despite the paucity of research on psycholinguistics in advertising contexts, copywriting guidelines based on general psycholinguistic principles have been developed (Percy, 1982; Rogers, 1988). The purpose of the studies to be presented here is to test empirically hypotheses derived from psycholinguistic theory regarding advertising effectiveness. Specifically, these studies investigate the effects of syntactic complexity on brand attitudes and the conditions under which these effects hold.

SYNTACTIC COMPLEXITY AND PERSUASION

The Elaboration Likelihood Model (ELM) of Petty and Cacioppo (1986) has specific implications for predicting syntactic complexity's influence on persuasion. The ELM outlines several factors that affect both the ability and motivation to elaborate on arguments contained in a persuasive message. If ability to process is impaired, or motivation to process is low, elaboration of message arguments likely will suffer. Thus, the message should be less persuasive for strong arguments under these conditions. According to the ELM, however, weak arguments should be more persuasive when elaboration is low.

Factors affecting the ability to process information include distraction, message repetition, and message complexity or comprehensibility. For example, if one is distracted from attending to a message, it is difficult to elaborate on the information in the message. The same is true when comprehension of the message is impaired by message complexity. Factors that affect level of motivation include personal relevance, responsibility, and message sources. For instance, the more personally relevant a particular advertisement, the more one may be motivated to pay attention to and elaborate on it. Thus, both ability to process and motivation to process are important determinants of the persuasiveness of an advertisement.

In ELM terms, syntactic complexity might be viewed as an ability variable (i.e., message complexity), although it has been suggested that message complexity in the form of quantitative information may also operate as a motivational variable (Petty & Cacioppo, 1986; Yalch & Elmore-Yalch, 1984). If viewed as an ability variable, syntactic complexity might impair processing of the information presented in an ad. Thus, somewhat complex (yet comprehensible) messages may be less comprehensible than simple messages because of reduced processing abilities.

Studies using the ELM as a framework typically address the effects of extreme levels of complexity. At such levels, working memory can become overloaded, resulting in a lack of ability to process the message, even when motivation to process is high. However, because advertising is designed to be comprehensible to the majority of adults with average language skills, it is important to address the role that less extreme levels of complexity may have in the persuasion process Under normal circumstances, advertisements range from simple to somewhat complex.[1] The experiments reported here address these issues with particular attention paid to the levels of complexity and exposure conditions frequently encountered in advertising contexts. The first experiment is a simple investigation of the effects of syntactic complexity on advertising persuasiveness in a broadcast context. The second experiment includes a shift to a print context and a manipulation of argument strength. In addition, this experiment was conducted in a laboratory to examine explanatory factors for the effects of syntactic complexity. The third experiment conceptually replicates Experiment 2, but adds a manipulation of motivation to process information to determine whether the effects of syntactic complexity found in Experiments 1 and 2 were due primarily to impaired ability or lack of motivation to process information.

EXPERIMENT 1

Syntactic complexity was manipulated to determine its effect on advertising persuasiveness. Rough television commercials were copytested by ASI Market Research, Inc., using their typical field experiment methodology. Bran cereal was chosen as the product for the commercials in an effort to hold constant at a moderate level personal relevance, and thus motivation to process information.[2]

Method

Development of stimuli.   The syntactically simple claims were written in the affirmative, active voice with right-branching structure. Complex copy was created by transforming the simple claims into negations and left-branching, passive structures. Every effort was made to keep total length of each version approximately equal (range was 47–54 words).

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[1]For example, a syntactically simple headline would be "Raid kills bugs dead " A complex headline would be "We're not the best because we're the oldest—we're the oldest because we're the best "

[2]The use of the term *moderate* refers to an unmanipulated, unmeasured level of personal relevance Pretests indicated that bran cereal was of moderate interest to individuals Because Experiment 3 includes an involvement manipulation (in an attempt to investigate processing strategies under low and high levels of personal relevance), the term *moderate* is used to differentiate between the first two experiments and Experiment 3

These versions were pilot-tested for comprehensibility using the Cloze procedure (Taylor, 1953; see also Zinkhan & Martin, 1983). This procedure involved asking participants to fill in the blanks in a passage of text (the advertising copy) where every fifth word had been replaced with a blank. Comprehensibility scores were then computed by summing the number of incorrectly replaced words within the passage of text. The syntactically simple copy produced significantly fewer errors ($M = 3.29$, $SD = 1.49$) than did the complex copy ($M = 4.32$, $SD = 1.57$), $F(1, 32) = 9.11$, $p = .005$, indicating that the syntactic complexity manipulation was successful.

Two television commercials that varied in terms of their syntactic complexity were produced. In a broadcast context, moderate levels of syntactic complexity should impair ability to process, consistent with previous findings in psycholinguistics. Inability to process fully should decrease the persuasiveness of the commercials, consistent with the ELM Thus, a main effect of syntactic complexity on persuasion was expected: Attitudes should be less favorable for complex syntax versions than for simple syntax versions.

Sample and procedure.   A total of 400 women between the ages of 18 and 65 were recruited by ASI Market Research, Inc., in the cities of Chicago and Providence, RI. Three hundred seventy-five participated in the recall phase of the experiment, and 255 participated in the refocus phase of the experiment (to be described in detail subsequently).

The television commercials advertised BRAN-NEW, a fictitious breakfast cereal. Minor modifications of the pilot-tested copy were made to allow for a more natural delivery by the spokeswoman (for these scripts, see Appendix A).

On the day the commercial was to be broadcast, potential viewers were recruited by telephone in each test site. They were invited to preview new material being considered for a television broadcast and were informed that they would be contacted the following day to voice their opinions. The test commercial for BRAN-NEW was inserted along with other test commercials into a program vehicle that had never been broadcast (a situation comedy pilot), similar to normal television programming practices. The program was broadcast in the early evening on a vacant cable channel.

On the following day, respondents were contacted by phone and asked whether they had viewed the programming the previous evening. Respondents who had viewed then were administered the recall questionnaire (the recall phase). The questionnaire included questions regarding the program vehicle, questions about each of the test commercials (including recall and recognition), and classification questions concerning general demographics and the respondents' diet and exercise habits.

After these data were collected, respondents again were asked to turn their televisions to the vacant channel for a rebroadcast of the test commercial for

BRAN-NEW (the refocus phase). The subset of respondents who agreed to watch the commercial a second time then was asked specific questions about the commercial, including their attitudes toward the brand compared to other brands. The attitudes were measured using a 5-point scale, ranging from 1 (*not very good*) to 5 (*much better*).

Results

Recall.   As expected, the simple syntax version yielded a higher level of related recall (46%) than did the complex syntax version (37%), although this effect was only marginally significant, $F(1, 373) = 2.86, p = .10$. In addition, recognition was greater for the simple syntax version (62%) than for the complex version (50%), $F(1, 373) = 5.32, p = .03$. These results are consistent with previous findings regarding the effects of syntactic complexity on text comprehension.

Attitudes.   The hypothesized main effect was not statistically significant, $F(1, 253) < 1$, power = 97, based on a medium effect size of .25 (Cohen, 1987). Thus, attitudes did not differ as a function of syntactic complexity, although recall and recognition levels were affected by complex syntax.

Discussion

In a broadcast context, syntactic complexity was expected to impact ability to process. Consequently, complex syntax was expected to produce less favorable product attitudes than simple syntax. However, these results were not observed. Instead, only recall and recognition levels were impacted by syntactic complexity.

There are a number of possible explanations as to why syntactic complexity failed to influence attitudes. The complexity manipulation may not have been strong enough to produce any differences in attitudes. This is not supported by the recall results, however, which found that the complexity manipulation was at least strong enough to produce differences both in recognition, and, to a lesser extent, in recall.

A second, more likely explanation concerns the manner in which the data were collected. The recall and recognition data were collected from all participants, whereas the attitude data were collected from a subset of these participants who also participated in the refocus phase of the study. More important, the attitude data in the refocus phase were collected after participants had viewed the commercial a second time. Consequently, the second viewing of the commercial may have negated the effects of the syntactic complexity manipulation, particularly in light of its subtle nature.

Thus, although the recall and recognition results were consistent with predictions, problems with precise data collection methods inherent in the field experiment preclude drawing unequivocal conclusions regarding the effects of syntactic complexity. To address these problems and to test additional hypotheses regarding the effects of syntactic complexity in the persuasion process, a lab experiment was conducted to better control measurement and procedure. In addition, the experiment investigated the possible effects of syntactic complexity on attitudes within a print context. Syntactic complexity may operate differently in a print context because of the self-paced (rather than externally paced) nature of message reception.

EXPERIMENT 2

In a print context the impact of syntactic complexity on persuasion may depend on the strength of the claims, consistent with basic ELM assumptions. When complexity is low (simple syntax) and claims are thus easily understood, strong claims may produce more favorable attitudes than weak claims. When complexity is greater (complex syntax) and claims are thus less easily understood, argument strength may have less impact. Hence, an interaction is expected between syntactic complexity and argument strength.

Method

Development of stimuli.   Four print advertisements for BRAN-NEW that differed in syntactic complexity (simple vs. complex) and argument strength (strong vs. weak claims) were created, yielding a 2 × 2 factorial design (the claims are presented in Appendix B).

Participants in the previously reported pilot test also provided strength ratings for several advertising claims, using a 5-point scale, ranging from 1 (*very weak*) to 5 (*very strong*). Claims that were expected to be strong and compelling included "great taste," "fat-free," and "high in fiber." Claims that were expected to be weak and less compelling included "easy to store in small kitchens," "lightweight packaging," and "available at many stores." Strong claims were rated as much stronger ($M = 4.32$, $SD = .49$) than were weak claims ($M = 2.52$, $SD = .84$), $F(5, 31) = 31.133$, $p = .0001$.

Sample and procedure.   Fifty-seven students received extra credit in an introductory class for participating in the study. The data from 1 participant whose native language was not English were eliminated; the data from 3 other participants were eliminated due to failure to follow instructions. Thus, the data from 53 participants were retained for analysis.

Booklets containing 10 advertisements were randomly distributed to the participants. The target ad for BRAN-NEW breakfast cereal was embedded in the third position in the booklet. The first page of the ad booklet informed participants that they would be reading a series of ads, some of which might be in unfinished or "rough" form. Five of the 10 ads were roughs, including the target ad for BRAN-NEW cereal. Participants were allowed to read through the booklet at their own pace, but no interaction between participants was allowed.

After reading through the ad booklet, participants were presented with a measurement booklet, which they also completed at their own pace. Participants reported their attitudes toward BRAN-NEW along a 9-point scale, ranging from 1 (*very negative*) to 9 (*very positive*).[3] Free recall of the target ad content then was assessed by asking participants to list any information they could remember about the target product. In addition, cognitive responses toward the target product were assessed by having participants list their thoughts on thought-listing forms. Finally, participants provided demographic information, including native language.

Results

Recall.   Simple syntax versions did not differ from complex versions in terms of the number of claims recalled, $F(1, 49) = 1.08, p > .10$. This finding is different from that obtained in Experiment 1. However, because Experiment 1 involved a broadcast context (externally paced message) rather than the print context (self-paced message) used in Experiment 2, that finding is not surprising given the moderate levels of syntactic complexity used.

Attitudes.   A 2 (simple/complex syntax) × 2 (strong/weak claims) analysis of variance (ANOVA) was conducted to analyze participants' attitudes toward BRAN-NEW cereal. The results of this analysis indicated that attitudes were influenced by both the strength of the claims and the level of syntactic complexity (see Table 1). As hypothesized, syntactic complexity interacted with argument strength, $F(1, 49) = 4.63, p = .04$. For simple syntax versions, attitudes were more favorable for strong claims than for weak claims, $t(24) = 2.71, p = .02$. However, when participants were exposed to ads with complex syntax, their attitudes did not differ as a function of claim strength, $t(24) < 1$. Neither of the main effects was significant, although the effect of argument strength was marginally significant, $F(1, 49) = 3.49, p = .07$.

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[3]In addition, participants were asked to indicate their purchase intention on a 9-point scale, ranging from 1 (*very unlikely*) to 9 (*very likely*) As no results of any interest were obtained for that measure, it is not discussed further

TABLE 1
Mean Attitude Ratings and Cognitive Responses for Experiment 2
as a Function of Syntactic Complexity and Claim Strength

| | Simple Syntax | | | | Complex Syntax | | | |
| | Strong Claims | | Weak Claims | | Strong Claims | | Weak Claims | |
Dependent Variables	M	SD	M	SD	M	SD	M	SD
Brand attitude	4 86$_a$	1 56	3 08$_b$	1 78	4 54$_a$	1 61	4 64$_a$	1 39
Support arguments	50$_a$	85	00$_b$	00	15$_{ab}$	38	29$_{ab}$	61
Counterarguments	1 36$_a$	93	1 92$_a$	1 38	92$_a$	1 04	1 50$_a$	76

Note   For each measure, means sharing subscripts are not significantly different at $p < 05$
For the support arguments, one listed thought was dummy-coded as a support argument in the
simple syntax/weak claims cell, even though no participants in this cell generated support
arguments This was necessary in order to conduct planned comparisons between strong and
weak claims in the simple syntax condition

Cognitive responses.   Cognitive responses generated during the processing
of persuasive messages may be important mediators of attitude change (Greenwald,
1968; Petty & Cacioppo, 1986). Two trained, independent judges categorized each
participant's thoughts as support arguments, counterarguments, other relevant
thoughts, or irrelevant thoughts (Petty & Cacioppo, 1979; Wright, 1980). Support
arguments included those thoughts that agreed with or elaborated on claims made
in the ad, as well as thoughts that expressed positive global attitudes. Counterargu-
ments included thoughts that disagreed with or argued with claims made in the ad,
as well as thoughts that generally indicated a negative attitude. The judges were
blind to the syntactic complexity and claim strength conditions. The two judges
agreed with each other on 79% of their classifications. All disagreements were
resolved by a third judge.

A 2 × 2 ANOVA was conducted on the total number of support and counterar-
guments that each participant generated (see Table 1). The results for support
arguments showed that syntactic complexity interacted with claim strength to
impact the generation of support arguments, $F(1, 49) = 4.02$, $p = .05$. For simple
syntax versions, more support arguments were generated for strong claims than for
weak claims, $t(24) = 1.71$, $p = .05$, one-tailed. For complex syntax versions, there
was no effect of claim strength on the number of support arguments generated, $t(24)$
< 1. This pattern is the same as that obtained with the brand attitude measure,
although planned comparisons yielded slightly different significant relations.[4] For
support arguments, neither of the main effects was significant.

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[4]There was a significant correlation between attitude ratings and the number of support arguments
generated ($r = 50$, $p = 001$)

The results for counterarguments yielded a different pattern (see Table 1). The two-way interaction was not significant, $F(1, 49) < 1$, but the main effect for argument strength approached significance, $F(1, 49) = 3.98$, $p = .06$. Specifically, fewer counterarguments were generated for strong claims (i.e., collapsed across levels of syntactic complexity ($M = 1.15$, $SD = .99$) than for weak claims ($M = 1.69$, $SD = 1.09$). It appears, then, that attitudes may have been influenced mainly by the lack of support arguments generated by participants exposed to weak claims with simple syntax.

Discussion

Attitudes toward the advertisements were expected to vary as a function of both syntactic complexity and claim strength. Specifically, for simple syntax versions, attitudes were expected to be more favorable for strong claims than for weak claims. For complex syntax versions, however, attitudes were not expected to differ as a function of claim strength. The pattern of the data fits this hypothesis. The analysis of support arguments also yielded results that bolster this notion. The number of support arguments generated in response to simple syntax versions differed as a function of claim strength, whereas the number of support arguments generated in response to complex syntax versions did not. Note that these results are entirely consistent with the basic tenets of the ELM. However, it is not completely clear why these results were obtained.

One basic assumption of the ELM is that when ability to process is hindered, results similar to those in Experiment 2 will be obtained. However, an alternative explanation for the results of Experiment 2 is that syntactic complexity is operating as a motivational rather than an ability variable. Consider that in most advertising contexts, even complex versions are not incomprehensible; certainly this is true for the complex versions in these experiments. On the other hand, studies that investigate the ability to process information often use extremely complex stimuli. Syntactic complexity should be viewed as falling along a continuum from simple messages at one endpoint to incomprehensible messages at the other, with complex yet comprehensible messages falling near the midpoint.

In the context of advertising, then, in which messages are normally designed to be readily comprehensible, the messages may only range from very simple to somewhat complex. Consequently, syntactic complexity may in fact serve as a motivational variable. If this is so, motivation to process the ad should be a key determinant of the extent to which syntactic complexity affects brand attitudes because complex messages require greater processing effort than do simple messages. One interpretation of the results obtained in Experiment 2 is that motivation to process the ad is reduced when extra effort is required (i.e., when syntax is complex).

The results of Experiment 2 lend partial support for this reasoning. In particular, the lack of any difference in recall levels between simple and complex versions suggests similar levels of comprehension. Moreover, even though it is possible that complex syntax overloaded processing capabilities, this seems unlikely given the moderate level of complexity and the self-paced nature of the print context.

Experiment 3 was designed to distinguish between the two competing explanations (ability vs. motivation) for the results obtained in Experiment 2. Experiment 3 conceptually replicated Experiment 2, but also manipulated motivation to process information to determine whether syntactic complexity at moderate levels is a motivational variable rather than an ability variable.

EXPERIMENT 3

The purpose of this experiment was to examine the effects of syntactic complexity under different levels of motivation to process information. This was accomplished by manipulating the personal relevance of (i.e., the involvement with) the target ad. By manipulating involvement, it is possible to determine whether a moderate level of syntactic complexity (as used in Experiments 1 and 2) serves to inhibit either the ability or the motivation to process the ad. If syntactic complexity operates solely as an ability factor, involvement level should not affect attitudes. However, if syntactic complexity operates as a motivational factor, the attitudes of participants in the high-involvement condition should differ from those of participants in the low-involvement condition, producing an interaction between syntactic complexity, argument strength, and involvement. Specifically, high-involvement participants should report more positive attitudes for strong versions than for weak versions, regardless of level of syntactic complexity. Low-involvement participants, on the other hand, should differentiate between strong and weak versions for simple ads only. For complex ads, the attitudes of low-involvement participants should not differ across levels of claim strength. The experiment used the same design as Experiment 2, with the addition of an involvement manipulation, yielding a 2 (simple/complex syntax) × 2 (strong/weak claims) × 2 (low/high involvement) factorial design.

Method

Sample and procedure.   There were 117 students at a large Midwestern university and 35 students at a small private university in the Northeast who participated in return for extra credit in introductory classes. The data from these participants were combined for analysis ($N = 152$). The data from 15 participants were eliminated due to failure to complete substantial portions of the questionnaire. Thus, the data from 137 participants were retained for analysis.

The procedure used in this experiment was similar to that of Experiment 2, with minor changes. All participants received a booklet containing 10 advertisements, which they read at their own pace. Again, these booklets were distributed randomly to participants. The first page of the booklet included an explanation of the product selection process to take place at the end of the experiment. Specifically, some participants were told that they would be selecting a free sample of the target product (bran cereal) at the end of the experiment (high-involvement participants), and other participants were told that they would be selecting a free sample of soap, which was advertised in one of the filler ads (for a similar use of this manipulation, see Petty, Cacioppo, & Schumann, 1983). After reading the ad booklet, participants were presented with a measurement booklet similar to the one used in Experiment 2, with the addition of three 7-point scales designed to assess level of involvement (very uninvolved/very involved, concentrating very hard/not concentrating at all, not paying attention at all/paying a lot of attention) and a Personal Reaction Inventory to assess need for cognition (Cacioppo & Petty, 1982).

Results

Manipulation check for involvement.   Participants completed three 7-point scales designed to assess their level of involvement. These three scales were combined into an overall assessment of self-reported involvement (Cronbach's α = .87). An ANOVA indicated, however, that the experimental manipulation of involvement was not successful. Although the mean involvement rating was slightly higher for high-involvement participants ($M = 3.86$, $SD = 1.51$) than for low-involvement participants ($M = 3.50$, $SD = 1.35$), the difference was not significant, $F(1, 135) = 2.19$, $p = .15$, power = 54, based on a medium effect size of .25. To investigate the interaction between syntactic complexity and involvement, participants were placed into three levels of involvement in the following manner. Participants in the low-involvement condition whose self-reported levels of involvement were below the median (3.57) for the low-involvement condition were categorized as low-involvement participants ($n = 38$). Participants in the high-involvement condition whose self-reported levels of involvement were above the median (3.78) for the high-involvement condition were categorized as high-involvement participants ($n = 36$). All other participants (those clustered around the mean for the entire sample) were categorized as moderate-involvement participants ($n = 63$). In addition, as is discussed in detail subsequently, the pattern of cognitive responses provides justification for this division. (Both the elaboration level and number of thoughts generated by moderate-involvement participants fell between those of high- and low-involvement participants.)

Recall.   As in Experiment 2, recall levels did not differ as a function of syntactic complexity, $F(1, 131) = 2.36$, $p = .13$. Again, this is to be expected, given

the subtle manipulation of syntactic complexity utilized and the fact that message reception is self-paced in a print context. There was, however, a main effect of involvement level on recall, $F(2, 125) = 7.70, p = .002$. Specifically, highly involved participants had higher levels of recall ($M = 3.82, SD = 1.50$) than did moderately involved participants ($M = 3.16, SD = 1.65$), $t(99) = 2.00, p = .05$, whose recall levels were higher than low-involvement participants ($M = 2.36, SD = 1.53$), $t(97) = 2.37, p = .02$. This finding lends additional support to the grouping of participants into three involvement levels.

However, the differences on the recall measure do not appear to be the result of differences in participants' abilities to process the ads. Need for cognition scores (Cacioppo & Petty, 1982) were obtained from all participants, and there were no differences on this measure across levels of involvement, $F(2, 124) = 1.88, p = .16$. This finding, along with random assignment to groups, points to motivational factors as the underlying cause for differences on the recall measure.

Attitudes.   A 2 (simple/complex syntax) × 2 (strong/weak claims) × 3 (low/moderate/high involvement) ANOVA was conducted to analyze participants' attitudes toward BRAN-NEW. Results showed a three-way interaction, $F(2, 125) = 3.75, p = .03$, as hypothesized (see Table 2), as well as a main effect for argument strength, $F(1, 125) = 27.73, p = .001$.

The pattern of results differs as a function of syntactic complexity. For simple syntax versions, there is a main effect only for claim strength, $F(1, 65) = 18.47, p = .001$; that is, strong claims yielded more positive attitudes than did weak claims, regardless of involvement level. However, for complex syntax versions, an interaction between involvement and claim strength was observed, $F(2, 60) = 7.66, p = .002$, as expected. In addition, both main effects—claim strength and involve-

TABLE 2
Mean Attitude Ratings for Experiment 3 as a Function of
Syntactic Complexity, Claim Strength, and Involvement

| | Simple Syntax | | | | Complex Syntax | | | |
| | Strong Claims | | Weak Claims | | Strong Claims | | Weak Claims | |
Brand Attitude	M	SD	M	SD	M	SD	M	SD
Involvement								
Low	5 21$_a$	1 48	3 73$_b$	1 35	3 57$_b$	1 40	3 00$_b$	1 83
Moderate	5 27$_a$	1 68	3 75$_b$	1 73	4 53$_{ab}$	1 87	4 24$_{ab}$	2 11
High	5 63$_a$	1 69	3 82$_c$	1 17	7 25$_b$	1 49	3 00$_c$	1 61

Note   Within each level of involvement, means sharing subscripts are not significantly different at $p < .05$

ment—were significant: $F(1, 60) = 10.64$, $p = .003$, and $F(2, 60) = 3.18$, $p = .05$, respectively.

For those in complex syntax conditions, attitudes of low-involvement participants did not differ as a function of claim strength, $t(23) < 1$. However, for high-involvement participants, attitudes were more favorable for strong claims than for weak claims, $t(17) = 5.85$, $p = .001$. This implies that high-involvement participants were motivated to differentiate between strong and weak claims regardless of the level of syntactic complexity, whereas low-involvement participants were not.

At moderate levels of involvement, attitudes of those who received complex ads did not differ as a function of claim strength, $t(25) < 1$. Although these planned comparisons are similar to those obtained for low-involvement participants, it is interesting to note the difference in the overall pattern, as can be seen in Table 2. The pattern for moderate-involvement participants also is similar to that obtained in Experiment 2 for all participants, although the relations that are significant differ somewhat from those results: There was the same marginally significant main effect for argument strength, $F(1, 59) = 2.89$, $p = .10$, but no significant two-way interaction, $F(1, 59) = 1.63$, $p = .21$.

Cognitive responses.   The patterns observed for support and counterarguments indicated no effect of syntactic complexity, and the three-way interaction did not approach statistical significance, $F(1, 125) < 1$. However, an additional measure of elaboration did indicate greater processing on the part of high-involvement participants.

In addition to the categorical coding of thoughts, judges were instructed to rate each thought on a 7-point elaboration scale, ranging from 1 (*message playback*) to 7 (*recipient-generated*), similar to procedures used in previous studies (Greenwald, 1968; Shavitt & Brock, 1986; Shavitt, Lowrey, & Han, 1992; Shavitt, Swan, Lowrey, & Wanke, 1994). The two judges agreed with each other on 72% of their codings. Disagreements were handled by averaging the ratings (this procedure was also used in Experiment 2, but no effects of this elaboration measure were noted).

As Table 3 indicates, the thought elaboration level of high-involvement participants was significantly higher than that of low-involvement participants, $t(78) = 2.05$, $p = .05$. Also, high-involvement participants generated significantly more thoughts than did low-involvement participants, $t(99) = 2.45$, $p = .02$, lending additional support to the notion that high-involvement participants processed the ads more extensively. Both the elaboration level and number of thoughts generated by moderate-involvement participants fell between those of high- and low-involvement participants, and did not differ from either (all *ts* < 1). Again, these results help to validate the grouping of involvement into three levels.

TABLE 3
Mean Thought Elaboration and Number of Thoughts for
Experiment 3 as a Function of Involvement

	Low Involvement		Moderate Involvement		High Involvement	
	M	SD	M	SD	M	SD
Thought elaboration	13.08_a	4.43	15.10_{ab}	4.15	16.75_b	4.39
Number of thoughts	3.58_a	1.11	3.95_{ab}	1.13	4.53_b	1.16

Note   For each measure, means sharing subscripts are not significantly different at $p < 0.05$

Discussion

In this experiment an interaction between syntactic complexity, claim strength, and level of involvement was expected. Due to the inability to effectively manipulate level of involvement for all participants, however, an analysis was conducted based on a categorization of participants at three levels: low, moderate, and high. The patterns observed for these three categories of participants were consistent with the hypotheses and with results obtained in Experiment 2. For the direct attitude measure, a significant three-way interaction was observed.

The results suggest that when syntax is simple, strong claims are more persuasive than weak claims, regardless of level of involvement. This is consistent with the results from Experiment 2, where involvement was held constant at a moderate level. However, for complex syntax versions, only high-involvement participants continue to differentiate between strong and weak claims. The attitudes of low-involvement participants from Experiment 3 and moderately involved participants from both Experiments 2 and 3 did not differ as a function of claim strength. This suggests that syntactic complexity may interact with motivation to process information in determining advertising persuasiveness. The results on the recall measure in Experiments 2 and 3 also lend additional support to this notion.

Examination of the elaboration of participants' thoughts in Experiment 3 indicates that high-involvement participants had a greater number of more elaborated thoughts than did low-involvement participants, regardless of level of syntactic complexity. These findings support the notion that moderate levels of syntactic complexity can serve as an inhibitor of motivation to process information rather than as an inhibitor of ability to process. High-involvement participants were motivated to process the target ad and therefore differentiated between strong and weak claims, even for complex versions, to a greater extent than did low- or moderate-involvement participants.

These results suggest that when levels of complexity are more moderate in nature, syntactic complexity interacts with motivation rather than with ability to

process information in determining the persuasiveness of advertising. This implies that it is important to understand how processing occurs along the entire complexity continuum, at least in the context of advertising.

GENERAL DISCUSSION

The series of experiments reported here suggests that syntactic complexity has implications for the persuasiveness of ads beyond its effects on comprehension as noted in previous psycholinguistic research. First, in a broadcast context, moderate levels of syntactic complexity seemed to inhibit recall and recognition levels but did not have an effect on attitudes. Again, it is important to remember that the attitude measure in Experiment 1 was measured after a second, forced exposure to the commercial, possibly negating the effects of syntactic complexity. Second, as predicted by the ELM, syntactic complexity can affect the persuasiveness of advertising in a print context, with participants differentiating between strong and weak claims for simple syntax versions, but failing to do so for complex syntax versions. Third, syntactic complexity appears to impact motivation, influencing one's willingness to process an ad as opposed to one's ability to process an ad, at least in a print context. Given that levels of complexity typical in advertising are quite low, this is not surprising. However, it is essential that researchers interested in advertising begin to understand how processing occurs along the entire complexity continuum, rather than borrowing from typical ELM findings that have been obtained using extremely complex stimuli.

The pattern of results observed in these experiments was, for the most part, consistent with predictions. This is quite encouraging given the nature of the syntactic complexity manipulation—that is, complex ads differed from simple ads in very subtle ways. However, simple and complex versions yielded different patterns of results for many of the measures.

There were three methodological problems in these experiments that should be addressed in future extensions of this research. First, it was not feasible due to budgetary constraints to include in Experiment 1 commercials produced for BRAN-NEW that included weak claims. In other words, it was not possible to vary claim strength, as was done in Experiments 2 and 3. Of course, advertising is not purposefully designed to include weak claims (although weak claims do occur). Second, the field test methodology used in Experiment 1 did not provide for the collection of typical cognitive response measures. This precluded a direct investigation into the underlying processes that led to the results obtained for the attitude measure, although both the recall and recognition results were consistent with expectations. Finally, the manipulation of involvement in Experiment 3 was not successful. The majority of participants reported levels of involvement that clustered around the mean. Although the involvement manipulation used in this

experiment has been used successfully in the past (Petty et al., 1983), a stronger manipulation may be needed in this context.

Future research also may investigate other ways in which syntactic complexity might interact with motivation and ability to process advertising. For example, particular syntactic structures may serve to increase cognitive elaboration, despite their complex nature. In fact, rhetorical questions have been shown to induce greater levels of elaboration (Petty, Cacioppo, & Heesacker, 1981). In addition, individual differences may interact with this process. For instance, individuals with a high need for cognition (Cacioppo & Petty, 1982) may be more motivated to expend extra effort in processing syntactically complex messages than are individuals with a low need for cognition. It would be useful to conduct experiments similar to Experiments 2 and 3, with participants preselected on the basis of their need for cognition scores, to investigate this possibility.

In conclusion, simply borrowing theory and findings from the area of psycholinguistics is not sufficient. Psycholinguists are primarily concerned with issues of reading comprehension, not persuasion. Thus, findings regarding the effects of syntactic complexity are not completely applicable in the context of advertising. Instead, psycholinguistic theories of syntax should be thoroughly tested in terms of effects on persuasion. In addition, assuming that a moderate level of syntactic complexity operates only as an ability variable may be shortsighted. It is only by testing such theories using typical low- to moderate-complexity advertisements as stimuli, and measures of persuasiveness as dependent variables, that one can determine how syntax might impact advertising effectiveness.

The experiments reported here provide a framework for exploring the diverse ways in which syntactic complexity may increase or decrease the persuasiveness of advertising. Research in these areas should continue to contribute to our understanding of how message complexity impacts the persuasion process in the context of advertising.

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APPENDIX A

BRAN-NEW TV Commercial Scripts

Simple Syntax/Strong Claims

Oh, hi! If you're like me, you're looking for an easy way to eat healthy And BRAN-NEW has it. BRAN-NEW is a healthy choice for breakfast, because it's high in fiber, and it's preservative-free. And more people prefer this all-natural cereal, because it has crispy flakes and tastes great. Naturally, it's also fat-free and cholesterol-free. Try BRAN-NEW. The new, healthy cereal.

Complex Syntax/Strong Claims

Oh, hi! If you're like me, you're looking for an easy way to eat healthy. And BRAN-NEW has it. Because it's high in fiber and contains no preservatives, BRAN-NEW is a healthy choice for breakfast. And because it has crispy flakes and tastes great, this all-natural cereal is preferred by more people. Naturally, it has no fat or cholesterol. Try BRAN-NEW. The new, healthy cereal.

APPENDIX B

Advertising Claims for BRAN-NEW

Simple Syntax/Strong Claims

BRAN-NEW cereal is a healthy choice for breakfast because it's high in fiber. BRAN-NEW is also preservative-free. More people prefer this all-natural cereal because it has crispy flakes and tastes great. It's also naturally fat-free and cholesterol-free. Try BRAN-NEW—the new, healthy cereal.

Complex Syntax/Strong Claims

Because it's high in fiber, BRAN-NEW cereal is a healthy choice for breakfast. BRAN-NEW also contains no preservatives. Because it has crispy flakes and tastes great, this all-natural cereal is preferred by more people. Naturally, it also does not contain fat nor cholesterol. Try BRAN-NEW—the new, healthy cereal.

Simple Syntax/Weak Claims

BRAN-NEW cereal is a convenient choice for breakfast because it's available at many stores. BRAN-NEW also has lightweight packaging. More people prefer this convenient cereal because it's easy to store in small kitchens. It comes in only one small size. Try BRAN-NEW—the new, convenient cereal.

Complex Syntax/Weak Claims

Because it's widely available, BRAN-NEW cereal is a convenient choice for breakfast. BRAN-NEW has packaging that isn't heavy. Because it's easy to store in small kitchens, this cereal is preferred by more people. It doesn't come in any size but one—small. Try BRAN-NEW—the new, convenient cereal.