

# 8

## The Case for a Complexity Continuum

---

---

*Tina M. Lowrey*

### **Chapter Summary**

*Research on the effects of complexity in an advertising context has yielded seemingly contradictory findings. Rather than being problematic, however, the results from previous research can be reconciled by placing each set of findings along a complexity continuum based on textual factors, the advertising medium, and individual difference variables. The purpose of this chapter is to explain the interactive effects of respondent characteristics, the medium, and the message itself in determining the ultimate impact of the message, allowing for a more thorough understanding of how complexity operates.*



Common wisdom for copywriters is that advertising copy should be kept relatively simple (otherwise known as KISS, or “keep it simple, stupid”). Obviously, the level of simplicity required will depend on the target market, but in general, writers strive to increase readability levels of their advertising copy by avoiding lengthy and/or complicated words, reducing sentence length, and using the active voice. However, despite the intuitive obviousness of this dictum, it is worth asking whether it yields the desired results. In other words, does writing simple copy always enhance either the memory for or persuasiveness of advertising relative to more complex copy?

Several recent articles have provided evidence that the effects of complexity are actually more complicated than previously thought. In many instances, research has shown that advertising written at higher levels of complexity are better recalled and liked better than are ads written at lower levels of complexity (Chamblee et al. 1993; Macklin, Bruvold, and Shea 1985; but see also Meeds and Bradley 2007).

Thus, “keep it simple, stupid” may not always be the best policy for copywriters. There are a variety of factors that can moderate the effects of complexity. When should copy be kept as simple as possible and when is it advisable to write at a more complex level? To quote an anonymous reviewer, “Studying message complexity has turned out to be, well, complex.”

Unfortunately, past research on complexity effects in an advertising context has yielded seemingly contradictory findings in attempting to answer these questions. Some research has shown positive effects of complexity, but others have shown negative effects of complexity. As just one example, Lowrey (1998) showed that complexity can enhance attitudes, but Chebat et al. (2003) found the opposite.

The purpose of this chapter is to provide a framework that can reconcile these conflicting findings. This framework is based on a complexity continuum that takes into consideration a variety of factors, including the reading level and overall length of the copy, the advertising medium, and individual differences of respondents. This continuum ranges from simpler passages of text, through moderate passages, to more complex passages. The complexity continuum is used to examine recent research findings on the effects of complexity on memory and persuasion in an advertising context. As will be shown presently, complexity effects show a clear, nonlinear pattern. Specifically, very high levels of complexity are detrimental to both memory and persuasion measures, but at lower levels of complexity, very simple text can also be detrimental. At moderate levels of complexity, the complexity of the text interacts with a variety of extratextual factors to determine memory for and attitudes toward advertising.

In this chapter I argue that discussing the effects of complexity in terms of textual factors alone overlooks what really goes on when individuals encounter advertising messages. Complexity effects actually occur within the individual. For example, an individual encounters text that is either simple or not for the individual to process. Although the text is a key determinant of how easy the processing will be, characteristics of the individual (e.g., cognitive processing abilities and/or motivation) and the situation (e.g., time pressure due to the advertising medium) contribute as well. Thus, the same exact text presented to two different individuals in two different situations may yield very different results.

The remainder of the chapter is structured as follows. First, I discuss textual factors that contribute to message complexity, including word difficulty, syntax, and message length. These factors dictate the initial placement of messages on the complexity continuum. I then briefly review other factors that may inhibit or enhance message processing, including the advertising medium and individual difference variables. These factors can cause shifts along the complexity continuum in either direction. Next, I discuss five separate complexity articles, and place each along the complexity continuum in an effort to understand the “big picture” of all of the results combined. I conclude the chapter with a summary and directions for future research in this area.

## **Contributing Factors to Message Complexity**

Both textual factors and “extratextual” factors can impact how difficult a message is to process. The basic textual factors addressed here include word difficulty, syntax (sentence structure), and the overall length of the message. Extratextual factors include the advertising medium (e.g., print versus broadcast) and those individual difference variables most likely to impact motivation and ability to process information, including age, education level, and motivational state.

### ***Textual Factors***

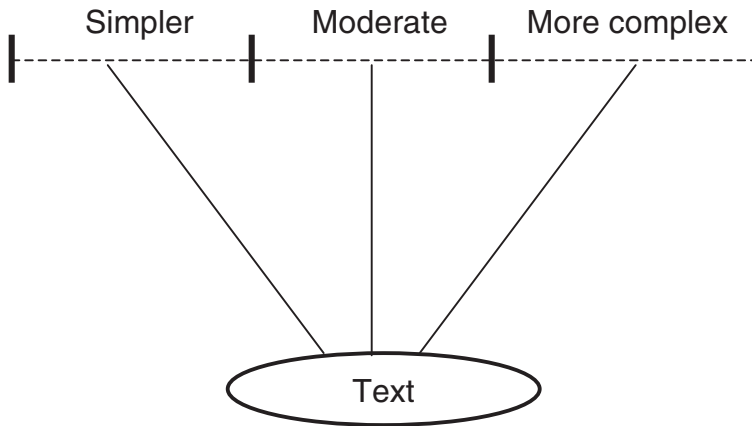
There are several factors that contribute to the complexity of any passage of text, but the two major contributors are vocabulary and syntax. Both the specific words selected and how the words are strung together into sentences can impact message complexity, and thus impact the initial placement of texts along the complexity continuum. Indeed, these two factors are the primary contributors to common measures of text complexity. In addition, although the impact of overall text length has not been thoroughly addressed in previous research, this factor will be included in an effort to be as theoretically inclusive as possible in formulating the complexity continuum.

The words used in a passage of text may be short, single-syllable words that first-graders can easily understand (e.g., cat) or multisyllabic, obscure terms that only college graduates with a sophisticated vocabulary would use (e.g., tautological). In addition, words may be those that use everyday language or those that are technical terms specific to a particular industry. With respect to syntax, or how these words are strung together into sentences, sentences can range from very simple (e.g., one clause written in the active voice with no negation) to very complex (e.g., several clauses written in the passive voice with negation). For example, “Most doctors recommend caffeine-free beverages for their sleep-deprived patients” is easier to process than “For their sleep-deprived patients, beverages with no caffeine are recommended by most doctors.” How syntactic complexity is assessed, however, differs across readability measures.

### ***Assessing Text Complexity***

Word difficulty and syntactic complexity are typically combined when assessing the reading level of any given passage of text. For example, the two most commonly used measures of readability, the Flesch Reading Ease formula (Flesch 1951) and the Gunning Fog index (Gunning 1968), combine assessments of word difficulty and sentence difficulty. The Flesch formula computes the average number of syllables per 100 words (to assess word difficulty) and the average number of words per sentence (to assess sentence difficulty). These two measures are then combined to provide a single index of overall complexity (ranging from 0 to 100, with higher numbers indicating greater readability). The Fog index counts the number of words

Figure 8.1 Initial Placement on the Complexity Continuum



*Note:* Based on Flesch formula, Fog index, or assessment of word difficulty, syntactic complexity, and/or copy length.

and the number of sentences to calculate average sentence length (based on the assumption that longer sentences are more difficult to process). In addition, words with three or more syllables are counted to assess word difficulty. A Fog score is indexed to grade in school. That is, an index of 5 indicates fifth-grade material, whereas an index of 17 would indicate material suitable for a college graduate.

Other measures have been developed in response to criticisms of these measures, but both the Flesch formula and the Fog index correlate highly with these newer measures and are generally simpler to administer. Thus, both Flesch and Fog are commonly used to assess the readability of print materials (Bogert 1985; Metoyer-Duran 1993; Olson 1984) and the “listenability” of text presented in broadcast contexts (Allen 1952; Denbow 1975; Fang 1966–1967; Lowrey 2006a).

### *Overall Text Length*

For the purposes of this chapter, the two textual factors that contribute to the Flesch and Fog indices (word difficulty and syntactic complexity) will be the primary determinants of where specific passages of text should be initially placed along the complexity continuum (see Figure 8.1).

However, another textual factor that may contribute to complexity is overall length of the text, although I have found no published research that has addressed this issue. On the one hand, neither the Flesch nor Fog indices include overall length of a passage of text, implying that overall length is not a contributor to

complexity. On the other hand, Denbow (1975) pointed out the need to investigate longer passages of text (in a nonmarketing context), suggesting that longer passages might make the text more complex. Thus, in order to be as thorough as possible, the overall lengths of the various stimuli used will be presented in addition to word difficulty and syntactic complexity.

### *Extratextual Factors*

In addition to factors inherent to the message itself, there are factors external to the message that can impact message complexity. Rather than contributing directly to complexity, however, it is more appropriate to view these factors as those that increase or decrease the effects of complexity, thus causing shifts along the complexity continuum. Two of the most important factors in an advertising context are the medium in which the message appears and individual difference variables in information processing. Although there are a variety of advertising media, the most basic dichotomy is print versus broadcast, which differ in obvious ways. Broadcast media are externally paced (i.e., the viewer/listener does not control the pace of message delivery), whereas most print media are self-paced (with the exception of some transit advertising). Individual difference variables related to information processing include age, education level, and motivational state, all of which have implications for message processing.

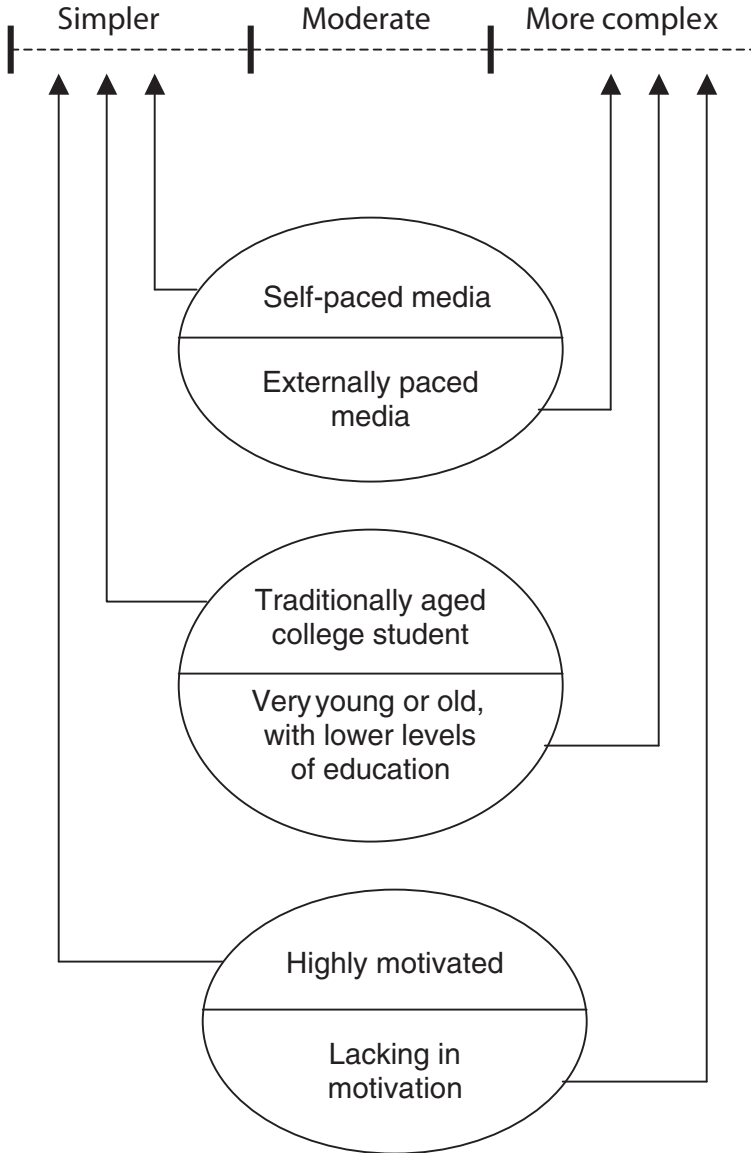
### *Advertising Medium*

Some media may contribute to processing constraints more than others, making text more difficult to process. For example, for externally paced media such as radio and television, complexity effects may be magnified, causing shifts to the more complex end of the complexity continuum (see Figure 8.2). This is due to the fleeting nature and speed of presentation of the message that is out of the perceiver's control. Conversely, in self-paced media such as magazines and newspapers, the fact that an individual can read the message slowly and repeatedly should minimize the effects of complexity, causing shifts to the simpler end of the complexity continuum. It is well documented that consumers have limited abilities when it comes to processing advertising information, and that ads presented via broadcast media are generally more difficult to process than ads presented via print media (Bettman 1979; Webb 1979).

### *Individual Difference Variables*

Although many variables have the potential to impact the effects of complexity, age, education level, and motivational state seem the most important factors to consider. These factors have been shown to affect the ability or motivation to process information in a variety of contexts.

Figure 8.2 **How Extratextual Factors Shift Placement on the Complexity Continuum**



*Age.* Many researchers have documented how aging affects the processing of information, both in general (Cohen and Faulkner 1983; Denney 1982; Hartley and Anderson 1983; Salthouse 1985; Wright 1981) and in a consumer context (Cole and Gaeth 1990; French and Crask 1977; John and Cole 1986; Phillips and Sternthal 1977; Stephens 1981). Most children have processing abilities lower than those of most adults, regardless of presentation format. However, older adults have a more difficult time processing information than do younger adults in any presentation format, and this is particularly true for broadcast media (Johnson and Cobb-Walgren 1994; Stephens 1981).

*Education Level.* This factor, although important, presents operational problems. First, the Fog index is linked directly to educational level (recall that a Fog index of 5 indicates material suitable for fifth-graders and a Fog index of 17 indicates material suitable for college graduates). Thus, it becomes somewhat circular to argue that education level is an individual difference variable that can inhibit or enhance message processing. Add to this issue the fact that, at least for children, education level is directly tied to age, and the picture becomes murkier still. However, in comparing adults of the same age, education level does need to be taken into account. Therefore, it is an essential factor to consider in any development of a framework such as the complexity continuum, especially for the purposes of comparing across articles that have yielded seemingly contradictory results.

*Motivation.* Numerous studies have shown that greater motivation leads to greater elaboration. This is true whether the motivation is induced by the situation (Houston and Rothschild 1978), is induced by the product category in a consumer context (Laurent and Kapferer 1985; Zaichkowsky 1985), or is a trait characteristic of the individual, such as need for cognition (Cacioppo and Petty 1982). An example of situational motivation is if an individual happened to be in the market for the product being advertised in the experimental stimuli (e.g., someone preparing to buy a new car). An example of involvement with the product category is an individual who is “chronically” interested in the product (e.g., car enthusiasts). An example of a trait characteristic related to motivation to process information is need for cognition, a trait that indicates the degree to which an individual enjoys activities that require cognitive effort (e.g., crossword puzzles). Because those who are more motivated tend to elaborate more fully on messages to which they are exposed than those who are less motivated, they tend to encounter fewer processing difficulties despite potential processing constraints such as message complexity (Petty and Cacioppo 1986).

### ***The Interaction Between Textual Factors and Extratextual Factors***

Extratextual factors such as the advertising medium and individual difference variables, rather than being primary contributors to the complexity continuum, serve as “shifters” along the complexity continuum. That is, whereas textual factors cause

initial placement along the complexity continuum, the other two factors (medium and individual differences) can shift the text in either direction (again, see Figure 8.2). For example, when exposed to a complex TV commercial, processing difficulties might arise, shifting the complexity of the message to the more complex end of the complexity continuum. However, if one is highly motivated to process, the effects of complexity may be less severe, thus shifting the complexity of the message to the simpler end of the complexity continuum.

It should be noted that the extratextual factors basically deal with ability and motivation to process messages. Many theories have outlined the potential impact of ability and motivational factors on information processing ( Craik and Lockhart 1972; Petty and Cacioppo 1986). Although there are differences between Craik and Lockhart's levels of processing framework and Petty and Cacioppo's Elaboration Likelihood Model, they agree that ability and motivation to process are both critical factors in message processing.

To summarize, whether an ad appears in print or via broadcast has implications for processing capabilities. Similarly, age can impact an individual's ability to process (with younger children and older adults having lower levels of ability, in general). Higher education levels tend to increase processing abilities. Motivation to process can be situational or inherent in an individual (whether it stems from involvement with a particular product category or is a trait characteristic). Regardless of the source of the motivation, high levels of motivation enhance message processing and low levels hinder processing. Ability and motivation factors can also interact with one another.

### ***Summary of Contributing Factors to the Complexity Continuum***

Seven factors that influence complexity have been identified. Two textual factors (word difficulty and syntax) are viewed as primary contributors to complexity, and cause initial placement of a given message on the complexity continuum. In addition, overall text length may contribute to complexity and thus play a role in initial placement on the continuum. Four extratextual factors (the advertising medium, age, education level, and motivation) can lessen or magnify the effects of complexity, causing shifts along the complexity continuum in either direction.

In the following section, I review five recent articles that deal with the effects of complexity on memory for and attitudes toward advertising. At first glance, these articles yield conflicting findings. However, as I will show, these seemingly conflicting findings can be reconciled when viewed in the context of the complexity continuum.

### **Recent Advertising Complexity Research**

For each article to be reviewed, an overview of the study design will be presented first, followed by the results. For initial placement along the complexity continuum

based on textual factors, complex stimuli reading levels (including word difficulty and syntactic complexity) and overall copy length will be assessed. In addition, the advertising medium, average age and education level of the participants, and motivation (when measured) will be reviewed to determine how each set of studies might shift along the complexity continuum based on extratextual factors. The major findings will also be contrasted and compared (for an overview of each article, see Table 8.1).

***Article One: Lowrey (1998)***

These three experiments were among the first to look at how complexity impacts memory for and the persuasiveness of print and TV advertising. In Experiment 1, participants from a general population sample were exposed to a TV commercial written at a moderate level of complexity. The copy consisted of five sentences of approximately forty-eight words, written at moderate Flesch levels. The simple version was written in the active voice and contained no negations. The complex version was written in the passive voice and contained negations. This manipulation of complexity was very subtle, yet the two versions did vary in terms of their readability scores. In Experiments 2 and 3, college students were exposed to the same copy, but in a magazine context. In Experiment 1, it was not possible to measure motivation, but in Experiments 2 and 3, motivation was measured. Complexity reduced memory measures for both TV and print, and led to less favorable attitudes in a print context for those low in motivation to process. However, this was not true for those who were highly motivated to process. In fact, complexity actually enhanced the attitudes of high involvement participants.

For initial placement of the copy, given that both versions were written at moderate Flesch levels, the textual factors place it in the middle of the complexity continuum (see Figure 8.3).

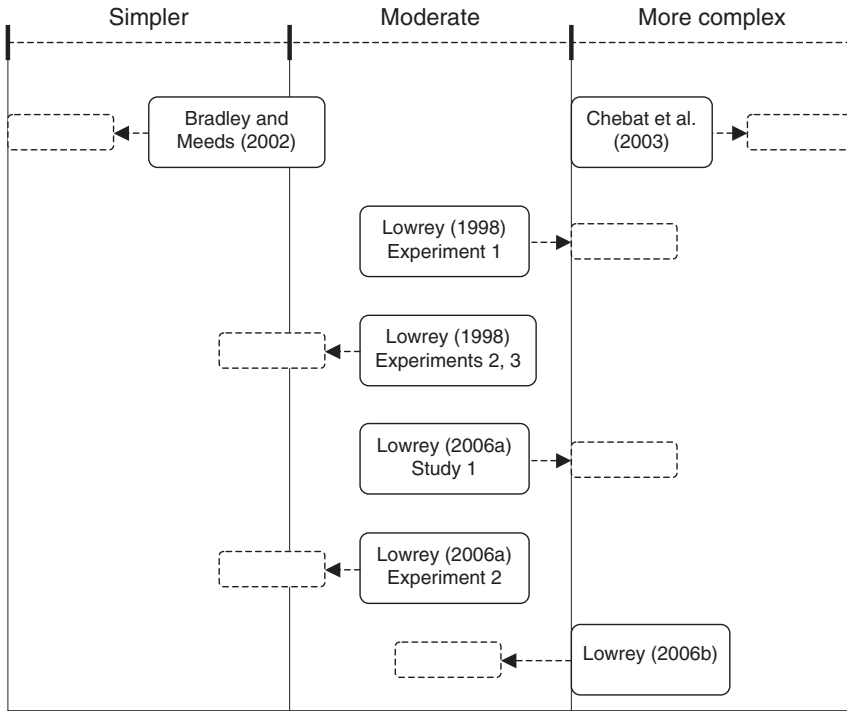
For extratextual factors, the first experiment was conducted in a TV context (field study), with participants ranging in age from eighteen to sixty-five and education level averaging some high school. Motivation was not measured. Experiments 2 and 3 were conducted in a print context (lab study) with participants who were traditionally aged college students (eighteen to twenty-five). Motivation was measured. The medium causes a shift toward the simpler end of the complexity continuum for print, and toward the more complex end of the complexity continuum for TV. Keep in mind that participants in Experiments 2 and 3 were college students exposed to moderate level copy in the two print experiments, some of whom were highly motivated to process (which causes a shift to the simpler end of the complexity continuum), but participants in Experiment 1 came from a general population sample (which causes a shift to the more complex end of the complexity continuum, due to the lower education levels and the higher average age of participants—see Figure 8.3).

Table 8.1

**Textual and Extratextual Factors Analyzed in Each Article**

Article	Text Complexity	Medium	Age	Education
Bradley and Meeds (2002)	Simpler (1 sentence of 5 words with 1 [or 2] transformations)	Print	18–25	High
Chebat et al. (2003)	More complex (2–7 sentences of 66 words at Fog college level)	Print	18–65	Moderate
Lowrey (1998)				
Experiment 1	Moderate (5 sentences of 48 words at moderate Flesch levels)	TV	18–65	Moderate
Experiments 2 and 3	Moderate (5 sentences of 48 words at moderate Flesch levels)	Print	18–25	High
Lowrey (2006a)				
Study 1	Moderate (5 sentences at moderate Flesch levels)	TV	18–65	Moderate
Experiment 2	Moderate (5 sentences at moderate Flesch levels)	Print	18–25	High
Lowrey (2006b)	More complex (600–900 words at Fog college level)	Print	18–25	High

Figure 8.3 Initial Placement of Complex Texts in Past Research with Resulting Shift Due to Extratextual Factors



*Article Two: Bradley and Meeds (2002)*

In this experiment college students read a slogan (rather than a block of ad copy) in a print context. All slogans were one sentence consisting of five words. Complexity was manipulated by making either one or two transformations to a kernel sentence (the simplest utterance). For example, the kernel sentence “Comtech accurately reproduces your thoughts,” which is written in the active voice, was changed by one transformation to the passive voice, “Your thoughts are accurately reproduced by Comtech.” As with Lowrey (1998), this was a subtle, yet successful manipulation of complexity. Motivation was measured. Complexity did not affect comprehension (with the exception of the recognition measure, which was lower for all participants exposed to complex slogans). However, complexity did enhance recall and attitudes toward the ad. The findings did not differ as a function of the motivation level of the participants.

For initial placement, this type of text is at the simpler end of the complexity continuum (although reading level cannot be computed for single sentences—see

Figure 8.3). For extratextual factors, the medium was print and participants were traditionally aged college students, both of which cause shifts to the simpler end of the continuum as well. Bradley and Meeds found that the effects of syntactic complexity on a variety of measures occurred regardless of motivation level.

Whereas Bradley and Meeds' results might seem, at first glance, to directly contradict the findings in Lowrey (1998), the stimuli used in the two studies were quite different. Not only is the text already at the simpler end of the complexity continuum, the combination of a print medium with college students as participants should cause an even further shift toward the simplest end of the complexity continuum (see Figure 8.3). That is, the combination of high cognitive ability with relatively easy-to-process stimuli presented in a self-paced medium made for a very simple task, resulting in no effects based on motivation to process.

### ***Article Three: Chebat et al. (2003)***

In this study, participants from a general population sample were exposed to print advertising that differed in terms of Fog readability levels. The ad copy ranged from two to seven sentences in length (with a constant word count of sixty-six—one contributor to complexity in the Fog index is sentence length), with the complex version written at college level. Thus, the stimuli differed both from Bradley and Meeds' (in terms of word count and sentence length, reading level differences were undetermined) and from Lowrey's (primarily in terms of reading level—word count and sentence length were similar). Motivation was measured. Complexity had a strong negative impact on memory and persuasion measures, and these effects occurred regardless of motivation level.

Initial placement based on textual factors is at the more complex end of the complexity continuum (see Figure 8.3). For extratextual factors, although the medium was print, the use of older, less educated participants would cause a further shift to the more complex end of the continuum.

The strong negative impact of complexity on both memory and persuasion measures, regardless of level of motivation, can be explained with the complexity continuum. Whereas Bradley and Meeds (2002) found no complexity differences as a function of motivation, and Lowrey (1998) found complexity differences primarily for those low in involvement, Chebat et al. (2003) found that complexity impaired both memory and persuasion *regardless* of level of motivation. The print medium context was used in all three articles. However, in Chebat et al. participants were not traditionally aged college students, as was the case in both Bradley and Meeds and in Experiments 2 and 3 of Lowrey. Although in Chebat et al., the text is already on the more complex end of the complexity continuum, the combination of lower education level and higher age causes an even further shift toward the most complex end of the complexity continuum, making already more difficult, college material potentially even more difficult for their participants (see Figure 8.3). That is, the combination of lower cognitive ability with relatively difficult stimuli made

for a very difficult task, resulting in complexity-induced processing impairment, regardless of level of motivation.

***Article Four: Lowrey (2006a)***

This set of studies extended my previous research in a TV context. In Study 1, participants from a general population sample were exposed to a variety of TV commercials, with scripts averaging five sentences in length and complex scripts written at moderate Flesch levels. This secondary data set (which did not include a measure of motivation) was provided by a research firm. In Experiment 2, college students were exposed to two of the scripts in a print context. Specifically, two scripts for one product that varied sufficiently in terms of the Flesch formula were selected from the sample of scripts used in the first study (the two scripts had Flesch scores of “easy” versus “more difficult”). Motivation was measured. As with Lowrey (1998), complexity had negative effects on memory measures for both TV and print. However, these relations were again moderated by level of motivation in Experiment 2. For those who were highly motivated to process, complexity actually enhanced memory measures.

For initial placement based on textual factors alone, the complex scripts belong in the middle of the complexity continuum (see Figure 8.3). For extratextual factors, in the first study, the broadcast context shifts the scripts to the more complex end of the complexity continuum. In addition, in the first study, the use of older, less educated participants also requires a further shift to the more complex end of the complexity continuum. This is not the case with the second experiment, in which college students were participants. Ability to process was also enhanced in the second experiment by using a print medium. In addition, motivation to process caused complexity effects to weaken, as would be expected. All of these extratextual factors cause shifts to the simpler end of the complexity continuum (see Figure 8.3).

Negative effects of complexity on memory were found in both studies, but these relations were moderated by motivation in the second experiment. As with Lowrey (1998), those who had enhanced processing capabilities and higher motivation to process were positively impacted by complexity, whereas those with lower motivation were negatively affected. In addition, those who had decreased processing capabilities due to the broadcast medium, higher age, and lower education, showed negative effects of complexity similar to those obtained in the first experiment of Lowrey (1998) and by Chebat et al. (2003).

***Article Five: Lowrey (2006b)***

The final article to be reviewed involves an experiment conducted in a direct marketing context in order to investigate the contribution of overall text length to the complexity continuum. College students were exposed to one of four versions of

a direct mail piece that systematically varied length and complexity (i.e., short/moderate complexity, short/complex, long/moderate complexity, long/complex). Short versions had 600–650 words and were just over one page in length, whereas long versions had 850–900 words and were just over two pages long. Moderately complex versions of the stimuli had high school-level Fog indices, whereas complex versions had college-level Fog indices. Motivation was measured. There was no effect of overall text length on intentions to order the product. Complexity had a positive main effect on order intentions, but this effect was qualified by an interaction with motivation. Specifically, the positive effect of complexity on order intentions held only for those who were highly motivated.

Initial placement based on textual factors is at the more complex end of the complexity continuum (see Figure 8.3). For extratextual factors, the medium was print and participants were traditionally aged college students, some of whom were highly motivated to process. All of the extratextual factors cause shifts from the more complex end to the middle of the continuum (see Figure 8.3). The results replicate both Lowrey (1998, 2006a), suggesting that for those with high cognitive ability and motivation to process, moderate complexity can enhance memory for and the persuasiveness of advertising. The levels of complexity used in this experiment are consistent with previous work in this area, with the complex versions similar to material used in Chebat et al. (2003). It was initially difficult to decide whether the length of the stimuli should cause an initial placement further toward the most complex end of the complexity continuum, as the number of words far exceeded those found in previous stimuli. However, the results indicate that length was not an issue (i.e., there was no main effect for length in this experiment). The nature of the participants (college students, some of whom were motivated to process) may have negated the effects of length. Moreover, although length did not have an effect in this particular experiment, it is possible that the stimuli did not differ sufficiently on this construct to tease out any impact. Additional research is needed to fully address this issue.

### *Integration of the Results from the Five Articles Reviewed*

By comparing and contrasting across the findings from the five articles reviewed in this chapter, one can see a fairly strong pattern emerging (see Figure 8.3). At simpler levels, complexity enhances memory and persuasion. At more complex levels, complexity impairs these processes. It is in the moderate, middle portion of the complexity continuum where extratextual factors interact with complexity to affect memory and persuasion.

Bradley and Meeds (2002) is an example of research conducted at simpler levels of the complexity continuum, and they found that complexity enhanced a variety of measures in an experiment that exposed college students to fairly simple copy (one-sentence slogans) in a print context. Results did not differ as a result of motivation to process. Given the nature of their stimuli, the medium, and their participants

(i.e., high cognitive ability), it appears that the overall task was relatively simple and did not require high degrees of motivation to perform.

Chebat et al. (2003) is an example of research conducted at more complex levels of the complexity continuum, and they found strong negative effects of complexity in a study that exposed participants from a general population sample to fairly complex copy (written at college level) in a print context. Again, however, results did not differ as a result of motivation to process. Given the nature of their stimuli and their participants (i.e., lower cognitive abilities), it appears the overall task was quite difficult to perform, despite the medium, resulting in impaired processing regardless of motivation level.

It is only in the set of experiments and studies reported in Lowrey (1998, 2006a, 2006b) that motivation interacts with complexity, and then only in the print context with college students. Stimuli were typically of moderate complexity (with the exception of those used in 2006b). Still, for participants with lower cognitive abilities exposed to the stimuli in TV contexts, complexity impaired processing. Only for college students exposed to print stimuli did motivation interact with complexity. Specifically, for those highly motivated to process, complexity did not have negative effects on processing. On the contrary, complexity actually enhanced memory for and attitudes toward the various stimuli.

## Summary

Once one has taken into consideration inherent textual factors, the advertising medium, and individual difference variables, one can clearly see that the various sets of results obtained in past research are complementary to one another and validate the complexity continuum as a logical framework for positioning advertising complexity research. The important issue is the recognition that complexity effects *occur in the individual*. Yet we often overlook this and focus solely on the manipulated complexity of a given text. Whereas this is often useful for determining specific effects within an experiment, it ignores how complexity operates in natural settings. Consequently, the overall conclusions drawn from these various articles, if taken in isolation, may be misleading if one does not take into account the fact that extratextual factors influence movement along the complexity continuum in either direction from the objectively determined initial placement. This is particularly important given that the effects of complexity are not linear. Rather, the optimal range appears to be at moderate levels.

Thus, the complexity continuum makes two equally important and related contributions to the study of complexity in an advertising context. First, it is imperative that extratextual factors are taken into account when assessing the effects of complexity based on textual factors. That is, different media and different participant types can lead to very different results even when the same textual stimuli are used. Indeed, the shifted placements shown in Figure 8.3 for Lowrey (1998, 2006a) show direct evidence of this phenomenon. Second, both textual

and extratextual factors interact with one other in complicated ways. Although researchers in this area have begun to investigate some of these interactions, much remains to be done.

## Discussion

This chapter has provided several insights to those interested in complexity effects in an advertising context. First, previous research on the effects of complexity in an advertising context has focused on very short messages. The exception is the fifth article reported here, which is the first experiment to investigate whether length has any impact on complexity in general (with no support for such a contention). Overall length of the message does not seem to be a contributing factor for placement along the complexity continuum (at least for college students), although additional research may be warranted. It is possible that the manipulation of length in Lowrey (2006b) was insufficient to capture the potential impact of overall text length on complexity. Second, although both complexity and involvement seem to exert main effects on advertising persuasiveness in many of the articles covered here, it is the interaction between the two that is most interesting. Thus, higher complexity for those highly involved with the message actually enhances attitudes (within a moderate range of complexity, that is).

Obviously, it is not advisable to conclude from this chapter that specific complexity levels used in the various stimuli reported would be applicable to more generalized audiences. Indeed, that is one of the very premises of the complexity continuum—that individual difference variables such as age, education level, and motivation to process can shift complexity effects in either direction, as can the advertising medium. Thus, many of these stimuli might be too difficult for the general public to comfortably process. Further research is required to determine optimal levels for specific types of audiences, both in terms of medium and in terms of individual differences.

It should be noted here that the complexity continuum is entirely consistent with resource matching theory (Anand and Sternthal 1990). That is, when resources available to process a message match the resources required to process the message, persuasion will be most successful (see also McQuarrie and Mick 1996; Peracchio and Meyers-Levy 1997). Thus, textual factors (and perhaps also the medium) could be viewed as major contributors to the resources required, whereas individual difference variables could be viewed as contributors to the resources available.

Given that motivation is one factor that clearly moderates the effects of complexity, more research should be conducted to determine exactly how and when it exerts its effects, along with other factors that may impact such effects. Chebat et al.'s (2003) study of ability factors is a good example of an area that should be investigated more thoroughly. The effect of the advertising medium is another area ripe for future exploration. Despite findings in a broadcast context (Lowrey 1998, 2006a), much more remains to be done in order to understand the difference

between externally paced and self-paced media. In addition, beyond the dichotomy of traditional broadcast and print media lies Internet advertising, which has the potential for a more complicated set of effects on processing. The Internet allows for a mixture of self-paced information search within a site, combined with externally paced pop-up advertising at intermittent intervals. In addition, Liu and Shrum (2003) suggest that the degree of interactivity, which can be viewed as a potential contributor to complexity, may also play a role. Thus, theorizing about how this medium's special characteristics may impact the processing of text could be quite complex.

Another important factor to be considered in future research is the impact of additional textual factors that may contribute to or magnify the effects of complexity. Two of the articles reviewed in this chapter focused solely on syntactic complexity (Bradley and Meeds 2002; Lowrey 1998), whereas the other three investigated readability in a more general manner (Chebat et al. 2003 and Lowrey 2006b with the Fog index; Lowrey 2006a with the Flesch formula). The latter three articles go beyond syntactic complexity to include word difficulty in assessing overall complexity. Additional research might investigate how complexity is affected by other textual factors, such as puns and wordplay, the use of simile and metaphor, and other linguistic variables that might impact initial placements of text on the complexity continuum and/or cause shifts along the continuum in either direction.

In addition to verbal text elements, future research should take into consideration the impact of visual elements of the text. A number of studies have investigated the effects of font selection on advertising effectiveness (Doyle and Bottomley 2006; Henderson and Cote 1998; Henderson, Giese, and Cote 2004; McCarthy and Mothersbaugh 2002), but not in the context of contributing to (or alleviating) the overall complexity of a given passage of text. For example, to what extent could a simpler font style assist in the processing of more complicated messages? To my knowledge, this question has not yet been addressed.

The study of additional visual elements that are not textual is another area to be investigated. Copy layout decisions may contribute to textual processing difficulties (this obviously has to do with the placement of text, but is not strictly textual in nature). Finally, future research should address how the verbal/textual elements of an advertisement might interact with completely nontextual, visual elements (such as illustrations or photographs). Phillips and McQuarrie (2004, 116) have posited a typology of visual complexity that would be a useful starting point for the complicated task of investigating how verbal complexity and visual complexity interact with one another.

It is clear that much more needs to be done to address these issues. Research that provides additional insights into how other textual factors contribute to complexity is needed. So too are experimental designs that include potential extratextual moderators of the impact of complexity on advertising persuasiveness. It is hoped that this chapter will be a starting point for researchers to continue to investigate how complexity exerts its effects along the complexity continuum.

## References

- Allen, William. 1952. "Readability of Instructional Film Commentary." *Journal of Applied Psychology* 36 (June): 164–168.
- Anand, Punam, and Brian Sternthal. 1990. "Ease of Message Processing as a Moderator of Repetition Effects in Advertising." *Journal of Marketing Research* 27 (August): 345–353.
- Bettman, James R. 1979. *An Information Processing Theory of Consumer Choice*. Reading, MA: Addison-Wesley.
- Bogert, Judith. 1985. "In Defense of the Fog Index." *Bulletin* 48 (June): 9–11.
- Bradley, Samuel D., and Robert Meeds. 2002. "Surface-structure Transformations and Advertising Slogans: The Case for Moderate Syntactic Complexity." *Psychology & Marketing* 19 (July–August): 595–619.
- Cacioppo, John T., and Richard E. Petty. 1982. "The Need for Cognition." *Journal of Personality and Social Psychology* 42 (January): 116–131.
- Chamblee, Robert; Robert Gilmore; Gloria Thomas; and Gary Soldow. 1993. "When Copy Complexity Can Help Ad Readership." *Journal of Advertising* 33 (May–June): 23–28.
- Chebat, Jean-Charles; Claire Gelinias-Chebat; Sabrina Hombourger; and Arch G. Woodside. 2003. "Testing Consumers' Motivation and Linguistic Ability as Moderators of Advertising Readability." *Psychology & Marketing* 20 (July): 599–624.
- Cohen, Gillian, and Dorothy Faulkner. 1983. "Age Differences in Performance on Two Information Processing Tasks: Strategy Selection and Processing Efficiency." *Journal of Gerontology* 38 (4): 447–454.
- Cole, Catherine A., and Gary J. Gaeth. 1990. "Cognitive and Age-related Differences in the Ability to Use Nutritional Information in a Complex Environment." *Journal of Marketing Research* 27 (2): 175–184.
- Craik, Fergus I.M., and Robert S. Lockhart. 1972. "Levels of Processing: A Framework for Memory Research." *Journal of Verbal Learning and Verbal Behavior* 11: 671–684.
- Denbow, Carl J. 1975. "Listenability and Readability: An Experimental Investigation." *Journalism Quarterly* 52 (2): 285–290.
- Denney, Nancy Wadsworth. 1982. "Aging and Cognitive Changes." In *Handbook of Developmental Psychology*, ed. Benjamin B. Wolman, 807–827. Englewood Cliffs, NJ: Prentice Hall.
- Doyle, John R., and Paul A. Bottomley. 2006. "Dressed for the Occasion: Font-Product Congruity in the Perception of Logotype." *Journal of Consumer Psychology* 16 (2): 112–123.
- Fang, Irving E. 1966–1967. "The 'Easy Listening Formula.'" *Journal of Broadcasting* 11 (Winter): 63–68.
- Flesch, Rudolph. 1951. *How to Test Readability*. New York: Harper and Brothers.
- French, Warren A., and Melvin R. Crask. 1977. "The Credibility of Media Advertising for the Elderly." In *Contemporary Marketing Thought*, ed. Barnett A. Greenberg and Danny N. Bellinger, 74–77. Chicago: American Marketing Association.
- Gunning, Robert. 1968. *The Technique of Clear Writing*. New York: McGraw-Hill.
- Hartley, Alan A., and Joan Wilson Anderson. 1983. "Task Complexity and Problem-solving Performance in Younger and Older Adults." *Journal of Gerontology* 38 (1): 72–77.
- Henderson, Pamela W., and Joseph A. Cote. 1998. "Guidelines for Selecting or Modifying Logos." *Journal of Marketing* 62 (April): 14–30.
- , Joan L. Giese; and Joseph A. Cote. 2004. "Impression Management Using Typeface Design." *Journal of Marketing* 68 (October): 60–72.
- Houston, Michael J., and Michael L. Rothschild. 1978. "Conceptual and Methodological Perspectives on Involvement." In *1978 Educators' Proceedings*, ed. S. Jain, 184–187. Chicago: American Marketing Association.

- John, Deborah Roedder, and Catherine A. Cole. 1986. "Age Differences in Information Processing: Understanding Deficits in Young and Elderly Consumers." *Journal of Consumer Research* 13 (3): 297–315.
- Johnson, Rose L., and Cathy J. Cobb-Walgren. 1994. "Aging and the Problem of Television Clutter." *Journal of Advertising Research* 34 (4): 54–62.
- Laurent, Gilles, and Jean-Noel Kapferer. 1985. "Measuring Consumer Involvement Profiles." *Journal of Marketing Research* 22 (1): 41–53.
- Liu, Yuping, and L.J. Shrum. 2003. "What Is Interactivity and Is It Always Such a Good Thing? Implications of Definition, Person, and Situation for the Influence of Interactivity on Advertising Effectiveness." *Journal of Advertising* 31 (4): 53–64.
- Lowrey, Tina M. 1998. "The Effects of Syntactic Complexity on Advertising Persuasiveness." *Journal of Consumer Psychology* 7 (2): 187–206.
- . 2006a. "The Relation Between Script Complexity and Commercial Memorability." *Journal of Advertising* 35 (Fall): 7–15.
- . 2006b. "Moderate Copy Complexity Enhances the Persuasiveness of Direct Mail." Unpublished manuscript, University of Texas at San Antonio.
- Macklin, M. Carole; Norman T. Bruvold; and Caroly Lynn Shea. 1985. "Is It Always as Simple as 'Keep It Simple!'" *Journal of Advertising* 14 (4): 28–35.
- McCarthy, Michael S., and David L. Mothersbaugh. 2002. "Effects of Typographic Factors in Advertising-Based Persuasion: A General Model and Initial Empirical Tests." *Psychology & Marketing* 19 (7–8): 663–691.
- McQuarrie, Edward F., and David Glen Mick. 1996. "Figures of Rhetoric in Advertising Language." *Journal of Consumer Research* 22 (March): 424–438.
- Meeds, Robert, and Samuel D. Bradley. 2007. "The Role of the Sentence and Its Importance in Marketing Communications." In *Psycholinguistic Phenomena in Marketing Communications*, ed. Tina M. Lowrey, 103–118. Mahwah, NJ: Erlbaum.
- Metoyer-Duran, Cheryl. 1993. "The Readability of Published, Accepted, and Rejected Papers Appearing in *College & Research Libraries*." *College & Research Libraries* November: 517–526.
- Olson, Arthur V. 1984. *Readability Formulas—Fact or Fiction*. Washington, DC: U.S. Department of Education.
- Peracchio, Laura A., and Joan Meyers-Levy. 1997. "Evaluating Persuasion-Enhancing Techniques from a Resource-Matching Perspective." *Journal of Consumer Research* 24 (September): 178–191.
- Petty, Richard E., and John T. Cacioppo. 1986. *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*. New York: Springer-Verlag.
- Phillips, Barbara J., and Edward F. McQuarrie. 2004. "Beyond Visual Metaphor: A New Typology of Visual Rhetoric in Advertising." *Marketing Theory* 4 (1/2): 113–136.
- Phillips, Lynn W., and Brian Sternthal. 1977. "Age Differences in Information Processing: A Perspective on the Aged Consumer." *Journal of Marketing Research* 14 (4): 444–447.
- Salthouse, Timothy A. 1985. *A Theory of Cognitive Aging*. Amsterdam: North-Holland.
- Stephens, Nancy. 1981. "Media Usage and Media Attitude Change with Age and with Time." *Journal of Advertising* 10 (1): 38–47.
- Webb, Peter H. 1979. "Consumer Initial Processing in a Difficult Media Environment." *Journal of Consumer Research* 6 (4): 225–236.
- Wright, Ruth E. 1981. "Aging, Divided Attention, and Processing Capacity." *Journal of Gerontology* 36 (5): 605–614.
- Zaichkowsky, Judith Lynne. 1985. "Measuring the Involvement Construct." *Journal of Consumer Research* 12 (3): 616–618.