The Case for a Complexity Continuum

Tina M. Lowrey
Professor of Marketing
College of Business
University of Texas at San Antonio
6900 North Loop 1604 West
San Antonio, TX 78249-0631
210.458.5384
FAX: 210.458.6335
tina.lowrey@utsa.edu

Department of Marketing,
University of Texas at San Antonio,
San Antonio, TX 78249, U.S.A

The Case for a Complexity Continuum

WORKING PAPER – 5/08

Tina M. Lowrey
Professor of Marketing
College of Business
University of Texas at San Antonio
6900 North Loop 1604 West
San Antonio, TX 78249-0631
210.458.5384
FAX: 210.458.6335
tina.lowrey@utsa.edu

Tina M. Lowrey (Ph. D., University of Illinois), Professor of Marketing, College of Business, University of Texas at San Antonio, tina.lowrey@utsa.edu.

The Case for a Complexity Continuum

ABSTRACT

The case for a Complexity Continuum (CC) is presented. Past research on the effects of syntactic complexity (and other contributors to complexity, such as difficult words) in an advertising context has yielded seemingly contradictory findings. Rather than being problematic, however, it is argued in this conceptual paper that the various results from past research are complementary. By placing each study along the CC (based on medium, textual factors, and participant characteristics) one can see how results to date combined provide a clearer understanding of how complexity operates. Two experiments provide additional evidence of the validity of the CC proposed herein.

The Case for a Complexity Continuum

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. Does this practice yield the desired results? In other words, does writing simple copy enhance either the memory for or persuasiveness of advertising?

Certainly, several recent academic studies have provided evidence that the effects of complexity are actually more complicated than previously thought. Thus, "keep it simple, stupid" may not always be the best policy for copywriters. But what are the factors that contribute to the positive effects of simplicity (or conversely, and perhaps more appropriately, to the negative effects of complexity)? That is, when should copy be kept as simple as possible and when is it advisable to write at a more complex level?

The purpose of this conceptual paper is to propose a Complexity Continuum that takes into consideration the advertising medium, the reading level and overall length of the copy, and individual difference variables of respondents, and to examine recent research findings of the effects of complexity on memory and persuasion in an advertising context by placing them on the Complexity Continuum. Finally, results from two laboratory experiments will be presented and discussed in terms of how they expand what we can claim about the Complexity Continuum (CC).

CONTRIBUTING FACTORS TO COMPLEXITY

Textual Factors

There are several factors that contribute to overall complexity of any passage of text, but the two major contributors are vocabulary and syntax. The specific words selected and how the words are strung together into sentences can both impact message complexity.

First, the words selected may be short and simple, single-syllable words that first-graders can easily understand. Conversely, the words may be multi-syllabic obscure terms that only college graduates with a sophisticated vocabulary are familiar with. In addition, terms may be commonly used or be technical terms specific to a particular industry.

Second, the way in which these words are strung together into sentences (known as syntax) can be as simple as possible (e.g., one clause written in the active voice with no negation) or can be quite complex (e.g., several clauses written in the passive voice with negation). These two factors are often combined when assessing the reading level of a passage of text.

Indeed, two of the 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 (word difficulty) along with the average number of words per sentence (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 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. The Fog index correlates with grade in school – an index of five indicates 5th grade level material, whereas 17 would indicate college graduate.

Other measures have been developed in response to criticisms of these measures, but the Flesch formula and the Fog index both correlate with these newer measures. In addition, both Flesch and Fog are commonly used to assess the readability of print materials and the "listenability" in broadcast contexts (Allen 1952; Bogert 1985; Denbow 1975; Fang 1966-67; Foulger 1978; Harwood 1955; Lowrey 2006; Metoyer-Duran 1993; Molstad 1955; Olson 1984).

Extra-textual Factors

In addition to the choice of words and syntax, there are factors external to the message that can impact message complexity. Rather than contributing to complexity, however, it is more appropriate to view these factors as those that lessen or magnify the effects of complexity (thus, causing shifts along the CC). Two of the most important of these factors in an advertising context are the medium and individual difference variables.

First, the advertising medium can contribute to processing constraints, thus making text more difficult to comprehend. Thus, in externally-paced media (such as radio and television), complexity effects may be magnified (possibly causing shifts to the right along the CC). Conversely, in self-paced media (such as magazines and newspapers), the

fact that an individual can read the message slowly and repeatedly might minimize the effects of complexity (possibly causing shifts to the left along the CC).

Second, a host of individual difference variables can impact the effects of complexity, such as age, education level, and motivational state. These two factors, rather than being primary contributors to the CC, serve as "shifters" along the CC. That is, whereas the two factors inherent to the passage of text (word choice and syntax) cause initial placement along the CC, the other two factors (medium and individual differences) can *shift* the text in either direction (see Figure 1).

PLACE FIGURE 1 ABOUT HERE

Thus, when exposed to a complex TV commercial, processing difficulties might arise (shifting the complexity of the message to the right). However, if one is highly motivated to process, the effects of complexity may be less severe (shifting the complexity of the message to the left).

It should be noted that these two factors basically deal with ability and motivation to process messages. Many theories of information processing have outlined the potential impact of various ability and motivational factors (see, for example, Craik and Lockhart 1972; Petty and Cacioppo 1986). While there are differences between Craik and Lockhart's Levels of Processing Framework and Petty and Cacioppo's Elaboration Likelihood Model, they both agree that ability and motivation to process are both critical factors to take into consideration when investigating message processing.

For example, age can impact an individual's ability to process (with younger children and older adults having lower levels of ability, for the most part). Similarly, higher education levels tend to contribute to processing abilities. Motivation to process

can be situational (such as motivation to complete a specific task) or inherent to an individual (such as involvement with a particular product category, or a trait characteristic such as Need for Cognition [Cacioppo and Petty 1982]). Regardless of the source of the motivation, in general high levels of motivation increase message processing, whereas low levels can hinder processing.

Summary of Contributing Factors to the CC

Thus, four factors are the focus of the case presented here in support of the CC. To reiterate, the two textual factors (words and syntax) are primary contributors to complexity, and cause initial placement of a given message on the CC. The two extra-textual factors (medium and individual difference variables) can lessen or magnify the effects of complexity, causing shifts along the CC in either direction.

To illustrate and support the case for the CC, a review of four recent studies that provide seemingly contradictory findings regarding the effects of complexity in an advertising context will illustrate the validity of the CC (as well as demonstrate that the findings are, in fact, complimentary).

RECENT ADVERTISING COMPLEXITY RESEARCH

In an effort to more fully understand how complexity exerts its effects on memory and persuasion, four studies that investigated complexity issues will be reviewed briefly. Factors that will be analyzed include advertising medium, reading level and length of copy, and characteristics of the research participants.

The first study, Lowrey (1998), was one of the first set of experiments to look at how complexity might impact memory for and the persuasiveness of print and TV advertising. She found that complexity (syntactic complexity, specifically) did reduce

performance on memory measures for both media and led to less favorable attitudes in a print context for those low in motivation to process, but that complexity did not negatively impact those who were highly motivated. In fact, complexity actually enhanced the attitudes of high involvement participants. Her stimuli would fall in the middle of the CC (see Figure 2). The copy consisted of five sentences of approximately 48 words (simple and complex versions differed slightly on word count), written at a grade school level. Thus, the inherent features of the text place it in the middle of the CC (although perhaps toward the simpler end).

PLACE FIGURE 2 ABOUT HERE

The medium (print vs. TV) could cause a shift (toward the left [simpler] end for print and toward the right [more complex] end for TV). Keep in mind that her participants were college students being exposed to grade school level copy in the two print experimentss (that could also cause a shift to the left), but she used a general population sample in the TV experiment (that could also cause a shift to the right, due to the lower education levels and the higher average age of participants – see Figure 3).

PLACE FIGURE 3 ABOUT HERE

In the second study, Bradley and Meeds (2002) found that syntactic complexity had no effects on a variety of measures regardless of motivation level, with the exception of recognition (complexity lowered recognition levels for all). While this might seem, at first glance, to directly contradict Lowrey's (1998) findings, the stimuli were quite different. In this case, the context was one of reading a slogan (rather than a block of ad copy), one sentence in length, with five words. Complexity was manipulated by making either one or two transformations to a kernel sentence (the simplest utterance). This type

9

of text would presumably be placed at the simpler level of the CC (although reading level can not be computed for single sentences). Again, given that the participants were college students and the medium was print, a shift to the left would be expected.

The third study, Chebat et al. (2003), did find strong inhibition of both memory measures and persuasion measures when participants were exposed to complexity in a print context, regardless of level of involvement. In this case, complexity was measured as readability using the Fog index. However, their stimuli could be placed toward the right end of the CC, based on inherent characteristics. The ad copy they used ranged from two to seven sentences in length (with a constant word count of 66 – one contributor to complexity in the Fog index is sentence length) written at college level. Thus, their stimuli differed both from Bradley and Meeds' (in terms of both word count and sentence length, reading level differences undetermined) and from Lowrey's (primarily in terms of reading level – word count and sentence length quite similar).

However, whereas Bradley and Meeds found *no* complexity differences regardless of involvement and Lowrey found complexity differences primarily for those low in involvement, they found that complexity impaired both memory and persuasion *regardless* of level of involvement. What can account for these differences? The print medium context was used in all three studies. However, Chebat et al.'s respondents were not college students. Instead, they sampled from the general population, with a lower education level and higher average age. Thus, individual difference variables shifted their text to the right, making already more difficult, college-level material potentially very difficult for their respondents.

The fourth study to be reviewed here (Lowrey, 2006) further investigated complexity in a television context. She found very strong evidence for negative effects of complexity on memory (but again, these relations were moderated by motivation in her second experiment). Specifically, her stimuli in the first study consisted of a variety of TV commercial scripts (average of 5 sentences in length) written at easy to moderate levels (using the Flesch formula). In the second experiment, 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" vs. "more difficult"). Based on inherent characteristics alone, the texts would belong in the middle of the CC.

However, the broadcast context would help shift it to the right (making processing more difficult). In addition, in the first study, older, less-educated participants would also require a further shift to the right (this was not the case with the second experiment, with college students as participants). In the second experiment, ability to process was enhanced, as the participants read the scripts. In addition, motivation to process caused complexity effects to weaken, as would be expected (causing a slight shift back to the left).

Once one has taken into consideration inherent stimuli characteristics, 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 CC as a logical framework for positioning advertising complexity research. However, other than the shorter slogan-context research of Bradley and Meeds (2002), all of the other studies had copy lengths that were quite similar to one another.

Does length contribute to complexity? On the one hand, Denbow (1975) pointed out the need to investigate longer passages of text (in a non-marketing context), suggesting that longer passages might strengthen the effects of complexity. On the other hand, Flesch (1951) did not include overall length of a passage of text in his readability formula, implying that overall length is not a contributor to complexity (this is also true for the Gunning Fog Index, 1968).

To date, however, nobody has directly investigated whether overall length contributes to complexity. A laboratory experiment was conducted that isolated complexity from length as the manipulated independent variable that would impact order intentions in a direct mail context (in addition, a follow-up replication was conducted and both are reported below).

EXPERIMENTS

The first experiment involved a 2 (simple vs. complex copy) X 2 (short vs. long) manipulation of direct mail pieces for a fictitious collectible. Given the dimensions that comprise both the Flesch and Fog indices, complexity should impact the persuasiveness of the offer but length should not. Based on past research results that show enhanced attitudes for greater complexity (at least among highly motivated college student samples, see Lowrey, 1998), order intentions should be positively related to complexity, such that higher complexity offers would be associated with greater intention to order (a main effect for complexity). Motivation (measured as product involvement) should also exert a main effect on order intentions, such that those higher in involvement will have greater intention to order than those low in involvement.

There should be no effect of length on order intentions (although this is a null prediction, it is important to demonstrate that it is complexity, isolated from length, that exerts effects on persuasion). Finally, in addition to the two expected main effects (for complexity and motivation separately), motivation should also moderate the effect of complexity on persuasiveness. Therefore, an interaction between complexity and involvement is expected, such that order intentions will be greatest for those high in involvement exposed to complex versions.

Method

The direct mail pieces were written about an offer relevant to the experimental sample (i.e., a collectible that embodied a local attraction was selected after extensive pre-testing). Detailed attention was paid to make four versions of the offer that differed both on levels of complexity (i.e., Fog index) and on overall length (total number of words and pages). Thus, the four versions created were: short/simple; short/complex; long/simple; and long/complex. The simple versions had high school level Fog indices of 10.75 (long) and 11.45 (short), whereas the complex versions had college level Fog indices of 14.60 (long) and 13.70 (short). The short versions had 600-650 words and were just over one page long, whereas the long versions had 850-900 words and were just over two pages long.

The independent variables included complexity (simple/complex), involvement (low/high), and length (short/long). Involvement was a self-reported measure on a nine-point scale, with a higher number indicating greater involvement. This was then converted to a dichotomous variable ($M = 5.46$). The dependent variable was intention to

order the offered item on a nine-point scale (with a higher number indicating a greater intention to order).

Participants were 85 college students who provided informed consent to participate in the experiment for extra credit in an introductory marketing class. Participants were run in groups of 12, seated at cubicles in a quiet laboratory space. Participants were asked to read the direct mail offer at their own pace. After reading the offer, participants were instructed to raise their hands to receive the next phase of the experiment. The researcher collected the offer and provided the participants with the measurement booklet. Participants were instructed to complete the booklet at their own pace. Upon completion of this booklet, the participants were debriefed and were free to leave the laboratory.

Results

Main Effects. A 2 (simple vs. complex copy) X 2 (short vs. long) X 2 (low- vs. high-involvement) analysis of variance was conducted. Complexity did contribute to order intentions, as expected. Those who received the complex versions had higher intentions to order ($M = 2.98$) than those who received the simple versions ($M = 2.05$; $F(1,83) = 3.99$; $p < .05$). There was also a main effect for involvement, as expected, such that those who reported high levels of involvement were more likely to order than those low in involvement (2.96 vs. 2.04; $F(1,83) = 3.78$; $p < .05$). Length did not contribute to order intentions, consistent with expectations.

Interaction. Involvement moderated the impact of complexity on order intentions, as expected. High involvement participants who received the complex offer had higher order intentions than all other participants ($F(1,81) = 9.24$; $p < .005$; see Table 1 for

complete details). Thus, complexity had a more positive impact on those high in involvement than on those low in involvement.

PLACE TABLE 1 ABOUT HERE

These findings provide further evidence that complexity affects the persuasiveness of advertising messages, and that involvement can moderate this effect. There was no evidence that overall text length contributed to or magnified the effects of complexity. In this experiment, the expected results were obtained with respect to intention to order. However, order intentions were quite low in this experiment.

Recall that intention to order was reported on a nine-point scale. The main effect for complexity on order intention was based on the difference between a mean response of 2.98 versus 2.05. The mid-point of the scale is 5, implying that even though complex copy significantly improved intentions, the general level was quite low overall. Indeed, the interaction provides a more in-depth analysis of this generally low level of order intentions by the majority of participants (see Table 1). Only the highly involved participants who received the complex version of the offer had order intentions around the mid-point of the scale. All other participants' intentions to order were quite low.

Replication

Despite pre-testing that indicated the selected item was relevant to the sample, given this relatively negative response from experimental participants (and the possibility that such a negative response may have skewed the results), a follow-up replication was designed in an attempt to provide an offer that might be of more overall interest to participants. With the exception of the item being offered, the replication was identical to the first experiment.

Modifications were made to the offer to make it more relevant, more interesting, and more desirable to the experimental sample (the new item was a collectible that demonstrated pride in one's university). Four versions were created – the simple versions had high school level of Fog indices of 10.70 (long) and 11.48 (short), whereas the complex versions had college level Fog indices of 14.64 (long) and 13.67 (short). The short versions had 602-646 words and were just over one page long, whereas the long versions had 856-913 words and were just over two pages long. Participants were 103 college students participating for extra credit.

The results of the follow-up experiment replicated the main effects of the first experiment. Specifically, complexity exerted a main effect on order intentions (5.00 vs. 3.77; $F(1,101) = 6.23$; $p < .05$). Involvement also exerted a main effect, with high involvement participants being more likely to order than low involvement participants (5.57 vs. 3.36; $F(1,101) = 23.48$; $p < .001$). Length did not contribute to order intentions. The pattern of results for the interaction between involvement and complexity was as expected, but was not significant ($p > .20$). However, t-tests conducted to determine which means differed from one another suggest partial support for the relation (see Table 2 for complete details). Specifically, highly involved participants exposed to complex copy had higher intentions to order than all other participants (e.g., the results for the comparison with high involvement participants exposed to simple copy were $t(1,45) = 3.69$; $p < .01$).

PLACE TABLE 2 ABOUT HERE

Thus, the follow-up replicated the main effects obtained in the first experiment (with much higher intentions to order overall), and provided partial support for the

expected interaction between involvement and complexity that was significant in the first experiment. The results, combined, seem to provide additional evidence for the validity of the CC.

DISCUSSION

The findings reported here are important for a number of reasons. First, previous research on the effects of complexity in an advertising context has focused on very short messages – this research is the first 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 CC.

Thus, the studies in Figure 2 could be placed on the CC solely in terms of their inherent complexity level (significantly, no placements would actually change, however). The stimuli used in the current research would be in the middle (simple versions) and the right (complex versions – see Figure 4), based on complexity only, not length.

PLACE FIGURE 4 ABOUT HERE

Second, although both complexity and involvement exert main effects on advertising persuasiveness, it is the interaction between the two that is most interesting. Thus, higher complexity for those highly involved with the message actually enhances intentions to order (similar to results obtained by Lowrey, 1998). Keep in mind that motivation helps to shift an otherwise complex message to the left (into the moderate portion of the CC). Given the print context of the current research, and the college level of participants, it makes sense that complexity does not have deleterious effects on persuasiveness.

As with any study, the two studies reported here had limitations. Obviously, it is not advisable to conclude from these studies that the specific complexity levels used in these stimuli would be applicable to a more generalized audience. Indeed, that is one of the very premises of the CC – that individual difference variables such as age, education level, and motivation to process can shift complexity effects in either direction. Thus, these stimuli might be too difficult for the general public. Further research is required to determine optimal levels for specific audiences.

Second, the product chosen for the first experiment generated very low intentions overall (with the exception of those highly involved who were exposed to complex versions). While the follow-up replication addressed this issue, the main effect replications overwhelmed the interaction between complexity and involvement that had been observed in the first experiment. The pattern of means offers partial support for the notion that high involvement participants exposed to complex versions would have the highest intentions to order (that was the case), but low involvement participants' intentions were also enhanced by complexity, a finding that was not expected (nor obtained in the first experiment).

Future research will need to investigate this anomaly further. Indeed, one could argue that real-world direct marketing pieces are rarely actually read by "low involvement" individuals (that is, only those remotely interested in the offer will actually open the envelope and read through the entire piece). It's possible that the low involvement participants in the follow-up experiment followed the instructions to read the piece and, in so doing, became moderately more involved than they would have been otherwise. Obviously, further research will need to be conducted to determine if this

might have been the case. This is, of course, an issue with all laboratory experimentation into the effects of complexity on memory and persuasion.

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. Media effects is another area ripe for future exploration. Despite Lowrey's (1998; 2006) findings in a broadcast context, much more remains to be done in order to understand the difference between externally- and self-paced media.

Another important factor that needs 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 studies reviewed in this paper 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 with the Fog index; Lowrey 2006 with the Flesch formula; and the current research with the Fog index). These three studies go beyond syntactic complexity to include word difficulty in assessing overall complexity. Additional research could investigate how complexity might be affected by puns and word play, the use of simile and metaphor, and other linguistic constructions that might cause shifts along the CC.

It is hoped that this paper will be a starting point for researchers to continue to investigate how complexity exerts its effects along the Complexity Continuum. Research that provides additional insights into how other textual factors contribute to complexity is

needed. So too are studies that include potential moderators of the impact of complexity

on advertising persuasiveness.

Table 1

Mean Order Intentions in First Experiment

	Simple Copy	Complex Copy	
Low Involvement:	2.25_a	1.91	a
High Involvement:	1.92_a	4.25	b

Note: Means with different subscripts differ significantly from one another ($p < .05$).

Table 2

Mean Order Intentions in Follow-up Replication

	Simple Copy	Complex Copy	
Low Involvement:	2.80_a	4.00	b
High Involvement:	4.67_b	6.81	c

Note: Means with different subscripts differ significantly from one another ($p < .05$).

Figure 1

The Complexity Continuum

[-----------------------][------------------------][------------------------]

Text is: simple   moderate   complex
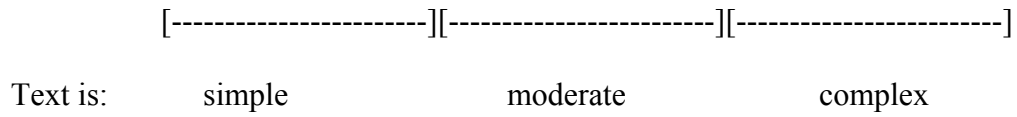
Externally-paced media shift messages to the right (makes more complex).

Motivation shifts messages to the left (makes less complex).

Figure 2

Where Past Stimuli Falls Along

The Complexity Continuum

[----------------------][----------------------][----------------------]

Bradley & Meeds (2002)   Lowrey (1998)   Chebat et al. (2003)
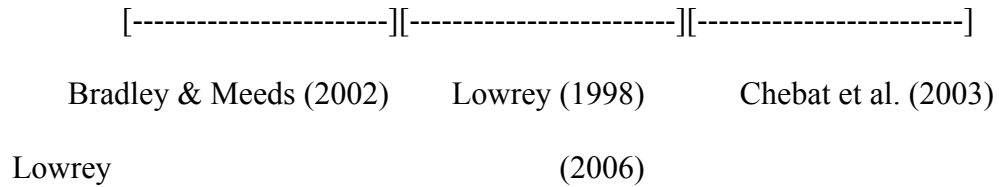
Lowrey   (2006)

Bradley & Meeds: 1 sentence of 5 words with 1 (or 2) transformations (print)

Chebat et al.:   2-7 sentences of 66 words at college level (print)

Lowrey (1998):   5 sentences of 48 words at grade school level (print & TV)

Lowrey (2006):   easy to moderate scripts (TV)

Figure 3

How Medium/Individual Difference Variables

Shift Findings Along The Complexity Continuum

[----------------------][-----------------------][-----------------------]

Lowrey   (1998)   Lowrey   (1998)

(Experim   ents 2 & 3)   (Experim   ent 1)

Bradley & Meeds (2002)   Chebat   et al. (2003)

Lowrey   (2006)   Lowrey   (2006)

(Experim   ent 2)   (Experim   ent 1)

Bradley & Meeds (2002):   moderate shift to the left (print context plus college

                            students)

Chebat et al. (2003):   moderate shift to the right (despite print context, lower

                            education and higher age)

Lowrey (1998):   major shift to the right Experiment 1 (TV context plus

                            lower education and higher age); moderate shift to the left

                            for Experiments 2 and 3 (print context plus college

                            students, some of whom were highly motivated to process)

Lowrey (2006):   major shift to the right for Experiment 1 (TV context plus

                            lower education and higher age); moderate shift to the left

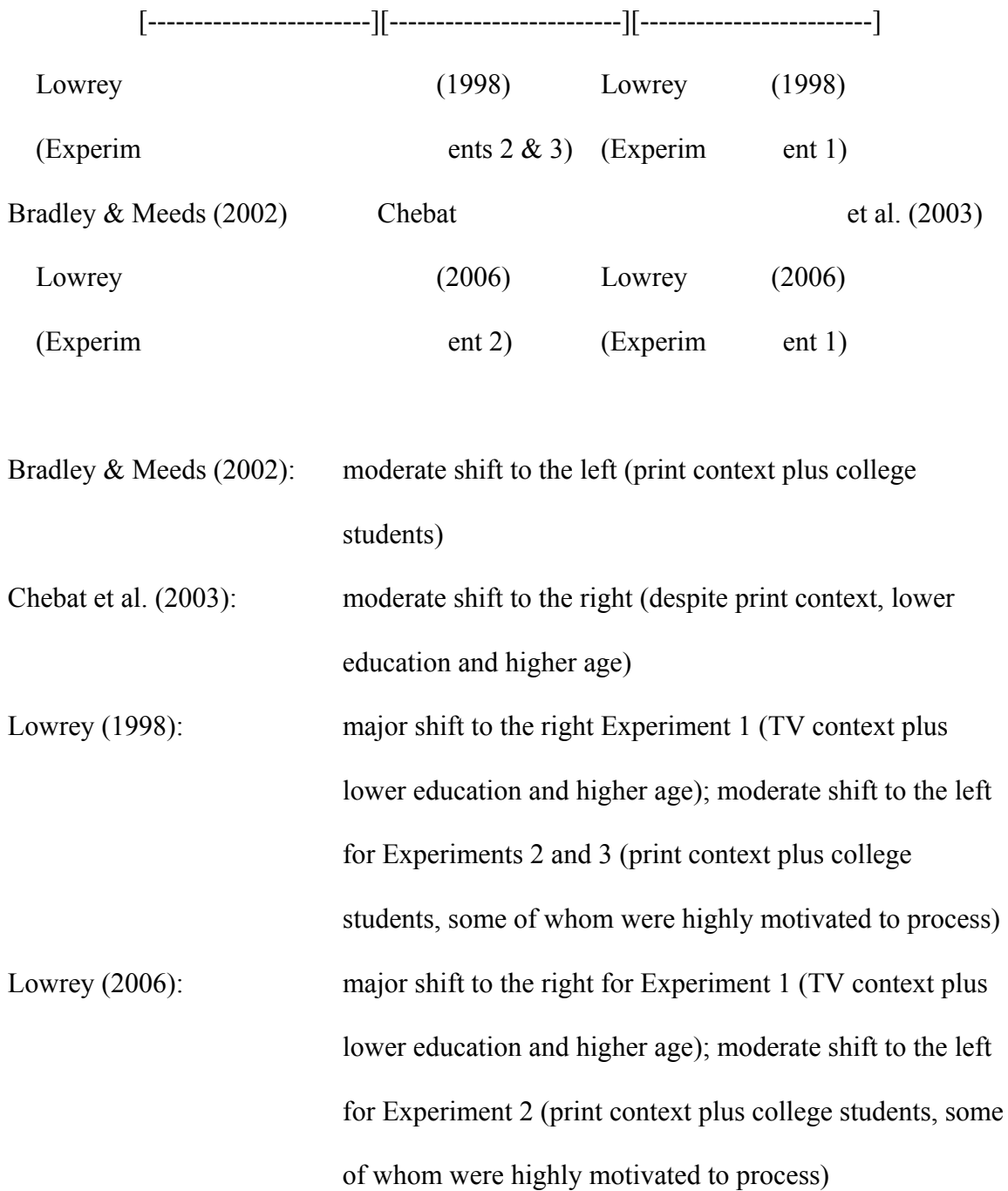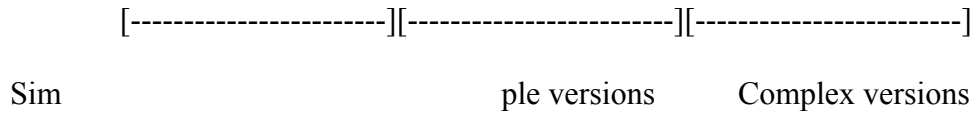   for Experiment 2 (print context plus college students, some

                            of whom were highly motivated to process)

Figure 4

Where Current Stimuli Falls Along

The Complexity Continuum

[----------------------][----------------------][----------------------]

Sim   ple versions   Complex versions

Simple versions: high school level Fog indices

Complex versions: college level Fog indices

How would medium/individual difference variables shift findings along the CC?

Would shift to the left – print context plus college students (and high levels of

motivation)

REFERENCES

Allen, William (1952), "Readability of Instructional Film Commentary," *The Journal of Applied Psychology*, 36 (June), 164-168.

Bogert, Judith (1985), "In Defense of the Fog Index," *The 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, 116-131.

Chebat, Jean-Charles, Claire Gelinas-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.

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.

Fang, Irving E. (1966-67), "The 'Easy Listening Formula'," *Journal of Broadcasting*, 11 (Winter), 63-68.

Flesch, Rudolph (1951), *How to Test Readability*, New York: Harper and Brothers.

Gunning, R. (1968), *The Technique of Clear Writing*, New York: McGraw Hill..

Lowrey, Tina M. (1998), "The Effects of Syntactic Complexity on Advertising Persuasiveness," *Journal of Consumer Psychology*, 7 (2), 187-206.

Lowrey, Tina M. (2006), "The Relation Between Script Complexity and Commercial Memorability," forthcoming in *Journal of Advertising*.

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, D.C.: U.S. Department of Education.

Petty, Richard E., and John T. Cacioppo (1986), *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*, New York: Springer-Verlag.