

# Zipped Commercials, Zapped Memory? Not Necessarily

Robert Rouwenhorst<sup>1</sup> & Liang Zhao<sup>1</sup>

<sup>1</sup> Assistant Professor, Marketing Department, St. Ambrose University, USA

Correspondence: Robert Rouwenhorst, Assistant Professor, Marketing Department, St. Ambrose University, USA

Received: August 29, 2017

Accepted: September 21, 2017

Online Published: September 22, 2017

doi:10.5430/bmr.v6n3p85

URL: <https://doi.org/10.5430/bmr.v6n3p85>

## Abstract

As digital-video-recorders (DVRs) become more popular, an increasing number of television commercials are being zipped (fast-forwarded). This paper examines how memory for brand names, products and attitudes toward commercials are influenced by zipping at the speeds used by the popular DVR manufacturer, TiVo (300, 1800 and 6000 percent). Experimental results show that compared to ads shown in real-time, memory for the advertised brand names improves when the commercials are zipped at 300 percent of normal speed. However, brand name recall dramatically declines as the commercials are zipped at faster speeds (1800 and 6000 percent). Speed of zipping had a significant effect on the ability to recall the advertised brand for all commercials except those at the end of a commercial pod. This suggests that all else being equal, ads placed at the end of a commercial pod are more likely to be recalled at all zipping speeds. Viewers of zipped commercials had more neutral attitudes toward the ads compared with those who saw them in real-time.

**Keywords:** Zipping, Explicit memory, Attitudes, Commercials

## 1. Introduction

“TiVo is God’s Machine.” – Former FCC Chairman Michael Powell

Broadcasters and their affiliates have had near total control over how commercials are viewed since the dawn of television. The invention of the videocassette recorder (VCR) and remote control were revolutionary in that viewers controlled how much of an ad or ads they watched. With this increased control, audiences started to do what they could to avoid commercials. Abernethy and Rotfeld (1991) estimated that 32 percent of the television audience avoided commercials through either physical avoidance (leaving the room) or mechanical (changing channels) with the remote control.

Continuing technological developments are giving even more control to viewers. The invention of the digital-video-recorder (DVR) has enabled audiences to have a greater choice of what they watch and when they watch it. DVRs allow users to simultaneously record several programs to a hard drive and then play them back at the viewer’s leisure in addition to watching “live” television. Whereas the VCR was limited to either two to six hours of recording time depending on quality, DVRs can store hundreds of hours of programming. The greatest threat to advertisers is the DVR’s ability to quickly fast-forward, or zip, through advertising. Every recorded program can be fast-forwarded through at the consumer’s will. TiVo has become synonymous with DVRs and shipped its first DVR in 1999. According to Nielsen (2016), over half of households in the United States have a DVR. The growth in DVR usage is seen by many as a direct threat to television advertising as more people are able to time-shift (record a show and play it back later) and fast-forward through most, if not all, commercials.

Given their increasing popularity and the attention they have drawn in the popular press, the potential consequences of fast-forwarding through commercials have received surprisingly little academic research. What research exists was done in the 1980s and 1990s when the VCR was gaining in popularity; however, the typical VCR had only one fast-forward speed. By contrast, most DVR manufactures (TiVo, Sony, Motorola, Scientific-Atlanta) offer three or more fast-forward speeds. From a marketer’s perspective, the most troubling statistic is that the majority of DVR owners fast-forward through advertisements. The exact statistics vary. According to Flint (2005), TiVo stated that 77 percent of customers who record a show and watch it later fast-forward through the commercials. CBS found that 64 percent of DVR owners skipped all commercials.

These statistics are troubling for advertisers and some studies have argued that “there are only losses” (Sternberg 1988) when a commercial is zipped. However, many forget that a viewer must engage in an active process and

make an effort to avoid watching commercials. If a viewer elects to zip through the advertising, he or she must pay close attention to the television to ensure they do not unintentionally zip into the desired program. Thus, attention level and hence memory for zipped commercials may be greater than for a commercial viewed at normal speed. This could help explain the results reported by Neff (2003). He stated that in internal market research, Proctor & Gamble discovered that viewers retain fast-forwarded commercials at about the same rate as those watched in normal speed. However, the speed with which the commercials were zipped is not reported.

What little published research there is on the effects of zipping is often limited to surveys, diary reports, and correlational studies. The scarcity of experimental research conducted in a controlled environment warrants a different approach to studying the impact of zipping on viewers' memories. The current study provides experimental evidence of the relationship between memory for the advertised brands in commercials and zipping speed. Free recall measures are used to measure the information received and retained over a half-hour of television viewing. Additionally, attitudes toward the remembered commercials are assessed.

## 2. Literature Review

Terminology used to describe the skipping of commercials is not always consistent. However, the current paper defines "zapping" as changing the channel to avoid commercials or to see what is playing on another station. "Zipping" refers to fast-forwarding of videotapes (Cronin 1995). In this paper, the term "zipping" also refers to fast-forwarding digitally recorded content on a TiVo or a similar DVR.

The video component of television can be thought of as a series of pictures shown at 30 images per second. Therefore, much of the research in psychology and human perception of pictorial stimuli may be applied to television. Nelson et al. (1976) noted that the rate of presentation of a stimulus alters a participant's ability to process the meaning of the stimulus. Intraub (1979) found that as the presentation sequence of pictures is accelerated, it is increasingly difficult to store information about the picture in memory. Intraub (1980) stated that rapidly presenting pictures reduces recognition of each by approximately 75 percent.

It must be noted that although memory for advertising has been detrimentally impacted by zipping, Metzger (1986) reported that 85 percent of viewers who zipped commercials reported seeing some of the pictorial elements. Reiss (1986) provided evidence that zipped commercials are remembered. Two percent of viewers who zipped commercials could recall the names of the products from the spots they zipped. Furthermore, 18 percent of the zippers were able to name at least one commercial that made them stop zipping and watch. Several studies have looked at the effects of zipped commercials upon memory for the brands advertised. Stout and Burda (1989) found that zipping does interfere with a viewer's ability to recall product and brand name and that viewers' brand recall fell dramatically when they were shown zipped versus normal-speed commercials.

Most studies have focused on the negative aspects of zipping. However, results from several studies give reason to believe there could be positive aspects to zipping. Neff (2003) stated that Proctor & Gamble found that viewers who zipped commercials retained them at about the same rate as those who watch them in normal speed. Ang et al. (1999) looked at silence as an execution cue in advertising. The authors found that a silent segment in a commercial did not enhance brand attitudes, but it did enhance attention and recall of the ad. Using a DVR to fast-forward induces silence on all commercials zipped; hence, we believe that zipping will not enhance favorability toward the brands but will enhance recall of commercials.

Additionally, zipping speed may be a factor in memory recall as evidenced by the conflicting studies of Stout and Burda (1989), who found detrimental effects of zipping, and Neff (2003), who stated no such effect was found. Since neither article described the speed that viewers were allowed to use for zipping, it is conceivable that the speed differed between studies and that the attention level of zippers could be higher than those who watch a commercial at normal speed. Therefore, it is possible that zipping commercials at a slow speed can lead to an increase in memory for the ads. However, as the speed increases, viewers cannot process the images as well and memory recall for the ads declines.

Research by LaBarbera and MacLachlan (1979) in radio advertising found that subjects were able to fully comprehend messages played at 200 percent of normal speed. Comprehension was measured using 35 multiple-choice questions confined to factual content of the messages played to participants. However, memory for visual information has been found to be superior to memory for words (Paivio 1969, 1971 and Lutz and Lutz 1978). Therefore, memory for zipped video should exceed that of audio. Additionally, as the speed of the commercials increases, it follows from Intraub (1979 and 1980) that the ability of viewers to process the message and commit it to memory will drop significantly. Therefore, it is hypothesized that:

H1: Individuals viewing commercials at a slow zipping speed will have better brand name recall than those exposed to the same commercials shown in real-time.

H2: Individuals viewing commercials at higher zipping rates will have worse brand name recall than those exposed to the same commercials shown in real-time.

Pieters and Bijmolt (1997) conducted a field study looking at the duration, serial position, and competition effects on both unaided and aided recall of advertised brands. They found that both unaided and aided recall were most impacted by the length of the commercial, with consumers being better able to recall longer commercials. They also found that recall was influenced by advertising competition. Recall worsened with more advertisements from competing brands. Finally, they showed that primacy/recency had a significant impact upon which commercials were remembered. Those commercials at the beginning and at the end of a commercial block or “pod” were more likely to be remembered. However, zipping may decrease the ability to recall the first commercial in a pod because viewers may take time adjusting to the speed of the zipping. By contrast, commercials shown at the end of a pod are likely to have minimal carryover effects from watching the television program. Therefore:

H3: Commercials at the end of a commercial block are most likely to be remembered by viewers who zip commercials.

It is debatable whether ads that are fast-forwarded are evaluated similarly to those that are seen in real-time. Ambady and Rosenthal (1993) found that predicted teacher evaluations were highly correlated between the end-of-semester scores from students who took the class and subjects who only saw a video of the teacher lecturing. This finding was present despite the fact that the videos were only two to ten seconds in duration and did not have any audio. Lindgaard et al. (2006) found that subjects could assess the visual appeal of websites within 50 milliseconds, and the abbreviated assessments were highly correlated with their scores when they could freely browse the website. While visual appeal can be surmised easily and quickly, overall favorability to an ad may be compromised since the auditory message cannot be heard, and the actions of those in the commercial may go by too fast for any meaning to be attached. Additional effort is required to form well-developed attitudes whereas less elaboration or motivation should result in more neutral attitudes. It is more likely that viewers will generate less associations between incoming information and that which is already stored in memory due to the disruption in cognitive elaboration (Moore et al. 1986). Therefore:

H4: Individuals shown zipped commercials will have more neutral attitudes toward the commercials than those shown the commercials in real-time.

### 3. Method

The main purpose of the experiment was to examine how the speed of presentation of advertisements impacts explicit memory for brands being advertised and attitudes toward the commercials.

113 participants were recruited from an undergraduate marketing class from a large public university in the United States. Participants received course credit for their participation. Participants were randomly assigned to one of four treatment groups. The four treatment groups did not deviate substantially in size ( $n = 25-30$ ).

The stimuli used for the experiment consisted of a video of the British television show “The Office” with three commercial pods distributed approximately evenly throughout the program. The British version of “The Office” was selected because it was expected that subjects would be less familiar with the show. This expectation was confirmed in a pilot study where only one of 46 subjects had seen the episode selected. Each of the three commercial pods consisted of four 30-second commercials for nationally advertised brands. Care was taken to select commercials from product categories that the sample was likely to purchase.

Four different videos were created. One showed both the program and commercials in real-time. The other three videos showed the program in real-time but had all the commercials zipped by 300, 1800 or 6000 percent. These speeds were chosen because the most popular DVR with some 6.8 million users (Stynes 2016), TiVo, uses 3, 18, and 60 times real-time as the three fast-forwarding speeds. For each video, the commercials were shown in the same order.

Subjects participated in groups which ranged in size from six to nine individuals per session. Two identical rooms were used and furnished identically with the same carpet, lighting, tables, chairs, and video equipment. The tables and chairs were arranged so each person would have an unobstructed view of a 42-inch Panasonic plasma screen television set placed in the corner of the room.

Identical instructions were given to participants in all conditions by the same researcher. After all subjects selected a seat, the researcher explained they were about to watch a video and that they would be evaluating a television program. After obtaining consent, the researcher passed out the surveys. The first page of the survey assessed the subjects' moods and motivational states. After completing the mood measures, the subjects were shown the video.

While the program played, the researcher remained among the subjects with a remote control visibly displayed. In the zip conditions, the researcher pointed the remote at the video equipment and "fast-forwarded" through the commercials. The researcher knew when each commercial break was. Additionally, a black screen was shown for less than one second before the start of a commercial pod. This was done to serve as a cue to the researcher to press the remote but also to mimic normal television programming where a black screen is shown for a short duration between the program and the first commercial in a pod. To ensure that each group would be shown identical video presentations, the videos were all professionally created using Final Cut Pro with the commercials shown at the desired zipped speed and then burnt onto a DVD. The remote control had no impact on the video playback. In addition to ensuring that all groups saw the same video, it was felt that showing the groups a video with commercials sped up without the use of the remote control would call undue attention to the commercials and serve as a demand characteristic. The use of the remote control was seen as mitigating some of the artificiality of the experimental setting. After the DVD was finished, the subjects were asked to complete the survey containing the dependent measures.

Mood was measured using items from the PANAS-X scale developed by David Watson and Lee Anna Clark (1994). Participants rated how they felt at that moment on a three-item, seven-point mood scale anchored by: sad/happy, bad/good mood, depressed/cheerful (with "one" being the most negative and "seven" being the most positive). Measures of mood were taken before viewing the video and immediately thereafter. These ratings were taken to rule out an alternative hypothesis for improved memories that is consistent with the work of Lee and Sternthal (1999). Results from their study indicated that a positive mood can improve memory for brand names. Hence, mood was measured in this study to disprove that improved memory for brand names was due to the video and commercials bettering participants' moods.

Recall was measured using an open-ended question asking subjects to name any brands or products for which they remembered seeing a commercial. A seven-point scale, anchored with dislike/like (with "one" being the most negative and "seven" being the most positive), was used to measure the participants' attitudes toward the commercials they recalled. To ensure that no participant knew that the remote control did not function, the following open-ended question was asked: "Did you notice anything out of the ordinary when the commercials were fast-forwarded?" Only one subject noted that the researcher's remote was not fast-forwarding the video and that subject's responses were dropped from the analysis.

#### 4. Results

Participants' moods were assessed first. Cronbach's  $\alpha$  equaled 0.88 on the three mood items, so they were summed to form a single index. Mood before and after the video did not differ significantly ( $\bar{x}$  =13.87 vs.  $\bar{x}$  =14.04,  $t(110)$  = -.88,  $p < 0.40$ ). Since the video did not alter participants' moods, we can eliminate the possibility that the video improved moods and caused increased recall.

Table 1. Number of Brands Recalled

Speed	N	Mean	Std. Deviation	Minimum	Maximum
Real-time	29	5.14	1.620	1	8
300%	25	6.68	1.909	3	11
1800%	26	3.31	2.150	0	8
6000%	30	1.67	1.729	0	6
Total	110	4.11	2.631	0	11

Table 1 presents the descriptive statistics of the number of brand names participants recalled from the commercials at various presentation speeds.

ANOVA results indicate a significant effect on the recall of brands dependent on the speed that the commercial was shown ( $F(3, 106) = 38.11$ ,  $p < 0.001$ ). A Tukey post hoc test revealed that the difference in number of brands recalled between the group shown the ad in real-time ( $\bar{x} = 5.14$ ) and the group shown the ad at 300 percent of real-time ( $\bar{x} = 6.68$ ) was significant,  $p < 0.015$ . This supports the hypothesis that those shown the commercial at a

slightly faster speed compared to real-time would be able to recall more of the brands advertised. In this case, the individuals shown the commercials at 300 percent of real-time were able to recall on average 1.5 more commercials than the group shown the same commercials in real-time.

The results also provide support for the second hypothesis, recall for brand names was significantly decreased by showing the commercials at zipped speeds above 300 percent. Tukey post hoc tests revealed the difference between the 300 percent ( $\bar{x} = 6.68$ ) and the 1800 percent group ( $\bar{x} = 3.31$ ) was significant,  $p < 0.001$ . Furthermore, the difference between the 1800 percent and the 6000 percent group ( $\bar{x} = 1.67$ ) was significant,  $p < 0.007$ . These results imply that faster zipping speeds impair an individual's ability to recall the brand names of the commercials he or she has just seen.

To assess whether commercials at the end of a commercial pod were more likely to be remembered, the percentage of participants who recalled each commercial was compared across all zipping speeds. Table 2 reports the ANOVA findings for zipping speed and memory for the 12 commercials shown. Memory for the three commercials at the end of the commercial pods (Nestle Crunch, Subway, Slim Jim), in contrast to overall memory, was not significantly altered due to zipping speed ( $p > 0.33$ ). Hence, placing an ad at the end of a commercial pod prevents memory deterioration due to zipping. These results support the third hypothesis and should provide marketers with justification for paying extra to have an ad shown at the end of a commercial pod as the number of customers zipping through commercials grows. It should also be noted that recency may explain the better recall of the third commercial pod. If more of the program was shown after the third commercial pod, one would expect the recall of Vonage and MasterCard to decrease as zipping speed increased.

Table 2. Commercial Recall

Commercial Pod 1	Real-Time (n=29)	300% (n=25)	1800% (n=26)	6000% (n=30)	F	p-value
Oral-B	69%	84%	12%	7%	31.79	< 0.001
Lipton	45%	80%	27%	0%	19.89	< 0.001
Sam Adam's	41%	64%	23%	0%	12.34	< 0.001
Crunch	45%	48%	50%	37%	0.39	0.76
Commercial Pod 2						
Orbit	41%	52%	38%	13%	3.52	0.02
Crest	69%	92%	31%	17%	19.38	< 0.001
Campbell's	24%	56%	19%	0%	9.90	< 0.001
Subway	24%	44%	46%	37%	1.16	0.33
Commercial Pod 3						
Best Buy	83%	64%	23%	17%	16.41	< 0.001
Vonage	41%	36%	23%	13%	2.35	0.08
MasterCard	10%	28%	12%	3%	2.70	0.05
Slim Jim	21%	20%	27%	23%	0.14	0.93

Table 2 presents the percentage of participants that recalled a particular commercial at various presentation speeds.

To determine if attitudes toward the advertisement were more neutral in the zip condition, the absolute distance from the midpoint of the scale ("four" on the "one" to "seven" point scale) was calculated. Using this method, a mean of zero, correlating to a rating of "four" on the scale, would indicate a completely neutral response to the ad. ANOVA revealed a significant difference between the groups,  $F(3, 106) = 8.50$ ,  $p < 0.001$ . The Tukey post hoc tests revealed significant differences between the real-time group ( $\bar{x} = 1.84$ ) and both the 1800 percent group ( $\bar{x} = 1.13$ ),  $p < 0.024$  and the 6000 percent group ( $\bar{x} = 0.73$ ),  $p < 0.001$ . As predicted by Hypothesis 4 and shown in Table 3, subjects shown the commercials at faster zipping speeds had more neutral attitudes toward the ads than those shown the commercials in real-time.

Table 3. Strength of Attitude

Speed	N	Mean	Std. Deviation	Minimum	Maximum
Real-time	29	1.8440	.78250	.20	3.00
300%	25	1.6331	.84314	.00	3.00
1800%	26	1.1259	.93804	.00	3.00
6000%	30	.7333	1.08420	.00	3.00
Total	110	1.3234	1.01372	.00	3.00

Table 3 presents the strength of attitudes toward the commercials recalled by participants at various zipping speeds.

### 5. Limitations

Although this study possesses limitations, it provides the first evidence of the effects of zipping speed on memory and attitudes for television commercials. At the expense of external validity, laboratory conditions maximized internal validity. To the authors' knowledge, not that many of the effects of zipping speed have been demonstrated in a controlled environment. However, we must point out three large limitations that call into question the generalizability of our experiment. First, the use of a standardized video for each zipping speed is different from what would be encountered in the real-world where the DVR would calculate the images to show on the fly. Second, this study looked at the response to zipping in a group setting where viewers were not in control of the remote and saw the commercials at a pre-recorded speed. Not only are viewers not in control of the remote, but they are viewing the television in groups of six to nine individuals which is larger than what most people encounter when they watch television. Finally, our study used undergraduate students as subjects. How do groups of different ages and experience with technology process and recall advertisements they were exposed to? Is one group more prone to zipping at faster speeds? This and other issues related to zipping should also be explored.

### 6. Discussion and Future Directions

The present study was designed to look at the differential effects of zipping speed on a television viewer's ability to process advertising information. Zipping speeds of 300, 1800 and 6000 percent faster than real-time were analyzed as they are the speeds used by one of the most popular DVR manufacturers, TiVo. As demonstrated previously by Stout and Burda (1989), increasing zipping speed did hinder the ability to recall advertised brand names. However, this is true only at the 1800 and 6000 percent zipping speeds. At 300 percent zipping speed, memory for brand names actually increased. Although this appears counterintuitive, one must realize that a viewer zipping commercials must pay attention to the screen to ensure that he or she does not zip into the desired program. Evidence that attention level can increase comes from Ang et al. (1999) who looked at silence as an execution cue in advertising. The authors found that a silent segment in a commercial did not enhance brand attitudes but did increase attention and recall of the ad. Using a DVR to fast-forward induces silence on all commercials zipped; hence, zipping should enhance recall of commercials shown at a slow zip speed.

Zipping speed had a significant effect on viewers' ability to recall the advertised brand for all commercials except those placed at the end of a commercial pod. This suggests that by placing a commercial at the end of a commercial pod, viewers are better able to recall the brand name at all speeds of zipping. A great deal of research has demonstrated the benefits of primacy and recency in being able to recall a series of commercials (Pieters and Bijmolt 1997). Possible reasons that only recency is beneficial with zipped commercials are because it allows for maximization of the viewers' adjustments to the speed of the zipping. In addition, placement at the end of the commercial pod minimizes any carryover effects from watching the television program. From a practical standpoint, these findings provide marketers with justification for paying more to have an ad shown at the end of a commercial pod as the number of customers zipping through commercials grows.

As zipping speeds increase, viewers' attitudes toward the ads become increasingly neutral. Decreasing the amount of time a commercial is shown does not allow for sufficient processing of the information for strong attitudes to develop.

As more than half of households in the United States have a DVR, marketers must look at ways to improve the recall of their ads that are more likely to be zipped. One method may be to create a brand-dominant commercial by featuring the brand or product on the screen for a longer period of time to fight the detrimental effects of zipping. The rationale is that if the product is shown for a greater length of time, the viewer has more time to take notice and focus on information presented about the product.

Stout and Burda (1989) hypothesized that creating a brand-dominant message by increasing the product exposure during a commercial would act as a vividness enhancer and facilitate recall of zipped commercials. Vividness can be thought of as making the brand more noticeable to the viewer through the use of a logo or picture. Kisielius and Sternhal (1984, 1986) found that vivid commercials are better recalled. Potter and Levy (1969) studied the recognition of pictures when the speed of presentation varied between one-eighth of a second to two seconds. They demonstrated that the longer the viewing time, the likelihood of recognizing the picture later on increased. However, Stout and Burda's experiment failed to show that brand-dominant commercial bolstered brand name recall. The authors pointed out that their manipulation of taking the last three seconds of a commercial (which were still shots of the package with the brand name visible) and doubling it to six seconds may have been too weak a manipulation of brand-dominance.

Another possible tactic that deserves study is the use of repetition to enhance memory for commercials. Several theories of repetition effects are based on Berlyne's (1970) two-factor theory which holds that a communication's effectiveness increases with low levels of repetition and then decreases with further repetitions, forming a nonmonotonic (inverted-U) relationship between communication effectiveness and repetition. Berlyne based his theory on two factors which influence affect toward a repeated stimulus: positive habituation and tedium. Initial exposures to a stimulus serve to reduce negative responses to an unfamiliar stimulus which increases positive habituation. With continued repetition of a stimulus, tedium occurs out of reactance against the stimulus.

Cacioppo and Petty (1979) extended the analysis of repetition effects and demonstrated that repetition had its greatest effect at moderate levels of repetition. They found that increasing the number of exposures to a message to a moderate level increased agreement with the message, but high levels of repetition prompted counter-argumentation and caused message agreement to decline.

Potentially, recognizing a commercial should generate the recall of previously learned information and beliefs about the brand. Zipping could have a positive impact on familiar brands under moderate to high speeds of zipping as there can be little persuasion or elaboration on new information. Only previously learned information and elaborations can be recalled. Therefore, looking at the impact of repetition by zipped commercials may be a fruitful avenue of research.

Another way advertisers can offset the effects of zipping is by placing their commercials at the end of a commercial pod. At faster zipping speeds, it becomes more difficult to adjust to the speed the images are shown. However, brand recall for the three commercials at the end of the commercial pods did not significantly fall. These results suggest that viewers have made an adjustment to the speed of the commercials and are better able to encode the information and later recall it. More research is needed to tease out why this occurs. Is it the blank screen that occurred after the last commercial? Do viewers adjust their ability to process zipped commercials and are better able to process the zipped commercials after seeing several in a row? Thus, a fourth, fifth, sixth, etc. zipped commercial in a pod may be more likely to be recalled. This also can be a ripe topic for research.

Future studies should continue to investigate these matters in a natural setting. For instance, are the effects different when the viewers are in control of the remote and when the zipping speed varies? How do viewers zip in real-life and what do they remember? It may take time to begin zipping so are viewers more likely to recall the first commercial during a commercial break? Another important but untested variable in the current study is if experience with DVRs alters viewers' abilities to process advertisements. It is conceivable that the longer one uses a DVR and becomes accustomed to watching zipped commercials, the less likely he or she is to process them as he or she is conditioned to look for only the desired television show. Answering questions like this will allow for a more realistic assessment of the effects explored in this article and their replicability.

This study adds to previous work on zipping by examining the effects of various zipping speeds and demonstrates the positive effects of allowing viewers to fast-forward, but only at a slow speed (300% in this experiment) when one expects a commercial to be zipped. One possible real-world outcome would be for streaming services such as YouTube and Hulu to not force viewers to sit through a 30-second or longer advertisement. Many viewers probably engage in zapping and pay attention to a different browser window. Instead, we would encourage YouTube and Hulu to allow viewers to zip the commercials at a slow rate (300%). Not only would viewers feel more in control over their viewing experience, they will be more likely to recall the brand advertised according to our findings.

Although many unanswered questions related to zipping exist, fast-forwarding through television commercials at a high speed has serious negative implications for marketers and companies that use television advertising. Only by

better understanding zipping behaviors and their consequences can we hope to offer insights on how to make more effective advertisements in the era of streaming and DVRs.

## References

- Abernethy, A. & Rotfeld, H. (1991). Zipping through TV Ads is Old Tradition- but Viewers are Getting Better at it. *Marketing News*, 25(1), 6.
- Ambady, N. & Rosenthal, R. (1993). Half a Minute: Predicting Teacher Evaluations From Thin Slices of Nonverbal Behavior and Physical Attractiveness. *Journal of Personality and Social Psychology*, 64(3), 431-441. <https://doi.org/10.1037/0022-3514.64.3.431>
- Ang, W.H. , Leong, S.M. & Yeo, W. (1999). When Silence is Golden: Effects of Silence on Consumer Ad Response. *Advances in Consumer Research*, 26, 295-299.
- Berlyne, D. (1970). Novelty, Complexity, and Hedonic Value. *Perceptions and Psychographics*, 8, 279-286. <https://doi.org/10.3758/BF03212593>
- Cacioppo, J. & Petty, R. (1979). Effects of Message Repetition and Position on Cognitive Response, Recall and Persuasion. *Journal of Personality and Social Psychology*, 37(1), 97-109. <https://doi.org/10.1037/0022-3514.37.1.97>
- Cronin, J. (1995). In-Home Observations of Commercial Zapping Behavior. *Journal of Current Issues and Research in Advertising*, 17(Fall), 69-75. <https://doi.org/10.1080/10641734.1995.10505033>
- Flint, J. (2005). Marketers Should Learn to Stop Worrying and Love the DVR. *The Wall Street Journal*, October 26, 2005.
- Hansell, S. (2006). TiVo is Watching When You Don't Watch, and It Tattles. *The New York Times*, July 26, 2006.
- Intraub, H. (1979). The role of Implicit Naming in Pictorial Encoding. *Journal of Experimental Psychology, Human Learning and Memory*, 5(2), 78-87. <https://doi.org/10.1037/0278-7393.5.2.78>
- Intraub, H. (1980). Presentation Rate and the Representation of Briefly Glimpsed Pictures in Memory. *Journal of Experimental Psychology, Human Learning and Memory*, 6(1), 1-12. <https://doi.org/10.1037/0278-7393.6.1.1>
- Kisielius, J. & Sternthal, B. (1984). Detecting and Explaining Vividness Effects in Attitudinal Judgments. *Journal of Marketing Research*, 21(February), 54-64. <https://doi.org/10.2307/3151792>
- Kisielius, J. & Sternthal, B. (1986). Examining the Vividness Controversy: An Availability-Valence Interpretation. *Journal of Consumer Research*, 12(March), 418-431. <https://doi.org/10.1086/208527>
- Krane, J. (2003). FCC's Chief Calls TiVo 'God's Machine.' *The Washington Post*, January 11, 2003.
- LaBarbera, P. & MacLachlan, J. (1979), Time-Compressed Speech in Radio Advertising. *Journal of Marketing*, 43, 1(January), 30-36. <https://doi.org/10.2307/1250755>
- Lee, Y. (2006). FX Channel Tries Commercial to Combat Ad-Skipping. *Reuters*, September 15, 2006.
- Lieberman, D. & Petrecca, P. (2006). New TiVo Service to Measure its Ad-zapping Fallout. *USA Today*, July 26, 2006.
- Lindgaard, G., Fernandes, G., Dukeks, C. & Brown, J. (2006). Attention Web Designers: You Have 50 Milliseconds to Make a Good First Impression. *Behavior and Information Technology*, 25(March/April), 115-126. <https://doi.org/10.1080/01449290500330448>
- Lutz, K. & Lutz, R. (1978). Imagery-Eliciting Strategies: Review and Implications for Research. *Advances in Consumer Research*, 5, 611-620.
- Metzger, G. (1986). CONTAM's VCR Research. *Journal of Advertising Research*, 26(2), RC8-RC12.
- Neff, J. (2003). TiVo Less of a Threat? Surprising P&G Findings. *AdAge.com*, March 17, 2003.
- Nielsen Total Audience Report: Q1 2016. Retrieved from <http://www.nielsen.com/us/en/insights/reports/2016/the-total-audience-report-q1-2016.html>
- Paivio, A. (1969). Mental Imagery in Associative Learning and Memory. *Psychological Review*, 76, 241-263. <https://doi.org/10.1037/h0027272>
- Paivio, A. (1971). *Imagery and Verbal Processes*. New York: Hold, Reinhart and Winston.
- Pieters, R. & Bijmolt, T. (1997). Consumer Memory for Television Advertising: A Field Study of Duration, Serial



- Position, and Competition Effects. *The Journal of Consumer Research*, 23(March), 362-372. <https://doi.org/10.1086/209489>
- Potter, M. & Levy, E. (1969). Recognition Memory for a Rapid Sequence of Pictures. *Journal of Experimental Psychology*, 81(1), 523-529. <https://doi.org/10.1037/h0027470>
- Reiss, C. (1986). Fast-Forward Ads Deliver. *Advertising Age*, 27(October), 97.
- Sternberg, S. (1988). Measuring VCR Playback. *Marketing and Media Decisions*, March, 122-123.
- Stout, P. & Burda, B. (1989). Zipped Commercials: Are They Effective? *Journal of Advertising*, 18(4), 23-32. <https://doi.org/10.1080/00913367.1989.10673164>
- Stynes, T. (2016). TiVo Continues to Add Subscribers. *MarketWatch*, March 1, 2016.
- Thorson, E. & Snyder, R. (1984). Viewer Recall of Television Commercials: Prediction from the Propositional Structure of Commercial Scripts. *Journal of Marketing Research*, 21(May), 127-136. <https://doi.org/10.2307/3151695>