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THE EFFECTS OF AD-BLOCK WALL LEVEL, AD-BLOCK WALL MESSAGE FRAME, EXPLICIT GOAL EXISTENCE AND AD TYPE ON PSYCHOLOGICAL REACTANCE, UNCONSCIOUS AD PROCESSING AND ONLINE NEWS BRAND EVALUATION

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Table of Contents

Acknowledgements v

List of Tables xi

List of Figures xii

Abstract xiv

Chapter 1: Introduction 1

Ad Avoidance, Financial Crisis in Journalism and Drastic Increase in Ad-blocking 1

Ad-block User vs. Ad-block Wall: Freedom vs. Responsibility 3

Failing Immediate Gratification Needs and Subsequent Affect Transfer 6

Mere Exposure Effect: The Effects of Goal Explicitness and Negative Priming .8

Mitigating Reactance: Message Framing 10

Testing the Effectiveness of a New Type of Ad: The Native Ad 12

Problem Statements 13

The Purpose of This Study 13

Theoretical and Practical Implications 14

Chapter 2: Literature Review 16

Online Advertising Avoidance 16

Background Theories in Advertising Avoidance Research 16

Applying Theories into Advertising Avoidance 17

Chapter 3: Study 1: Ad-block Wall Processing 21

Overview 21

Psychological Reactance Theory 22

Hypotheses Development 26

Chapter 4: Study 2: Advertising Processing....35
Unconscious Processing of News Media Advertising....35
New Perspectives: Ignored Ads = Blocked Ads?....35
Attention Control: Goal-directed Behavior....36
Mere Exposure vs. Distractor Devaluation Effect: Unconscious Processing of Ad....38
Mere Exposure Effect....39
Distractor Devaluation....42
Hypotheses and Research Question Development....45
Chapter 5: Study Overview....52
Chapter 6: Pretest....53
Pretest Plans....53
Pretest 1: Ad-block Wall, Explicit Goal, and Attention Goal Test....57
Pretest 2: Ad-block Wall Message Frame and Native Ad Perception Test....60
Pretest Overview....62
Pretest 1 Results....62
Pretest 2 Results....65
Chapter 7: Experiment 1....66
Participants....67
Research Design....67
Data Analysis Strategies....68
Procedures....68
Measures....71

Experiment 1 Results....73
Experiment 1 Discussion....90
Chapter 8: Experiment 2....97
Participants....97
Research Design....97
Data Analysis Strategies....97
Procedures....97
Measures....99
Experiment 2 Results....100
Experiment 2 Discussion....106
Chapter 9: General Discussion....109
Limitation and Future Studies....111
Conclusion....112
References....113
Appendix A: Measurement Items....131

List of Tables

Table 1. Summary of Experiment 1 Results.....88

Table 2. Pearson's *r* Correlations Matrix of Reactance Related Measure and Affective Ad Ratings.....107

Table 3. Dependent Variables Measurement Items.....131

Table 4. Manipulation Check Measurement Items.....132

List of Figures

Figure 1. Three Levels of Ad-block Wall Processing 27

Figure 2. Fictitious Online News Website Main Page and Second Page 54

Figure 3. Examples of Tested News Content 54

Figure 4. Developed News Website's Main Page and Second Page 55

Figure 5. Example of a Developed Banner Ad and a Native Ad 57

Figure 6. Developed Low-level Ad-block Wall without Message Frame 58

Figure 7. Ad Placement on the Second Page 60

Figure 8. Two Developed Gain and Loss-frame Ad-block Wall Messages 61

Figure 9. Example of Editorial Content, Native Ad and Banner Ad 61

Figure 10. An Example of the Image Annotation Task and the Grammar/Spelling Checking Task from Rashtchian, et al.'s Study (2010) 68

Figure 11. A Process of Information Search Tasks for a Participant in the Middle-level Ad-block Wall at the Explicit Goal Condition 70

Figure 12. A Process of Information Search Tasks for a Participants in the Low-level Ad-block Wall at the Non-explicit Goal Condition 70

Figure 13. Main Effects of the Ad-block Wall Level on Threat to Freedom 75

Figure 14. Expected Results (H3) 78

Figure 15. Ad-block Wall Level X Explicit Goal on Anger 79

Figure 16. Ad-block Wall Level X Explicit Goal on Attitude to Ad-block Wall 80

Figure 17. Ad-block Wall Level X Explicit Goal on Attitude to News Media Brand 81

Figure 18. Expected Results (H4) 81

Figure 19. Ad-block Wall Level X Wall Message Frame on Threat to Freedom 82

Figure 20. Ad-block Wall Level X Wall Message Frame on Negative Cognition 83

Figure 21. Ad-block Wall Level X Wall Message Frame on Attitude to Ad-block Wall84

Figure 22. Expected Results (H5).....85

Figure 23. Ad-block Wall Level X Explicit Goal on Negative Cognition.....86

Figure 24. Expected Results (H6).....87

Figure 25. Expected Results (H7).....101

Figure 26. Expected Results (H8).....102

Figure 27. Expected Results (H9).....103

Figure 28. Expected Results (H10).....103

Figure 29. The Effects of Ad-block Wall Level, Wall Message Frame, and Ad Type on Affective Ratings (R1).....105

Abstract

Myopic loss aversion can take place when news media management and advertisers focus too much on preventing short-term losses. Although ad-bock walls may successfully block the ad-block users' access, two studies here have shown that the ad-block wall can backfire when ad-block users perceive their freedom as being threatened. In study 1, depending on the goal type and ad-block wall level, ad-block users evaluated the ad-block walls and news media brand differently. The results showed that high-level ad-block walls and explicit goal conditions together tend to generate greater reactance than other conditions. In addition, the finding showed that loss-frame wall messages in high-reactant condition (i.e., high-level ad-block wall) can result in more negative responses than gain-frame wall messages. Study 2 found that perceived reactance from the ad-block wall processing can influence the unconscious advertised brand ratings if the ad format was perceived as a distractor. The results showed that distractor devaluation was generated in the banner ad condition but not in the native ad condition which implies that the native ad format needs to be considered as a possible future of advertising.

Keywords: Ad-block, Ad-block Wall, Psychological Reactance, Distractor Devaluation, Native Advertising, Affect Transfer, Advertising Avoidance, Unconscious Ad Processing

CHAPTER 1. Introduction

Advertising supports the Internet ecosystem (Deighton, Kornfeld, & Gerra, 2017). Deighton and his colleagues (2017) analyzed and reported that three types of advertising (i.e., paid, owned and earned) contributed $1,121 billion (6% of total US GDP) to the US GDP in 2016. Considering the average US gross domestic product (GDP) growth rate from 2012 to 2016 was 4 percent, the 20 percent growth rate of advertising-supported ecosystems reflects the substantial value of advertising on the Internet (Deighton, et al., 2017). In other words, the Internet industry relies heavily on advertising.

Contrary to its financial importance in the ecosystem, some advertisers and industrial analysts have maintained their skeptical standpoint toward the effectiveness of online advertising based on numerical indicators such as low impressions and click-through rates, and non-human traffic rates (Drèze & Hussherr, 2003; Saleh, 2014). Research indicates that users intentionally avoid or don't pay attention to where banner advertising is placed (Barreto, 2013). Given these conditions, it is clear why online journalism is in a financial crisis due to decreasing ad revenue.

Ad Avoidance, Financial Crisis in Journalism and Drastic Increase in Ad-blocking

According to the Pew Research Center (2015), print advertising revenues in 2014 ($16.40 billion) were the lowest since 2003. Furthermore, 2014 revenue was less than half of 2005's revenue. Even worse, the increasing use of ad-block software among online users is contributing to a severe decrease in news websites' ad revenue (IAB, 2016). Online content publishers lost $15.8 billion in ad revenue due to the increasing use of ad-block software in 2017 (Sullivan, 2017). The number of global ad-block users

increased by 30 percent in 2016 and current ad-block-using devices are 615 million (PageFair, 2017). By simply installing ad-block software, advertising does not appear on users' screens.

Traditionally, advertising scholars have studied why people avoid advertising and how advertisers can improve audience attitudes and behavioral intention toward advertising (e.g., Baek & Morimoto, 2012; Cho & Cheon, 2004; Edwards, Li, & Lee, 2002; Li, Edwards, & Lee, 2002; Seyedghorban, Tahernejad, & Matanda, 2016; Speck & Elliot, 1997). Based on theoretical background, ad scholars have tried to explain advertising avoidance in both traditional and new media. Using information theory (Crowley & Mitchell, 1994; Shannon, 1949), advertising scholars have argued that media users can perceive ad exposure as noise that gets in the way of reaching the desired content (Speck & Elliot, 1997; Cho & Cheon, 2004; Seyedghorban, et al., 2016). In other words, users can perceive online ads as being not only irrelevant but also distractive to their online experience.

Past research also showed that users can perceive online ad exposure as a threat to their freedom when using the Internet because the enforced ads are intrusive and irritating (e.g., Edwards, et al., 2002; Li, et al., 2002), and insecure in terms of information privacy (e.g., Baek & Morimoto, 2012). Based on psychological reactance theory (Brehm, 1966), scholars explained user avoidance to advertising in terms of users wanting to retain their threatened freedom from ad exposures. These scholars suggested that advertisers need to create advertising that is more congruent to the given media contexts, namely, that which is entertaining and informational, based on increased personalization (Li, et al., 2002; Baek & Morimoto, 2012). Similar to the

abovementioned ad avoidance motivations, the main reasons consumers use ad-block software are to avoid interruption and maintain security followed by avoiding ad clutter, and concern about privacy concerns (PageFair, 2017).

The increase in ad-block use among online users is an understandable decision because, in general, fewer people want to approach negative experiences or threats (risks) without benefits. In other words, if blocking ads permits users to view editorial content without advertising, users personally have no explicit reason not to use ad-blocking software. People avoid pain and approach pleasure. However, there is a clear reason for not using ad-block software: to support quality news content creation.

Ad-block User vs. Ad-block Wall: Freedom vs. Responsibility?

Consider the impact of advertising on online news website revenue which is used for creating editorial content. The increased use of ad-block software is neither beneficial for news websites nor online users. Without advertising revenue support, for-profit news organizations cannot maintain quality content creation and distribution (Gade & Lowrey, 2011). Thus, increasing ad-block use makes the current financial crisis in journalism even worse.

Based on these concerns, to prevent additional downward trends in ad revenue, many news websites made ad-block walls which forced users to disable their ad-block software to gain website access (O'Reilly, 2017). Currently, three levels of ad-block walls exist. The highest level of an ad-block wall prevents users from entering a website without disabling ad-block software. In this case, users cannot check the website's news content. Once the ad-block software has been disabled, users can enter the news websites' main page, and see editorial content alongside placed advertisements. In this

case, in exchange for accessing the desired content, users are exposed to other editorial content unrelated to their interests along with advertising placement.

Middle-level ad-block wall allows users to enter websites and view the main page. However, mid-level ad-block walls prevent users from reading or watching user-chosen content if they do not disable their ad-block software. On the website's main page, there is no advertising at all. However, after users disable their ad-block software, the website displays advertising on the second screen while users process the site's editorial content. This type of ad-block wall implies that the website attempts to exchange the value of user-chosen content with advertising placement on the page. An extension of this scenario is that although ad placement is guaranteed when an advertiser pays for space on a website, the actual ad processing depends on whether the media user chooses to read it, click through it, or ignore it.

The lowest level ad-block walls allow users to enter a website and see the main page. If users click content and the second page, they become exposed to the request message that asks them to disable the ad-block. However, users can still close the request message box and read or watch the content.

In summary, websites' autonomy support levels for ad-blocking are different. The lowest level of user autonomy equates to a high-level ad-block wall followed by the middle-level, and finally low-level ad-block walls. Regarding restrictions distinguished among ad-block wall levels, the website's support of user autonomy differs among various ad-block wall levels. Specifically, ad-block users use ad-block software based on their desire to do so. Website ad-block walls threaten users' free will to use ad-blocking software. Thus, from the point of entering the main page of a news website to

landing on the targeted news information on the second page, ad-block wall intervention timing defines the level of autonomy the news website is willing to provide.

Industrial analyses warn that building an ad-block wall is not good for users or websites, from short and long-term perspectives (PageFair, 2017). PageFair (2017) reported 70% of ad-block users responded that they simply left websites when they encountered ad-block walls. Although industry analysis argued that ad-block walls make users leave sites, if we consider that most news media users selectively choose their primary news brands (Arendt, Northup & Camai, 2017), ad-block users are more likely to disable their ad-block software to enter their preferred news brand websites.

In addition, if users have specific information they want to view, they are more likely to disable their ad-block software against their will. In this case, users tend to perceive their own freedom of choice as being threatened by an enforced decision (i.e., disabling the ad-block). Thus, even though the ad-block wall strategy may be temporarily effective in prompting users to disable their ad-block software, advertisers and news websites should consider advertising effectiveness after causing users to disable their ad-block software. The question becomes: Will ad-block users process ads in the same way as non-ad-block users? It is unclear whether the negative experience generated by encountering an ad-block wall transfers as a negative attitude to the online news website, or the advertising encountered there, or both. Therefore, research should be conducted to answer these questions.

Traditionally, the main problem surrounding online advertising was attention scarcity (i.e., attention blindness) (Drèze & Hussherr, 2003; Duff & Faber, 2011; Lang 2000). Even though users agree to disable their ad-block software (either actively or

passively), do they really pay attention to the ads that follow? If they still do not pay attention to ads on news websites, is the ad-block wall with its perceived threat to users' freedom mutually beneficial for advertisers and news websites? Past research argued that unconscious processing of ads can influence media users' affective responses to advertised brands (Duff & Faber, 2011; Yoo, 2008). However, what remains controversial is whether unattended (subliminal) advertising in online news media has a positive or negative influence on users as they evaluate online news or advertised brands.

Failing Immediate Gratification Needs and Subsequent Affect Transfer

The need for immediate gratification is natural (Baumeister, 2002; Freud, 1920; Magen & Cross, 2007). For example, if people are thirsty, in most cases they want to drink something to satisfy their thirst. If there's a way to alleviate thirst, there is no reason to wait longer to do so; they focus mainly on resolving their thirst. In this case, the natural process of immediate gratification not only quenches thirst in the short term, it will generate similar, positive future outcomes, too. However, when immediate gratification causes downstream negative outcomes, people try to control their need for immediate gratification to achieve better future outcomes. For instance, we know that habitually eating chocolate ice cream late at night may make us feel good for the moment, while at the same time, we also know that it can cause future health problems. In this case, the conflict between immediate gratification and delayed gratification causes internal conflict and frustration (Magen & Cross, 2007).

Furthermore, if someone were to tell ice cream eaters not to eat ice cream at night for health reasons, the message receivers (i.e., the ice cream eaters) could say that

eating ice cream is their own choice, complete with negative cognition and emotion. Although, the message recipients know that habitually eating ice cream at night is bad for their health, if the recipients perceive the message as an enforced recommendation, they can resist being persuaded by the message arguments. In this case, they still maintain control for their eating habits.

When ad-block users try to enter news websites, they expect to see the main page immediately (i.e., immediate gratification). However, they will be exposed to the ad-block wall that stops them from entering the website. In this case, users have to disable their ad-block software if they want to view the websites' editorial content. Ad-block users may have clear reasons to use the software. Thus, they can perceive that their freedom is threatened by the websites' requests. However, if the ad-block wall is the only option available for news websites to earn ad revenue, the phenomenon in question should not simply be treated as a stay-or-leave decision. It is obvious that advertising revenue is crucial for news websites' content quality control and website user satisfaction. However, if users perceive negative cognition and emotions against the websites' ad-block walls, these specific situations may generate negative impacts on advertising effectiveness and user satisfaction toward websites. These points should be studied clearly.

Seemingly, there are no clear relationships between disabling ad-block walls and advertising effectiveness because advertised products or services, advertising types, personal interests and even message appeal vary throughout the timeline and sections on the websites. However, affect transfer theory warns that contextual effects can influence the evaluation of subsequent objects (Murphy & Zajonc 1993). For instance, media

users' negative or uncomfortable experiences prior to advertising exposure, can cause negative affective responses to extend or transfer (be projected) onto the placed ads. Therefore, users may have negative affective responses from ad-block walls. However, the intensity of affect transfer from the context to the ads can vary based on the interaction between different ad-block wall types and users' explicit goal existence (i.e., explicit goal/non-explicit goal) (Duff & Faber, 2011). How is that different? To answer the question, it is necessary to categorize active and passive ad avoidance based on the existence of specific goals (Duff & Faber, 2011).

Mere Exposure Effect: The Effects of Goal Explicitness and Negative Priming

According to Duff (2009), users who have specific goals to achieve from the web sites (e.g., searching recent news about a tornado or learning how to build a backyard cabin) can be categorized as active ad avoiding users because they do not intentionally pay attention to those ads. On the other hand, users who do not have specific goals when visiting a web site can be categorized as passive ad avoiding (or passive ad exposure) users because they do not necessarily strive to avoid ads to achieve their explicit goals (Duff, 2009). In other words, users' avoidance patterns rely on whether they have specific goals when they use a website.

The Internet is a strongly goal-oriented medium in many cases (Rodgers & Thorson, 2000). Based on human attention capacity, it should be noted that Internet users' limited capacity for information processing leads them to not focus on advertising sections which are not related to their primary goals (Duff & Faber, 2011; Lang 2000). Furthermore, even when their need for immediate gratification (i.e., viewing chosen content) was delayed by pop-up or pre-roll ads, the news content

consumer still focuses on the chosen, and therefore expected, editorial content. For example, YouTube users visit the main page, and choose content. Then, before playing the content, in most cases users are exposed to pre-roll advertising. In this situation, users pay attention to the skip button which they can click after five seconds so they can move on to the intended content as soon as possible. Likewise, Facebook users cannot avoid exposure to newsfeed ads. But users' main interests are friends and celebrities posts rather than advertising. Thus, they scroll through the ads quickly. On news websites, users mainly focus on news articles not on advertising. However, this does not mean that the unattended ads are always wasting advertisers' money (Duff & Faber, 2011). Past research has shown how unattended advertising also has some impact on users' attitudes (Bornstein, 1989; Duff & Faber, 2011; Zajonc, 2001).

The above-mentioned cases are examples of the top-down process which is goal-directed and which features controlled attention (Yantis, 1998; Fox, Derakshan, & Standage, 2011). At the same time, it can be considered active avoidance (or ignoring) of ads because users intentionally focus on the editorial content they wanted to use but not on the ads (Duff & Faber, 2011).

On the other hand, passive ad avoidance or passive ad exposure is more likely to occur when users do not have specific goals to pursue other than simply browsing and finding interesting tidbits on the web (Duff, 2009). It is possible to argue that viewing and searching interesting content could be an abstract goal. However, this study defines the distinction between goal and non-goal situations based on explicitness (or concreteness) (Duff & Faber, 2011; Trope & Liberman, 2011). If users are not explicitly goal-oriented at the time they use websites, their non-attention to ads is simply because

they are not interested in them as ancillary exposure (Shapiro, MacInnis, & Heckler, 1997; Duff & Faber, 2011). Therefore, it is possible to argue that information processing in this non-explicit goal situation is bottom-up processing. That is, without a specific goal in mind, we are more likely to pay attention to more arousing stimuli. For instance, when we visit a news website without having specific content in mind, we simply browse the main page with a holistic view. In this case, users will pay more attention to more-visible news content—those with color or words that attract interest and attention (i.e., vivid and salient content).

Overall, limited attention (or blindness) to advertising is natural. Thus, this study concentrates on how affective responses from unattended ads influence general advertised brand attitudes. The mere exposure effect assumes that pre-conscious exposure can affect attitudes toward the stimuli (Zajonc, 2001; Duff & Faber, 2011). But Duff and Faber (2011) pointed out that the positive mere exposure effect may not work in the goal-driven situation. For instance, while on the news website's main page, if a user wants to search news articles about a recent hurricane or a favorite musicians' new album, at that moment, the person may actively inhibit (or avoid) unrelated stimuli (e.g., ads). Furthermore, users negatively rated previously ignored stimuli even at the pre-conscious level (Duff & Faber, 2011). Therefore, considering the interaction effects between ad-block wall levels and users' goal explicitness levels that ad-block walls may enhance users' negative ad responses because the negative effects the ad-block contexts aroused transfer to the affective responses toward ads in the news websites. Basically, users can perceive the ads as distractions.

Mitigating Reactance: Message Framing

Past research suggests that finding effective communication methods to alleviate conflicts are as important as finding the problems (Rains, 2013; Shen, 2010;). Technically, the message that comes with the ad-block wall is one possible option to consider for communicating with ad-blocker users. And effective messages presented on the ad-block wall may help us alleviate their psychological reactance against the ad-block wall. Regarding the significant impact on the Internet ecosystem, it is surprising that little academic research has been undertaken to identify this phenomenon. Prospect theory (Kahneman & Tversky, 1979) suggests that when presented with predicted positive outcomes of making certain decisions, people tend to avoid risk (risk aversion). In contrast, when presented with predicted negative outcomes of not making certain decisions, they are more likely to show risk seeking behavior.

Based on the prospect theoretical framework, past research has focused on finding ways to make better persuasive message appeals. For example, using message frames, the outcomes of a certain recommendation can be presented in two different ways: gain-frame and loss-frame. Gain-frame describes the benefits of what can be achieved if recommended behaviors are accepted. Loss-frame emphasizes what people will lose if they do not follow recommended behaviors. If advertisers want to promote their products, it would be beneficial to develop message-frame messages to fit their situations (i.e., gain or loss).

That is, if people clearly understand the achievable benefits stemming from recommended behaviors, gain-frame messages may be more effective than loss-frame messages (Monga & Zhu, 2004). To reiterate, this is because gain-frame messages emphasize what people will gain if they follow recommendations. On the other hand, if

people clearly understand the predicted losses from not following recommended behaviors, loss-frame messages are more effective than gain-frame messages. This is because people are more likely to respond to the option that will help them avoid negative outcomes (i.e., losses). Thus, loss-framed messages focus on the consequences of not following recommended behaviors. This study predicts the interaction effects among message frames with ad-block walls and ad-block wall levels and users' goal explicitness (i.e. whether they know and clearly state their goal).

Testing the Effectiveness of a New Type of Ad: The Native Ad

Recently, news websites are adopting a new type of advertising called native advertising, "textual, pictorial, and/or audiovisual material that supports the aims of an advertiser (and is paid for by the advertiser) while it mimics the format and editorial style of the publisher that carries it" (Couldry & Turow, 2014, p. 1716). Industrial analysis argues that native advertising effectiveness is higher than typical online banner advertising because the format and content are in harmony with their environment and other editorial content (IAB, 2013). However, based on past research (e.g., Duff & Faber, 2011), if users perceive native advertising as advertising in the goal pursuing situation, based on the similarity, native advertising can be perceived even more negatively than banner advertising. This negativity stems from the users' need to expend more cognitive resources to discern native advertising as paid content as opposed to the simple process of identifying banner advertising. However, it is unclear whether news consumers perceive native advertising as a distractor at the non-conscious level, too. Past research showed that, in a top-down process situation, it is possible for

distractor devaluation to occur even unconsciously. The question then becomes: will these interactions be generated in the non-explicit goal situation?

Problem Statements

This study has three problem statements.

First, the effects of ad-block wall levels on ad-block users' negative perceptions in different goal settings should be considered as well as how to mitigate them.

Second, negative perceptions against ad-block walls may negatively influence advertised brand ratings unconsciously and ad similarity may be a determining factor in the situation.

Third, the effects of the ad-block wall level and ad similarity on negative perceptions can be mitigated by messages delivered by the news websites that are blocking access.

The Purpose of This Study

The purpose of this study is twofold: To determine 1) the impact ad-block walls have on evaluating online news brands, and 2) the effects ad-block walls have on the unconscious ad processing of advertised brands.

First, this study identifies the following elements, namely the effects of 1) ad-block wall levels, 2) whether users have explicit goals when visiting a news website, 3) message frames on users' reactance, related perceptions, and attitudes toward news brand websites.

Second, this study examines how users demonstrate their affective ratings to the advertised brand after being forced to disable ad-block use while visiting news websites. Additionally, this study examines whether interaction among ad-block wall levels, ad-

block wall message frames, and ad similarity influence the advertised brands' affective ratings.

Theoretical and Practical Implications

Not only will this study provide important theoretical implications, it will extend psychological reactance theory to news website environments. Previous advertising research has not directly measured psychological reactance. However, communication scholars developed measurement scales and applied them to examine the effectiveness of public service announcements (PSAs) when the message included a controlling message (Dillard & Shen, 2005). Based on past studies, this study tries to measure reactance when ad-block users encounter an ad-block wall in online news websites. If they perceive their freedom of choice is being threatened by the ad-block wall, they will likely show negative cognition and anger. This negative cognitive and emotional response will negatively influence their attitudes toward the website.

Furthermore, this study examines whether the boomerang effect influences users' brand attitudes. Also, this study will provide ways that the reactance theory framework interacts with mere exposure, distractor devaluation, affect transfer theory, prospect theory and explicit goal existence. Lastly, this study provides information on how native advertising is perceived within news websites in many different situations.

This research provides important implications to both news websites and advertisers. First of all, if a certain level ad-block wall generates more reactance than other levels, website managers need to consider the wall's impact on users. In addition, this study provides ways that message framing should be used to mitigate negative responses from ad-block walls. Finally, this study shows how native advertising should

be used in news media websites. Most studies focus on the effectiveness of native ads within website environments. However, the users' goal-orientation should be considered to validate results.

CHAPTER 2. Literature Review

Online Advertising Avoidance

A general approach to solving problems is to know the causes of the problems encountered. After identifying the causes, people try to find solutions to resolve the problems. Advertisers and ad scholars have focused on identifying the causes of advertising avoidance for decades (e.g., Baek & Morimoto, 2012; Cho & Cheon, 2004; Edwards, Li, & Lee, 2002; Li, Edwards, & Lee, 2002; Seyedghorban, et al., 2016; Speck & Elliot, 1997; Youn & Kim, 2019a). To come up with better solutions, it is important to consider prior advertising avoidance studies.

Background Theories in Advertising Avoidance Research

Based on the information theory (Crowley & Mitchell. 1994; Shannon, 1949), any type of interactive communication components can be perceived as noise if interactive communication components interfere with the desired content availability, value, and cost as interferences (Berger & Calabrese, 1975; Cragan & Shields, 1998; McQuail, 2010; Seyedghorban, et al., 2016). For instance, if we extended this transmission model to explain the interactive processes within the news media (Speck & Elliot, 1997), journalists want to interact with news media users through their news content, and media users also want to interact with journalists through news content. Between these expectations, advertising can be considered as a distractor (Duff & Lutchyn, 2017). Thus, advertising can be considered as "a significant source of noise" (Speck & Elliot, 1997, p. 65).

According to the experiential learning theory (Kolb, 1984), learning and development is a "transaction between internal characteristics and external

circumstances, between personal knowledge and social knowledge" (p. 133). Media users have learned and conceptualized about advertising within media environments and have accumulated knowledge about advertising (Cho & Cheon, 2004; Seyedghorban, et al., 2016). Based on users' accumulated knowledge about advertising, they develop their own strategies about how they process ad information in media contexts (Cho & Cheon,2004; Seyedghorban, et al., 2016). Past studies have shown that users' prior knowledge and experiences about advertising affect media users ad attitudes and behaviors (Cho & Cheon, 2004; Fazio & Zanna 1981; Friestad & Wright, 1994; MacKenzie, Lutz, & Belch, 1986; Smith & Swinyard, 1982; Speck & Elliot, 1997).

Recently, rooted in psychological reactance theory (Brehm, 1966), ad avoidance studies have focused on media users' freedom to control advertising exposure (e.g., Baek & Morimoto, 2012; Edwards, et al., 2002; Li, et al., 2002; Ham, 2017; Tucker, 2014; Youn & Kim, 2019a). Brehm (1989) explained that reactance, as the motivational state, "impels the individuals to restore the particular freedom that was threatened or taken away. It does not impel the individual to acquire just any freedom—only the one threatened or taken away will do" (p. 72). Therefore, if media users perceive that advertising delivery methods threatens their freedom, they try to restore their freedom by avoiding advertising in a variety of ways. To obtain valid and reliable information to identify problems, prior research depended on self-reports which asked media users to ruminate about why they avoid advertising (Duff & Lutchyn, 2017).

Applying Theories into Advertising Avoidance

Speck and Elliott (1997) defined ad avoidance as "all actions by media users that differentially reduce their exposure to ad content" (p. 61). They categorized ad

avoidance into three types: Cognitive, behavioral, and mechanical. For example, in the case of television, people can intentionally ignore ads (i.e., cognitive) through avoidance by leaving the room (i.e., behavioral), and using devices such as zipping, zapping or ad-blocking (i.e., mechanical) (Abernethy, 1991; Speck & Elliott, 1997). All avoidance means chosen by media users hinder ads from being delivered to target audiences (Li, et al., 2002; Speck & Elliott, 1997). In a national survey, Speck and Elliott (1997) considered four variables as predictors of ad avoidance, namely, demographic (age, gender, income, education, race, etc.), media-related (i.e., usage and prior attitude toward the medium), ad perception (i.e. how media users perceive the ads in each medium), and communication problems (i.e., search hindrance, disruption, and distraction) across four media channels including television, radio, newspaper and magazine. Results showed that prior ad perceptions, age, income, and search hindrance were the major variables that predicted ad avoidance.

Cho and Cheon (2004) identified why online users avoid advertising on the Internet and from that, developed advertising avoidance measurement scales. They examined perceived goal impediment (search hindrance, disruption, distraction), perceive ad clutter (excessiveness, exclusiveness, irritation), and prior negative experiences (dissatisfaction, perceived lack of utility, perceived lack of incentive) and found that these factors positively predict online advertising avoidance (cognitive, affective, behavioral) (Cho & Cheon, 2004). Recently, Seyedghorban and her colleagues (2015) replicated Cho and Cheon's study (2004) to examine whether the model is still applicable in current media environments, and found the model is supported. Notably, however, researchers found that exclusiveness is no longer a valid

observed variable for ad clutter (Seyedghorban, et al., 2015). In addition, in their replication study, they pointed out the relationship between goal impediment and ad avoidance was weaker than in the original study because of increased user control of advertising (Seyedghorban, et al., 2015).

Edwards and his colleagues (2002) explored why online users try to avoid pop-ads based on American psychologist, Brehm's (1966) psychological reactance theory. More intrusive ad exposures cause online users to try and avoid pop-up ads and feel more irritated (Edwards, et al., 2002). However, they found that editorial-ad congruence, ad entertainment and ad informativeness were negatively related to ad intrusiveness. In other words, if media users perceive that editorial content and advertising fit together and an ad itself is entertaining, they consider the ads to be non-intrusive. Similarly, Li and his colleagues (2002) found that perceived ad intrusiveness is positively related to both cognitive and behavioral avoidance in their model A. However, their model B shows perceived ad intrusiveness as a positive predictor of ad irritation, and ad irritation was a positive predictor for both cognitive and behavioral ad avoidance.

Baek and Morimoto (2012) identified why media users avoid personalized advertising by adopting psychological reactance theory as background theory. According to the results, privacy concerns and ad irritation are positively related to ad skepticism and ad avoidance whereas perceived personalization was negatively related to ad skepticism and ad avoidance and ad skepticism was positively related to ad avoidance (Baek & Morimoto, 2012). In other words, personalized advertising can be considered a solution for online advertising avoidance based on the increased targeting algorithm. Still, privacy concerns and irritation made media users perceive their

freedom as being threatened by personalized advertising resulting in advertising avoidance and skepticism. Similarly, Ham (2017) found that perceived reactance is positively related to online behavioral advertising avoidance. That is, if media users counter-argue against the ad and feel angry, they avoid advertising to restore their threatened freedom.

In summary, the above-mentioned studies tried to identify why media users avoid online advertising. Based on the theoretical explanations, they provided possible solutions to resolve ad avoidance. We now know that it is important to balance protecting information privacy and ad personalization. Also, providing users with more ad control and less intrusive message delivery can improve their responses toward commercial messages.

CHAPTER 3. Study 1: Ad-block Wall Processing

Overview

Online media users try to avoid advertising because attending to advertising is not their primary goal, in general. But advertisers try to present advertising to users and users want to be autonomous in virtual worlds. Recently, media users who use ad-block software are drastically increasing (PageFair, 2017). If they want to avoid online advertising exposure in advance, in most cases, ad-block software helps them successfully wipe out ads from the websites they visit. Ad-block software and its impacts on advertising exposure cause website managers concern about revenue because advertising revenue supports most online websites.

As a result of these concerns, some websites start to re-block ad-block software use by enforcing visitors to disable their ad-block software if they want to view editorial content. Three levels of re-blocking strategies exist. The first type is when websites block users from entering the website's main page. The second type allows users to enter the main page and look through editorial content. But users cannot read, see or watch the editorial content because the websites prohibit them to enter a second page. In the first and second types, if users disable their ad-block software, they can use the website's contents. If they do not, no content is available. With this strategy, websites can make users visit the website page which includes at least some advertising content somewhere on the main and (or) second page. Seemingly, websites may maintain their advertising revenues and create the editorial contents continuously.

The third strategy is when websites allow users to visit editorial content without blocking ad-block software. Instead, an alarming message appears on the screen to

explain to users the rationale as to why they need to disable their ad-block software. Therefore, users can decide whether to disable their ad-block software for the given website. If users decided not to disable ad-block software, the websites can not present ad content to users. That is, websites make users choose when to use or not use their ad-block software and thereby take the risk of possible revenue decrease.

This study is not about identifying the optimal utility of ad-block wall type to maximize news media brands' profits nor to delve into ethical issues of ad-block use. Instead, this study's approach is to identify how ad-block users perceive different levels of ad-block walls, and how media brand managers can resolve users' negative perceptions and behaviors by communicating with them through messages that appear on the ad-block wall.

Psychological Reactance Theory

Psychological reactance theory has been largely used to explain the messages or campaigns that failed to persuade individuals (Hornik, et al., 2008; Ringold, 2002). Reactance is defined as a "motivational state directed toward the reestablishment of [a] threatened or eliminated freedom" (Brehm, 1966, p. 15). That is, psychological reactance is prompted when individuals' freedom is threatened by external stimuli, and they tend to work toward reinstating their threatened freedom (Brehm, & Brehm, 1981; Bessarabova, Fink, & Turner, 2013).

When consumers perceive that companies are attempting to infringe upon their freedom through attempts to change their behavior with marketing promotional tools, they experience psychological reactance which is a type of motivational resistance (i.e., reactance, distrust, scrutiny, and inertia) (Knowles & Linn, 2004). Therefore, it is

always possible that consumers behave differently than a company had expected when trying to persuade or promote their brands (boomerang effect) (Bessarabova, et al., 2013). Psychological reactance theory, as a comprehensive state of motivation to resist, has been used to explain a broad range of advertising avoidance, encompassing online and offline media environments (Baek & Morimoto 2012; Edwards, et al., 2002; Tucker, 2011; White, et al., 2008).

A recent trend in psychological reactance studies is personalization reactance in an online environment (e.g., White et al., 2008; Tucker, 2011). When consumers perceive that customized messages from a brand are too personal (i.e., go beyond the acceptable level of suggestion), they do not think that the customized messages are intimate or relevant recommendations (White, et al., 2008). Tucker (2011) conducted research about personalization reactance on Facebook. In her field experiment study, she showed that the users' responses toward personalized advertising were mediated by perceived control of privacy settings, which supports previous research (e.g., Taylor, 1979). This is not to say that users do not get positive feelings about advertisements. The main reason for avoiding or blocking advertising is due to delivery related problems not with the advertising contents (PageFair, 2017). Indeed, Yoon, Choi and Song (2011) contended that current media users enjoy advertising within the movies if they perceive the connection between the storyline and product placement to be well organized. In other words, if the advertiser managed delivery issues well, viewers don't perceive the advertisements as intrusive.

Interestingly, little research in advertising has directly measured psychological reactance so far. In the communication research field, Dillard and Shen (2005) argued

that the reactance state can be understood as an inter-mixture of cognition and affect. Based on their conceptual development of reactance as the amalgam of negative cognition and anger, communication scholars have studied the antecedents (e.g., threat to freedom of choice) and outcomes of reactance (attitude, behavioral intention) (e.g., Bessarabova, et al., 2013; Miller, et al., 2007; Quick & Stephenson, 2008; Shen, 2015).

In communication research, especially in health communication, studies have considered that people can perceive psychological reactance from message factors such as controlling language (e.g., you must do this!) in public service announcements (PSAs) (e.g., Miller, et al., 2007; Quick & Kim, 2009). In addition, the reactance generated by the controlling languages can be restored using message factors that employ restoration scripts, too. For instance, PSA messages, can coerce people to do (or do not) certain types of behaviors (e.g., you must not smoke!). Because current smokers may perceive their freedom of choice as being threatened from the coerced messages, they may respond (think and feel) negatively toward the PSAs. Even worse, they may behave in opposite ways from the PSA suggestion (e.g., smoking more cigarettes). To resolve the reactance, PSA campaign managers can use restoration messages informing them that they do not have to follow the recommended behaviors because their choices are their own (i.e., restoring people's autonomy) (Miller, et al., 2007; Quick & Stephenson, 2008).

For ad-block users, encountering an ad-block wall may generate similar or more intense psychological reactance than in the PSA controlling language condition (e.g., you must do this!). The goal of using ad-block software is to block advertising in online environments (Duff & Lutchyn, 2017). From Fishbein and Ajzen's (1975) expectancy-

value perspective to use-and-gratification perspectives (Katz, Blumer, & Gurevitch, 1974), the expectation or gratification expected from using ad-block software is the ability to view news websites without advertising (Rayburn & Palmgreen, 1984). With the increased control current media users have, they are pursuing more active control of media environments (Duff & Lutchyn, 2017). Thus, when the expected values (gratification) are fulfilled by using ad-block software, media users will show positive responses and be satisfied with the achieved outcome. On the other hand, if ad-block walls interrupt their expectation fulfillment, ad-block users can perceive negative cognition and emotions (Shah & Higgins, 1997).

In particular, most Internet users want to use the Internet without any ad exposure and, some even have the option that Internet content should be free (Butler, 2016; Fisher, 2010). They do not want to be interrupted (e.g., intrusive pop-up ads, pre-roll ads) or threatened (e.g., personalized ads, malware) by online advertising exposure (PageFair, 2017). Therefore, this study argues that ad-block software users may have the perception that ad-block walls threaten their freedom to use news websites without advertising. Feelings of anger and negative cognition can result from users' perceptions of threatened freedom (Dillard & Shen, 2005).

A focal point for interpreting this phenomenon is how we see advertising and media users. Based on exchange theory perspectives (Dwyer, Schurr, & Oh, 1987; Stern, 1997), media users are rational, and they implicitly agree to be exposed to advertising as a cost for using Internet content for free (Butler, 2016; Fisher, 2010; Stern, 1997). However, we have seen human rationality is limited and bounded (Kahneman, 2011), often in life, emotions influence decision making substantially and unconsciously

(Heath, 2012). Thus, the expectation for users to self-disable ad-block software voluntarily may be naïve. Furthermore, past research showed that online media users show lower disinhibited behaviors (i.e., controlling their behaviors) than those who use offline environments due to anonymous, invisible, and no-eye contact traits (Lapidot-Lefler & Barak, 2012). Thus, industry analysis shows that simply asking users to disable their ad-block software without any mechanical enforcement will not work (IAB, 2016). But, if forceful mechanical blockades (e.g., ad-block walls) can be perceived differently across various types of ad-block wall levels and users' explicit goal existence, ad-block wall message frames should be developed to fit situational factors.

Hypotheses Development

Situational Factor One: Ad-block Wall Levels

As stated earlier, there are three levels of ad-block walls. Figure one describes different ad-block wall levels. The first type of ad-block wall (high-level) forces users to disable ad-block software before visiting the website's main page. After disabling their ad-block software, they are allowed to enter the news website's main page, and secondary pages containing advertising placement. In the second type of ad-block wall (middle-level), users can enter the main page without disabling the ad-block and there are no advertising placements on the main page. However, ad-block walls block their path when they click the content they want to view. Only when they disable their ad-block software, can they visit the second page. In this case, they will encounter advertising placement on the second page, and subsequent page visits on the same news website. The last type of ad-block wall (low-level) is not an endorsable form of ad-block wall. Instead of enforcing ad-block disabling, this type of ad-block wall is asking

users to disable their ad-block software. Although it looks similar to the second type of ad-block wall so far, the third type is different because the third type of ad-block wall allows users to visit the second page without disabling their ad-block software. In other words, this type of ad-block wall can be deleted by clicking *x* button. Thus, in this case, no advertising placement is present across the whole websites.

Comparing the enforcement nature of these three ad-block walls, the perceived threat to freedom and state reactance will be lower in low-level ad-block walls than in high-level and middle-level ad-block walls. However, it is not clear whether media users experience a different perceived threat to freedom and state reactance between high and middle-levels of ad-block walls because both of these wall types force users to disable ad-block software.

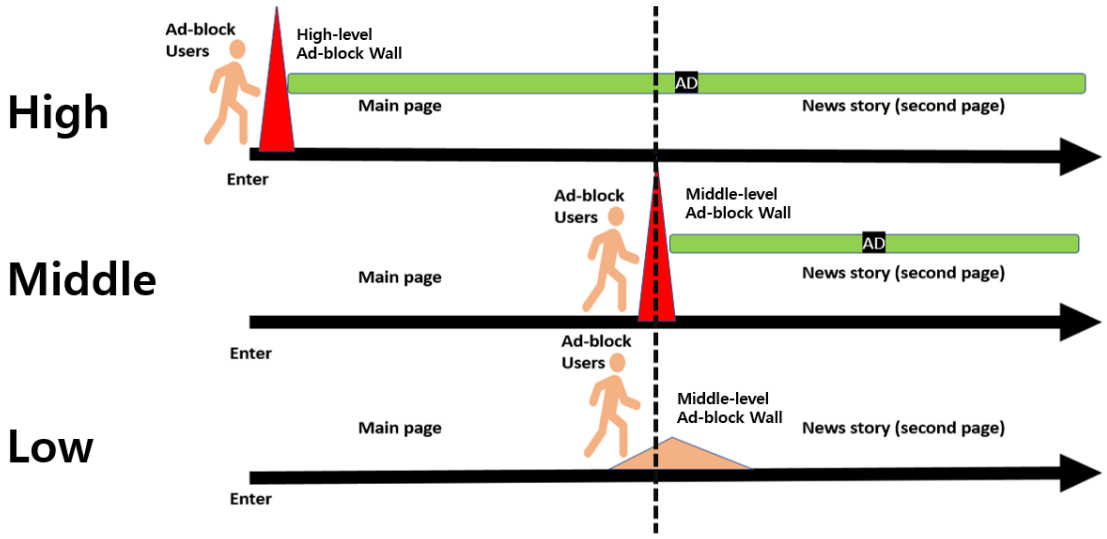

Figure 1. Three Levels of Ad-block Wall Processing

One possible prediction can be made based on peak-end rules (Kahneman, 2011). Basically, people remember what something unpleasant felt like when at its peak and what it felt like when it ended. When people face unpleasant-but-necessary experiences, they tend to prefer experiences that end in a not-so-unpleasant state even if that

unpleasantness takes longer to experience (Kahneman, 2011). Applying this rule into current ad-block situations, we can predict how users perceive different levels of ad-block walls. That is, even though middle-level ad-block walls make users disable ad-block software only for the advertising placed next to the content they want to view on a website's second page, discomfort (i.e., blocking by ad-block wall) increases before reaching the goal (i.e., viewing the news content). On the other hand, high-level ad-block walls increase discomfort at the beginning of the website experience and significantly decreases after disabling the ad-block. Thus, this study predicts that users may perceive a greater threat to their freedom of choice from the second type (mid-level) of ad-block wall than first type (high-level) of ad-block wall.

H1. High and middle levels of ad-block walls will show a) higher threats to freedom, b) state reactance (i.e., negative cognition and anger), and c) negative attitudes to ad-block walls, and d) negative news media brand attitude than low level ad-block walls.

Situational Factor Two: Goal-oriented News Media Use

Compared to traditional mass media, Internet users are more goal-oriented (Eighmey, 1997; Yoo, 2011). Online news media audiences use news websites to gratify their goals (Sundar & Limperos, 2013; Yoo, 2011). Flavián and Gurrea (2006) identified three goals of online newspapers: specific information search, updated news search, and entertainment. They found the specific information and updated news search are positively related to the reason for reading online news (Flavián & Gurrea, 2006). Also, highly experienced online news users showed positive associations between entertainment and reasons for news readings (Flavián & Gurrea, 2006). Yoo (2011)

suggested four motives of online newspaper uses: "socializing, entertaining, information seeking and pastime" (p. 81). With repeated news media use, if news media users succeed to gratify their expected goals, attitudes toward the news websites increased with positive association (Yoo, 2011). In summary, news media users visit the online news website to fulfill their goals. Thus, news media brand managers need to manage news media use and gratification flows carefully.

Considering users' online news media flow, ad-block walls clearly interrupt users' goal fulfillment when they visit news websites. Clearly, it is obvious when distractors (ad-block walls or other distractions) are detected during the goal pursuit process, individuals are more likely to show negative attitudes toward the distractors (Duff & Faber, 2011). However, perceptions about goal-fulfillment intrusion may differ depending on the existence of the users' explicit goal. For example, when a news website user wants to read specific information in a news website within a limited timeframe, the existence of ad-block walls can be perceived as being more disturbing than when simply passing time or reading for entertaining purposes. Thus, goal explicitness (i.e., specific information search) can be a significant factor to influence users' distractor perceptions (Duff, 2009; Raymond, Fenske & Tavassoli, 2003). If ad-block users who have specific news information in mind are blocked by ad-block walls, they are more likely to perceive higher reactance and negative attitude toward the news website than when having no-specific news information in mind.

Furthermore, if media users encounter higher and middle-levels of ad-block walls (i.e., active blocking) with the existence of an explicit goal (i.e., a specific news information search), they will generate higher psychological reactance and negative

attitude toward the online news brands than low-level ad-block walls (i.e., passive blocking).

H2. Explicit-goal existence will generate higher a) threat to freedom, b) state reactance (i.e., negative cognition and anger), c) negative ad-block wall attitudes, and d) news media brand attitudes than in the no explicit-goal condition.

H3. Explicit-goal existence and ad-block wall levels will show significant interaction effects on threat to freedom, negative attitude to ad-block walls, state reactance and negative attitude toward the online news brands such that participant within the high and middle levels of ad-block wall groups, explicit goal condition will show more negative responses than the non-explicit goal condition whereas there will be no difference between explicit and non-explicit goal in low-level ad-block group.

Situational Factor Three: Ad-block Wall Message Framing

Ad-block wall reactance will make users leave websites (PageFair, 2017). Similar to PSA tactics, to resolve the reactance, media brand managers may try to develop messages to present on the ad-block wall. A typical message used by media brand managers on ad-block walls simply says “disable the ad-block!”. This study argues that there is a better way to communicate with reactant media users.

Based on prospect theory (Kahneman & Tversky, 1979), researchers have tested how people respond in different ways depending on the gain- or loss-framed messages they receive about the same events (O’Keefe & Jensen, 2006; Quick & Bates, 2010). Gain-framed messages describe positive outcomes that one can achieve if he or she follows given recommendations. On the other hand, loss-framed messages are about

depicting possible costs or risks if one does not follow recommended behaviors. For example, if a campaign wants to promote smoking cessation, the message frame can be managed to either emphasize positive cessation outcomes such as improving the body's athletic abilities or focusing on negative outcomes of maintaining smoking habits such as decreasing health.

Research found that loss-framed messages are more effective in detection behavior promotions such as breast self-exams (e.g., Meyerowitz & Chaiken, 1987) than gain-framed messages where gain-framed messages are more effective in disease prevention such as using sunblock (e.g., Detweiler, et al., 1999) (Quick & Bates, 2010). However, findings are not consistent.

Recently, considering the effects of message framing with the concept of reactance, Shen (2015) argued that loss-frame appeal increases psychological reactance because people tend to perceive a message emphasizing negative outcomes of not following recommendations to be more salient, forceful, and manipulative than describing positive outcomes. He found that when the message was loss-framed, participants were more likely to perceive reactance while the gain-framed message alleviated reactance (Shen, 2015). However, Quick and Bates (2010) showed that the effectiveness of message framing relies on people's perceived risks about their current or future health states. That is, if individuals view their health risks are not influenced by their heavy drinking habits, gain-framing would be more effective in persuading them not to drink heavily, whereas, loss-framing would be more effective with individuals who perceive they are at high risk (i.e., susceptible) if they maintain their heavy alcohol consumption. Thus, a more elaborate approach is required to examine

whether different goal-orientations or situational factors matter when using message frames.

Applying Quick and Bates' study to ad-block wall processing, low-level ad-block walls are not a direct threat to reading news contents. Users can read the news after simply clicking *x* button on the ad-block wall message. This means that the perceived risk of not disabling the ad-block wall will be lower in the low-level ad-block wall case than in the high and middle ad-block wall cases. Therefore, gain-frames may be more effective in low-level advertising ad-block walls whereas loss-frames may be more effective in high and middle advertising ad-block walls. For instance, if an ad-block wall loss-frame message depicts the risks of not reading news articles when users do not disable their ad-block software in the low ad-block condition, users may not perceive the loss message to be consistent to with their situation. On the other hand, if ad-block software users encounter high- or mid-level ad-block walls, loss-frame can be more effective than gain-frame because the described negative outcomes of no news content viewing is consistent with current ad-block users.

Similarly, when ad-block users who have explicit goals in mind encounter loss-frame messages, they may perceive less psychological reactance and negative attitudes toward online news brands than toward gain-frame ad-block wall messages because the described negative situations in the loss-frame are consistent with their current states (i.e., expected goal failure) (Quick & Bates, 2011). Lastly, considering the above-mentioned relationships among ad-block wall levels, explicit goal existence, and ad-block wall message frames, this study predicts that there are significant interaction effects among three outcome variable factors. That is, when ad-block users with a clear

goal in mind encounter active blocking walls (i.e., high and middle-levels of ad-block walls) with a gain-frame message, they may show higher psychological reactance and negative attitudes toward online news media brands than users who have no explicit goal in mind.

H4. Ad-block wall levels and message frames will show significant interaction effects on threat to freedom, and negative attitude toward ad-block walls, state reactance and negative attitudes toward online news brands such that participant within the high and middle levels of ad-block wall groups, gain wall message condition will show more negative responses than those loss wall message condition whereas loss wall message will show higher negative responses than gain message on low-level ad-block group.

H5. Explicit goal existence and ad-block wall message frames will show significant interaction effects on threat to freedom, state reactance and negative attitudes toward online news brands such that participant within explicit goal group, gain wall message show more negative responses than loss wall message condition whereas loss wall message will show greater negative responses than the gain wall messages within the non-explicit goal group.

H6. Explicit goal existence, ad-block wall levels, and ad-block wall message frames will show significant interaction effects on threat to freedom, state reactance, negative attitude toward ad-block walls, and negative attitudes toward online news brands such that participant within the explicit goal condition, on those the high and middle levels of ad-block wall groups, gain wall message will generate more negative responses than loss wall message whereas loss wall

message will generate more negative responses than gain wall message on the low-level ad-block wall group. However, within the non-explicit goal condition, no difference will be found between gain and loss wall message frames.

CHAPTER 4. Study 2: Advertising Processing

Unconscious Processing of News Media Advertising

Thanks to the improved algorithm, the online ad industry may successfully resolve all problematic causes (i.e., poor personalization, privacy concerns, etc.) in the near future. However, potential problems still exist. It should be noted that ad avoidance studies were based heavily on self-reports which asked media users to reflect upon why they avoid advertising (Duff & Lutchyn, 2017). In other words, based on human conscious limitations, we cannot easily think about our experiences beyond our consciousness. Then, what if we process information unconsciously and it impacts subsequent ad processing implicitly?

New Perspectives: Ignored Ads = Blocked Ads?

Although users' reflective self-reports are helpful in identifying the causes of problems and their solutions, these studies and solutions are all focused on the context when users consciously process advertising (i.e., focal attention). What we missed is the fact that advertising frequently does not draw enough attention from media users in online media contexts (Duff & Faber, 2011; Kahneman, 2011; Lang, 2000). And non-attention to the ad does not mean that the ad has no effect on the media users' affective responses.

Past research showed that, even under the pre-conscious or pre-attention situations, advertising may influence users' affective responses not only in positive ways but also in negative ways, moderated by situational (motivational) factors (e.g., time pressure, relevance) (Duff & Faber, 2011; Murphy & Zajonc, 1993; Bagdziunaite, et al., 2014; Yoo, 2005). Thus, if media users can be affected by advertising pre-attention or pre-conscious levels of exposure, it is important to identify how the ad can be processed in different contexts.

Previous research revealed that the effects of non-attended ads on media users' responses were primarily moderated by the goal existence (Duff & Faber, 2011; Fox, et al., 2011; Ramsøy, 2015). By the existence of specific goals or not, they distinguish ad avoidance as intentional (active) ad avoidance and non-intentional (passive) ad avoidance (Duff & Faber, 2011).

Regarding the limited capacity of human attention (Fox, et al., 2011), we control our attention resources to process information we are interested in. For example, if our goal is to get specific information from news content in news websites, we will try to pay attention to news content. Naturally, media users may not pay attention to advertising because the ads are not related to the goal of media users (i.e., intentional avoidance (or ignoring)) (Duff & Faber, 2011).

On the other hand, if we do not have a specific goal in mind when we visit the news website (i.e., we are simply browsing), we may browse the news website and see what interesting content is there (Ramsøy, 2015). In this case, non-attention to advertising is not based on the media users' intentions (i.e., unintentional ad avoidance (or exposure)) (Duff & Lutchyn, 2017). Therefore, considering the ad exposure situation within media contexts, two types of ad avoidance (i.e., intentional and non-intentional advertising avoidance) are related to the users' explicit goal existence in the media context (Duff & Faber, 2011).

Attention Control: Goal-directed Behavior

Attention control can be defined as "a range of processes that allow attention to be either diverted or maintained on a particular type of information" (Fox, et al., 2011, p. 16). In other words, we can control our attention based on our specific goals and (or)

our attention can be controlled by external environments (Fox, et al., 2011). Depending on different processing mechanisms, attentional control is divided into top-down and bottom-up process (Ramsøy, 2015).

Top-down attention is "controlled, slow, volitional" (Ramsøy, 2015, p. 86) whereas bottom-up attention is "automatic, fast, non-volitional" (p. 82). For instance, if a person finds specific news content about a recent earthquake in Oklahoma on a news website, he or she will intentionally and carefully try to find the news content related to the earthquake, within the news website's main page. In this situation, other unrelated content will be ignored. On the other hand, if a person doesn't have a specific goal to fulfill when visiting a news website, while browsing the page, his or her attention may be automatically controlled by intriguing external stimuli (i.e., physical properties such as sound, color, brightness or semantical properties such as interesting topics). In this case, no-vivid visuals, unrelated or uninteresting content will be ignored.

Online advertising can be ignored by top-down and bottom-up attention control mechanisms (Duff & Lutchyn, 2017). Media users may not even notice that advertising was presented in news websites as a consequence of attention control (Duff & Faber, 2011). However, the important point is that distinguished attention control mechanism outcomes may be opposite when evaluating peripheral advertising placement with news content: negative affective responses in top-down processes and positive affective responses in bottom-up processes (Duff & Lutchyn, 2017). To explain the opposite consequences of media users' attention control on ad effectiveness, we need to understand the mere exposure effect and distractor devaluation (Duff & Faber, 2011)

because “successful selective attention is a combination of target activation and distractor inhibition” (Malley & Strayer, 1995, p. 657).

Mere Exposure vs. Distractor Devaluation Effect: Unconscious Processing of Ad

News media users enter the website’s main page to view content they had in mind. They focus on finding the words, phrases, or pictures that fit the content they had in mind. For example, if I want to view how Mr. Trump reacts to North Korea’s ICBM missile launch in the news websites, I would try to find the word, “North Korea” or “Trump,”, or “ICBM” or “missile” or possibly “Rocket man” or images of Mr. Trump, Rocket man, or missiles first on the main page. Once I find information that matches the goal I had in mind, I will click the content directly, ignoring unrelated content. Media users may not notice they are exposed to the ads in the main page. As a result, they may neither recall nor recognize the ads on the main page. However, even when they do not remember or are not aware of the placed ad, it is possible to process the ad unconsciously (Zajonc, 2001). Then, does the ad have any effect on the user’s mentality? Past research tried to examine this topic (e.g., Duff & Faber, 2011; Yoo, 2008) and agreed that unconscious advertising processing may influence users’ affective responses. But they predicted and showed opposite results.

One school of thought predicts positive results of unconscious processing of advertising. They called it mere exposure effects (Zajonc, 2001). The other school of thought predicts negative results of unconscious processing of advertising. They called this distractor devaluation (Raymond, et al., 2003).

Mere Exposure Effect

Zajonc (1968) defined mere exposure as "a condition making the stimulus accessible to the individual's perception" (p. 1). He argued that individuals who are merely exposed to an object, in repeated fashion, augment their preferences toward the stimulus (Zajonc, 1968). In particular, he contended that mere exposure under the unconscious level enhances a person's affective response toward a given stimulus (Zajonc, 2001). He explained the effects of subliminal mere exposure by adopting the classical conditioning mechanism (Zajonc, 2001). For example, a trainer showing that a defensive rabbit in a cage needs to confirm that the person approaching its cage is safe (Havice, 2016). Providing safe signals means the trainer would sit next to the rabbit and maintain indifference toward the rabbit for a while. As time goes by, when the uncertainty is removed, the rabbit does not show any vigilant behaviors toward the person.

When we apply this mechanism to the advertising exposure situation, the conditioned stimulus (CS) is advertising. Consumer preference will be the conditioned response (CR). And, as Zajonc (2001) suggested, the unconditioned stimulus (US) should be "no positive or negative consequences follow exposures" (p. 225). Thus, under the unconsciousness level, if the advertising exposure results are not aversive, the preference toward advertising will be increased.

In addition, scholars have suggested the effect of mere exposure is based on two models: misattribution and the uncertainty reduction model (Bornstein, 1989; Jacoby, Woloshyn, & Kelley, 1989). First, the misattribution model posits that prior exposure to the object facilitates perceptual information processing (i.e., perceptual fluency) with increased familiarity (Whittlesea, 1993; Duff, 2009). In this situation, people

misattribute perceptual fluency as the preferred stimulus (Bornstein & D'Agostino, 1994; Lee, 2001). That is, "when a stimulus is old but is judged as "not present," perceptual fluency is misattributed to the stimulus being particularly pleasing, and liking increases" (Lee, 2001, p. 1256). Thus, mere exposure to advertising can unconsciously enhance a person's preference toward the advertised brand due to the misattribution of perceptual fluency.

Second, the uncertainty reduction model posits that mere exposure decreases the uncertainty of the stimulus (subjective familiarity) (Bornstein, 1989; Lee, 2001). When a person encounters an unfamiliar stimulus (e.g., color, negative or positive events, novelty), he or she is more aroused by the unfamiliar stimulus than a familiar stimulus (Lee, 2001). The underlying mechanism is based on the two-factor model: habituation and tedium (Berlyne, 1966, 1970). Therefore, the unfamiliar stimulus generates "low-level of liking," and the uncertainty is reduced by repeated exposure to the stimulus with increased preference until it becomes boring (Lee, 2001, p. 1257). The uncertainty reduction model is closer to Zajonc's (2001) original explanation of the subliminal mere exposure effect (Duff, 2009). That is, the absence of harmful outcomes from prior exposure augments the affective response.

Considering perceptual fluency and uncertainty reduction together, past research showed that consumers who processed advertising unconsciously (i.e., no awareness of advertising) rated the advertised brand more favorably based on uncertainty reduction and implicit learning (Yoo, 2005). In his pretest, Yoo (2005) found that implicit memory of advertising is greater in the unconscious attention condition than in the no-ad exposure condition. This means prior exposure without recognition also aids learning

implicitly and perceptual fluency is the evidence of "implicit learning in the absence of recognition" (Lee, 2001, p.1257).

Therefore, unconscious ad processing reduced the uncertainty of the stimulus and is aided by perceptual fluency (i.e., implicit learning) (Yoo, 2005). Similarly, Yeu, Yoon, Taylor and Lee (2013) also found that mere ad exposure without explicit recall increased the implicit learning.

After all, both misattribution and uncertainty reduction models agreed that mere exposure without recognition is effective in generating positive affective responses (Bornstein, 1989; Bornstein & D'Agostino, 1994; Lee, 2002, Yoo, 2007). Furthermore, a recent study found that, under the unconscious processing condition, the enhanced affective responses are aided from perceptual fluency and uncertainty reduction (Yoo, 2007).

A neuroscience study revealed that "detection of familiar object categories in natural scenes is extremely rapid and can be done even without focal attention" (Peelen, Fei-Fei, & Kastner, 2009, p. 2). Furthermore, a study using functional magnetic resonance imaging (fMRI) confirmed that the effect of product information without spatial attention can also significantly increase consumer choices of the given presented product (Tusche, Bode, & Haynes, 2010). Therefore, without a negative outcome from prior exposure (i.e., distraction) (Zajonc, 2001), this study argues that the subliminal mere exposure effect will be helpful for the advertising industry.

However, it should be noted that the above-mentioned studies were implemented in non-distractive situations (Duff & Faber, 2011). For example, although Yoo (2007) told the participants that they would be asked about the information in the news articles

(primary task), the task performances (memory test) were not related to the rewards or goals that they can achieve after the end of the experiment. Also, Tusche and her colleagues (2010) designed their study without any external pressures such as compensating the participants differently based on task-performance. Then, what if the unconscious (automatic) categorization of advertising was not situationally value-neutral? In other words, unlike the mere exposure of the value-neutral stimuli as suggested in Zajonc's (2001) study, if the advertising implicit learning process contains negative valence due to its distractive nature, do mere exposure effects still exist? Unlike the mere exposure effect explanation, some studies provided different predictions of ad exposure results when media users had explicit goals in mind (e.g., top-down attention) (e.g., Duff & Faber, 2008; Duff & Faber, 2011).

Distractor Devaluation

Contrary to mere exposure effect predictions, distractor devaluation effects (Raymond, et al., 2003) argued that the previously ignored item is evaluated more negatively than attended items or novel items. Based on the selective attention mechanism, if the untargeted content competed with the targeted content to gain attentional resources, people not only approached (or activate) the target contents but also avoided (inhibit) the inappropriate contents (Raymond, et al., 2003; Duff & Faber, 2011). Because the inhibition process is "stored with the mental representation of that stimulus," re-exposure of the inhibited (ignored) content will generate stimulus devaluation (Fenske & Raymond, 2006, p. 314).

This explanation is exactly opposite the prediction of the mere exposure effect (Fenske & Raymond, 2006). Specifically, although previous studies posit perceptual

fluency is positively valenced (e.g., Lee, 2001; Winkielman, Schwarz, Fazendeiro, & Reber, 2003), the distractor devaluation mechanism argues that pre-exposure to the distractor facilitates inhibition processing and selective attention with the devaluation of the distractor (i.e., conditioned response (CR)) (Fenske & Raymond, 2006).

Consequently, the existence of distractors (i.e., ignored contents) will hinder successful target information processing. Thus, this aversive outcome (i.e., unconditioned stimulus (US)) will be associated with negative affective responses (i.e., conditioned response (CR)) to the subsequent exposure to the same ignored contents (Fenske & Raymond, 2006). Raymond, Fenske and Westoby (2005) found that the distractor (i.e., ignored content) was devalued more when it was subsequently placed near the target rather than far away from it or putting it in a new location other than the original location.

Notably, Martiny-Huenger, Gollwitzer, and Oettingen (2013) found that distractor devaluation is generated when the ignored stimuli were not consciously recognized as distractors. That is, participants did not discern what the ignored or the target or novel stimuli were when exposed to the stimuli later. However, in the affective ratings, they showed higher devaluation to previously ignored stimuli than to target stimuli. Furthermore, the distractor devaluation was stronger when high interference distractor stimuli (i.e., perceptually asymmetry) were placed with the target stimuli than with low interference distractor stimuli (i.e., perceptually symmetry) (Martiny-Huenger, et al., 2013). Similarly, the devaluation effects were stronger when distractors were placed near the target stimuli rather than farther away (Martiny-Huenger, et al., 2013; Gollwitzer, Martiny-Huenger, & Oettinger, 2014).

In an advertising study, Duff and Faber (2011) examined the distractor devaluation mechanism against exposure of banner advertising in news media contexts. Considering the primary tasks in news media are processing news contents, advertising is considered to be a distractor because they compete with news content to get media users' attention. Based on the selective attention mechanism, when media users focus on their primary tasks (i.e., processing news contents), they actively ignore (inhibit) advertising for the successful primary task performances. Then, the ignored ad is tagged as a distractor, and will be stored with mental representations with negative affective evaluation.

As a result, when the media user is exposed to the same ad again while searching or processing news contents in the news website, the stored mental representation about the ad as a distractor with negative evaluation will affect the ad evaluation negatively (i.e., distractor devaluation). They found that when the ad (i.e., distractor) is similar to the target information (i.e., the expected news information in mind), and when the ad is placed near the target new content, distractor devaluation was increased (Duff & Faber, 2011). However, brands of ignored ads were not more significantly devalued than novel brands (Duff & Faber, 2011). Although not all predictions were supported, this study's results are meaningful because they showed that distractor devaluation can be generated in certain contexts.

Indeed, Wang and Duff (2016) found that, in the in-game banner ads context, participants rated banner ads in the low perceptual load game more positively than higher perceptual load games. Additionally, they found that banner ads in low perceptual load games were more positively rated than novel ad conditions which

reflected mere exposure effects (Wang & Duff, 2016). Based on the results, they suggested that the task-load type might moderate the effects of distractor devaluation (Wang & Duff, 2016).

Overall, distractor interference levels and task load levels can moderate the effects of distractor devaluation (e.g., Duff & Faber, 2011; Martiny-Huenger, et al., 2013; Gollwitzer, et al., 2014; Wang & Duff, 2016). However, controlling perceptual load types (i.e., high vs. low) of primary tasks in news media are not realistic because if the news content is difficult to process perceptually (e.g., color, font), readability will be decreased which is not the recommended result. However, in case of interference levels, there are many options that can be tested to identify the effects of distractor devaluation such as distance or similarity between target content and advertising (Duff & Faber, 2011).

Hypotheses and Research Question Development

Processing High Similarity Advertising When the Explicit Goal Exists

Many advertising studies suggest that the similarity (congruity) of advertising and media contexts increase the positive affective responses (e.g., Celuch & Slama, 1993; De Pelsmacker, Geuens, & Anckaert, 2002; Moore, Stammerjohan & Coulter, 2005; Newman, Stem, & Sprott, 2004). But when media users have clear goals in mind (i.e., a specific information search), the positive effects of congruity can be flipped based on distractor devaluation effects (Duff & Faber, 2011; Wang & Faber, 2016). That is, to control their attention to targets (e.g., news contents), the inhibition of distractors (i.e., ads) should be performed successfully. If the similarity between advertising and news contents is high, the inhibition processes will be more difficult

than low similarity conditions (Duff & Faber, 2011). Although advertisers make it more difficult for users to ignore ads by increasing similarity, stronger interferences may result in increased distractor devaluations (Duff & Faber, 2011; Gollwitzer, et al., 2014) which are not desirable outcomes for advertisers and media brand managers.

Distractor: Advertising Similarity

Especially, recent active utilization of native advertising formats can be cases for distractor devaluation effects based on similarity to editorial contents. Because the advent of native advertising is a recent phenomenon in online media environments, we first need to identify native advertising as distinguished from banner advertising, a more traditional type of online ad.

What is Native Advertising?: Native advertising is known by several names including sponsored content, and advertorials—a name which Brown and his colleagues (2001, p. 23) says originates from "advert[isement-edit/orials" or advertorial." Native content dates back to the 20th century (Brown, et al., 2001) and has been used in print media campaigns to persuade readers, and Beer (2013, para.1) describes native advertisements as "promotional material dressed in journalism's clothing." Because native ads are bedfellows of editorial content—even when clearly marked—readers become confused as to what is editorial content and what is native content because the point is for the native content to blend in (i.e., high similarity).

Dumenco (2014) uses the word "betrayal" when talking about native advertisements and cites HBO's John Oliver who dedicated an entire "Oliver rant" to native advertising, which he maintains is a way to fool customers. Despite the controversy surrounding native advertising, native ads are becoming exceedingly

popular. Buzz Feed's CEO, Jonah Baretti, admits that one hundred percent of Buzz Feed's revenue comes from native advertisements (Oliver, 2014, time: 3:06-3:15). Native content's popularity as a means of revenue for news sites, however, should be considered more carefully because it may increase negative affective ratings when the media users are involved in the news contents. For more deliberate understanding of native advertising, we compare it with banner advertising.

Difference between Native and Banner Ads: Advertisers have started to recognize the financial value that native advertising can bring through boosting poor ad revenues caused by traditional online advertising models. They also argue that the blurry line between crafted native ads and editorial content can clarify online users' negative perceptions about paid advertising (Campbell & Marks, 2015; Matteo & Zotto, 2015).

Native advertising is a new concept and not quite precisely defined (Matteo & Zotto, 2015). Thus, to identify native advertising traits, it is worthwhile to take into account key differences between banner and native ads. At the same time, it should be considered how native advertising consumption is similar to editorial content consumption (Kim, Youn & Yoon, 2019).

First, native advertising does not impede the online users' experiences or goals, while banner advertising does. Although native advertising should clearly disclose its content's sponsor, the process of consuming native advertising is no different from that of consuming editorial content (Cambell & Marks, 2015). This is because, in the case of news websites, both editorial content and native advertising have a similar format with one exception. This exception is that native advertising is demarcated by sponsor tags

(e.g., paid by, presented by, etc.). Especially, on news websites' main page, it is hard to distinguish editorial content from native advertising if sponsor tags are not attached. If online users perceive a native ad as being personally relevant or interesting, they may click it and consume its content just as they do for editorial content (Kim, et al., 2019).

Second, unlike banner advertising, which is hyperlinked, online users are not directed to a sponsored brand site when they click a native ad (Gregoire, 2013; Li & Bukovac, 1999). If users click a banner ad about Amazon's Cyber Monday promotion, they will go to the Amazon website. But, when users click a native ad sponsored by Amazon on the front page of *The Huffington Post*, they will be exposed to the content they expect to read.

Third, native advertising is a good fit for the website environment (or editorial content) because it is embedded with regard to topics and styles. But banner advertising is not a good fit compared to native advertising. Native advertising's most unique feature is fitting into the overarching flow of a presenting website (Matteo & Zotto, 2015). One native advertising strategy is to not display the brand's product information in its content. If the native ad includes details about the brand (e.g., price, attributes, etc.) in the ad content, it is not native advertising anymore because it disregards the nature of native advertising, which delivers the look and feel of a website's content. Thus, advertisers need to avoid revealing their self-serving motives for promoting their products or services explicitly, when they use native advertising.

Based on the similarities between native advertising and editorial content, when users have clear news content consumption goals in mind, the devaluation will be

higher for native advertising than from banner advertising due to its distractive traits. This study predicts:

> H7. Brands in native advertising will show more negative affective ratings of advertised brands and more negative attitudes toward online news brands than brands in banner advertising.

Affect Transfer: Ad-block wall Processing and Unconscious Native Ad Processing

Based on ad-block wall enforcement, ad-block software users can perceive their freedom of choice as being threatened (Brehm, 1989). When media users perceive freedom threats, they perceive state reactance (i.e., negative cognition and state anger) which drives boomerang effects (i.e., behaving opposite directions against the recommended behaviors with negative attitudes) (Bessarabova, et al., 2013). Except for low-level ad-block walls, both high- and middle- level ad-block walls do not allow ad-block software users to view the news content they have in mind before disabling their ad-block software. If they perceive psychological reactance, does negative cognition and state anger influence on the advertising evaluations?

Affect transfer theory explains that contextually aroused feelings have impacts on rating subsequent events (Murphy & Zajonc, 1993). Fennis and Bakker (2001) showed that, when media users are exposed ads that they dislike or to many ads before they are exposed to target ads, their irritation from the disliking of those ads or from exposure to too many ads transfers to the target ad and brand evaluations. Therefore, based on the affect transfer theory (Payne, et al., 2005; Oikawa, et al., 2011), if ad-block users perceive negative cognition and emotions before being exposed to advertising, their negative perceptions may influence their advertised brand evaluations.

Additionally, the negative impact on advertised brands will be higher when perceived psychological reactance is higher. That is, this study predicts that middle-level ad-block walls with native advertising will show lower ratings on advertised brands and negative attitudes toward online news brands than higher level ad-block wall.

Past research showed that the gain-frame is more effective in alleviating state reactance (Shen, 2015). However, when perceived risks are high, media users can perceive even higher reactance when they are exposed to gain-frame messages than loss-frame message (Quick & Bates, 2010). Thus, this study predicts that middle-level ad-block walls with gain-frame ad-block wall messages will generate negative responses on advertised brands and news media brands than loss-frame ad-block wall messages.

Then, can the alleviated reactance from the gain-frame change a user's unconscious ad processing mechanism from distractor devaluation to mere exposure? In other words, if the presented positive outcome (i.e., loss-frame) on a high-level ad-block wall is perceived as positive both in cognition and affect, subsequent native advertising exposure (i.e., high similarity) may not be perceived as more distractive than banner advertising (i.e., less similarity). However, it should be noted all of the previous studies about message framing and reactance are conducted from the standpoint where participants process target messages consciously. Furthermore, there are few studies that examine affect transfer from the ad-block wall evaluations to unconscious advertising processing. Thus, this study raises another research question.

H8. Middle-level ad-block walls will show less positive affective ratings of advertised brands and more negative attitudes toward online news brands than

high-level ad-block walls.

H9. Ad-block wall levels and ad-block wall message frames will show significant interaction effects on affective ratings of advertised brands and attitudes toward online news brands such that participant within middle-level ad block wall group, loss wall message show more positive responses than gain wall message condition whereas there will be no difference between gain and loss wall messages within the high-level ad-block wall group.

H10. Ad-block wall levels and ad type will show significant interaction effects on affective ratings of advertised brands and attitudes toward online news brands such that participant within middle-level ad-block wall group, banner ad show more positive responses than native ad whereas native ad will show greater positive responses than banner ad within high-level ad-block wall group.

RQ1. Will ad-block wall level, ad-block wall message frame and ad type show interaction effects on affective ratings of advertised brands and attitudes toward the online news brands?

CHAPTER 5. Study Overview

The purpose of this study is to identify the effects of ad-block wall levels, explicit goal existence, ad-block message frames, ad-type on psychological reactance and advertised brand and online news brand evaluations. To test hypotheses and research questions this study implemented two pre-tests, and two experiments. Pretests were conducted to develop and test (1) three levels of ad-block walls, (2) ad-block wall message frames, (3) task difficulties, (4) native and banner advertising similarities to editorial content, and (5) attention control (unconscious ad processing) for successful implementation of experiments 1 and 2.

The objective of experiment 1 is (1) to test how ad-block users perceive different levels of ad-block walls, (2) to examine how explicit goal existence influences media users' perception, and (3) to identify how message frames can affect ad-block users' perceptions of ad-block walls and online news brands.

The objective of experiment 2 is (1) to examine whether psychological reactance against ad-block walls influences unconscious advertising processing, (2) to identify how ad similarity and ad-block wall message frames interplay within the processing flow.

CHAPTER 6. Pretest

Pretest Plans

A fictitious news website was created. Similar to actual news websites, the website contained both first and second pages with the news content. All of the news content was filled with neutral news contents based on neutrality tests (Duff, 2009). Overall 9 news bites (headlines and content) were created for both the main and second pages. News content was edited by a professional journalist.

On the main pages, each news content was created similar to actual news websites. In addition, a banner ad and a native ad were created (i.e., one ad for each news website). That is, each participant was exposed to eight news contents and one advertisement on the main page for the high-level ad-block wall condition (See Figure 2). For the middle- and low-level ad-block walls conditions, each participant was exposed to eight news contents on the main page. On the second page, the main news content was presented on the right side of ad placement (different from the ad on the main page) (see Figure 2). When participants encountered the low-level ad-block wall type, they had the choice to disabling their ad-block software. If the participants chose not to disable their ad-block software, then they were allowed to move onto the secondary page and view no ads. However, if the participants disabled their ad-block software, then they were allowed onto the secondary page where ads were displayed.

Experimental Stimuli Development

A fictitious news website, *The Integral Report* was built by a professional web designer. Based on newspaper circulation (Agility PR Solutions, 2018), the three popular news websites, *The New York Times, The Washington Post, and USA Today*

were chosen to select potential news content stimuli.

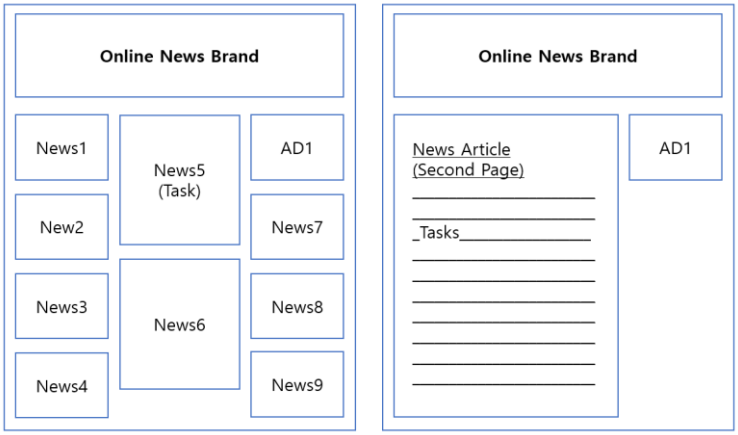

Figure 2. Fictitious Online News Website Main Page (left) and Second Page (right)

Overall, 60 news stories (20 per each news website) were selected from those that were placed on the main page from February 11 to 14, 2019 (See Figure 3). That is, five news stories were chosen from each news website each day (i.e., 5 news stories x 3 news websites x 4 days = 60 news stories). Among them, 36 news stories were selected after removing same-topic content (3 sets of news content x 3 news websites x 4 days = 36).



Figure 3. Examples of Tested News Content

Overall, 93 participants (28 for *The New York Times*, 31 for *The Washington Post*, and 34 for *USA Today*) finished an online Qualtrics survey. Each participant was assigned to the same websites' 9 news articles (See Figure 4). Based on credibility (e.g., single item; 1:not at all credible to 7: very credible) (Appelman & Sundar, 2016), liking (e.g., single item; "How much do you like the news article?; 1:dislike to 7: like) (Duff &

Faber, 2011), and arousal (single item: e.g., "The news article was ___"; 1: calm to 7: excited) (Leshner, Bolls, & Tomas, 2009), 9 news articles which were "not at either extreme (scores ranged from 2 to 6 and means ranged from 3.10 to 4.35 on seven-point scales" were chosen as study stimuli (Duff & Faber, 2011, p. 55). To select the neutral brand names, this study adopted fictitious brand names from Duff's (2009) study (e.g., *SAFIR, TRANDAR, ELSEVE, LAVENUS, NATIONWIDE, NALTO*, and *MOJAVA*). Product and service categories were selected from 10 product and service categories of leading newspaper ads sponsored in the United States (Statista, 2016).

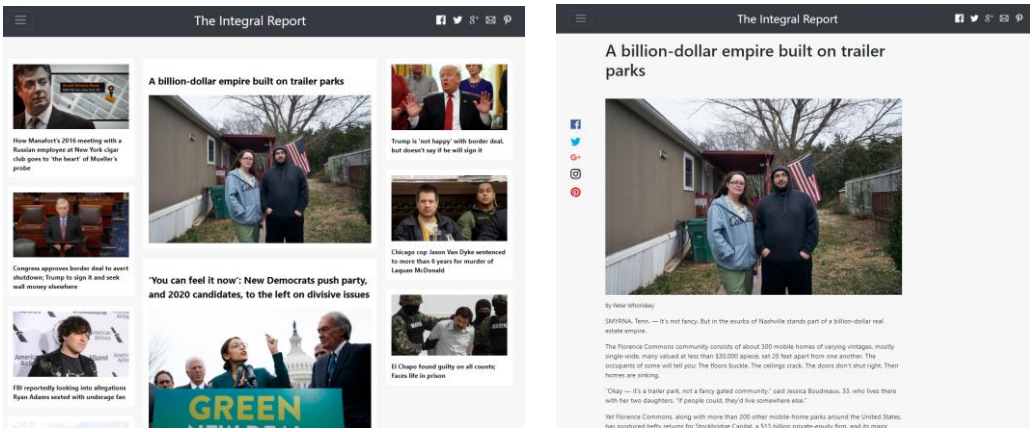

Figure 4. Developed News Website's Main Page (left) and Second Page (right)

Overall, 30 participants visited an online Qualtrics survey link. Each participant was asked to rate 12 brand names based on liking and arousal (Duff & Faber, 2011; Leshner, Bolls & Wise, 2011) and evaluated their familiarity with 10 current online news ad sponsors' products and services. Similar to the news article selection process, two neutral brand names, *SAFIR* and *LAVENUS*, were chosen based on liking and arousal mean scores between 3.10 to 4.35 on 7-point scales (Duff, 2009; Duff & Faber, 2011). In addition, 3 out of 10 product and service categories (e.g., a department store,

fashion, and a car) were chosen based on familiarity scores between 3.10 to 4.35 on 7-point scales.

Two native ads and two banner ads were adopted from the actual native and banner advertising content at *the Huffington Post*. The chosen native ad topics were 1) smart technology, and 2) gifting cultures (e.g., "why some of us dread opening gifts in front of other people"). Additionally, banner ads were chosen from a car manufacturer and a fashion brand. To determine the perceived fit (7-point scales; three items from Rifon, et al.'s study (2004); "incompatible-compatible", "incongruent – congruent", "bad fit – good fit"; Cronbach's α = .930) between chosen brand names and product category, 112 participants were recruited via Amazon MTurk system. The results showed that participants were more likely to perceive the brand name, *Safir* as a car product (M=6.38, SD=.61) than as a department store product (M=5.11, SD=1.84) or as a fashion product (M=5.23, SD=1.86). On the other hand, participants perceived *Lavenus* as a fashion product (M=5.76, SD=1.43) rather than as a car product (M=4.98, SD=1.83), or as a department store product (M = 5.21, SD=1.57) ($F(1, 555) = 18.034$, $p<.001$).

Based on the results, brand names in the chosen ads (i.e., banner and native ads) were replaced using either *Safir (*for car product ads) or *Lavenus* (for fashion product ads) (See Figure 5).

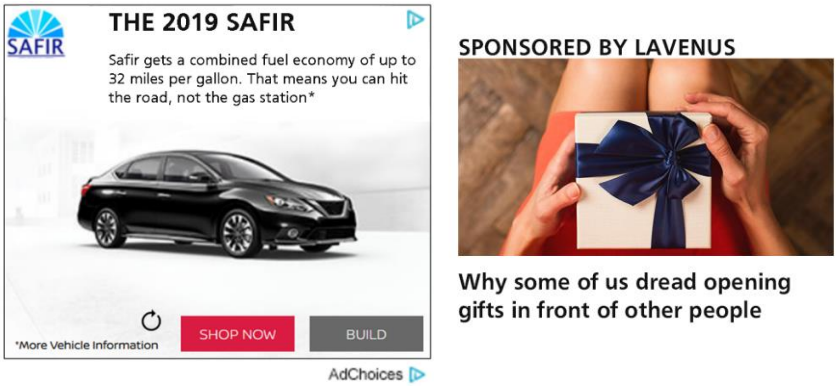

Figure 5. Example of a Developed Banner Ad (left) and a Native Ad (right)

Pretest 1: Ad-block Wall, Explicit Goal, and Attention Goal Test

Ad-block Wall Level Test

Ad-block wall levels were manipulated based on existing ad-block walls on the news websites. A high-level ad-block wall was presented before displaying the main news page which prevented ad-block software users from entering the main page without disabling their ad-block software. Mid-level ad-block walls were presented after displaying the main news page. By presenting an ad-block wall before the website's second page, it is possible to block ad-block software users from reading the second page before disabling the ad-block wall. Lastly, Low-level ad-block wall was presented after displaying the main news pages. After checking news content on the main page, when ad-block software users click the news content, an ad-block wall identical to the middle-level ad-block wall was presented. However, the difference between middle- and low-level ad-block walls is that low-level ad-block wall did not coerce ad-block software users to disable the ad-block. Rather, the ad-block wall can be deleted by clicking the *x* button on the ad-block wall. Ad-block users were able to view the second page news content without disabling their ad-block software (See Figure 6).



Figure 6. Developed Low-level Ad-Block Wall without Message Frame

To test whether ad-block users perceive different levels of ad-block wall characteristics, this study measured their perceived autonomy to choose ad-block software use (Ryan & Deci, 2017). Based on the self-determination theory (Deci & Ryan, 2002), autonomy needs are basic human needs. The definition of the need for autonomy is, "the need of individuals to experience self-endorsement and ownership of their actions to be self-regulating in the technical sense of that term" (Ryan & Deci, 2017, p. 86). Psychological Reactance theory explains that if individuals perceive their autonomous levels as not satisfactory, they are more likely to perceive psychological reactance (Quick & Stephenson, 2010). In addition, the definition of competence is, "our basic need to feel effectance and mastery" (Ryan & Deci, 2017, p. 11). To check whether participants perceive their abilities to control desirable outcomes (i.e., viewing news contents without disabling ad-block) differently across the three ad-block wall levels, this study measured perceived competence (Deci & Ryan, 2002). Past research showed that perceived competence is also an important factor in influencing the satisfaction and behavioral intention.

Explicit Goal Existence

The tasks for manipulating explicit goal were developed similar to Duff 's

(2009) study (e.g., instruction 1 on the main page: find the news article: “A billion-dollar empire built on trailer parks”). After finding specific news content from the main pages, users were asked to click the news content to find specific information (e.g., instruction 2: “What is the name of the community in the article?”) in secondary pages.

To prevent frustration due to the study’s short time allocation, task time allocations were decided by testing the average task-completion rate in advance. Duff (2009) manipulated the physical distance between target ads and news content (i.e., close vs. distant) on the screen. Although Duff and Faber (2011) found that the effects of physical distance (i.e., close vs. distant) between news content (i.e., target) and ads (i.e., distractor) on the screen were not significant, they found significant three-way interactions among similarity, distance, and test condition. Closer placement to target stimuli would be devalued significantly when the ad is similar to the editorial content within the advertising exposure condition than with other conditions (Duff & Faber, 2011) (See Figure 8). Based on the results from the previous study, this study only adopted a close placement condition, which place the ad next to the target news content (see Figure 8). To control task difficulty, this study pre-tested task difficulties (7-point scale; single item from Duff’s study (2009)) and tried to avoid extreme levels of ease and difficulty (e.g., “scores ranged from 2 to 6 on seven-point scales) (Duff & Faber, 2011, p.55).

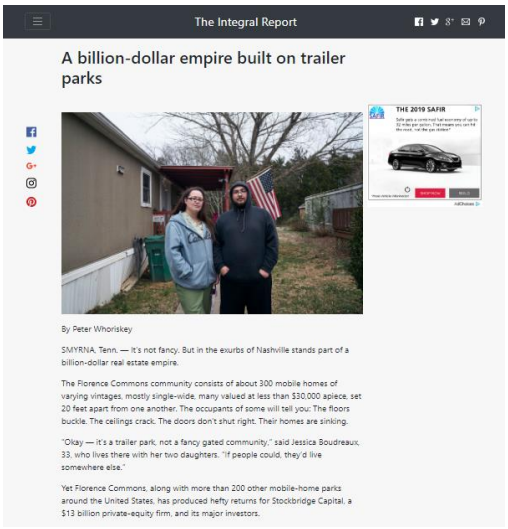

Figure 7. Ad Placement on the Second Page

Attention Control

Based on attention control, ad recognition should be low (or no-recognition) when participants were assigned to find specific information on the main and second pages. Therefore, this study tested whether participants do not recognize the advertising brands which were placed on the news websites' main and second pages. After finishing their search tasks on the first and second pages, participants were asked to choose the brand names they thought they were exposed to previously. (Duff, 2009).

Pretest 2: Ad-block Wall Message Frame and Native Ad Perception Test

Ad-block Wall Message Frame

Ad-block wall message frames were developed by either emphasizing positive outcomes of disabling ad-block walls or negative outcomes of not disabling ad-block walls (Lee & Aaker, 2004) (See Figure 7). To test whether gain and loss ad-block wall frames were developed successfully, each participant was asked whether he or she perceived the ad-block wall message was about the positive outcome disabling ad-block

software or negative outcomes for not disabling ad-block software (Lee & Aaker, 2004) (See Table 4).

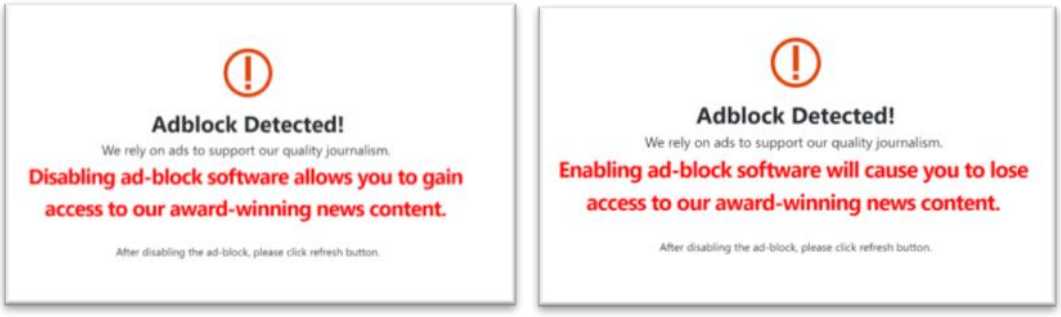

Figure 8. Two Developed Gain (left) and Loss-frame (right) Ad-block Wall Messages

Testing Native and Banner Ad with Editorial Content: Native advertising was created based on current news website examples of native ads (see Figure 3). That is, native advertising can be created using a similar format to news content. The only difference between native ads and editorial content was that sponsored brands demarcated native advertising (e.g., SPONSORED BY SAFIR). Banner advertising was created by revealing its selling purpose (e.g., THE 2019 SAFIR, SHOP NOW) (See Figure 9).



Figure 9. Example of Editorial Content (left), Native Ad (middle) and Banner ad (right)

To check whether native advertising is more similar to editorial content than banner advertising, participants were presented with two contents either 1) editorial content—a native ad pair or 2) an editorial content—a banner ad pair. They were asked

two questions to determine they thought the ad content was similar to editorial content (Duff & Faber, 2011). In addition, each banner and native ad were tested to determine whether the ads "have liking and cheeriness scores that were not at either extreme (scores ranged from 2 to 6)" (Duff & Faber, 2011, p. 55).

Pretest Overview

Based on three fictitious news websites created, two pretests were implemented to test whether 1) three-level ad-block walls are perceived differently (pretest 1), 2) tasks were developed to be neither extremely difficult nor extremely easy (pretest 1), 3) attention control hinders participant recognition of advertised brands (pretest 1), 4) the ad-block wall message frame is manipulated successfully (pretest 2), 5) native ads are perceived more similarly to editorial content than banner ads (pretest 2).

Pretest 1 Results

Overall, 114 participants were recruited from Amazon Mechanical Turk using a Qualtrics online survey. Each participant was randomly assigned one of three ad-block wall levels. After the ad-block wall processing, they were assigned to search the specific information in the news websites (i.e., finding and clicking the specific news title and search the specific information on the second page). The ads were placed on the main (e.g., next to the target news article) and second pages (e.g., next to the title of the news article on the second page).

Ad-block Wall Level

Pretest 1's first purpose was to examine whether ad-block users actually perceive they have different levels of perceived autonomy to control ad-block use (two

items from Jung's study (2011); Cronbach's α = .815) and perceive competence to result in desirable outcome (i.e., not disabling ad-block software and use the news website without ads) (three items from Deci & Ryan's study (2002); Cronbach's α = .788) among three levels of ad-block walls.

Each participant was randomly assigned one of three ad-block wall levels. The ad-block wall message was "Ad-block Detected! We rely on ads to support our quality journalism, after disabling the ad-block, please click the refresh button." Results showed that there were significant differences among the three ad-block walls on perceived autonomy ($F(2,110) = 8.583$, $p < .001$). Participants perceived highest autonomy in the low-level ad-block wall ($M = 5.02$, $SD = 1.41$), followed by the high-level ad-block wall ($M = 4.21$, $SD = 1.59$), and finally the middle-level ad-block wall ($M = 3.35$, $SD = 1.82$). Similarly, they perceived highest competence in the low level ad-block wall (M=5.00, SD=1.44), followed by the high-level ad-block wall (M=4.62, SD=1.48), and the middle level ad-block wall was the lowest (M=4.13, SD=1.41) ($F(2,110) = 3.045$, p=.05). The results showed that participants clearly understood that high- and middle-level ad-block walls limit their autonomy and competence needs compared to low-level ad-block wall. Therefore, the ad-block wall manipulation check was successful.

Explicit Goal Tasks

The second purpose of Pretest 1 was to identify how much difficulty participants perceived when completing various tasks, to avoid extremely easy (i.e., dreary) or difficult tasks (i.e., frustration) (Duff, 2009). By avoiding those extreme task difficulties, it is possible to control the affect transfer from task itself to attitudes to news brand and

affective ad ratings.

Four search tasks (e.g., What is the name of the community in the article?; What is the name of the company that owns the community?; What is the name of the government-sponsored lender? and How much did Ms. Boudreauz pay to buy a double-wide home?) were provided before participants were exposed to the news website's main page. Each participant was randomly assigned one of three ad-block wall levels and performed the search tasks on the assigned news websites. The results showed that there were no significant differences on perceived task difficulty among the three ad-block wall levels ($F(2,106) = 2.372$, $p = .10$). The perceived difficulties of four search tasks ranged from 2.39 to 3.26 on 7-point scale. One task (e.g., What was the title of the news article at the top of the page?) was deleted due to the low difficulty factor (i.e., below mean score 2).

Attention Control

Pretest 1 also examined whether participants who were focused on the search task paid attention to the ad. All of them disabled their ad-block software. Sixty-five (65) participants responded that they did not recognize they were exposed to ad(s) while reading a news website while 47 participants responded that they noticed (an) ad(s) in the news website. Among the 47 participants, 20 identified correct brand names (i.e., Toyota) in the news websites. The results showed that 94 participants from among 114 (82.5%) responded that they did not recognize the advertised brand name in the first two news websites. In addition, there was no significant difference among three ad-block levels on attention control (high (M=6.49, SD =.75), middle (M=6.46, SD= .82), and low (M= 6.07, SD =1.44) (e.g., when attempting to find information on the webpage, I

was ____. 1: not at all focused to 7 completely focused on task) ($F(1, 106) = 1.71$, p=.186). The results mean that while participants focused on reading the news article to search the specific information, they controlled their attention to achieve their goals and consciously ignored the distractor (i.e., ads). Therefore, attention control was successful across three ad-block wall levels.

Pretest 2 Results

For the ad-block wall message frame manipulation check, using the Amazon Mturk platform, 136 participants responded via an online survey. Each participant was assigned to one of two ad-block wall message frames (i.e., gain and loss), and assigned to two ad-editorial content pairs.

Ad-block Wall Message Frame

When participants were exposed to the gain-frame, they perceived the message as describing the more positive outcome of disabling the ad-block (M = 5.50, SD = 1.82) than on the negative outcomes of enabling the ad-block (M = 4.57, SD = 1.93) ($F(1,134) = 3.327$, p = .005). On the other hand, when participants were shown the loss-frame message, they perceived the message as describing more negative outcomes of enabling the ad-block (M= 5.54, SD = 1.63) than on the positive outcomes of disabling the ad-block (M= 3.66, SD = 2.26) ($F(1,134) = 31.159$, $p < .001$). Therefore, the ad-block wall message frame check was successful.

Testing Banner and Native Ads with Editorial Content

The second purpose of Pretest 2 was to identify whether participants perceived similarity between advertising and editorial content. Each participant was exposed to a 1) native ad-editorial pair, or a 2) banner ad-editorial pair (i.e., within-subject design).

The order of stimuli exposure was randomized. Participant responses showed that native advertising (M = 3.41, SD = 1.69) is more similar to editorial content than banner advertising (M=2.66, SD = 1.69) ($F(1,136) = 37.626$, $p < .001$).

Chapter 7. Experiment 1

Participants

For Experiment 1, data were collected from Amazon Mechanical Turk using a Qualtrics online survey. Amazon MTurk is an efficient and reliable platform for researchers (Casler, Bickel, & Hackett 2013; Kim & Hancock 2016). Only U.S residents, native English speakers, and qualified writers participated in this study by using an image annotation test and grammar/spelling checking task (Kim & Ahn, 2017; Rashtchian et al. 2010). Overall, 400 participants were recruited. Among them, female participants were 165 (41.3%) with average age being 35.19 (SD=11.11). Caucasian American (n=293 (73.3%)) was the largest followed by African American (n= 40 (10.0%)), Hispanic American (n= 21 (5.3%)), Asian American (n= 29 (7.3%), Native American (n=7 (1.8%)) and others (n=10, (2.5%)).

Each participant was assigned to a random image and then was requested to describe the image briefly (see Figure 10). Next, they were assigned to five sentences and asked to decide whether the sentences were correct or incorrect (see Figure 10).

Research Design

A 2 (Explicit goal existence: explicit goal /non-explicit goal) (between) x 3 (ad-block wall levels: high vs. middle vs. low) (between) x 2 (ad-block wall message frame: gain vs. loss) between subject design was employed. For Experiment 1, overall 400 participants were recruited. Each participant was assigned one of twelve conditions and exposed to an identical news website.



Figure 10. An Example of the Image Annotation Task (first) and the Grammar/Spelling Checking Task (second) from Rashtchian, et al.'s (2010) study

Data Analysis Strategies

Analysis of covariance (ANCOVA) was used to test research question and hypotheses. In addition, planned contrast analysis was implemented to test the hypotheses.

Procedures

After giving consent, each participant was asked a filtering question, "are you currently using ad-blocking software?". If the participant answered yes, she was required to choose her ad-block software. All participants were asked to turn on their ad-block software and then each was exposed to a news website. Similar to users' experiences with news websites, the study's main page was exposed first, and the second page appeared as directed, based on users' content clicks.

Based on different ad-block wall levels, each participant can be exposed to zero, one or two banner advertisements. For the high-level ad-block wall condition, each

participant was exposed to two different advertisements on main and second pages. For the middle-level ad-block wall condition, each participant was exposed to one advertisement on the second page. For the low-level-ad-block wall condition, each participant was not exposed to any ads if they decide not to disable the ad-block software. If he or she decided to disable the ad-block software, the participant was exposed to an ad.

Depending on the assigned ad-block wall level, each participant encountered one ad-block wall during the news website visit. Additionally, each participant was exposed to either a gain or loss ad-block wall message and the message frame direction (i.e., gain/loss) was identical across all three ad-block wall levels.

For the explicit goal condition, during each news website visit, participants were directed to search for a news title on the main page, and to find and answer the questions about information found on the second page (see Figure 11). Therefore, two instructions were provided. For instance, for the main page task, the participant was directed to find a news title (e.g., instruction on the main page: please find the news title and click it: "A billion-dollar empire built on trailer parks"). On the second page, the participant was instructed to find information from the news article (e.g., instruction two on the second page: please find the answer and write: ""What is the name of the community in the article?"). To keep participants from spending additional time on each web page, they were told that they would be timed (Duff & Faber, 2011).

With no task condition, exposure to the different levels of ad-block walls and gain-loss message frames of ad-block walls were controlled identically to the task condition. However, each participant was not directed to find specific information in



Figure 11. A Process of Information Search Tasks for a Participant in the Middle-level Ad-block Wall at the Explicit Goal Condition (i.e., specific information search task)

the no-explicit goal condition. Instead, they were assigned to find news content that draws their attention and asked to click it. On the second page, they were directed to browse the news contents and asked to answer what they read (see Figure 12).

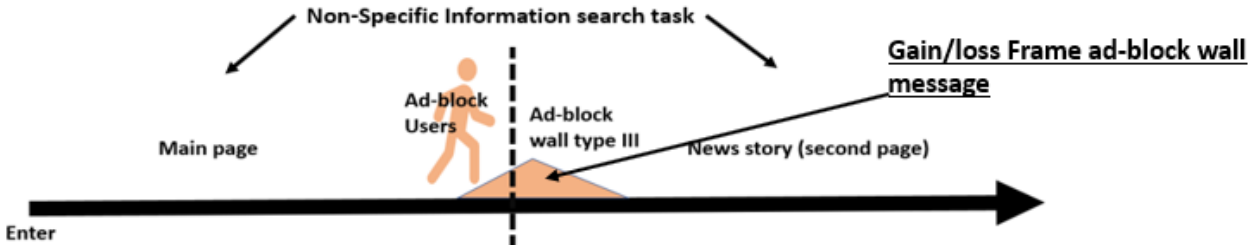

Figure 12. A Process of Information Search Tasks for a Participant in the Low-level Ad-block Wall at the Non-explicit Goal Condition (i.e., non-specific information search task)

After finishing news website task (i.e., both explicit and non-explicit goal tasks), participants were asked whether they disabled their ad-block software. Except for the participants who were assigned to the low-level ad-block wall, participants who responded they did not disable their ad-block walls were screened out of the survey due to their lack of understanding of the study design. In addition, among participants who were assigned to the low-level ad-block wall, those who disabled their ad-block wall were not included in the data analysis.

After answering the screening question about whether they disabled ad-block software or not, subjects were asked to answer questions related to their ad-block wall experiences and news media brand attitude. Lastly, after answering the given questions, participants were required to take a recognition test about the advertised brands. Although the low-level ad-block wall condition did not present any ads on the screen, each participant was asked whether they saw the advertised brands during their news website processing.

To examine whether recognition was by chance or not, two additional unexposed brand names (e.g., *Mojava, Nalto*) were inserted in the questionnaire (Duff & Faber, 2011). Prior attitude to online ads (Cronbach's α = .964) (3 items; "bad-good", "unfavorable-favorable", "unpleasant-pleasant"; Mackenzie & Lutz, 1989) and trait reactance (11 items; Cronbach's α = .871) (Hong & Faedda, 1996) were controlled as covariates (See Table 4).

Measures

Manipulation Check

To examine the different levels of ad-block walls, perceived autonomy to control ad-block software was measured with two items from Jung (2011; e.g., "I felt that I had a lot of control over my ad-block experiences at this website", "I could freely choose what I wanted to do about the ad-block wall.", 1: strongly disagree to 7: strongly agree; Cronbach's α = .790). Additionally, participants were asked whether they were able to bypass the ad-block wall or not (i.e., perceived competence) (e.g., "I was able to bypass the ad-block wall"; single item from Williams & Deci (1996); 1: not at all true to 7: very true) (See Table 4).

To test ad-block wall message frame manipulation, participants responded to two questions whether they perceived the messages were about benefits (gain) (e.g., "the message on the ad-block wall indicates what you will gain if you turn your ad-block software off") or costs (loss) (e.g., "the message on the ad-block wall indicates what you will lose if you leave your ad-block software on") (1: strongly disagree to 7: strongly agree) (Lee & Aaker, 2004). (See Table 4).

To examine advertised brand recognition, participants were asked if they remember whether they were exposed to any of the brand names presented on their screen (1: yes, 0: no) (Duff & Faber, 2011).

Dependent Variables: As dependent variables, perceived threat to freedom was measured with four items from Dillard and Shen' study (Cronbach's α = .891) (2005; e.g., "this ad-block wall threatened my freedom to choose," 1: strongly disagree to 7 strongly agree) (See Table 3).

Negative Cognition was measured with three items from Gardner and Leshner's study (Cronbach's α = .880) (2016; e.g., "the ad-block wall is reasonable,", reverse coded, e.g., 1: strongly disagree to 7 strongly agree) (See Table 3).

Stated anger was be measured with three items from Dillard and Shen's study (Cronbach's α = .869) (2005; "to what extent did this ad-block wall make you feel angry?," e.g., 1: not at all to 7 very much) (See Table 3).

Attitude toward the ad-block wall (Cronbach's α = .957) and news media brand attitude (Cronbach's α = .934) were measured with four items (Mackenzie & Lutz, 1989; Gorn, Pham, & Sin, 2001; e.g., 1: Negative to 7 Positive) (See Table 3).

Experiment 1 Results

Manipulation Check

Ad-block Wall Message Frame: Participants perceived the gain-frame ad-block wall message as describing what they will gain if they turn their ad-block software off (i.e., positive outcome) (M = 5.78, SD = 1.34) rather than what they will lose if they leave their ad-block wall software on (i.e., negative outcome) (M = 3.95, SD = 2.02); while the loss-frame ad-block wall message was perceived as describing the negative outcome (M = 5.29, SD= 1.86) rather than the positive outcome (M = 4.53, SD = 2.01) (F (1, 396) = 84.030, p < .001, η^2_{part} = .18). Therefore, the message frame manipulation check was successful.

Ad-block Wall Level Functional Difference Check: Participants' perceived autonomy to control ad-block use was highest in the low-level (M=4.48, SD=1.65) group, followed by middle-level (M=4.11, SD =1.83), and high-level (M=3.98, SD=1.68) group (F(2,384) = 3.011, p = .05, η^2_{part} =.019). Post hoc analysis showed that the difference between high-level ad-block wall and low-level ad-block wall was significant (SE=.210, p=.02 [-.916, -.091]). Therefore, participants significantly perceived that they had higher perceived autonomy in low-level ad-block wall than high-level ad-block wall. Additionally, participants were asked whether they were able to bypass the ad-block wall or not (i.e., perceived competence) (1: not at all true to 7: very true). The result showed that low-level ad-block wall (M= 5.437, SD=1.83) showed significantly higher competence than middle- (M= 4.44, SD=2.09) and high-level ad-block walls (M=4.57, SD=2.04) (F(1, 385) = 8.855, p<.001, η^2_{part} = .044). The findings showed that participants clearly understood that their autonomy and competence needs

were more limited in high- and middle-level ad-block walls than in low-level ad-block wall. Thus, it is possible to argue that participants understood the different functional characteristics among different levels of ad-block walls.

Explicit Goal Manipulation and Attention Control: Participants in the explicit goal condition were assigned to search for specific information to answer the questions; whereas participants in the non-explicit condition were not assigned the search tasks. Instead, the non-explicit goal participants were guided to simply browse the main page and select an interesting news article where they could freely browse what they want to do on the second page. Therefore, the perceived task difficulty should be higher in the explicit goal condition than the non-explicit goal condition (Duff, 2009). As expected, participants showed higher perceived task difficulty (M = 3.34, SD = 1.97) in the explicit goal condition than the non-explicit goal condition (M = 2.59, SD = 1.86) ($F(1, 386)=15.112$, $p < .001$, $\eta^2_{part} = .04$). Also, the perceived difficulty was not extreme (i.e., mean scores ranged from 2 to 6). Furthermore, participants in the explicit goal condition (M=6.02, SD=1.25) showed higher attention control (i.e., focusing on the task) than the non-explicit goal condition (M=5.35, SD=1.62) ($F(1, 387) = 21.471$, $p<.001$, $\eta^2_{part} = .053$). Thus, the explicit goal manipulation was successful.

Among 400 participants, 354 participants (88.5%) did not remember they were exposed to the ads. 46 participants (non-explicit goal condition: 28 out of 200 participants, explicit goal condition: 18 out of 200 participants) recalled the brand names of the second page and 22 participants recalled the product categories of the ads. There was no difference among ad-block wall levels on attention control ($F(1, 387) =1.398$, $p=.25$, $\eta^2_{part} = .007$).

Hypotheses Testing Results

Hypotheses 1s posited that participants in the high and middle levels of ad-block wall groups show higher a) the higher threats to freedom, b) state reactance (i.e., negative cognition and anger) and c) more negative attitude to ad-block walls, and d) more negative news media brand attitude than those in the low-level ad block wall group.

H1a. Threat to Freedom: Participants perceived marginally higher threat to freedom in high- (*M*=4.98, *SD*=1.55) and middle-level ad-block walls (*M*=4.79, *SD*= 1.69) than in the low-level ad-block wall condition (M=4.56, SD=1.48) ($F(2,375) = 2.509$, $p=.08$, $\eta^2_{part}=.13$). Post-hoc analysis showed that the difference between high-level and low-level was significant (SE=.19, $p=.03$ [.051, .788]). However, the difference between middle-level and low-level ad-block walls was not statistically significant (SE=.19, $p=.23$, [-.144, .606]).

Figure 13. Main Effects of the Ad-block Wall Levels on Threat to Freedom

H1b. State Reactance (negative cognition): Participants showed no significant difference in their negative cognition to the ad-block wall in the high- (M = 4.55, SD = 1.58), middle- (*M*= 4.38, *SD* = 1.66), and low-level ad-block wall conditions (*M* = 4.61, *SD* = 1.35) ($F(2,376)=.966$, $p=.38$, $\eta^2_{part}=.005$).

H1b. State Reactance (anger): Participants showed no significant difference in their angers toward the ad-block wall in the high- (M = 4.26, SD = 1.66), middle- (*M*= 4.06, *SD* = 1.76), and low-level ad-block wall conditions (*M* = 4.00, *SD* = 1.66) (*F*(2,372)=.1.033, *p*=.36, η^2_{part}=.006).

H1c. Attitude toward the Ad-block Wall: Participants showed no significant difference in their attitudes toward the ad-block wall in the high (M = 3.43, SD = 1.54), middle (*M*= 3.57, *SD* = 1.64), and low-level ad-block wall conditions (*M* = 3.25, *SD* = 1.38) (*F*(2,376)=1.773, *p*=.17, η^2_{part}=.009).

H1d. Attitude toward the News Media brand: No difference was found in participants' attitudes towards the news media brand in the high (*M* = 4.38, *SD* = 1.22), middle (*M*= 4.53, *SD* = 1.38), and low-level ad-block wall condition groups (*M* =4.55, *SD*=1.18) (*F*(2, 372)=.718, *p*=.49, η^2_{part}=.004). Therefore, H1s were not supported.

Hypotheses 2s posited that explicit-goal existence generates higher a) the higher threats to freedom, b) state reactance (i.e., negative cognition and anger) and c) more negative attitude to ad-block walls, and d) more negative news media brand attitude than those in the no explicit-goal condition.

H2a. Threat to Freedom: Participants in the explicit-goal condition did not significantly perceive a higher threat to freedom (*M*= 4.77, *SD* = 1.58) than those in the non-explicit goal condition (*M*= 4.78, *SD* = 1.60) (*F*(1,375) = .003, *p* =.96, η^2_{part}=.000).

H2b. State Reactance (negative cognition): Participants in the explicit-goal condition did not show significantly greater negative cognition (*M* = 4.53, *SD* = 1.54) than those in the non-explicit goal condition (*M*=4.50, *SD*=1.55) (*F*(1,376)=.021, *p* =.89, η^2_{part}=.000).

H2b. State Reactance (anger): Participants in the explicit-goal condition did not perceive more anger (M=4.15, SD=1.71) than those in the non-explicit goal condition (M=4.06, SD=1.69) (F(2,372)=1.033, p=.36, η^2_{part}=.006).

H2c. Attitude toward the Ad-block Wall: The explicit-goal condition (M = 3.46, SD = 3.47) was no difference to the non-explicit goal condition (M = 3.37, SD = 1.53) on attitude to the ad-block wall (F(1,376) = .458, p = .50, η^2_{part} = .001).

H2d. Attitude toward the News Media Brand: Participants in the explicit-goal condition did not perceive significantly greater negative attitudes toward the news media brand website (M=4.55, SD=1.23) than those in the non-explicit goal condition (M=4.43, SD=1.30) (F(1,372)=.947, p=.33, η^2_{part}=.003). Thus, H2s were not supported.

Hypotheses 3s posited that explicit goal existence and ad-block wall level will show significant interaction effects on higher a) the higher threats to freedom, b) state reactance (i.e., negative cognition and anger) and c) more negative attitude to ad-block walls, and d) more negative news media brand attitude such that participant within the high and middle levels of ad-block wall groups, explicit goal condition will show more greater negative responses than the non-explicit goal condition whereas there will be no difference between explicit and non-explicit goal in low-level ad-block group.

Figure 14. Expected results (H3)

H3a. Threat to Freedom: There was no significant interaction effect between explicit goal existence and ad-block wall levels on threat to freedom ($F(2, 375) = .645$, $p=.53$, $\eta^2_{part} =.003$).

H3b. State Reactance (negative cognition): There was no significant interaction effect between explicit goal existence and ad-block wall levels on negative cognition ($F(2,376) = .888$, $p=.12$, $\eta^2_{part} =.006$).

H3b. State Reactance (anger): There was a marginally significant interaction effect between explicit goal existence and ad-block wall levels on anger ($F(2,372)= 2.803$, $p=.06$, $\eta^2_{part} =.015$). Descriptively, anger was higher in non-explicit goal group ($M = 4.45$, $SD = 1.59$) than explicit goal group ($M = 4.07$, $SD = 1.73$) on high-level ad-block wall whereas the explicit goal group ($M = 4.31$, $SD = 1.72$) showed higher anger than non-explicit goal group ($M = 3.80$, $SD = 1.79$) on middle-level ad-block wall. No difference was found between explicit ($M = 4.07$, $SD = 1.69$) and non-explicit groups ($M = 3.93$, $SD = 1.65$) on low-level ad-block wall.

However, post hoc analysis showed that, only within the middle-level ad-block wall, the explicit goal condition generated significantly higher anger than non-explicit goal condition ($F(1,127)=4.885$, $p=.03$, $\eta^2_{part}=.037$).

Figure 15. Ad-block Wall Level X Explicit Goal on Anger

H3c. Attitude toward the Ad-block Wall: There was a marginally significant interaction effect between explicit goal existence and ad-block wall levels on attitude to ad-block walls ($F(2,376) = 2.459$, $p=.09$, $\eta^2_{part}=.013$). Descriptively, there was no difference between explicit ($M = 3.44$, $SD = 1.56$) and non-explicit goal groups ($M = 3.42$, $SD =1.51$) on high-level ad-block walls.

In addition, the non-explicit goal group ($M = 3.45$, $SD =1.68$) showed higher positive attitude to ad-block wall than the explicit goal group ($M = 3.69$, $SD = 1.61$) on the middle-level ad-block wall, while the explicit goal group ($M = 3.50$, $SD =1.44$) showed higher positive attitude to ad-block wall than non-explicit goal group ($M = 3.00$, $SD =1.26$) on the low-level ad-block wall. Post hoc analysis showed that only the difference between explicit and non-explicit goal groups on the low-level ad-block wall was significant ($F(1,107) = 4.836$, $p=.03$, $\eta^2_{part}=.043$).

Figure 16. Ad-block Wall Level X Explicit Goal on Attitude to Ad-block Wall

H3d. Attitude toward the News Media Brand: There was a significant interaction effect between explicit goal existence and ad-block wall levels on attitude to the news media brand website ($F(2,372) = 3.526$, $p=.03$, $\eta^2_{part} =.019$). Descriptively, explicit goal group ($M = 4.64$, $SD =1.19$) showed more positive attitude to news brand than non-explicit group ($M = 4.14$, $SD=1.23$) on the high-level ad-block wall whereas the non-explicit goal group ($M = 4.68$, $SD = 1.44$) showed more positive attitude than the explicit goal group ($M = 4.39$, $SD =1.23$) on the middle-level ad-block wall. Post hoc analysis showed that, only within high-level ad-block wall, non-explicit goal condition generated significantly less positive news brand attitude than explicit goal condition ($F(1,135)=8.254$, $p=.005$, $\eta^2_{part} =.058$). Overall, H3s were not supported.

Figure 17. Ad-block Wall Level X Explicit Goal on Attitude to News Brand

Hypotheses 4s posited that ad-block wall level and wall message frame will show significant interaction effects on higher a) the higher threats to freedom, b) state reactance (i.e., negative cognition and anger) and c) more negative attitude to ad-block walls, and d) more negative news media brand attitude within the high and middle levels of ad-block wall groups, gain wall message condition will show more greater negative responses than those loss wall message condition whereas loss wall message will show higher negative responses than gain message on low-level ad-block group.

Figure 18. Expected results (H4)

H4a. Threat to Freedom: There was a significant interaction effect between ad-block wall levels and wall message frame on threat to freedom ($F(2,375) = 4.349$, $p=.01$, $\eta^2_{part} =.023$). Descriptively, loss wall message ($M = 5.36$, $SD =1.30$) generated higher threat to freedom than gain-frame ($M = 4.60$, $SD =1.69$) on the high-level ad-block wall whereas gain wall messages ($M = 4.69$, $SD =1.54$) generated higher threat to freedom than loss wall messages ($M = 4.43$, $SD =1.65$) on the low-level ad-block wall. The difference between gain ($M = 4.82$, $SD =1.74$) and loss ($M = 4.76$, $SD =1.65$) wall messages on the middle level was not shown.

Post hoc analysis confirmed that, only within high-level ad-block wall, loss wall message generated significantly higher threat to freedom than gain wall message ($F(1,137) = 9.972$, $p=.002$, $\eta^2_{part} =.068$).

Figure 19. Ad-block Wall Level X Wall Message Frame on Threat to Freedom

H4b. State Reactance (negative cognition): There was a marginally significant interaction effect between message frame and ad-block wall level on negative cognition ($F(2,376) = 2.35$, $p=.097$, $\eta^2_{part} =.012$). Descriptively, loss wall message ($M = 4.88$, $SD =1.48$) generated higher negative cognition than gain-frame ($M = 4.23$, $SD =1.62$) on

the high-level ad-block wall whereas difference between gain (M = 4.37, SD =1.86) and loss (M = 4.39, SD =1.43) wall messages on the middle-level ad-block wall was not shown. Also, there was no difference between gain (M = 4.62, SD =1.40) and loss (M = 4.61, SD =1.30) wall messages on the low-level ad-block wall. Post hoc analysis confirmed that, only within high-level ad-block wall, loss wall messages generated higher negative cognition than gain wall messages (F (1,137) = 9.563, p=.002, η^2_{part} =.065).

Figure 20. Ad-block Wall Level X Wall Message Frame on Negative Cognition

H4b. State Reactance (anger): There was no significant interaction effect between message frames and ad-block wall levels on anger to ad-block walls (F(2,372) = .779, p=.46, η^2_{part} =.004).

H4c. Attitude toward the Ad-block Wall: There was significant interaction effect between message frame and ad-block wall level on attitude to ad-block wall (F(2,376) = 3.385, p=.04, η^2_{part} =.018). Descriptively, gain wall message (M = 3.75, SD =1.46) generated more positive attitude to the ad-block wall than loss-frame (M = 3.11, SD =1.58) on the high-level ad-block wall whereas loss wall messages (M = 3.34, SD

=1.44) generated more positive attitude to the ad-block wall than gain wall messages (*M* = 3.16, *SD* =1.30) on the low-level ad-block wall. The difference between gain (*M* = 3.59, *SD* =1.91) and loss (*M* = 3.55, *SD* =1.31) wall messages on the middle level was not shown. Post hoc analysis found that the gain-frame generated a more positive attitude to the ad-block wall than the loss-frame, within high-level ad-block wall ($F(1,137)=10.085$, $p=.002$, $\eta^2_{part} = .069$).

Figure 21. Ad-block Wall Level X Wall Message Frame on Attitude to Ad-block Wall

H4d. Attitude to the News Media Brand: There was no significant interaction effects between explicit goal existence and ad-block wall levels on negative attitude to the news media brand website ($F(2,372) = .455$, $p=.64$, $\eta^2_{part} =.002$). In sum, H4s were not supported.

Hypotheses 5s posited that explicit goal existence and ad-block wall message frame will show significant interaction effects on a) higher threat to freedom, higher a) the higher threats to freedom, b) state reactance (i.e., negative cognition and anger) and c) more negative attitude to ad-block walls, and d) more negative news media brand attitude such that participant within explicit goal group, gain wall message show greater

negative responses than loss wall message condition whereas loss wall message will show greater negative responses than the gain wall messages within the non-explicit goal group.

Figure 22. Expected Results (H5)

H5a. Threat to Freedom: There was no significant interaction effect between explicit goal existence and ad-block wall message frame on threat to freedom ($F(2,375) = .645$, $p=.53$, $\eta^2_{part} =.003$).

H5b. State Reactance (negative cognition): There was a marginally significant interaction effect between explicit goal existence and ad-block wall message frame on negative cognition ($F(1,376) = 2.822$, $p=.09$, $\eta^2_{part} =.007$). Descriptively, loss wall message group ($M = 4.75$, $SD =1.50$) showed higher negative cognition than gain wall message group ($M = 4.30$, $SD =1.59$) in the explicit goal condition whereas no difference was found between gain ($M = 4.51$, $SD =1.73$) and loss ($M = 4.50$, $SD =1.34$) wall messages in the non-explicit goal condition.

Post hoc analysis confirmed that loss wall messages generated higher negative cognition than gain wall messages within explicit goal condition ($F(1,186)=4.279$, $p=.04$, $\eta^2_{part}=.022$).

Figure 23. Ad-block Wall Level X Explicit Goal on Negative Cognition

H5b. State Reactance (anger): There was no significant interaction effect between explicit goal existence and the ad-block wall message frame on anger ($F(1,372) = .294$, $p=.59$, $\eta^2_{part}=.001$).

H5c. Attitude to the Ad-block Wall: There was no significant interaction effects between explicit goal existence and ad-block wall message frame on negative attitude to the ad-block wall ($F(1,376) = .717$, $p=.40$, $\eta^2_{part}=.002$).

H5d. Attitude to the News Media Brand: There was no significant interaction effect between explicit goal existence and ad-block wall message frame on negative attitude to news brand ($F(1,372) = .091$, $p=.76$, $\eta^2_{part}=.000$). Therefore, H5s were not supported.

Hypotheses 6s posited that explicit goal existence, ad-block wall level and wall message frame will show significant interaction effects on higher a) the higher threats to

freedom, b) state reactance (i.e., negative cognition and anger) and c) more negative attitude to ad-block walls, and d) more negative news media brand attitude such that participants within the explicit goal condition, on those the high and middle levels of ad-block wall groups, gain wall message will generate more negative responses than loss wall message whereas loss wall message will generate more negative responses than gain wall message on the low-level ad-block wall group. However, within the non-explicit goal condition, no difference will be found between gain and loss wall message frames..

Explicit goal condition Non-explicit goal condition

Figure 24. Expected Results (H6)

H6a. Threat to Freedom: There was no significant interaction effect among explicit goal existence, ad-block wall level, and the ad-block wall message frame on threat to freedom ($F(2,375) = 1.179$, $p=.31$, $\eta^2_{part} =.006$).

H6b. State Reactance (negative cognition): There was no significant interaction effect among explicit goal existence, ad-block wall level, and the ad-block wall message frame on negative cognition ($F(2,376) = .101$, $p=.90$, $\eta^2_{part} =.000$).

H6c. State Reactance (anger): There was no significant interaction effect among explicit goal existence, ad-block wall level, and the ad-block wall message frame on negative cognition ($F(2,372) = .482$, $p=.62$, $\eta^2_{part} =.003$).

H6d. Attitude toward the Ad-block Wall: There was no significant interaction effect among explicit goal existence, ad-block wall level, and the ad-block wall message frame on negative attitude to ad-block walls ($F(2,376) = .07$, $p=.93$, $\eta^2_{part} =.000$).

H6e. Attitude to the News Media Brand: There was no significant interaction effect among explicit goal existence, ad-block wall level, and the ad-block wall message frame on negative attitude to news brand ($F(2,372) = .448$, $p=.64$, $\eta^2_{part} =.002$). Therefore, H6s were not supported.

Table 1. Summary of Experiment 1 Results

IVs		DVs			Significant Results (Post hoc analysis)
H1s	Ad-block wall level (High/Middle/Low) **: Not supported**	**H1a**	**TF**	***F*(2,375) = 2.509*, η^2part=.13**	**High-level** > Low-level only **: Expected result**
		H1b	NC	$F(2,376)=.966$, η^2part=.005	n.s.
		H1b	ANG	$F(2,372)=.1.033$, η^2part=.006	n.s.
		H1c	AAW	$F(2,376)=1.773$, η^2part=.009	n.s.
		H1d	ANB	$F(2, 372)=.718$, η^2part=.004	n.s.
H2s	Explicit goal existence (Explicit/Non-explicit) **: Not supported**	H2a	TF	$F(1,375)=.003$, η^2part=.000	n.s.
		H2b	NC	$F(1,376)=.021$, η^2part=.000	n.s.
		H2b	ANG	$F(2,372)=1.033$, η^2part=.006	n.s.
		H2c	AAW	$F(1,376)=.458$, η^2part=.001	n.s.
		H2d	ANB	$F(1,372)=.947$, η^2part=.003	n.s.
H3s	Ad-block wall level x Explicit goal existence **: Not supported**	H3a	TF	$F(2, 375)=.645$, η^2part =.003	n.s.
		H3b	NC	$F(2,376)=.888$, η^2part =.006	n.s.
		H3b	**ANG**	***F*(2,372)= 2.803*, η^2part =.015**	**Explicit goal** > Non-explicit goal only within middle-level **: Expected result**
		H3c	**AAW**	***F*(2,376) = 2.459*, η^2part =.013**	**Explicit goal** > Non-explicit goal only within low-level **: Opposite result**
		H3d	**ANB**	***F*(2,372) = 3.526**, η^2part =.019**	**Explicit goal** > Non-explicit goal only within high-level **: Opposite result**
H4s	Ad-block wall level x Wall message frame (Gain/Loss)	**H4a**	**TF**	***F*(2,375) = 4.349**, η^2part =.023**	**Loss frame** > Gain frame only within high-level **: Opposite result**

	: Not supported	**H4b**	**NC**	***F*(2,376) = 2.35*, η^2part =.012**	**Loss frame** > Gain frame only within high-level **: Opposite result**
		H4b	ANG	*F*(2,372) = .779, η^2part =.004	n.s.
		H4c	**AAW**	***F*(2,376) = 3.385**, η^2part =.018**	**Gain frame** > Loss frame Only within high-level **: Opposite result**
		H4d	ANB	*F*(2,372) = .455, η^2part =.002	n.s.
		H5a	TF	*F*(2,375) = .645, η^2part =.003	n.s.
	Explicit goal existence x	**H5b**	**NC**	***F*(1,376) = 2.822*, η^2part =.007**	**Loss frame** > Gain frame only within explicit goal **: Opposite result**
H5s	Wall message frame				
	: Not supported	H5b	ANG	*F*(1,372) = .294, η^2part =.001	n.s.
		H5c	AAW	*F*(1,376) = .717, η^2part=.002	n.s.
		H5d	ANB	*F*(1,372) = .091, η^2part =.000	n.s.
	Ad-block wall level	H6a	TF	*F*(2,375) = 1.179, η^2part =.006	n.s.
	x	H6b	NC	*F*(2,376) = .101, η^2part =.000	n.s.
	Explicit goal existence	H6b	ANG	*F*(2,372) = .482, η^2part =.003	n.s.
H6s	x	H6c	AAW	*F*(2,376) = .07, η^2part =.000	n.s.
	Wall message frame	H6d	ANB	*F*(2,372) = .448, η^2part =.002	n.s.
	: Not supported				

Note. Threat to Freedom (TF); Negative Cognition (NC); Anger (ANG); Attitude toward the Ad-block Wall (AAW); Attitude toward the News Brand (ANB); Covariates – prior attitudes toward the online advertising and trait reactance.
**p*<.10, ***p*<.05, not significant (n.s.).

Experiment 1 Discussion

Experiment 1 was implemented to test psychological reactance theory on ad-block wall processing in the news website condition. Specifically, Experiment 1 examined whether people perceive different reactance levels on three levels of ad-block walls (i.e., high, middle and low). In addition, it assumed the effects of goal-oriented behavior (i.e., explicit goal and non-explicit goal), and ad-block wall message types (i.e., gain and loss) as the potential interaction factors with the effects of ad-block walls on participants' reactance and news media brand evaluations.

First, it seems that ad-block users might think that they have a right to view the news content of the main page first and decide whether they to disable their ad-block or not. The difference between high-level ad-block wall and the other two levels of ad-block walls (e.g., middle- and low-level) is whether ad-block users can see the main page or not. As shown in the result (H1a), the highest level of threat to freedom was generated when ad-block users were not allowed to view the main page of the news website. Because the high-level ad-block wall does not allow ad-block users to visit the page without disabling their ad-block software, ad-block users might perceive that their freedom was threatened by the ad-block wall. On the other hand, once they were allowed to visit the news website (i.e., middle- and low-level ad-block walls), ad-block users seemed that they perceive the news website guarantees their freedom compared to high-level ad-block wall.

Second, to ad-block users, their goals matter. Although ad-block users might think that allowing them to visit the main page is better than blocking them before visiting the main page, it seemed that their anger levels still depends on whether they

have a specific goal in mind or not on the middle-level ad-block wall. As the results have shown (H3b), ad-block users show higher anger in the explicit goal condition than non-explicit goal condition on the middle-level ad-block wall. Being blocked by the ad-block wall just before consuming the pre-decided news content (i.e., the news content that users decided to read before the website visit) could make people angry.

In a similar vein, specific goal-oriented ad-block users perceive the ad-block walls more positively than non-specific goal-oriented ad-block users when they notice that they have an option to choose whether they disable the ad-block or not (i.e., low-level ad-block wall) than simple browsing ad-block users (H3c). The faster and easier goal fulfillment increase the attitude to the brand.

Third, sacrificing ad-block software for uncertain future outcomes is not welcomed by ad-block users even if the loss was temporarily. If ad-block users do not have specific content in mind, and a news website is adopting the high-level ad-block wall, the users seem to view this negatively (H3d). Ad-block users' web browsing experience could have two distinguished purposes: 1) hedonic (i.e., experiential) and 2) utilitarian (i.e., goal-oriented) purposes (Novak, Hoffman, & Duhachek, 2003; Park, et al., 2012). That is, when ad-block user's purpose is hedonic browsing (i.e., non-explicit goal) on the news website, they do not like the news website that makes them disable their ad-block without showing them any news content. On the other hand, it seemed the ad-block users who already know what they want to consume (i.e., goal-oriented) will sacrifice ad-block use to achieve the specific goal (i.e., utilitarian). In other words, for the explicit goal-oriented ad-block users, the exchange could be perceived as reciprocity.

Fourth, the way news brands communicate with ad-block users on the wall can result in different outcomes. The results showed that a high-level ad-block wall generated a higher perceived threat to freedom when the wall message emphasizes negative outcomes (i.e., loss-frame) (H4a). Similarly, ad-block users showed a more negative cognition to the ad-block wall in the loss wall message than gain wall message on the high-level ad-block wall (H4b). In addition, participants showed more positive attitudes to the ad-block wall in the gain-frame than the loss-frame ad-block wall messages in the high-level ad-block wall condition (H4c). It is apparent that the loss-frame wall messages were not effective in the high-level ad-block wall condition.

Originally, this study hypothesized that loss wall messages on the high and middle level ad-block walls generate less perceived threat to freedom than gain wall message because the loss wall message describes the ad-block users' situations more precisely. Given these results, why did the loss-frame participants perceive a greater threat to their freedom? There are some possible explanations: The loss wall message on the high-level ad-block wall might generate higher reactance than the gain wall message. The ad-block users might think and feel that the news website forces them to disable the ad-block software without considering their free-will. That is, the loss-frame condition can generate higher reactance than the gain-frame condition in a certain situation (Shen, 2015).

From the ad-block users' perspectives, they (i.e., ad-block users) installed their ad-block software on their web browsers to avoid possible ad-exposure in advance like a shield. But if they were blocked by the ad-block wall, they need to give up their ad-block software (i.e., possession and protection) to earn the access to the news content.

However, interestingly, the negative responses to the loss wall message only came out from high-level ad-block wall (H4a and b). The results reflect that seeing potential news content is making ad-block users believe that their exists benefits to sacrificing their ad-block to visit the news content. That is, ad-block users do not want to disable their ad-block software without identifying the potential gain (i.e., news content). Seeing is believing.

Based on the endowment effect (Kahneman, Knetsch, & Thaler, 1991), people value the same product differently depending on whether they possess the product when the products value is being evaluated. That is, they value the same product higher if they need to sell the product to someone compared to the situation that they need to buy the product from someone. Applying the effect to current study's context, ad-block users have to lose their possessions without identifying potential benefits (i.e., news content) on the high-level ad-block wall condition. The situation makes them focus more on the already-over-valued loss. Thus, emphasizing what ad-block users will lose (i.e., loss-frame) can make them value their ad-block software even more. On the high-level ad-block wall, the wall message that promoting what they can get in near future seemed to be more effective than the message that emphasizing what they 1) have to lose to achieve the uncertain benefits (i.e., news content that they did not read yet) and 2) will lose if they do not follow the instruction.

Last, taken the goal type and the message frame together, what ad-block users' goals are and how news brands communicate with them through the ad-block wall matters. Ad-block users' cognitive appraisal to the wall depends on how the message is conveyed on the wall. The results showed that the loss wall message generates a more

negative cognition than a gain wall message in the explicit goal condition (H5b). Again, these results were unexpected from this study's hypotheses. This study hypothesized that loss-frame message would generate more positive cognition than gain-frame wall messages when ad-block users are more in explicit goal condition compared to non-explicit goal condition. However, as results show, when they know what news content they want to read, ad-block users who encountered the loss wall message think the ad-block wall is more unfair, unreasonable, and unpleasant than those who encountered the gain wall message condition.

Based on the construal level theory (Liberman & Trope, 1998), when people were assigned to a concrete goal (e.g., planning for summer vacation next week), they focus more on specific information (i.e., means) (e.g., choose the travel site, making a checklist for luggage, booking hotel, buying airline tickets) that can help them achieve their goal (i.e., positive outcome). On the other hand, when people were assigned to an abstract goal (e.g., planning for summer vacation three month later), they focus more on the desirable outcome itself (e.g., exciting experience, relaxing, and beautiful sites) than the specific information they need. That is, assigned goal interacts with their perceptions and behaviors on the event.

Past research found that loss-frame message and concrete mindset pair results in more positive outcomes (e.g., positive attitude, increased behavioral intention) than gain-frame message and concrete mindset pair (e.g., Chang, Zhang, & Xie, 2015). Unlike the findings that showed the positive impacts of the fit between concrete mind set and loss-frame (e.g., White, Macdonnell, & Dahl, 2011), this study found that concrete mindset (i.e., low-level construal) and gain-frame pair (i.e., non-fit or

mismatch) could be more effective on the ad-block wall context. That is, describing their situation or perceived risk precisely could increase reactance.

Past research examined the construal level and message frame fit effect (i.e., construal level fit) was not based on the direct threat (or force) that could result in the immediate loss. If someone requires people to decide doing something immediately, people may start to calculate between 1) what they lose now if they follow the requirement and 2) what they lose in the future if they don't follow the requirement. If they perceive what they lose now will be bigger than what they will lose in the future, people will try to maintain current position (Status quo). On the other hand, if they perceive what they lose in the future is larger than what they lose now is bigger, they will follow the requirement. However, what past studies about the construal level and message frame fit cannot explain is if people are forced to make an immediate decision and behavior, they could feel pressured and perceive the situation itself unfair (i.e., state reactance) (Brehm, 1989; Shen, 2015). In this situation, a certain type of persuasive message may not be processed as it intended (i.e., boomerang effect).

In this study design, a loss wall message might not be read as it was originally intended. The original goal of the loss-frame is to make ad-block users focus the loss of the news content access. To achieve the goal, they were required to disable their ad-blockers. However, based on this study result, it seemed the explicit goal-oriented ad-block users in the loss wall message condition focused more on what they lose now (i.e., disabling ad-block software) than they will not lose in the future (i.e., news content access).

Taking the endowment effect, construal level fit, and reactance together, ad-block users might place a higher value on disabling ad-block wall (current possession) than not losing access to the news content (future possession) because they were directed to decide it immediately (i.e., concrete mindset) and to focus on means (i.e., loss) than outcomes (i.e., non-loss) by loss wall message. On the other hand, the ad-block users in the gain wall message condition might concentrate more on what they will gain in the future than what they lose now. That is, ad-block users in the gain-frame wall message were directed to focus more on outcomes (i.e., gain) than means (i.e., loss).

Based on the results of experiment 1, it is necessary to further examine whether the negative effects of the wall message frame on high-level ad-block wall affect ad-block users' unconscious advertised brand ratings. At the same time, it is required to examine whether similarity between advertisement and editorial content can amplify the negative affect transfer.

Chapter 8. Experiment 2

Participants

In experiment 2, this study also utilizes the Qualtrics online survey and Amazon Mturk for the data collection. An image annotation test and grammar/spelling checking task were implemented to filter current U.S residents with native English speakers (Kim & Ahn, 2017; Rashtchian et al. 2010). Overall, 210 participants (*mean age* = 35.21, *SD*= 11.06) were recruited. Female participants were 101 (48.1%) and male participants were 108 (51.4%). One participant did not select his or her gender. Caucasian American (*n*=151 (71.9%)) was the largest followed by African American (*n*= 21 (10.0%)), Asian American (*n*= 20 (9.5%), Hispanic American (*n*= 9 (4.3%)), Native American (*n*=5 (2.4%)) and others (*n*=4, (1.9%)). They were all current ad-block software users.

Research Design

A 2 (ad-block wall levels: high vs. middle) x 2 (ad-block wall message frame: gain vs. loss) x 2 (ad similarity: native (similar) vs. banner (dissimilar) between subject design was employed. Each participant was assigned one of eight conditions and exposed to a news website which has an identically manipulated for the participant based on the experimental design.

Data Analysis Strategies

Analysis of variance (ANCOVA) was used to test research question and hypotheses.

Procedures

Only current ad-block users were participated in this study. Overall news website processing was identical to experiment 1's flow. The differences between Experiment 1 and 2 were that Experiment 2 is 1) dropping out the low-level ad-block

wall, and 2) adding native advertising in addition to banner advertising from Experiment 1's design 3) dropping the no-explicit goal condition. Based on the objectives of Experiment 2, the low-level ad-block wall condition was dropped in Experiment 2 because if participants in the low-level ad-block condition do not disable ad-block software, neither native nor banner ads are presented in the main and second pages. That is, if advertising is not presented to participants, testing the impacts of psychological reactance to unconscious ad processing is not possible.

Experiment 2 was adopting native ads to test whether the similarity between editorial content and native ad content increase the distractor devaluation or mere exposure effect. Additionally, Experiment 2 was implemented only in the explicit goal-oriented condition because the objective of this experiment is to examine unconscious ad processing. Based on pre-test results, participants were expected to show higher levels of ad-recognition in the no-explicit condition than in the explicit goal condition (Duff, 2009). In other words, it is not possible to test unconsciousness ad processing if participants recognize the advertised brands.

Identical to experiment 1, each participant was assigned to process the ad-block wall with ad-block wall messages. After disabling ad-block software, participants entered the news website's main page. They were directed to find the news title on the main page, and then instructed to click the content. On the second page, they were assigned to find specific information and answer the questions based on their search.

Based on the assigned ad-block wall level, each participant managed one ad-block wall per news website while doing information search tasks. They visited a news

website. When participants managed the ad-block wall, they were exposed to either a gain or loss message which is identical to the message frame used in experiment 1.

About ad placements, participants were assigned to the high-level ad-block wall condition were exposed to two ads on the news website's main and second pages. The type of ad was either two banner ads or two native ads. However, the content was different between the two ads on the main and second pages. On the other hand, participants in the middle-level ad-block wall condition were exposed to only one ad (i.e., a native or banner ad) on the second page.

When participants finished their information search tasks for each news website, they were asked how they perceived the difficulty of the tasks. In addition, they were asked whether they perceive ad-block wall levels differently by using reactance related measures (e.g., threat to freedom, negative cognition, and anger). Ad-block wall message frame manipulation were checked (Leshner & Cheng, 2009). When they finished and answered the news website related questions, each participant was asked a surprise recognition test about advertised brands with the two fictitious brands, *Nalto* and *Mojava*, which were not placed in the news websites (Duff & Faber, 2011). Lastly, they were asked to evaluate their gut feelings about each brand they saw in the recognition test. Participants' general attitude to online ads (Mackenzie & Lutz, 1989) (Cronbach's α = .946) and their trait reactance (Hong & Faedda, 1996) (Cronbach's α = .884) were controlled as covariates.

Measures

Manipulation Check

To check participants perceive different level of reactance, reactance related

measures (i.e., threat to freedom (Cronbach's α = .900) (Dillard & Shen, 2005), negative cognition (Cronbach's α = .857) (Gardner & Leshner, 2016), and anger (Cronbach's α = .904) (Dillard & Shen, 2015)) were asked. In addition, participants were asked about gain-loss-frame manipulation checks (single item; e.g., 1: the negative side of enabling ad-block software to 7: the positive side of disabling ad-block software) (Leshner & Cheng, 2009) (See Table 4). Additionally, to check whether unconscious ad processing effect was generated, ad ratings difference among advertised brands and two unadvertised brands were examined.

Dependent Variables

Attitudes toward the news media brand attitudes was measured with three items from Mackenzie and Lutz (1989; e.g., 1: unfavorable to 7 favorable) (Cronbach's α = .918). Affective ratings on the advertised brands was measured with two items from Duff and Faber (2011; e.g., 1: dislike to 8 like) (Pearson's r = .846) (See Table 3).

Experiment 2 Results

Manipulation Check

Ad-block wall message frame: Participants perceived the gain-frame ad-block wall message is describing the positive outcome (M=5.34, SD= 1.60) whereas the loss-frame ad-block wall message was perceived as describing the negative outcome (M=4.20, SD= 1.78) (F(1, 207) = 23.779, p<.001, η^2_{part}=.103).

Ad-block wall level perception check: To check whether participants perceived different level of reactance, they were asked whether they perceived the threatened freedom by ad-block wall (e.g., single item, the ad-block wall threatened my freedom to use ad-blocking software, 1: strongly disagree to 7: strongly agree). The

result showed that perceived higher threatened freedom when they were encountered to the high-level ad-block wall (*M*=4.91, *SD*=1.65) than the middle-level ad-block wall (*M*=4.51, *SD*=1.70) (*F* (1, 205) = 3.384, p=.067, η^2_{part}=.016). There was no significant difference between high- and middle-level ad-block walls on anger (*F*(1,204) = .219, p=.640, η^2_{part}=.001). However, participants perceived higher negative cognition on the high-level ad-block wall (*M*=4.66, *SD*= 1.37) than on the middle-level ad-block wall (*M*=4.25, *SD*= 1.41) (*F*(1,205)=4.803, *p*=.030, η^2_{part}=.023). In sum, participants perceived different level of reactance between two levels of ad-block walls.

Hypotheses Testing

Hypotheses 7s posited that brands in native advertising will show lower affective ratings of advertised brands and negative attitudes toward online news brands than brands in banner advertising.

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Figure 25. Expected Results (H7)

There was no significant difference between native (*M*=4.47, *SD*=1.73) and banner advertising (*M*=4.22, *SD*=1.62) on affective ratings (*F*(1,207)=1.183, *p*=.28, η^2_{part}=.006). H7 was not supported. In addition, no significant difference between native (*M*=4.68 , *SD*=1.25) and banner advertising (*M*=4.62, *SD*= 1.04) on the news brand attitude (*F*(1,208)=.172, *p*=.68, η^2_{part}=.000). H7 was not supported.

Hypotheses 8s posited that middle-level ad-block walls will show lower affective ratings of advertised brands and negative attitudes toward online news brands than high-level ad-block walls.

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Figure 26. Expected Results (H8)

No significant difference between middle- (*M*=4.37, *SD*=1.67) and high-level ad-block wall (*M*=4.37, *SD*=1.69) on affective ratings were found ($F(1,207)=.031$, $p=.86$, $\eta^2_{part}=.000$). Additionally, there was no difference between middle- (*M*= 4.60, *SD*=1.13) and high-level (*M*=4.72, *SD*=1.19) ad-block wall on news brand attitudes ($F(1,208)=.548$, $p=.46$, $\eta^2_{part}=.003$). H8 was not supported.

Hypotheses 9s posited that ad-block wall levels and ad-block wall message frames will show significant interaction effects on affective ratings of advertised brands and attitudes toward online news brands such that participant within middle-level ad-block wall group, gain wall message show more positive responses than loss wall message condition whereas there will be no difference between gain and loss wall message conditions within high-level ad-block wall group.

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Figure 27. Expected Results (H9)

There were no interaction effects between ad-block wall levels and wall message frame on affective ratings ($F(1,204) = .378$, $p=.54$, $\eta^2_{part}=.002$). Also, no interaction effect between ad-block wall level and wall message frame was found on news brand attitude ($F(1,205)=.109$, $p=.74$, $\eta^2_{part}=.001$). Therefore, H9 was not supported.

Hypotheses 10s posited that ad-block wall levels and ad type will show significant interaction effects on affective ratings of advertised brands and attitudes toward online news brands such that participant within middle-level ad-block wall group, banner ad show more positive responses than native ad whereas native ad will show greater positive responses than banner ad within high-level ad-block wall group.

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Figure 28. Expected Results (H10)

The expected interaction effect between ad-block wall level and ad type was not found (F (F(1,205) = .241, p=.62, η^2_{part}=.001). No interaction effect between ad type and ad-block wall level was found on the news brand attitude (F(1,206)=1.926, p=.17, η^2_{part}=.009). Thus, H10 was not supported.

Research question 1 asked whether ad-block wall levels, ad-block wall message frames and ad type will show interaction effects on affective ratings of advertised brands and attitudes toward the online news brands.

There was a significant 3-way interaction among ad-block wall level, wall message frame and ad type on affective ratings (F(1, 201) = 5.807, p=.017, η^2_{part}=.028). However, the interaction effect of ad-block wall level, wall message frame and ad type on news brand attitude were not significant (F(1,202) = .001, p=.98, η^2_{part}=.000).

Affective ratings varied in the high-level ad-block wall condition for loss wall message, native ad (M= 4.55, SD=1.77) showed higher affective ratings than banner ad (M=3.75, SD=1.74). On the other hand, in the high-level ad-block wall for gain wall message, native ad (M=4.44, SD=1.73) and banner ad (M=4.53, SD= 1.46) did not differ on affective ad ratings. Post hoc analysis showed that, only within the banner ad condition, only the difference between gain and loss wall message was marginally significant (F(1,91) = 2.790, p=.098).

In the middle-level ad-block wall condition for gain wall message, native ad (M=4.79, SD= 1.86) showed higher affective ratings than banner ad wall (M= 4.04, SD= 1.50). However, for the loss wall message, banner ad (M=4.59, SD=1.55) showed

higher affective ratings than native ad (*M*=3.98, *SD*=1.65). The post hoc analysis showed that only within gain wall message condition, the difference between native and banner ads was marginally significant (*F*(1,111)= 3.379, *p*=.061). The difference between two ads within loss wall message condition was not significant (*F*(1, 111) = 1.565, *p*=.214).



Figure 29. The Effects of Ad-block Wall-level, Wall Message Frame, and Ad Type on Affective Ratings

Evidence of Unconscious Ad Processing: Multivariate Analysis of Variance (MANOVA) was implemented to examine whether unconscious ad ratings were significant only in the target advertised brand, *Safir* or not. Two advertised brands, *Safir* and *Lavenus* with two non-advertised brands, *Mojava*, and *Nalto* were tested. The result showed that only *Safir* showed a significant effect on ad ratings

Experiment 2 Discussion

Experiment 2 was conducted to examine how ad-block users' ad-block wall processing can impact on their unconscious ad affective ratings. In detail, study two examined how ad-block users 1) unconsciously rate the advertised brand names

differently and 2) consciously perceive the news brand attitude differently based on the different levels of ad-block walls (i.e., high vs. middle), wall message frames (i.e., gain vs. loss) and ad similarities (dissimilar (banner) and similar (native)).

First, ad-block walls can impact the unconscious (pre-attentive) ad ratings of users. The most reactant context would be high-level ad-block walls and loss wall message combination. That is, ad-block users focused on what they lose now (i.e., ad-block use), and were not allowed to visit the main page (i.e., uncertain benefit). The result showed that the advertised brand name in the banner ad was devalued more than the same brand name in the native ad condition (RQ1). This result reflects that ad-block users unconsciously processed the same brand name into two types of ads differently. Clearly, the brand name in the banner ad was processed as a distractor compared to the brand name in the native ad. However, within the high-level ad-block wall condition, the devaluation was found only in the loss wall message condition, reactance from high-level ad-block wall processing impacts the distractor devaluation.

Interestingly, within the middle-level wall ad-block condition, the banner ad devaluation was found in the gain wall message group. The least reactant situation would be the middle-level ad-block wall and gain wall message combination. That is, ad-block users could explore the target news content on the main page and were directed to focus more on what they will gain in the future (i.e., news content access) than what they lose now (i.e., ad-block use). The results showed that ad-block users still devalued the brand name in the banner ad more than the same name in the native ad (RQ1). Making them to focused on gaining news content access could make them devalue the ad information which is not related to their goal (i.e., distractor).

Considering both extreme conditions generated same results, ad-block wall processing has negative impacts on the unconscious banner ad processing.

As Table 2 shows, threat to freedom, state reactance, and affective ad ratings are correlated. The results also reflect the ad-block wall reactance has impacts on the unconscious ad ratings.

Table 2. Pearson's *r* Correlations Matrix of Reactance Related Measure and Affective Ad Ratings

	1	2	3	4
1. Threat to freedom	1			
2. Negative cognition	.426***	1		
3. Anger	.584***	.522***	1	
4. Affective ad rating	-.018	-.259***	-.136*	1
M	4.69	4.44	3.99	4.35
SD	1.69	1.40	1.79	1.68
N	209	209	208	209

* p =.05, ***p<.001

Second, ad-block users unconsciously processed native ads as a part of the editorial content. Unlike the study predictions, ad similarity did not affect the distractor devaluation. Although Duff (2009) found that ad similarity affects the distractor devaluation (i.e., negative ad ratings), this study found the mere exposure effect (i.e., positive ad ratings) when the ad format was similar to the editorial content (i.e., native ad). Considering Duff (2009) created different type of ads within the banner ad format, the distractor devaluation could be generated only between similar and dissimilar ads within the banner ad format (i.e., intra-format). However, native ad formats might not be processed as an ad (i.e., distractor). In both extreme conditions (i.e., high-level ad-block wall and loss wall message; middle-level ad-block wall and gain wall message),

native ad ratings were higher than banner ad ratings (RQ1). Certainly, unconscious native ad processing was not influenced by ad-block wall processing.

In conclusion, study two found that the reactance from the ad-block wall processing could even devalue the ignored banner ad as a distractor (i.e., distractor devaluation).

Chapter 9. General Discussion

Ad revenue supports the digital media industry, so it is vital that users interact with the advertisements (Yoon, Choi, & Sohn, 2008). Although digital media users

know they cannot use Facebook or YouTube without advertising (Youn & Kim, 2019b), digital media users want to control their ad exposure. Ad-block was invented to give users the ability to control what ads they are exposed to and when. When ad-block users were blocked by the ad-block walls, they are required to decide among three options: whether 1) they disable their ad-blockers, 2) maintain the ad-blockers, or 3) leave the news website. This study examined how ad-block users manage the ad-block walls in a variety of possible situations and how the ad-block wall experience results in their cognitive and emotional processing, news brand evaluation, and ad ratings. Study One and Two found that ad-block users are proactive users rather than reactive receptors.

First, ad-block users value the freedom to control ad-block software use and want to be treated fairly by the digital media brands they use. When they are blocked by the high-level ad-block wall, they may perceive reactance because the wall does not treat them with the fairness that they feel they deserve (Youn & Kim, 2019a). When ad-block users are blocked by ad-block walls, they want to have the freedom to choose whether to disable their ad-block software after viewing the content that the news site is offering. Ad-block users want to be treated fairly and given a choice to disable their ad-block software, and they want to feel that the compromise between themselves for disabling their ad-block software and the media outlet is fair. It seemed that adopting high-level ad-block wall is not a good strategy for the online news brands. In addition, ad-block users' goals increase their negative perceptions and behaviors toward the walls and news websites. When ad-block users are goal-oriented, reactance to the "no-fair-trade wall" (i.e., high-level ad-block wall) increases. Even if it is a relatively fair trade (i.e., middle-level ad-block wall), ad-block users still do not want to be interrupted by

ad-block walls and the disturbance makes them angry.

Second, loss aversion is different from loss-frame. Scholars have accepted the loss aversion as a general phenomenon (Simonson & Kivetz, 2018). However, loss aversion does not guarantee the effectiveness of loss-frame messages to be a magic bullet. What this study showed was that, in some cases, the loss-frame message can make the loss aversion stronger and generate undesirable outcomes (i.e., boomerang effects). Especially, if the loss-moment is direct and immediate (i.e., near future), people may not want to lose what they already have, and they value their possessions higher than as its actual or original value. Ad-block users showed how they could be aversive and reactant to loss wall messages. It seemed that ad-block users already know what they would have to lose to gain access to a website, therefore, ad-block wall messages do not need to emphasize users will lose. Instead, telling users what they will gain would be a more effective communication strategy. Message frame effectiveness is situational and limited (Gal & Rucker, 2018).

Third, the ad-block wall experience can harm banner ad ratings but not native ad ratings. Since AT&T's first online banner ad in 1994, banner ads have been a representative digital ad type (eMarketer, 2016). However, if media users are goal-oriented, the ignored distractor (i.e., banner ad) could be devalued when ad avoidance was happening after encountering the ad-block wall. Interestingly, native ads were ignored but not devalued even after ad-block wall processing. Therefore, at least within the ad blindness situation, news websites may consider using the native ad format rather than the banner ad format to block ad-block users. Once unconsciously identified as a distractor, repeated exposure makes the devaluation. This study's findings will provide

reasonable rationale for native ad production based on why the ad industry needs to focus on a native format rather than the banner ad format (Kim, et al., 2019).

Limitation and Future Studies

This study had several limitations. First, this study adopted a single message to examine the message frame effects and ad similarity effects due to the limitation of the study design. Therefore, one should take caution when interpreting the results. Future studies should develop and use multiple frame messages and ads to identify whether the message effects remain the same as this study's results (Thorson, Wicks, & Leshner, 2012). Second, although Experiment 2 found a significant effect on unconscious ad ratings, the results should be limited in the brand name evaluation condition and not the advertisement overall. In addition, to further elaborate on whether advertised brand name devaluation or mere exposure effects, future studies should examine the ad rating difference, with the same advertisement, between two conditions: 1) with and 2) without using a brand name (i.e., brand name and no brand name) (Duff, 2009). Third, although this study adopted the psychological reactance theory as a background theory, the study did not directly test how reactance can affect the subjects' attitudes and behaviors. Therefore, future studies should be implemented with testing the theory by using structural equation modeling (e.g., Dillard & Shen, 2007; Shen, 2015). Fourth, although participants responded that they did not recognize the advertised brand name on the second page, the study results should be validated by assessing the content with eye-tracking and physiological measures (e.g., Leshner, et al., 2009). Last but not least, the findings' effect size (i.e., partial eta squared values) indicated small-to-moderate effects. Therefore, results should be carefully interpreted.

Conclusion

This study contributes to the field of digital media studies by examining the interactions among ad-block wall levels, explicit goal existence, wall message frames, and native ad on media users' conscious and unconscious responses which are timely and emerging topics. The study's findings suggested that news website experience and banner ad effectiveness can be damaged by high-level ad-block wall with loss-frame wall messages. In addition, native advertising effectiveness was also found to be a promising ad type in the digital media environment.

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Appendix. Measurement Items

Table 3. Dependent Variables Measurement Items

Construct / Measurement Items	Source
Perceived threat to freedom	
1. This ad-block wall threatened my freedom to use ad-blocking software.	(Dillard & Shen, 2005)
2. This ad-block wall tried to make a decision for me.	
3. The ad-block wall tried to manipulate me.	
4. The ad-block wall tried to pressure me.	
State anger	
To what extent did this ad-block wall make you feel:	
1. irritated	(Dillard & Shen, 2005)
2. angry	
3. annoyed	
Negative cognitions	
The ad-block wall was:	
1. Pleasant (r)	(Gardner & Leshner, 2016)
2. Reasonable (r)	
3. Fair (r**)**	
Attitude to (ad-block wall / online news brand)	
To me, (ad in general/ this ad-block wall/ this online news brand) is…	
1. Bad-Good	(MacKenzie & Lutz, 1989)
2. Unfavorable-Favorable	
3. Unpleasant-Pleasant	
4. Positive-Negative	(Gorn, et al., 2001)
Affective ratings on the advertised brand	
1. Dislike – Like	(Duff & Faber, 2011)
2. Dreary - Cheery	

Table 4. Manipulation Check Measurement Items

Construct / Measurement Items	Source
Perceived autonomy	
1. I felt I had a lot of control over my ad block use while visiting this news website.	(Jung, 2011)
2. I could freely choose what I wanted to do about the ad-block wall.	
Perceived competence	
1. I felt protected by my ad-blocker.	
2. I felt confident in my ability to use the website.	(William & Deci, 1996)
3. I was able to bypass the ad-block wall.	
Message frame	
1. The message on the ad-block wall indicates what you will gain if you turn your ad-block software off.	(Lee & Aaker, 2004)
2.The message on the ad-block wall indicates what you will lose if you leave your ad-block software on.	
The message on the ad-block wall mainly tells me…	
1: the negative side of enabling ad-block software to 7: the positive side of disabling ad-block software	(Leshner & Cheng, 2009)
Trait reactance	
1. I become frustrated when I am unable to make free and independent decisions.	
2. I become angry when my freedom of choice is restricted.	
3. It irritates me when someone points out things which are obvious to me.	
4. Regulations trigger a sense of resistance in me.	
5. I find contradicting others stimulating.	(Hong & Faedda, 1996)
6. When something is prohibited, I usually think “that’s exactly what I am going to do.”	
7. I resist the attempts of others to influence me.	

8. It makes me angry when another person is help up as a model for me to follow.
9. When someone forces me to do something, I feel doing the opposite.
10. I consider advice from others to be an intrusion.
11. Advice and recommendations induce me to do just the opposite.

Perceived threat to freedom

1. This ad-block wall threatened my freedom to use ad-blocking software.
2. This ad-block wall tried to make a decision for me.
3. The ad-block wall tried to manipulate me. (Dillard & Shen, 2005)
4. The ad-block wall tried to pressure me.

State anger

To what extent did this ad-block wall make you feel:

1. irritated
2. angry (Dillard & Shen, 2005)
3. annoyed

Negative cognitions

The ad-block wall was:

1. Pleasant (r)
2. Reasonable (r) (Gardner & Leshner, 2016)
3. Fair (r)

Attitude to online ad in general

To me, online ad in general is…

1. Bad-Good
2. Unfavorable-Favorable (MacKenzie & Lutz, 1989)
3. Unpleasant-Pleasant