Everyday multiscreening

How the simultaneous usage of multiple screens affects information processing and advertising effectiveness

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Chapter 7

General Discussion

GENERAL DISCUSSION

The aim of this dissertation was to disentangle the phenomenon of multiscreening and how it affects information processing and advertising outcomes. To examine this, the dissertation had three objectives: 1) to explore multiscreening in daily life, 2) to examine how multiscreening affects advertising outcomes, and 3) to examine the facilitating role of task relevance. Based on these three objectives this dissertation led to six conclusions about multiscreening and how it affects information processing and advertising effectiveness. The conclusions are categorized per objective.

Conclusions about Multiscreening in Daily Life

First, multiscreening consists of different dimensions that could either facilitate or hinder information processing and advertising effectiveness. Different dimensions of multiscreening were described and completed with recent literature in the field of multiscreening, media multitasking, and persuasion. Based on this typology, an overview was provided of factors that could hinder or facilitate processing of advertising when multiscreening. The overview showed that the biggest challenge of multiscreening is its concurrent modality: both screens are visual. Because of this characteristic, people have to divide their visual attention between screens which hinders the information processing of advertising. Beside challenges also new opportunities for advertisers arise. An additional screen could for example offer the possibility to engage in related content on both screens, which could eventually increase advertising outcomes.

Second, multiscreeners in the Netherlands multiscreen more than 80 minutes a day, they combine the television most often with another screen, and multiscreening is for all ages. It was found that multiscreeners multiscreen on average three days a week, mostly on Sundays, and on average for more than 80 minutes per day. The television is the most often combined screen and is mostly combined with a smartphone, laptop, or tablet. The multiscreener has an average age of 41 years old, is predominantly female, has a higher than average education, and owns on average more than four screens. Multiscreening is for all ages, however, the younger people are the longer they will multiscreen.

Third, people tend to focus for only short periods of time on a screen when multiscreening and switch often between screens. The results of this dissertation showed that people switched 2.5 times per minute, had longer gazes on the television screen than to the tablet, and devoted most of their attention - 75% of their time – to the television. However, it should be noted that this could also vary, depending on content and tasks. Furthermore, half of all gazes was shorter than 10 seconds. This indicates that the main message of a media campaign must not take too long because

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people are less likely to hold their gaze to the screen to process longer messages.

Conclusions about Multiscreening and Advertising Effects

Fourth, multiscreening has a negative effect on cognitive advertising outcomes, such as brand memory. Thus, multiscreeners remember less of media content (e.g., TV shows, advertising, etc.) compared to single screeners. These results connect to the findings in the media multitasking literature that consistently show this negative effect of multitasking on people's memory. However, the results of this dissertation also showed that multiscreening is not always detrimental to memory. It was found that multiscreeners' memory of a message was unimpaired when most attention was allocated to the screen that displayed the message.

Fifth, multiscreening could have a negative and a positive effect on affective advertising outcomes, such as brand attitudes. In this dissertation, underlying mechanisms of multiscreening on affective advertising outcomes were examined. It was found that multiscreening could have a negative effect on affective advertising outcomes through ease of recognition and a positive effect on affective advertising outcomes through counterarguing. First of all, when people are multiscreening it is more difficult to recognize the brand afterwards, and difficult-to-recognize brands result in more negative brand attitudes and attitudes to the tablet ad. Second, multiscreening could have a positive effect on affective advertising outcomes through counterarguing, a resistance strategy. Multiscreening decreases the number of counterarguments and less counterarguments result in more positive brand attitudes, attitudes toward the television ad, and purchase intentions.

Conclusion about Multiscreening and Task Relevance

Finally, multiscreening with related tasks results in better memory and more positive attitudes compared to multiscreening with unrelated tasks through attention to the television and subsequent program involvement. In other words, task relevance is shown to be a facilitator of advertising effects when multiscreening. Task relevance is a form of relatedness in which the tasks of the different media in media multitasking serve an overarching or similar goal on the same topic (Wang, Irwin, Cooper, & Srivastava, 2015). Although single screeners still had the best brand memory and the most positive brand attitudes, it was found that related multiscreening led to better brand memory and more positive brand attitudes compared to unrelated multiscreening. This effect was mediated by attention to the television show and subsequent program involvement. The results showed that when people were engaged in related multiscreening they had more attention to the television show, were subsequently more involved with the

television show and, therefore, had better brand memory and more positive brand attitudes compared to people who engaged in unrelated multiscreening.

Theoretical Implications

This dissertation contributes to the development of theory regarding multiscreening and advertising effectiveness in four ways. First, this dissertation contributes to the conceptualization of the phenomenon of multiscreening. A few years ago, multiscreening was a phenomenon that was only mentioned by the industry. In 2014, this concept was still barely present in the scientific literature. Around that time, research on media multitasking as a general phenomenon was growing, but not yet on this specific form of media multitasking. The research in this dissertation contributes to the systematic development of the theoretical conceptualization of multiscreening, by describing the multi-dimensions of this phenomenon, by mapping its prevalence and composition in real-life, and by showing in an eye-tracking study what the viewing behavior of this specific form of media multitasking looks like. Conceptualizing multiscreening is important because the phenomenon of media multitasking encompasses all kinds of media compositions that are used simultaneously (e.g., Jeong & Hwang, 2015; Voorveld, Segijn, Ketelaar, & Smit, 2014). As a consequence, general conclusions were drawn about the effects of media multitasking based on diverse contexts and characteristics of media. Moreover, the breadth of the media multitasking definition makes comparing findings across studies challenging (Wang et al., 2015; Xu, Wang, & David, 2016). This dissertation, therefore, focused on a specific combination of media, namely screens. This makes it possible to draw conclusions about this specific form of media multitasking and to compare results between multiscreening studies. Finally, the conceptualization of multiscreening will advance future research on this topic. Especially the different dimensions of multiscreening could be used as a steppingstone to continue to examine multiscreening systematically and to further broaden the understanding of multiscreening and the consequences for information processing and advertising effectiveness.

Second, this dissertation contributes to the development of theories on multiscreening and advertising effectiveness. It was already assumed that multiscreening could affect information processing and advertising effectiveness because of capacity and structural interference. It was found that media multitasking hinders these processes, which results in less memory of the media content compared to single tasking. However, empirical evidence that tested whether multiscreening affects information processing of advertising outcomes has been scarce until now. This dissertation confirms the memory deficit when multiscreening. Additionally, this dissertation showed effects on

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affective outcomes are less straightforward. Multiscreening could have both a negative and positive effect on affective advertising outcomes depending on the underlying mechanism (i.e., implicit recognition or counterarguing).

Third, this dissertation makes a theoretical contribution to the understanding of *why* multiscreening is detrimental to advertising compared to single screening. It goes beyond measuring direct effects of multiscreening on advertising outcomes and taps into underlying mechanisms of this effect. Overall, the results of this dissertation call for the incorporation of attention as a theoretical concept in multiscreening literature. Exposure may be sufficient to affect brand memory and brand attitudes in single screening situations. However, attention becomes a key factor when multiscreening, because of the concurrent visual modalities. The important role of attention was, for example, demonstrated in the eye-tracking study in which attention to both screens was manipulated. The results of this study showed how attention allocation affected people's memory. Furthermore, attention appeared to be a key factor when comparing related to unrelated multiscreening. Other underlying mechanisms found in this dissertation were implicit recognition and counterarguing for affective advertising outcomes, and program involvement for both cognitive and affective advertising outcomes.

Finally, this dissertation makes a theoretical contribution to the understanding of facilitators of multiscreening on advertising effectiveness. By focusing on opportunities instead of negative consequences, this dissertation introduces a positive approach that focuses on how information processing and advertising effectiveness could be improved in a multiscreening situation. The results of this dissertation showed that multiscreening is not always bad for advertising effectiveness. For example, related multiscreening resulted in better brand memory and more positive brand attitudes through attention and subsequently program involvement, compared to unrelated multiscreening.

Methodological Implications

The studies conducted in this dissertation have three important methodological implications. First, the studies contribute to the knowledge about research designs when examining multiscreening or other forms of media multitasking. In order to assess multiscreening performance, a reference group is required. In most multitasking research, performance of multitaskers is assessed in comparison with single taskers (Lang & Chzran, 2015). Typically, a single tasking group (e.g., exposure to a video) is compared to a multitasking group (e.g., exposure to the same video + distractor task) on, for example, how well the participants of both groups can remember certain

elements from the video. A single screening condition is required to connect findings of multiscreening studies to the current knowledge in the field, which is mainly based on mono-media consumption. Studies in this dissertation also included other reference groups beside a single screen condition, which broadens the understanding of what is seen as (un)successful multiscreening (Lang & Chzran, 2015). For example, in chapter 5 a design was used that also included a sequential condition (e.g., first watch video, then complete additional task). In this study, no significant differences were found between this reference group and the two single screening conditions (i.e., television only and tablet only). Other reference groups were used in chapter 4 and 6 in which multiple multiscreening groups were compared to each other in addition to the comparison to a single screen group. These two chapters showed that not all multiscreening conditions are equally detrimental to advertising outcomes. There could be factors (e.g., attention allocation and task relevance) that could vary between multiscreening conditions and that affect information processing and advertising effectiveness. Based on this dissertation, it is recommended to always include at least one single screening condition as a reference group. However, future research should also further look into differences between different multiscreening conditions.

Second, this dissertation contributes to the knowledge of two methodological approaches used by two schools of multiscreening research. One school of research in which multiscreening is examined by split screen computer tasks, and one school of research in which multiscreening is examined with tasks on different screens. Both approaches exist in the literature, as well as in real-life. However, until now it was uncertain whether the approaches of both schools were complementary or could lead to different results. In chapter 6 of this dissertation, the same conceptual model was tested by the approaches of both schools in two separate studies. The results were similar. This is good news for multiscreening scholars because it indicates that the approaches will not lead to different outcomes. However, the studies had more differences than just the methodological approach. Therefore, more research is needed in order to provide further validation for this claim.

Third, the results of this dissertation, particularly the results of chapter 4, contribute to our knowledge of measuring attention allocation when multiscreening. In this chapter, visual attention was measured in two ways: by means of an eye-tracker and by means of self-reported measures. The results showed that these two measures were highly correlated. This implies that people are capable of self-reporting their attention allocation to both screens and that post-hoc self-reported attention – immediately after exposure – could be used as a reasonably accurate attention measure. This finding will benefit future research on media exposure and attention. The high correlation

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between the self-reported and eye-tracker measures of attention indicate that both could be used. The difference is that eye-tracking primarily measures visual attention (i.e., eyes on the screen) where self-reported measures of attention could also include psychological attention (i.e., being mentally present or not). Future research should use the measure based on what kind of attention the researchers are interested in.

Practical Implications

The results of this dissertation have important practical implications. Despite that this dissertation focuses on advertising outcomes, the implications may not only apply to advertisers. This dissertation is about information processing of a persuasive message when multiscreening. Although not tested in this dissertation, it can be argued that multiscreening could also influence the way other persuasive messages are processed, such as political campaigns or health messages. Especially when the aim is to affect cognitive outcomes, the results of this dissertation might be useful. Thus, the implications could be relevant for everyone involved in designing a persuasive message that is distributed through screen media.

Overall, it is very important to realize that a persuasive message never stands alone. Effects of a message can be altered by the use of an additional screen. Moreover, it can be influenced by the content shown on this additional screen and whether this content is related or unrelated to the designed messaged. In general, this dissertation shows that multiscreening has a detrimental effect on cognitive (e.g., memory) and affective (e.g., attitudes) outcomes. Therefore, it is reasonable to assume that the sender of a persuasive message would prefer single screening over multiscreening. However, this is beyond their control. The sender cannot control whether people are going to multiscreen while being exposed to their persuasive message or decide to pay full attention to it. However, this does not mean that there is nothing that they can do. The results of this dissertation showed at least two important factors that could facilitate cognitive and affective effects when multiscreening and which can be taken into account when designing a persuasive message.

The first factor that could facilitate the effectiveness of a persuasive message when multiscreening is attention. The results of this dissertation showed that it is possible that a message is processed just as well when people are multiscreening, as when they are single screening. People's memory of the media message is not impaired when most attention is allocated to the screen of the message of interest. Thus, it is important to attract attention when multiscreening. In the literature some message characteristics are presented that could elicit orienting responses, such as noises, camera changes, and arousing content (e.g., Lang, 2000). Attracting

attention to the message is also important when people are not multiscreening but becomes even more important in environments where distractions in the form of other screens are ever present. As a result of attracting attention, the encoding process of the advertised message might be enhanced. Furthermore, it is important to take into account that people have only short gazes – approximately 10 seconds – to the message. Thus, it would be recommended to keep the most important message short and elicit an orienting response right before this message.

The second factor that could facilitate advertising effectiveness when multiscreening is task relevance. The results of this dissertation showed that related multiscreening – opposed to unrelated multiscreening – led to better brand memory and more positive attitudes through attention and subsequent program involvement. Although the results showed that single screeners had even better brand memory and more positive attitudes via the same mechanism, related multiscreening might be the next best option. As argued in chapter 6, the question arises whether single screeners really exist in real-life or that they are an artifact of experiments in which people are forced to pay full attention to media content. Even more importantly, whether people are going to single screen is beyond the control of the sender. However, related multiscreening can be encouraged, for example, by offering interaction possibilities to engage with the television content on a second screen device. The challenge for the sender lies in thinking of creative ways to involve people.

Limitations and Suggestions for Future Research

Although this dissertation makes a substantial contribution to the multiscreening and advertising literature, it is not without limitations. Two limitations will be discussed: the conceptualization of multiscreening and the ecological validity of the research.

Conceptualization of multiscreening. A first limitation concerns the conceptuali-ation of multiscreening. One of the most important implications of this dissertation is that it contributes to the conceptualization of multiscreening. As stated in the introduction of this dissertation, multiscreening consists of task independence (i.e., tasks are self-contained) and performance concurrency (i.e., tasks have some sort of temporal overlap) (Benbunan-Fich, Adler, & Mavlanova, 2011). The visual nature of the screens makes it impossible for people to use multiple screens with complete temporal overlap. Therefore, multiscreeners use an interleaved strategy by switching their visual attention between screens. These switches can vary from rapid switching to longer time spans between switches (Salvucci & Taatgen, 2011). The conceptual question arises, however, where multiscreening stops and single screening begins. How many switches and how much temporal overlap is necessary to define it as multiscreening? At both ends of the

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continuum the distinction between multiscreening and single screening can be made. However, this leaves a grey area in the middle where this distinction becomes less clear.

This conceptual ambiguity has three implications for multiscreening research. First, the ambiguity of the definition could lead to different views about the measurement of multiscreening among researchers with implications for the generalizability of the results. Discrepancies between definitions of multiscreening can lead to difficulties in comparing results of different multiscreening studies. It would become an even bigger problem when certain situations are defined as multiscreening by some researchers and as single screening by others. Second, the ambiguity of the definition could lead to a different view about the concept between the researcher and the participant. The implication varies per method chosen. In an experiment, for example, the tasks are predefined by the researcher. In this case, the researcher is in charge of what is meant by multiscreening. A survey or diary study, however, relies on self-report of the participant. Therefore, the precise perception of multiscreening is more out of the researcher's control. This could lead to different interpretations of the results. For example, when people are asked to report the amount of multiscreening it is possible that they over- or underestimate their behavior based on the difference between their definition and that of the researcher. This implication also applies to the research done in this dissertation, because it contains both a study that was based on self-reported measures of multiscreening (Chapter 3) and studies in which multiscreening was predefined in the method (Chapter 4-6). Finally, the conceptual ambiguity of the definition could lead to different views about multiscreening within the population. This has implications for the validity of measuring multiscreening, especially when the definition of multiscreening differs between certain groups in the population. For example, it was found that younger people multiscreen longer than older people. However, it could be possible that younger people have a broader definition of multiscreening than older people, which could (partly) explain this difference. Because of these three implications, it is very important that future research continues to develop the conceptualization of multiscreening. This dissertation is a first step in unraveling the phenomenon of multiscreening and could serve as a steppingstone for future research in this respect.

Ecological validity of the research. A second limitation concerns the ecological validity of the research. Every method has its limitations. The majority of the studies presented in this dissertation consists of experiments. This is an appropriate method to examine causal effects in a controlled environment. However, this has also implications for the ecological validity of the findings. It is very hard to capture naturalistic multiscreening behavior, in the sense that people choose the composition of screens,

the content on the screens, the tasks, and even if they want to multiscreen or not. In an experiment, these decisions are made by the researcher and depend on the condition the participant is assigned to. Thus, an experiment might not resemble people's naturalistic multiscreening behavior. This does not need to be a problem when the aim of the study is to examine effects of multiscreening. However, it is a less ideal situation when multiscreening viewing behavior itself is under examination, as is done in chapter 4. Especially when it is assumed that viewing behavior could depend on composition, content, and tasks. Ideally, viewing behavior would be examined in a real-life situation. However, this is not feasible for many reasons. Although the approach chosen in this dissertation might not be ideal, some measures were taken to increase ecological validity. For example, the study approached a naturalistic multiscreen environment; the experiment took place in a living room setting with an actual television and tablet. Also, the use of eye-tracking glasses – opposed to the fixed eye-tracker – had the advantage of flexibility, while still recording detailed viewing information that did not obstruct multiscreening viewing behavior. However, the main issue is that it remains forced exposure. In this light, the results should be seen as a first step in exploring multiscreening viewing behavior.

Research Agenda
This dissertation is a first step in examining how multiscreening affects information processing and advertising effectiveness. However, future research is necessary to further disentangle multiscreening and its effects.

The first recommendation for future research is focused on the phenomenon of multiscreening. Future research should continue the conceptualization of multiscreening. As mentioned in the limitation section of this chapter, the conceptual ambiguity of the phenomenon could have implications for multiscreening research. Therefore, it is important that future research continues the process on conceptualizing the phenomenon of multiscreening which was started in this dissertation.

The second recommendation for future research is focused on advertising effects. Similar to media multitasking research, the results of this dissertation showed a memory deficit when combining multiple media. Effects of multiscreening and media multitasking on cognitive outcomes are examined thoroughly and the findings of different studies are consistent (For an overview see Jeong & Hwang, 2016). However, the effect of multiscreening on affective outcomes has less often been examined and this relation appears to be more complex. Some researchers found a positive relation between multiscreening and affective advertising outcomes, others found a negative effect, and some found no direct effects. In addition, researchers found both positive

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and negative indirect effects of multiscreening on affective advertising outcomes. Therefore, it is recommended that future research focusses on unraveling the effect of multiscreening on affective advertising outcomes. To further explore this relation, future research could extend the work of this dissertation by examining possible additional underlying mechanisms of this effect, such as perceived ad intrusiveness. Also, to further validate the findings of this dissertation, it should be tested whether the mechanisms found in this dissertation also work in different contexts, for example with different tasks, media content, or brands.

The third recommendation for future research is focused on additional advertising variables, such as (purchase) behavior. The ultimate goal of advertisers is that the product is purchased by consumers. Most screens that are combined when watching television are connected to the Internet and make it possible for consumers to immediately purchase advertised products. Knowledge about people's purchase behavior or intentions is scarce. However, it would be highly relevant for practitioners and it will contribute to theory about emerging media and consumer behavior. Future research could also focus more on implicit effects of multiscreening. Advertising effects are traditionally assessed through explicit measures. However, these tools may not provide a complete picture of the effects of multiscreening. In general, implicit measures are more sensitive to information that is processed in a shallow opposed to deep fashion. They are better capable of tapping into unconscious processes (Vandeberg, Murre, Voorveld, & Smit, 2015). Implicit measures may, therefore, be able to detect potential influences of a hardly attended medium. Thus, implicit memory and attitude are necessary to provide a more complete understanding of the mechanisms that underlie multiscreening processing and effects. This dissertation is one of the first multiscreening studies that incorporated implicit measures. However, future research is necessary to further assess the effect of multiscreening on implicit outcomes in order to get a better understanding of multiscreening and advertising effectiveness.

The final recommendation for future research is focused on the facilitators of multiscreening effects. This dissertation introduced a positive approach by focusing on facilitators of information processing and advertising effectiveness instead of focusing on how multiscreening hinders these processes. This is necessary because research continuously shows the high prevalence of multiscreening in society. At the same time, research shows that people have difficulties to process information when using multiple screens simultaneously. The results of the dissertation showed two possible facilitators of multiscreening effects, namely attention and task relevance. Future research could further look into facilitating factors of multiscreening on information processing and advertising outcomes. The dimensions of multiscreening (Chapter 2) could serve as a

starting point in examining these facilitators.

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