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Viswanathan, V.; Voorveld, H.

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Media Multitasking with Television News: The Interaction of Content and Audience Factors

Vijay Viswanathan
Hilde Voorveld

1 Introduction

News programs are an important source of revenue for the media and communications industry. The FCC (2011) reports that advertising on news programs accounts for around 40% of a TV station's revenue. A more recent report by the Pew Research Center (2013) points out that revenue from advertising expenditure on cable, local TV, and digital news platforms grew by at least 5% from 2011 to 2012. The report also reveals that while TV is still the dominant medium for obtaining news, consumers are increasingly using digital media to stay abreast of the latest news. In fact, recent studies have found that individuals across age groups frequently engage with multiple media platforms such as television and computers concurrently (Carrier, Cheever, Rosen, Benitez, & Chang, 2009; Roberts & Foehr, 2008; Voorveld & Van der Goot, 2013). From an integrated marketing communications point of view, the concurrent consumption of television and other media platforms poses an interesting opportunity for news channels and their advertisers. While some firms have attempted to take advantage of the opportunity, few have done so effectively. For instance, Nielsen conducted an analysis of around 5,000 cross channel campaigns and found that while TV advertisements reached 63% of the target audience, online advertisements reached only 2%. Moreover, the overlap was only 5%, much lower than the objectives set for these campaigns (Urbanski, 2013). These statistics suggest that firms have yet to gain a good understanding of the media consumption behavior of the target audience before planning cross channel campaigns. Campaigns that are developed and executed without a clear understanding of which consumer segments are likely to use multiple media are bound to be ineffective and expensive. Knowledge of the multiple media consumption patterns of the target audience is therefore crucial to the future performance of news channels and the media industry at large.

The phenomenon of individuals engaging with multiple media concurrently has aroused the interest of scholars from various disciplines. Concurrent media consumption or "multiple exposures to various media forms at a single point in time for the same media consumer" has been termed as media multitasking (Pilotta et al., 2004). Previous studies have shown that multitasking is common and that approximately a quarter of one's media day involves media multitasking (Papper et al., 2004). While evidence suggests that media multitasking is on

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the rise, only a few studies (e.g., Voorveld and Viswanathan, 2013) have attempted to examine whether the phenomenon is prevalent across different genres. This study builds on such work and examines how different segments of individuals engage in media multitasking with one specific genre. Specifically, since television is still the dominant medium for gathering news, the main objective of this study is to explain individual differences in engaging with multiple media while watching television news.

The article makes two key contributions to ongoing work on media multitasking. Hitherto, some studies on media multitasking have examined the role of structural or situational factors (Voorveld and Viswanathan, 2013) and others have focused on the uses and gratifications framework (Wang and Tchernev, 2013) to explain media multitasking. However, previous studies on media consumption state that it is important to consider the interaction of structural and individual factors to understand media consumption (Webster & Wakshlag, 1983). While structural factors do influence consumption of media to a large extent, studies that ignore audience factors implicitly treat all individuals as homogeneous (Cooper and Tang, 2009). Moreover, studies have found that individuals differ in their motivations for using different media and consuming content such as news (Ksiazek, Malthouse and Webster, 2010; Wonneberger, Schoenbach & van Meurs, 2011). Second, while most studies have relied purely on surveys or only on observational data e.g., Jordan, Trentacoste, Henderson, Manganello, & Fishbein, 2007; Mitchell, Macklin, & Paxman, 2007) to explain media multitasking, this study uses a combination of observational data and survey research. Audience factors such as uses and gratifications are obtained from a survey and included in the empirical analysis. To summarize, this study not only contributes to ongoing work on media multitasking but also provides news channels and advertisers a better understanding of the media consumption patterns of different segments of television news viewers.

2 Theoretical Framework

The section is laid out as follows. We conduct a brief review of prior work to gain a good understanding of the various factors that influence media consumption. We then examine how these factors have been used in previous studies on media multitasking, specifically with news on television. As stated earlier, we focus on media multitasking with television news as evidence suggests that television is still the dominant information resource (Pew Research Center, 2013). We then develop our theoretical framework to explain how the interaction of audience factors and characteristics of news content interact with each other and influence the extent of media multitasking. The audience factors that we are interested for this study are television viewing motivations related to social interaction, relaxation and information. Finally, we propose our hypothe-

sis to test whether there are individual differences in the extent of media multitasking with television news.

2.1 Factors Influencing Media Consumption

Webster, Phalen, and Lichtly (2000) suggest two factors that broadly explain media use: audience factors and media factors. Examples of audience factors are socio-demographic and psychological factors (Jeong & Fishbein, 2007). Previous studies on age (Carrier et al., 2009; Voorveld & Van der Goot, 2013) have surprisingly found that multitasking varies little between younger and older age groups. Other studies have also found that females are more likely than males to combine media usage with non-media activities, and that sensation seeking and impulsivity influence multitasking (Jeong & Fishbein, 2007; Sanbonmatsu, Strayer, Medeiros-Ward, & Watson, 2013).

An important audience factor in prior research on media use is uses and gratifications. According to this approach, people are aware of their needs and choose media content that provides the gratifications they seek (Katz, Blumler & Gurevitch., 1974; McQuail, 1983; Rubin, 2002). In this study, we focus on three specific needs or motivations for watching television. The three needs, which are need for social interaction, need for relaxation and need for information, have often been used in previous television uses and gratification studies. For instance, studies have found a positive relationship between need for relaxation and use of traditional media (e.g., Rubin, 1983). A similar relationship has been found between the need for relaxation and use of digital media (e.g., Stafford, Stafford and Schkade, 2004).

Media factors (Webster et al., 2000) comprise of structural media factors (e.g., media market) and individual media factors (e.g., media ownership). Cooper and Tang (2009) find that audience and structural factors are both influential in driving media consumption. Wonneberger et al. (2011) specifically examined consumption of television news and similarly found that both structural and individual factors have a significant effect on television news consumption.

2.2 Media Multitasking with Television News

Studies on media multitasking too have investigated the role of audience and situational factors. For instance, Wang and Tchernev (2012) investigate various individual factors to explain media multitasking and find that factors such as cognitive needs and habitual needs significantly influence individuals' decisions to engage in media multitasking. Voorveld and Viswanathan (2013) study the impact of several structural factors such as day parts, social viewing and media ownership, and find that they significantly affect the extent of media multitasking.

From the point of view of this study, an important finding in the latter study is that the extent of media multitasking varies for different genres being viewed on television. For instance, they find that the extent of media multitasking is lower when individuals watch television news than when they watch sports on the television. Voorveld and Viswanathan explain the low amount of media multitasking with television news by integrating theories related to intentional exposure, cognitive load, limited information capacity and benefits sought. Specifically, news can be characterized as a genre that is watched intentionally and which provides the latest information to its viewers. Newscasts are generally fast-paced and have tabloid style production qualities (Grabe, Zhou, Lang, & Bolls, 2000). Watching news can therefore be a highly complex and cognitively demanding process (Schaap, Renckstorf, & Wester, 2005). According to cognitive load theory (Lang & Chzran, 2013; Lee, 2012), news is likely to draw more cognitive resources (Grabe et al., 2000) and combining it with another medium simultaneously could result in overload. It is also quite possible that media multitasking with news results in lower processing of the news content as previous research suggests that multitasking with media results in lower levels of cognitive task performance (Bowman et al., 2010; Ophir, Nass, & Wagner, 2009; Pool, Koolstra, & van der Voort, 2003). To summarize, it seems that watching television news is typically accompanied by low levels of media multitasking.

2.3 Media Multitasking with News: Interaction of Audience and News Characteristics

Previous studies on media multitasking have examined the role of audience factors and situational factors in isolation i.e., only main effects. However, a plethora of prior studies suggest that media exposure is a function of both gratifications sought by the individual as well as those obtained from consuming certain content. For example, Palmgreen, Wenner and Rayburn (1980) found that television news viewing is positively correlated to the strength of the relationship between gratifications sought by the individual and gratifications obtained from the content. Content that largely succeeded (failed) to meet the gratifications being sought were often the most (least) viewed ones. We bridge these findings and our knowledge of the theories that influence media multitasking to explain how television viewing motivations such as need for social interaction, relaxation or information influence the extent of media multitasking while watching television news in different ways.

In the previous sub-section we noted that media multitasking results in greater cognitive load and limits the information processing abilities of individuals. Therefore media multitasking with news inhibits individuals who have a high need for social interaction and also those who have a high need for relaxation from achieving their needs. Individuals who have a high need for social interaction have little to gain from media multitasking with news. Similarly,

media multitasking with news requires greater cognitive resources and thus prevents individuals from relaxing. However, it is quite possible that individuals who have a high need for information are able to meet their needs from media multitasking with news. Since television news often only partially meets the information needs of its viewers (Palmgreen et al., 1980), media multitasking can result in additional information and thus satiate the needs of these information seekers. While individuals do perhaps incur cognitive and information processing costs, the benefits obtained from media multitasking possibly overwhelm the costs incurred. We therefore hypothesize that

H1: A higher need for social interaction results in lower levels of media multitasking while watching television news.
H2: A higher need for relaxation results in lower levels of media multitasking while watching television news.
H3: A higher need for information results in higher levels of media multitasking while watching television news.

3 Research Design

3.1 Data

The Council for Research Excellence (CRE) is an independent group of research professionals that have conducted a host of studies on media consumption behaviors. For the analysis, we use data from the Video Consumer Mapping (VCM) study conducted from March 26, 2008 to July 24, 2008 (also see Voorveld and Viswanathan 2013). Nielsen initially provided CRE a list of former participants from their Peoplemeter panel. From this list, 495 U.S. adults were recruited from six Designated Market Areas (DMAs), specifically Dallas, Philadelphia, Atlanta, Seattle, Chicago, and Indianapolis, and were observed for an entire day. CRE took on the responsibility of training observers and providing them with "smart keyboards" and custom software. Custom software on the device presented a hierarchical menu system for coding the categories and activities. These tools helped the observer to record the use of various media including concurrent media usage at granular intervals of 10 seconds. Specifically, concurrent usage is said to occur when a participant uses two or more media simultaneously. Observers worked in eight hours shifts, and two shifts were sufficient to record a participant's activities over the course of the day. A follow-up survey was also conducted to obtain information on participants' sociodemographic profiles and background information. We included only those observations for the analysis where an individual watched television between 6am and 11pm. The final sample for the analysis consists of 108,664 observations pertaining to 273 participants.

3.2 Independent Variables

Observers from CRE recorded the genres that participants viewed on television. The genre news includes local newscasts as well as 24 hours cable channels such as CNN and news programs such as 60 Minutes. Around 15% of the total observations were related to watching news. News viewing was a coded as a binary variable with a value of 1 if an individual's primary attention was on a television news program and 0 otherwise.

Panelists responded to a questionnaire designed to understand their motivations for watching television specifically (see Table 1). A factor analysis of the responses revealed the presence of three needs or motivations that explained 58.5% of the total variance. The factors were named as the need for social interaction (Cronbach alpha = 0.829), the need relaxation (Cronbach alpha = 0.811) and the need for information (Cronbach alpha = 0.802). The table below shows the loadings obtained from the Varimax rotation.

Table 1: Factor loadings from factor analysis with varimax rotation

	Need for		
	Interaction	Relaxation	Information
Find something in common with others	.798		
Connect with friends, family or others	.781		
It's cool	.598	.385	
I trust it	.587		.339
Feel that I am on the cutting edge of things	.541		.540
Feel completely immersed in the experience	.506	.436	
It puts me in control	.385	.348	
To be entertained		.795	
It helps me unwind		.755	
It's fun		.740	
Pass the time		.677	
Satisfy my curiosity about something			.783
Keep up with what's going on in the world			.779
Offers me things that are personally relevant			.740

3.3 Media Multitasking

Observers recorded the use of television and the concurrent use of six other media, if any. The six other media are video, audio, phone, print, gaming, and

others. Please refer to Voorveld and Viswanathan (2013) for a detailed description of specific devices included in the study. Consistent with the definition, media multitasking was operationalized as the number of different media platforms used concurrently with television as the primary medium at each observation point. For example, an individual who watches a news program on television and simultaneously surfs the internet at a certain instance of time has a media multitasking measure of 2 at that observation instance. In our data, around 84% of the observations have a media multitasking measure of 1 and the remaining 16% have a media multitasking measure of at least 2.

3.4 Control Variables

We included gender (operationalized as a dummy with male = 1), education (college or higher = 1 else 0), age, and income levels (coded 1 to 4, with 1 representing the lowest income group and 4 representing the highest) as measures of individual demographics. Around 41% of the participants are male and 36% have at least a college education. The average age of the sample is around 49 years (SD = 17.25) with a minimum age of 19 years and a maximum age of 88 years. Finally, 33% of the sample has an income of less than USD 30K per annum, 16% has an income greater than USD 100K per annum, and the remaining 50% are in between.

Previous studies (Heeter, 1985; Yuan & Webster, 2006) suggest that audiences with higher availability use more media. We therefore used the amount of time individuals spend watching news. To control for time of the day, television viewing from 6am to 12pm was classified as morning, 12pm to 6pm as afternoon, and 6pm to 11pm as evening. Late night television viewing was not included in this study due to the sparse number of observations in this day part. Morning television viewing comprised around 18% of the total observations, afternoon television comprised of 36%, and evening television comprised of the remaining 46%.

We excluded media ownership from this study as all the respondents in the study had a television and most of the respondents had access to the internet and mobile phones. Ownership of media is also likely to be highly correlated with the motivations for media use.

3.5 Results

To test the hypotheses we used a univariate analysis of variance (ANCOVA) with news and uses and gratifications as independent variables and the number of media consumed simultaneously as the dependent variable. Estimation was done using Hochberg's GT2 correction. The model overall was significant ($F = 306.37$, $p < 0.01$). Significant effects are reported using the 99% confidence interval.

Table 2: Effects of independent variables on media multitasking (ANCOVA)

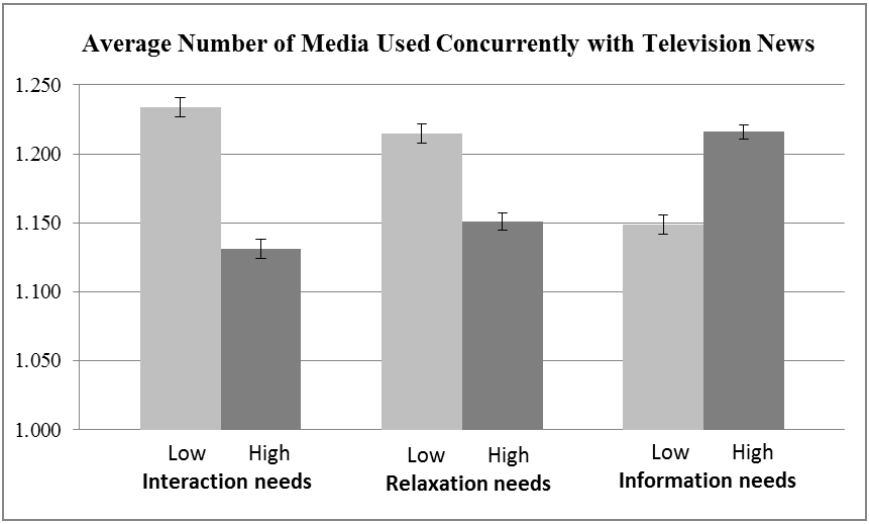
Source	DF	Type III SS	F	p
News	1	5.18	31.28	0.00
Day part	2	78.86	238.02	0.00
Male	1	12.21	73.69	0.00
College Education	1	2.47	14.88	0.00
Income	3	96.41	194.01	0.00
Age	1	3.12	18.82	0.00
Interaction	1	58.93	355.73	0.00
Relaxation	1	0.38	2.27	0.13
Information	1	36.87	222.56	0.00
Time with news	1	231.59	1,398.08	0.00
News x Interaction	1	0.94	5.68	0.02
News x Relaxation	1	14.49	87.46	0.00
News x Information	1	0.01	0.04	0.83

We first discuss the effects of the control variables pertaining to demographic variables and structural factors and then focus on the results pertaining to the hypotheses. The ANCOVA results in Table 2 suggest that gender and income differences between participants have a significant effect on media multitasking. Structural variables such as day parts, too, have a significant effect.

We now report the results for the main effects for news and viewing motivations. The ANCOVA results find that television news has a significant effect on media multitasking. The extent of media multitasking while watching news (M = 1.18, SE = 0.00) is greater than while watching other genres (M = 1.16, SE = 0.00). Two of the three motivations for watching television have a significant main effect on the extent of media multitasking. Individuals with a higher need for social interaction significantly engage with fewer media (M = 1.11, SE = 0.00) than individuals with a lower need for social interaction (M = 1.23, SE = 0.00). We do not find a significant difference in the extent of media multitasking between individuals with high or low need for relaxation. However, we do find a significant difference in the extent of media multitasking between individuals who have a high need for information and those who have a low need for information. Individuals who have a high need for information engage with more media concurrently (M=1.20, SE=0.00) than those with a lower need for information (M=1.14, SE=0.00).

We now report the results for the marginal means for the interaction effects of viewing motivations and news content. First, we find that individuals who

have a high need for social interaction significantly engage with fewer media (M = 1.13, SE = 0.00) while watching television news than those who have a lower need for social interaction (M = 1.23, SE = 0.00). H1 is therefore supported. Similarly, individuals who have a high need for relaxation significantly engage with fewer media (M = 1.15, SE = 0.00) while watching television news than those who have a lower need for relaxation (M = 1.21, SE = 0.00). Therefore, H2 is also supported. Finally, individuals who have a high need for information significantly engage with more media (M = 1.22, SE = 0.00) while watching television news than those who have a lower need for information (M = 1.15, SE = 0.00). H3 is also supported. The results from the ANCOVA therefore support all the three hypotheses. Figure 1 below provides a visual depiction of the marginal means reported above.



Note: SE lines displayed for each bar plot

Figure 1: The moderating effect of viewing motivations

4 Discussion

The main objective of the study was to study whether the interaction of media characteristics and motivations for watching television have a significant effect on media multitasking with television news. Previous studies have examined only one of these factors at a time to explain simultaneous use of multiple media. However, we find that the interaction of the two factors has a significant effect on media multitasking with television news and provides deeper insights

on how different individuals engage concurrently with multiple media. A unique combination of observational data and survey responses helped us conduct the analysis and test the hypotheses. This study therefore answers the call of Rubin (1984) and Ruggiero (2000) to add observational data when studying media use.

This study extends ongoing work on media multitasking and reveals important insights for academics and practitioners. Greater use of cognitive resources and limited ability to process information does seem to inhibit the use of multiple media. As Voorveld and Viswanathan (2013) suggest, people are less likely to engage in media multitasking when a situation is cognitively demanding, except when benefits can be expected from media multitasking. It is this context that the uses and gratifications approach plays an important role in determining the extent of media multitasking. As the results suggest, individuals who have a high need for information were perhaps able to meet their needs while multitasking with news television and therefore engage concurrently with more media. Conversely, media multitasking with television news was of little use and came at a high cost to individuals who have a high need for interaction or relaxation. Broadly speaking, the results suggest that there exists heterogeneity in individuals' preferences for multitasking depending on their motivations for media use. Previous studies have pointed out the importance of studying the structural factors that influence media use. However, it is important to note that an examination of only the structural factors ignores the existence of heterogeneity or differences in people's needs and preferences. It is therefore important that studies on media use include both structural factors as well as audience characteristics.

The advent of the digital era and penetration of multiple digital devices across households has tremendously empowered consumers of information. While marketing managers can choose what information to share with the market at large, individuals have greater control on decisions pertaining to what information to consume, which platform(s) to use, and when to consume it. This study therefore has important implications for practitioners in the communications industry. While the news industry rapidly increases its presence on digital media, it should be aware of which users are more likely than others to use a certain combination of media. Firms that seek to target the segment of information seekers will be better off ensuring that their content across media platforms are consistent and meet the needs of their viewers. On the other hand, news organizations or programs that cater to the segments of individuals who are looking for relaxation or social interaction can perhaps afford to be less vigilant. These segments seem to consume one medium at a time and do not perceive gaining any additional benefits from media multitasking. The study also has implications for firms that advertise on television news networks or programs. From an integrated marketing point of view, firms have to take into cognizance that some individuals may find certain content in a television news

program intriguing and consequently begin searching for related information on other media. Knowledge of these results can help advertisers be better prepared in how they manage their content over different media platforms.

5 Conclusion

The growing phenomenon of multitasking has aroused the interest of scholars in various disciplines. While this study makes important theoretical and managerial contributions to ongoing work on media multitasking, more work is needed. Future studies on multitasking can examine how the characteristics of other genres interact with audience factors in influencing the extent of media multitasking. While the motivations for television viewing were captured as a snapshot in a survey, future work can attempt to use more innovative research designs where viewing motivations are captured at the onset of and/or during media consumption. There is increasing interest is in using technologies from medicine such as skin sensors, fMRIs and eye tracking cameras in the social sciences. Future studies could use data captured by these methods to understand how people allocate attention to different media (Brasel & Gips, 2011) and how this influences information processing (e.g., Jeong & Hwang, 2012).

This study does suffer from certain limitations. As stated earlier, it would be ideal to have measures of gratifications sought and obtained at different viewing moments. While only 24% of individuals contacted agreed to participate in the study, this is understandable given the high level of involvement. The response rate is similar to those in most survey research. The observational nature of the study can raise concerns on whether participants only engaged in activities that were socially desirable a.k.a the Hawthorne Effect. Future research could use methods and technologies that are less intrusive to capture actual media consumption behaviors and thus further our understanding of media multitasking. While we did not include social viewing as a structural variable in this study, robustness tests revealed little change in the results even after including this variable.

In conclusion, our study provides important insights on how the extent of media multitasking with a certain genre varies depending on the viewing motivations of an individual. Studies that consider the interaction of structural factors and audience factors not only improve our understanding of multitasking but also provide managers a better idea of who is in fact their audience.

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