Understanding news consumption preference from a dual-system perspective

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Abstract

Purpose- To perform an exploratory analysis to investigate the demographic/socio-cultural variables that affect the dual-process reasoning of partisan viewers in a non-Western country when watching news.

Design/methodology/approach – The dual-process reasoning theory involves unconscious thought (System 1) and controlled thought (System 2). Utilizing a structured questionnaire survey and logistic regression analysis, this study reports evidence from a sample of 409 partisan viewers.

Findings –Education, income, and religion significantly influence viewer's choice of whether to use System 1 or System 2 for news consumption.

Research limitations/implications – The study is limited to just one type of news platform (TV).

Practical implications – Understanding the role of a dual-system approach in news consumption can help in developing a marketing media focus that specifically targets System 1 or System 2 reasoning processes.

Originality/value – To the best of our knowledge, this is the first study to explore how the dual-process reasoning theory affects news consumption preferences.

Keywords *News consumption, Decision-making, Dual-process theory*

Paper Track *Consumer Behavior*

1. Introduction

News consumption reflects the preferences of viewers. Although TV audiences are shrinking, TV is still considered the most important source of political information (Wonneberger et al., 2011, p.336) and the most common medium (Taylor, 2017). Age, gender, income, education, religion and political ideologies can influence media preference.

Scholars found that younger generations are more comfortable with technology and are less likely to watch TV than older generations who are uncomfortable with new technologies (Nielson and Sambrook, 2016). It was found that older people watch news programs, specifically extreme news channels, more often (Wonneberger et al., 2011) than younger generations (Bou-Hamad and Yehya, 2016). Research regarding the relationship between age and the two information-processing systems (System 1 and System 2) has yielded different results. Some scholars found that cognitive aging makes people more reliant on the intuitive, effortless System 1 processing (Schmidt et. al., 2017). Moreover, other scholars observed that millennials' decision-making approach is vastly different from that of older generations in that they do not use their analytic-based resources or System 2 thinking as much as they use System 1 (Viswanathan and Jain, 2013).

Scholars have shown that younger generations are more comfortable with technology and are less likely to watch TV than older generations who feel discomfort with new technologies (Nielson and Sambrook, 2016). It was found that older people watch news programs more often (Wonneberger et al., 2011), and specifically more extreme news channels than younger generations (Bou-Hamad and Yehya, 2016). Some scholars reveal that cognitive aging makes people more reliant on the intuitive effortless System 1 processing (Schmidt et. al., 2017). In contrast, other research finds that millennial's decision-making approach is vastly different from older generations since they do not use their "analytic-based resources" or System 2 thinking as much as they use System 1 (Viswanathan and Jain, 2013). With regards to education, the more educated the more likely consumers will use cognitive energy – system 2 (Zuckerman and Chaiken, 1998). As with gender, women were found to watch on average more TV than men (Cooper and Tang, 2009). Women are more intuitive, holistic and prone to System 1 thinking (Lin et al., 2012). Men on the other hand use more analytical system 2 processing. Another variable influencing consumer choice is income. Research shows that the higher the income of individuals, the less likely they would rely on heuristic processing. Consumer behavior also has a history of relationships with religion. Religion influences consumer attitudes, judgments and decisions (Allport and Ross, 1967).

Today in the Arab world, traditional media remain in the hands of the politicians and their powerful political parties (Bou-Hamad and Yehya, 2016). In Lebanon, the impact of partisanship on media consumption is evident in its highly polarized environment. Although the literature is replete with theories on consumer behavior, there is a gap in explaining news viewership behavior using brain science and dual-process theory. This exploratory study tries to answer the following research question: *What are the demographic and socio-cultural factors affecting partisan's use of System 1 & System 2 information processing in news consumption preference (NCP)?* This paper is organized as follows. In the next three sections, we explain the dual-system approach, supporting this theoretical framework with discussions on "affect-heuristics and media habits", the brain and media bias. Next, we present the methodology, results and discussion. Finally, we conclude with marketing implications, limitations and direction for future research.

2. Theoretical framework: The dual system theory

Most prominent in theoretical developments aimed at understanding human behavior has been the emergence of dual-process theories that have been used to understand how people handle mental tasks. The dual system perspective divides behavior into two main camps: System 1 and System 2. System 1 is fast, intuitive, and heuristic-based, while System 2 is a much slower, deliberate, and rational process (Stanovich and West, 2000). Consumers can be in a conscious decision-making mode or have their non-conscious drive their decision making completely (Chartrand and Fitzsimons, 2011). The dual-system approach of decision-making is thus influenced by System 1 nonconscious processing or System 2 deliberate processing or an interaction of both (Dhar and Gorlin, 2013; Viswanathan and Jain, 2013; Gawronski, 2013). Heuristics information processing shows that people are not rational decision makers; instead they use mental shortcuts to decision-making (Kahneman, 2011).

3. Affect heuristics & media habits

Default-interventionist models are most seen as describing the mental processing where system 1 is considered the default decision-making system with system 2 overriding system 1 processing when needed (Kahneman, 2011). The "affect heuristic" or when "affective reactions are triggered by contextual or task features, system 1 will generate a default response based on emotion" (Farrell et al., 2014, p. 1983). It is when people allow

"their likes and dislikes determine their beliefs about the world" (Kahneman, 2011, p.103); when people use their automatic feelings or "affect" to intuitively judge the "badness" or "goodness' of an object. As a mental shortcut that depends on feelings to direct decision making (Kelly, 2017), the "affect" has a striking role in System 1 judgments (Gorlin and Dhar, 2013). The way TV viewers consume partisan channels is a form of observable habitual behavior that is determined by "ongoing internal conversations with ourselves" (LaRose, 2010, p.19). To take the dual-process analysis even farther, "neuroscience and neuroeconomics" are emerging as fields of studies concerned with the "neural underpinnings of judgment, decision, and choice" (Gawronski, 2013, p.557).

4. The brain

Neurological accounts state that habits are automatic associations (System 1) between cues and actions that exist through repetitions. Captured in habitual TV behavior, consumers are *less* thoughtful and attentive than when viewing in a non-habitual mode. This shows how the brain preserves energy and thus confirms the "cognitive efficiency mechanism applied to habitual media consumption" (LaRose, 2010, p.204). Energy-conserving brains seek a plethora of lethargic System 1 ways to make pertinent decisions (Bridger, 2015). The neural role of habit is to save energy and protect consumers from being overwhelmed by the information processing of routine tasks. The amygdala in our brain responsible for emotions and improving memories is important in creating biases and making decisions. This explains the fact that in the amygdala, "the mechanisms through which emotion modulates memory and decision-making may be inseparable" (Bechara et al., 2000, p. 302).

5. Media bias

Consumers with high levels of ideological like-minded discussions hold stronger media biases (Eveland and Shah, 2003). In any communication, those who are similar or connected to us come across as more credible. Once the credibility of the messenger (i.e. TV station) is confirmed, individuals "often comply with whatever they communicate unthinkingly, even when the message sent are mistaken, foolish, or immoral" (Liu et al., 2017, p.141). Thus, in an ever increasingly polarized media environment, consumers are likely to choose news programs "according to their political preference" (Wonneberger et al., 2012, p.69). When a TV news consumer is looking for news from a preferred channel

congruent with his/her beliefs or political views, he or she as a cognitive miser is more likely to engage in heuristic processing based on salient cues, displaying reduced attention to the content of the message (Koh and Sundar, 2010).

This is supported by the literature where the preference lies in TV channels that confirm the consumer's prior beliefs (Bou-Hamad and Yehya, 2016; Gentzkow and Shapiro, 2008; Wonneberger et al., 2011; Strömbäck and Shehata, 2010; Wonneberger et al., 2012; Holbert et al. 2012; Prior, 2013).

6. Methodology

6.1 Data collection and measures

Lebanon is a country that is highly diversified in terms of religious sects and politics. Thus, a stratified random sampling technique is the best method to obtain a sample that best represents the diverse Lebanese population. It is worth noting that the Lebanese Civil War (1975–1990) contributed to shaping the country into a sectarian society wherein most homogenous religious groups reside in communities based on geography/location (Bou-Hamad & Yehya, 2016). To collect data from a sectarian and geographically-segregated society, we divided the population into strata based on geographic location and selected respondents based on a random sampling within each stratum.Utilizing a structured questionnaire, we surveyed a total of 784 participants selected from various cities and villages in Lebanon's six geographic districts. The survey was self-administered and comprised 48 questions regarding various indicators such as political orientation, religious backgrounds, demographics (education, income, gender, marital status, etc.), and television genre preferences.

We assumed that System 1 processing was prominent during the consumption of EPCs and System 2 processing was prominent during the consumption of MPCs. The reasoning behind this assumption stems from the dominance of System 1, which has a short-term focus, "frames decisions narrowly," does "not foresee consequence of decisions," and is impulsive and risk averse (Viswanathan and Jain, 2013, p.488), thus falling in line with extreme partisan channel consumption. In the survey, respondents were asked to name their preferred news channel; the answer to this question is considered as a response (dependent) variable reflecting the use of System 1/ System 2 in determining news consumption preference (NCP) among partisan viewers. NCP is defined as a binary response assuming a value of 1 for a partisan viewer consuming news from an EPC and zero if his/her news consumption was from an MPC. The

collected data included a subset of 409 partisan viewers. In this study, our analysis is based on this extracted subset.

6.2 Methods of analysis

We used a logistic regression approach to analyze the partisan viewers' responses regarding NCPs. The binary NCP variable was used as the dependent variable in the logistic model and was linked to the explanatory variables regarding the partisan viewer such as his/her socio-economic variables (education, income), religion, age, gender, marital status, and whether he/she had lived abroad for at least one year. Based on this regression analysis, we explored the effect of these explanatory indicators and investigated their influence on the viewer's reliance on one of the two systems (System 1/System 2) to choosing his/her NCPs.

7. Results and discussion

Before presenting our findings from the logistic regression analysis, we present some descriptive statistics. Table 1 provides information regarding the various age groups, income, political orientation, sects, education levels, gender, and other indicators.

Table 1 Descriptive Statistics

Variable	Percent	Variable	Percent
Political Affiliation		**Age**	
March 8	29.1	Young	71.3
March 14	23.1	Middle	13.3
Neutral	47.8	Older	15.4
Religion		**Income**	
Druze	4.7	Low	15.5
Catholic	5.5	Middle	40.0
Maronite	18.2	High	44.5
Orthodox	8.8	**Education**	
Shia	28.1	Pre-College	21.6
Sunni	28.1	College degree	65.3
Others	5.7	Graduate degree	13.1
Gender		**Marital Status**	
Male	50.1	Married	36
Female	49.9	Unmarried	64
Abroad			
Yes	41.6		
No	58.4		

7.1 Predicting the use of system 1/system 2 in news consumption preference

The regression analysis results are presented in Table 2. More specifically, Table 2 reports the regression coefficients with their statistical significance, the standard errors, the odds ratios, and the Nagelkerke pseudo R-square that evaluates the goodness-of-fit of a logistic

model. A value of Nagelkerke pseudo R-square above 10% is acceptable for the goodness-of-fit (Pampel, 2000). Bou-Hamad and Yehya (2016) found that Christians from different sects exhibited homogeneity in terms of their television viewing behavior. Thus, we combined Christian sects into one group and defined religion as a dummy variable assuming the value of 1 if Christian and zero otherwise.

Table2   Factors Predicting News Consumption Preferences

	Beta	SE	OR
Christian	-0.687**	0.268	0.503
Male	0.217	0.244	1.243
Age			
Middle	-0.045	0.389	0.956
Older	-0.130	0.387	0.878
Income			
Low	0.892*	0.400	2.440
Middle	0.570*	0.258	1.768
Education			
College	-0.632*	0.277	0.532
Graduate	-0.671*	0.382	0.511
Abroad	0.141	0.248	1.152
Married	0.291	0.318	1.337
R-Square	21%		

Note: Beta(s) are regression coefficients, OR(s) are odds ratios, SE are standard errors, * P-value <0.05, ** P-value <0.01. R-Square is Nagelkerke pseudo R-square for logistic regression.

The predictors that were significantly associated with the use of System 1 or System 2 when consuming news were Religion, Income, and Education (P-value < 0.05). Taking non-Christians as a reference group for religion, we found Christians to be twice more likely to rely on System 2 than System 1 (1/OR). Therefore, they are less likely to watch EPCs. However, this does not measure their level of religiosity, which literature denotes as the more religious the consumer, the more his/her reliance on System 1 (Baumard and Boyer, 2013). In alignment with the current literature, our findings show that the more educated partisan viewers are, the more likely they will use System 2 reasoning. For example, college and graduates are found to be 85% and 96% more likely than pre-college partisan viewers to use System 2 than System 1, respectively. Thus, the more educated the partisan viewers, the more likely they are to prefer watching MPCs rather than EPCs. Regarding income class, our findings are consistent with the literature. We found that the lower the income, the more likely that partisan viewers will rely on System 1 reasoning (regression coefficient is positive). Compared to high-income levels, partisan viewers with a mid-level income are 76% more likely to rely on System 1 than System 2 whereas low-income partisans are 2.5 times more likely to rely on System 1. Regarding the partisan viewer's age, we were not able to detect a significant relationship with the reliance on System 1/System 2. However, the negative coefficient sign of the variable Age might suggest that older partisan viewers are more likely than younger viewers to rely on System 2 for

watching news. This suggestive finding contradicts previous literature that found older people to be more reliant on System 1 (Schmidt et al., 2017) or heuristics processing (Meyers-Levy and Sternthal, 1991). Finally, although literature refers to women as more inclined to rely on System 1, our findings did not find any significant difference between partisan genders.

8. Conclusion

News consumption behavior, typically habitual, reveals that when consumers watch news, they are in an energy-saving neurological state that avoids cognitive dissonance. In this research, we explored how the dual-system reasoning theory affects NCPs within a highly polarized context. More specifically, we studied how demographic and other socio-cultural factors affect partisan viewers' reasoning for their NCPs.

Understanding the influence of demographics on NCP using a dual-process approach has allowed this exploratory research to reveal that demographic variables, such as education, income, and religion, have an impact on nonconscious decision-making. Whether heuristics-based (System 1) or systematic (System 2) reasoning was utilized, the findings show that partisans who are less educated, earning a lower income, and belonging to a non-Christian faith are more likely to rely on System 1 reasoning when watching the news. In contrast, highly educated and wealthier partisans tend to rely more on System 2 reasoning in their NCP. Accordingly, an implication of this study can be developing a media marketing strategy driven by demographic factors affecting a partisan viewer's choice. For example, a marketing strategy can focus on System 1 information processing to target the less educated, lower income consumers, while another strategy can adopt a more analytical System 2 approach to target more educated and wealthier consumers. This study has some limitations. For most audiences, online news media is considered to complement rather than substitute traditional news media (Ahlers, 2006). However, although traditional television has been dominant as a news source for half a century, young audiences are shifting toward digital platforms and TV news providers should adapt to this change (Nielsen and Sambrook, 2016). Thus, a limitation of this study is that it deals with only one type of news platform (TV), although the internet has changed how viewers participate, gather, analyze, and communicate news (Hermida, 2010). Another limitation is the fact that the religion variable in our sample, which does not measure partisans' religiosity. However, this study has useful implications for future research. For example, researchers can explore the influence of partisan viewers' demographic and other socio-cultural factors using the dual-process reasoning for online news platforms. Another future research

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area is to use neuromarketing software (i.e.,., I-code) to measure the implicit information that consumers provide.

10. References:

Ahlers, D. (2006). News consumption and the new electronic media. *Harvard International Journal of Press/Politics*, *11*(1), 29-52.

Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. *Journal of personality and social psychology*, *5*(4), 432-443.

Bechara, A., Damasio, H., & Damasio, A. R. (2000). Emotion, decision making and the orbitofrontal cortex. *Cerebral cortex*, *10*(3), 295-307

Bou-Hamad, I., & Yehya, N. A. (2016). Partisan Selective Exposure in TV Consumption Patterns: A Polarized Developing Country Context. *Communication Research*, 0093650216681896.

Bridger, D. (2015). *Decoding the irrational consumer: How to commission, run and generate insights from neuromarketing research*. Kogan Page Publishers.

Chartrand, T. L., & Fitzsimons, G. J. (2011). Nonconscious consumer psychology. *Journal of Consumer Psychology*, *21*(1), 1-3.

Cooper, R., & Tang, T. (2009). Predicting audience exposure to television in today's media environment: An empirical integration of active-audience and structural theories. *Journal of Broadcasting & Electronic Media*, *53*(3), 400-418.

Dhar, R., & Gorlin, M. (2013). A dual-system framework to understand preference construction processes in choice. *Journal of Consumer Psychology*, *23*(4), 528-542.

Farrell, A. M., Goh, J. O., & White, B. J. (2014). The effect of performance-based incentive contracts on system 1 and system 2 processing in affective decision contexts: fMRI and behavioral evidence. *The Accounting Review*, *89*(6), 1979-2010.

Gawronski, B. (2013). What should we expect from a dual-process theory of preference construction in choice?. *Journal of Consumer Psychology*, *23*(4), 556-560.

Gentzkow, M., & Shapiro, J. M. (2008). Competition and Truth in the Market for News. *Journal of Economic perspectives*, *22*(2), 133-154.

Gorlin, M., & Dhar, R. (2013). Refining the dual-process theory of preference construction: A reply to Gawronski, Martin and Sloman, Stanovich, and Wegener and Chien. *Journal of Consumer Psychology*, *23*(4), 564-568.

Hermida, A. (2010). From TV to Twitter: How Ambient News Became Ambient Journalism. *M/C Journal*, *13*(2).

Holbert, R. L., Hmielowski, J. D., & Weeks, B. E. (2012). Clarifying relationships between ideology and ideologically oriented cable TV news use: A case of suppression. *Communication Research*, *39*(2), 194-216.

Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *American economic review*, *93*(5), 1449-1475.

Kahneman, D., & Egan, P. (2011). *Thinking, fast and slow* (Vol. 1). New York: Farrar, Straus and Giroux.

Kahneman, D., & Frederick, S. (2007). Frames and brains: Elicitation and control of response tendencies. *Trends in cognitive sciences*, *11*(2), 45-46.

Kelly, A. (2017). Think Twice: Review of Thinking, Fast and Slow by Daniel Kahneman (2011). *Numeracy*, *10*(2), 15.

Koh, Y. J., & Sundar, S. S. (2010). Heuristic versus systematic processing of specialist versus generalist sources in online media. *Human Communication Research*, *36*(2), 103-124.

LaRose, R. (2010). The problem of media habits. *Communication Theory*, *20*(2), 194-222.

Lin, W. L., Hsu, K. Y., Chen, H. C., & Wang, J. W. (2012). The relations of gender and personality traits on different creativities: A dual-process theory account. *Psychology of Aesthetics, Creativity, and the Arts*, *6*(2), 112.

Liu, C., Vlaev, I., Fang, C., Denrell, J., & Chater, N. (2017). Strategizing with biases: making better decisions using the Mindspace approach. *California Management Review*, *59*(3), 135-161.

Meyers-Levy, J., & Sternthal, B. (1991). Gender Differences in the Use of Message Cues. *Journal of Marketing Research*, *28*(1), 84.

Nielsen, R. K., & Sambrook, R. (2016). What is happening to television news?.

Pampel, F. C. (2000). *Logistic regression: A primer* (Vol. 132). Sage.

Prior, M. (2013). Media and political polarization. *Annual Review of Political Science*, *16*, 101-127.

Schmidt, A. C. S., Bhatt, A. B., & Sunstein, C. R. (2017). Boundedly rational patients? Part 1: Health and patient mistakes in a behavioral framework. *Journal of Behavioral Economics for Policy*, *1*(2), 11-15.

Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate?. *Behavioral and brain sciences*, *23*(5), 645-665.

Strömbäck, J., & Shehata, A. (2010). Media malaise or a virtuous circle? Exploring the causal relationships between news media exposure, political news attention and political interest. *European Journal of Political Research*, *49*(5), 575-597.

Taylor, J. B. (2017). The Educative Effects of Extreme Television Media. *American Politics Research*, *45*(1), 3-32.

Wonneberger, A., Schoenbach, K., & Van Meurs, L. (2011). Interest in news and politics—or situational determinants? Why people watch the news. *Journal of broadcasting & electronic media*, *55*(3), 325-343.

Wonneberger, A., Schoenbach, K., & van Meurs, L. (2012). Staying tuned: TV news audiences in the Netherlands 1988–2010. *Journal of broadcasting & electronic media*, *56*(1), 55-74.

Zuckerman, A., & Chaiken, S. (1998). A Heuristic-Systematic Processing Analysis of the Effectiveness of Product Warning Labels. *Psychology & Marketing (1986-1998)*, *15*(7), 621.