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The future of pensions

Content and consequences of pension reforms in the media

van den Heijkant, L.

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CHAPTER 4

DIFFERENTIAL RESPONSES TO TRADITIONAL VERSUS SOCIAL MEDIA: EXAMINING SELF- REPORTED AND MANIPULATED MEDIA EXPOSURE MEASURES

This chapter is under review as: Van den Heijkant, L., Van Selm, M., Hellsten, I., & Vliegthart, R. (2021). Differential responses to traditional versus social media: Examining self-reported and manipulated media exposure measures

ABSTRACT

This study explores whether social media have a greater potential than traditional news media in the process of (political) learning. Relying on a survey-embedded experiment that includes both self-reported and manipulated media exposure measures, we examine to what extent the type of media affects cognitive and behavioral responses to news. Findings reveal that people exposed to news presented on social media are more concerned about the issue at hand and more likely to engage in interpersonal discussion as well as information seeking about the issue than those exposed to traditional news media. However, this effect of media type only holds for the *self-reported* exposure to media in everyday life and not for the *manipulated* exposure in the experimental setting.

INTRODUCTION

News media play a crucial role in informing citizens about what is going on in politics and society, and consequently affect how citizens perceive sociopolitical issues. In the contemporary news media landscape, citizens increasingly encounter and engage with news via social media (Bergström & Jervelycke Belfrage, 2018; Park & Gil de Zúñiga, 2020). The growing prominence of social media in the news environment and the distinctive features compared to traditional sources (e.g., printed newspapers, television, radio) raise the question of whether exposure to news on social media triggers different cognitive and behavioral responses relevant to the process of (political) learning compared to exposure to news in traditional news media. To date, scholarly knowledge about the role of social media in (political) learning is still limited (Park & Gil de Zúñiga, 2020). Recognizing social media's distinctive conversational and interactive affordances and ability to reach a large and diverse audience, we aim to explore whether social media have a greater potential to create public awareness of and concern about sociopolitical issues, as well as to stimulate interpersonal discussion and information seeking about these issues compared to traditional news media.

In studying potential differences in the extent to which traditional and social media induce these responses, the second objective of this study relates to the methodological issue of measuring media exposure. A substantial amount of extant research focusing on media exposure and its impact on the public in the context of learning relies on measures of self-reported media exposure, mainly by using (panel) surveys (e.g., Boukes & Vliegenthart, 2019; Chaffee et al., 1994; McLeod & McDonald, 1985). In these studies, the focus lies on citizens' exposure to media in *everyday life*. Yet, other existing studies have been conducted in an experimental setting, putting the focus on *manipulated* (i.e., controlled) exposure to media (e.g., Kruikemeier, Lecheler, et al., 2018; Norris & Sanders, 2003; Walma van der Molen & Van der Voort, 2000). The key contribution of the current study lies in disentangling cognitive and behavioral responses prompted by exposure to media in everyday life and exposure to media in an experimental context, by bringing both measures of media exposure together in a survey-embedded experiment. In this way, we are able to assess how closely the media effects resulting from both measures approach each other.

Accordingly, relying on measures from both the survey part *and* experimental part of this study, we empirically explore the inherent effects of the type of media on public awareness of and concern about an issue in the news, as well as on the intention to engage in interpersonal discussion and information seeking about the issue. The issue selected in this study is that of pension reform, as we believe the complex nature of this salient issue provides an excellent case for examining potential differences in news responses related to (political) learning. An important consequence of several of the pension reforms adopted across Western European countries is that individuals are made more responsible for securing their own level of pension income. This individual responsibility increases the need for understanding and awareness of one's own complex pension situation (Finseraas et al., 2017; Hagelund & Grødem, 2017; Sundén, 2006).

COGNITIVE AND BEHAVIORAL RESPONSES TO NEWS MEDIA

The role of news media in society cannot be underestimated. News media provide citizens with the information they need about political, social, and current issues to participate, engage and take their responsibilities in democratic societies (Strömbäck, 2005). In this information function, it is evident that news media contribute to (political) learning (e.g., Chaffee & Kanihan, 1997; Delli Carpini & Keeter, 1996; Strömbäck, 2017). Becoming aware of and concerned about an issue is perhaps the most important prerequisite for, or the first step in, learning from news media. As expressed in the agenda-setting theory, media determine public awareness of and concern about issues by focusing attention on particular issues and transferring the salience of issues to the public (McCombs, 2005; McCombs & Shaw, 1972).

Beyond these cognitive responses, we turn our attention to behavioral responses and, more specifically, to individuals' intentions to take actions to learn more about the issue they encounter in news presented in traditional and on social media. Issues featured in (news) media often spark interpersonal conversations (Moeller & De Vreese, 2019). This so-called interpersonal discussion plays a key role in the process of (political) learning (McLeod et al., 1999). The reasoning behind this mechanism is that engaging

in interpersonal discussion can contribute to higher levels of understanding; in the sense that talking with others and exchanging information and interpretations about what one has read or heard in the media about an issue can help people to understand these issues in all its complexity (Cho, 2005; Scheufele, 2002; Yamamoto & Nah, 2018). Interpersonal discussion, therefore, enables citizens to process (news) content more carefully and could eventually foster knowledge-building processes (Hoffman et al., 2007; Vermeer et al., 2020). In a similar way, searching for information plays a key role in (political) learning as it increases people's understanding of complex issues that are featured in the news (Mokros & Aakhus, 2002). Seeking out additional information allows people to process what they have read or heard in the news, which, in turn, helps them to learn more effectively about and engage with issues (Yamamoto & Nah, 2018).

FORMAT FEATURES ACROSS TRADITIONAL AND SOCIAL MEDIA

The news media landscape has been dominated by traditional news media for a long time, but nowadays, citizens increasingly encounter and engage with news via social media (Bergström & Jervelycke Belfrage, 2018). Traditional and social media differ considerably in terms of format features, and these distinctions may potentially lead to differences in triggering cognitive and behavioral responses. Given powerful elements such as hashtags and the option to share (news) content, social media can reach large numbers of users, also beyond the audience of 'usual suspects' for an issue (Enli & Simonsen, 2018). Recognizing the inherent ability to reach a large and diverse public, social media may, nowadays, create more public awareness and concern about issues compared to traditional news media. In addition, characterized by social contexts and two-way communication affordances, the *social* element is unique to social media (Bechmann & Lomborg, 2013; Kim & Jung, 2017). People exposed to (news) content on social media are guided by interactive and conversational affordances of social media, such as commenting on or sharing content (Park & Gil de Zúñiga, 2020). Along with online activity, these affordances may influence people's willingness to take offline actions (Gil de Zúñiga et al., 2012; Lane et al., 2017). Although traditional news media have developed interactive elements as well, news presented in traditional news media is, in essence, characterized by one-

way, sender-driven communication (Weeks & Holbert, 2013). There is little incentive for further engagement with news, in the sense that traditional news media provide limited opportunities for people to interact with or respond to content, which may also limit offline activity resulting from news exposure (Gil de Zúñiga et al., 2013; Weeks & Holbert, 2013). Recognizing these inherent affordances of traditional and social media, we might expect that people exposed to news presented on social media are more aware of and concerned about issues, as well as more likely to engage in interpersonal discussion and information seeking about the issues than the ones exposed to news presented in traditional news media.

Previous research focusing on the question of whether the medium matters for learning-related outcomes—mainly conducted in the context of audiovisual media (e.g., television) versus textual media (e.g., newspaper)—provided mixed findings (e.g., Boukes & Vliegenthart, 2019; Chaffee et al., 1994; McLeod & McDonald, 1985; Norris & Sanders, 2003; Walma van der Molen & Van der Voort, 2000). Some of the inconsistencies between these studies may be ascribed to methodological issues, such as differences between survey and experimental research (Eveland et al., 2002). Media exposure is approached in a different way in these methodologies, where both approaches entail advantages and disadvantages in measuring the concept, primarily in terms of causality and external validity (see e.g., Moeller & De Vreese, 2019). The present study, therefore, relies on a comprehensive measure of media exposure by using both self-reported exposure to media in everyday life (from cross-sectional survey data) and manipulated exposure to media in a forced context (from experimental data), aiming to disentangle these effects.

To explore whether traditional and social media elicit cognitive and behavioral responses to a different extent, and what exactly in media exposure produces these effects, we pose the following research questions¹:

RQ1. To what extent does exposure to news presented via traditional versus social media affect cognitive (issue awareness, issue concern) and behavioral (interpersonal discussion, information seeking) responses?

¹ This study follows from a preregistered design. For this follow-up study, we did not preregister a priori expectations, and therefore the expectations are inherently exploratory.

RQ2. Do these responses differ across media exposure in everyday life (self-report measure in the survey) and media exposure in a forced context (stimulus in the experiment)?

DATA

We relied on data from an online survey-embedded experiment² examining the impact of news content in traditional and social media on the attitudes of Dutch citizens toward proposed pension reforms (see Chapter 3). This dataset includes information on participants' exposure to news via traditional versus social media and its effects on relevant cognitive and behavioral responses. The total number of participants was 762³, of which the ages ranged from 19 to 64 years old ($M = 50.90$, $SD = 11.14$). Females represented 45.54% of the sample; 43.18% of the participants were lower educated, and 56.82% were higher educated.

INDEPENDENT VARIABLES

Exposure to news via traditional and social media was operationalized in two ways: (1) exposure to news presented via traditional versus social media in everyday life (self-report measure in the survey) and (2) exposure to news presented via traditional versus social media in a forced context (stimulus in the experiment). Regarding the latter, participants were randomly exposed to either a newspaper article ($n = 365$) or a social media post ($n = 300$)⁴ about reforming the pension system, both specifically created for the original study. The content across these media types was kept constant. The newspaper articles were presented with a title, summary lead, and the text presented in two columns in the layout style of one of the most-read Dutch quality newspapers (*NRC Handelsblad*). The social media posts were presented in Facebook layout,

² This online survey-embedded experiment was preregistered at the Open Science Foundation (OSF): https://osf.io/r4ead/?view_only=fb55654be2f64284a56505fd44ba1777.

³ A sample of 832 Dutch participants was recruited by I&O Research. To ensure participants paid sufficient attention to the manipulated news item, minimum exposure time was set to at least five seconds (which was sufficient as it was a strong and clear manipulation of media type). This condition was not met by 70 participants, resulting in a final sample of 762 participants.

⁴ In the original study, 97 participants were randomly assigned to the control condition. This control condition, in which participants were exposed to a neutral online news article, is excluded in the current study.

including characteristic features such as an image, the number of comments, shares, and likes indicated with Facebook's iconic thumbs up and appropriate emoticons, and at the bottom, a bar with options to like, comment on or share the post. A complete overview of the stimuli can be found in Appendices A and B. Regarding the self-report measure in the survey, participants were asked to indicate how many days in a typical week they use certain media types to follow news, from 0 to 7 days per week, adapted from Boomgaarden et al. (2011). To withstand challenges with the validity and reliability of self-reports, we used a careful measure in which all participants were asked about their use of (1) television, (2) radio, (3) printed newspapers, (4) online newspapers, (5) online news websites and (6) social media, for news. In the response options, participants were presented with concrete categories referring to the number of days per week rather than subjective categories such as 'seldom', 'regularly', and 'often' (Andersen et al., 2016; De Vreese & Neijens, 2016). Drawing from participants' reports about their use of *printed* newspapers ($M = 3.10$, $SD = 2.61$) and social media ($M = 3.81$, $SD = 2.98$) for news, we produced a variable that represented participants' self-reported exposure to news via traditional versus social media in everyday life. By subtracting the score of newspaper use from the score of social media use, we constructed a 15-point scale ranging from -7 (sole preference for consuming news via printed newspapers in everyday life) to 7 (sole preference for consuming news via social media in everyday life; $M = .71$, $SD = 4.14$). Given that this measure represents the *relative* importance of traditional news media over social media and vice versa, participants' under- or overestimation of their media use in everyday life is less of a problem. Participants who over- or underestimate their use of printed newspapers probably also over- or underestimate their use of social media for news. This means that the relative importance is fairly accurate.

MEASURES

All items were measured on a 7-point scale ranging from strongly disagree to strongly agree.

ISSUE AWARENESS

To examine the cognitive response of issue awareness among participants, they were asked to indicate the extent to which they agree with two statements: "I am well aware of my expected income after retirement" and "I delve deeply into my own pension situation" ($M = 4.69$, $SD = 1.64$, $\alpha = .89$).

ISSUE CONCERN

Another relevant cognitive response relates to concern about the issue among participants, which was measured by asking to what extent they agreed with the following statement: "I am worried about the level of my pension" ($M = 4.29$, $SD = 1.64$).

INTERPERSONAL DISCUSSION

Beyond cognitive responses, participants also answered statements to measure behavioral responses. To examine the intention to engage in interpersonal discussion about the issue, participants were asked to indicate the extent of agreement with two statements: "By reading the news item at the beginning of this questionnaire, I am inclined to talk to friends, family, or colleagues about the Dutch pension system" and "By reading the news item at the beginning of this questionnaire, I am inclined to discuss the future of the Dutch pension system" ($M = 3.34$, $SD = 1.38$, $\alpha = .83$).

INFORMATION SEEKING

To measure the behavioral response to search for additional information about the issue, participants were presented with the following statement: "By reading the news item at the beginning of this questionnaire, I am inclined to search for more information about the Dutch pension system" ($M = 3.54$, $SD = 1.49$).

CONTROL VARIABLES

To provide a conservative test of the effects of self-reported and manipulated exposure to news via traditional versus social media, we included a set of control variables in the analyses. We controlled for gender, age, educational level, and income⁵, as previous research has shown that these variables impact pension-related outcomes (e.g., Hershey et al., 2010; Parlevliet, 2017). We also controlled for interest in news about political and current affairs⁶,

5 Age was measured in years ($M = 50.90$, $SD = 11.14$). Educational level ranged from 1 (no education or only primary education) to 7 (a Master's or Doctoral degree) ($M = 4.99$, $SD = 1.36$). Income, measured by the question "In which category does the total gross annual income of your household fall?", ranged from 1 (minimum and below middle income/up to €26,500) to 5 (twice the middle income or more/€66,000 or more) ($M = 3.54$, $SD = 1.26$). Participants who selected the "no answer" option were not included in the analyses.

6 We asked participants to rate their degree of interest in (a) politics and (b) current affairs and information on a 7-point scale ranging from not interested to extremely interested. A mean score was used to measure participants' interest in news about political and current affairs ($M = 5.21$, $SD = 1.29$, $\alpha = .74$).

as this may also impact the relevant behavioral and cognitive responses. In addition, we controlled for the content of the manipulated news items, in which two news frames about reforming the pension system were portrayed: A news frame stressing a pension system based on collective vs. individual responsibility as future proof and a news frame stressing the respective pension system as unjust vs. just (see Chapter 3). Both news frames were included as controls in the analyses.

ANALYSIS

To answer RQ1, multiple regression models were performed to assess the cognitive (issue awareness, issue concern) and behavioral (interpersonal discussion, information seeking) responses prompted by exposure to news presented via traditional versus social media. In these regression models, we included two different independent variables to answer RQ2: (1) media exposure in everyday life (self-report measure in the survey) and (2) media exposure in a forced context (stimulus in the experiment). Doing so allows us to control for the type of media (traditional or social media) to which participants were exposed in the experimental context while testing the effects of their self-reported exposure to media in everyday life.

RESULTS

ISSUE AWARENESS AND ISSUE CONCERN

Table 4.1 displays the results of two regression models predicting participants' awareness of and concern about the pension issue. As shown in Model 1, we found no significant effect of media type on issue awareness, which implies that there is no significant difference in the extent to which traditional and social media affect participants' issue awareness, neither in the manipulated setting nor in everyday life. Model 2 captures results regarding participants' issue concern. In terms of the manipulated exposure, we did not find a significant difference in the extent to which traditional and social media affect participants' issue concern. However, regarding the self-reported exposure to media in everyday life, we found a significant and positive effect: A one-unit increase in the preference for following news via social media in everyday life (relative to newspapers) leads to a .044 increase in the level of concern about the pension issue. This implies that citizens who are used to consuming news via social media are more concerned about the issue than those used to consuming news via traditional news media.

Table 4.1 Effects of Media Type on Cognitive Responses

	Issue awareness			Issue concern		
	Model 1			Model 2		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Constant	-.081	.454	.858	5.330	.528	.000
Manipulated media exposure						
Social media [0=Traditional news media]	.065	.118	.582	.078	.137	.569
Self-reported media exposure	-.018	.015	.219	.044	.017	.011
Gender [0=Male]	-.044	.126	.726	-.061	.147	.677
Age	.059	.006	.000	.002	.007	.792
Educational level	-.046	.047	.334	-.020	.055	.716
Income	.257	.052	.000	-.222	.060	.000
News interest	.211	.049	.000	-.053	.057	.349
News content: responsibility frame	-.152	.117	.195	.023	.136	.863
News content: justice frame	.185	.117	.113	.015	.136	.913
	<i>R</i> ² = .307			<i>R</i> ² = .051		
	<i>F</i> (9, 559) = 27.57			<i>F</i> (9, 559) = 3.32		
	<i>p</i> < .001			<i>p</i> < .001		
	<i>n</i> = 569			<i>n</i> = 569		

Note. Cell entries are unstandardized coefficients, standard errors, and *p*-values.

INTERPERSONAL DISCUSSION AND INFORMATION SEEKING

Table 4.2 presents the results of two regression models predicting participants' intention to engage in interpersonal discussion and information seeking about the issue. Model 3 captures results related to interpersonal discussion. In terms of the manipulated media exposure, we did not find a significant effect of media type on the intention to engage in interpersonal discussion. However, regarding media exposure in everyday life, we found a significant and positive effect: A one-unit increase in the preference for following news via social media in everyday life (relative to newspapers) leads to a .043 increase in the intention to engage in interpersonal discussion. This finding suggests that people who are used to consuming news via social media are more likely to engage in interpersonal discussion than those used to consuming news via traditional news media.

As presented in Model 4, we found similar results in terms of information seeking. Regarding the manipulated media exposure, we did not find a significant effect of media type on the intention to engage in information seeking. However, in the case of participants' everyday news exposure via traditional versus social media, we found a significant and positive effect: A one-unit increase in the preference for following news via social media in everyday life (relative to newspapers) leads to a .049 increase in participants' intention to engage in information-seeking behavior. This means that people who are used to consuming news via social media in their everyday life are more likely to engage in information seeking than the ones used to consuming news via traditional news media.

Table 4.2 Effects of Media Type on Behavioral Responses

	Interpersonal discussion			Information seeking		
	Model 3			Model 4		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Constant	2.737	.438	.000	3.674	.483	.000
Manipulated media exposure						
Social media [0=Traditional news media]	.143	.113	.209	.020	.125	.875
Self-reported media exposure	.043	.014	.002	.049	.016	.002
Gender [0=Male]	.190	.122	.119	.421	.134	.002
Age	.002	.006	.764	-.005	.006	.406
Educational level	-.144	.046	.002	-.180	.050	.000
Income	.063	.050	.212	.022	.055	.684
News interest	.166	.047	.000	.159	.052	.002
News content: responsibility frame	-.116	.113	.304	-.101	.124	.415
News content: justice frame	.031	.113	.780	-.167	.124	.180
	$R^2 = .056$			$R^2 = .070$		
	$F(9, 559) = 3.71$			$F(9, 559) = 4.64$		
	$p < .001$			$p < .001$		
	$n = 569$			$n = 569$		

Note. Cell entries are unstandardized coefficients, standard errors, and p-values.

DISCUSSION

Relying on both self-reported *and* manipulated media exposure measures, this study empirically explored cognitive and behavioral responses prompted by traditional versus social media. Findings reveal interesting differences: People exposed to news presented via social media are more concerned about the issue at hand and more likely to engage in interpersonal discussion and information seeking about it than those exposed to news presented via traditional news media. However, this effect of media type only holds for the *self-reported* exposure to traditional and social media in everyday life and not for the *manipulated* exposure in the experimental setting.

Our findings show that the responses triggered by social media are to some extent distinct from the responses induced by traditional news media, indicating the potential of social media in the process of (political) learning. Our study lends support to the idea that in consuming news via social media in everyday life, citizens seem to be driven to engage in interpersonal discussion and information seeking, which could help them process news content more carefully and eventually foster learning in the context of complex issues. This learning process is crucial to the functioning of a democratic society. From a methodological perspective, the findings are interesting, too, as they teach us the importance of media exposure in everyday life for cognitive and behavioral responses to news. The lack of finding significant differences in the manipulated context may perhaps be explained by the characteristics of the issue at hand. Given the far-off and uncertain nature of the pension issue (Debets et al., 2020; Krijnen et al., 2018), one-time exposure perhaps does not impact citizens' responses to the issue. Future experimental research should take into account the media type to which people are exposed to (the most) in everyday life, to increase the external validity.

This study is not without limitations. Most importantly, for the self-reported measures of media exposure, we cannot prove causality between media exposure and the cognitive and behavioral responses, nor can we rule out all alternative explanations. Although we provided a conservative test by including relevant control variables in the analyses, future research may address other relevant factors that could play a role in citizens' responses to traditional and social media, such as personality traits (e.g., extraversion, introversion). Future

research should also further explore *why* cognitive and behavioral responses differ across traditional and social media. Does the interactive nature of social media indeed play a role in explaining differences?