

## **Reinforcing spirals at work? Mutual influences between selective news exposure and ideological leaning**

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### **Abstract**

The growth of partisan news sources has raised concerns that people will increasingly select attitude-consistent information, which lead to increasing political polarization. Thus far, there is limited research on the *long-term* mutual influences between selective exposure and political attitudes. This study therefore investigates the reciprocal influences between selective exposure and political attitudes over several years, using a three-wave panel survey conducted in Sweden 2014–2016. More specifically, we analyse how ideological selective exposure to both traditional and online news media influences citizens' ideological leaning. Findings suggest that (1) people seek-out ideologically consistent print news and online news, and (2) such attitude-consistent news exposure reinforces citizens' ideological leaning over time. In practice, however, such reinforcement effects are hampered by (3) relatively low overall ideological selective exposure and a (4) significant degree of cross-cutting news exposure online. These findings are discussed in light of selective exposure theory and reinforcing spirals model.

**Keywords**

selective exposure, reinforcing spirals model, political polarization, political ideology

## **Introduction**

The transition from low choice to high-choice media environments has raised a number of concerns, mainly related to how increasing media choice influences selective exposure and how increasing selective exposure might influence political attitudes, beliefs, and behaviour. Most scholars agree that the greater media choice there is, the more selective people have to be, and in turn, the more important their preferences become (Luskin, 1990; Prior, 2007). This includes general preferences such as political interest (Strömbäck et al., 2013), but also political preferences (Iyengar & Hahn, 2009; Stroud, 2011).

From a democratic perspective, one key concern is related to how changes in media environments have made it easier for people to selectively seek out and expose themselves to attitude-consistent information and how that influences political polarization (Levendusky, 2013). Bennett and Iyengar, for example, claim that it is “not a coincidence that the increased availability of news sources has been accompanied by increasing political polarization” (2008, p. 720). In the worst case, selective exposure to attitude-consistent information might lead to increasing polarization, which in turn will lead to even more selective exposure to attitude-consistent information, in a mutually reinforcing spiral (Slater, 2007).

While there is little doubt that the supply of politically biased news and information sources has increased, particularly online, and that people prefer information that confirms their attitudes and beliefs (Hart et al., 2009), it is less clear whether selective exposure leads to increasing polarization (Arceneaux & Johnson, 2013; Levendusky, 2013; Prior, 2013; Trilling et al., 2017; Van Aelst et al., 2017). There are several reasons for this. First, while increasing media choice has made people’s preferences more important, situational determinants and the opportunity structures for selective exposure also matter (Skovsgaard et al., 2016). Second,

exposure to attitude-consistent and attitude-inconsistent information constitutes two separate dimensions, and evidence suggests that exposure to attitude-consistent information does not necessarily equal avoidance of attitude-inconsistent information (Garrett, 2009a, 2009b; Messing & Westwood, 2014). Third, people are likely to be incidentally exposed to information that run counter to their preferences when using offline and online news media as well as social networking sites (Bakshy et al., 2015; Knobloch-Westerwick, 2014). Fourth, people's political attitudes might often be quite stable, thus inhibiting strong effects of selective exposure.

Whether the concern that selective exposure will lead to political polarization is warranted is thus not clear, and evidence seems to be mixed (Prior, 2013; Van Aelst et al., 2017). One problem in this context is that most studies are based on cross-sectional surveys, experiments or two-wave panel surveys (e.g. Stroud, 2010), which are limited in terms of understanding the *mutual influence* between selective exposure and political attitudes over time. These methods cannot take the degree of stability versus change into account, and that holds true with respect to both selective exposure and political attitudes. To understand the process of selective exposure and its effects on political attitudes, multi-wave panel surveys covering a longer period are necessary, and these are rare.

Against this background, the purpose of this study is to investigate the mutual influences between selective exposure and political attitudes over several years. More specifically, we will focus on selective exposure to both traditional and online news media on the one hand, and political ideology on the other. Empirically, this study uses data from a three-wave panel study conducted in Sweden over a period of two years — enabling an analysis of reinforcing spirals between selective news media use and political ideology over an extended period of time. By comparing the effects of selective exposure to both traditional printed newspapers and online

news websites, we are able to assess how the rapidly changing media environment influences public opinion formation as news consumption increasingly occur online.

### **Increasing media choice, increasing selectivity**

Although selective exposure is far from new (Lazarsfeld et al., 1948; Freedman & Sears, 1965; Sears & Freedman, 1967), increasing media choice has spurred new interest in the antecedents and effects of selective exposure (Knobloch-Westerwick, 2014). When the number of media choices is too great for humans to overview, some mechanism has to be in place to help people select information. In that context, people's preferences are key. Simply put, the greater media choice there is, the more selective people have to be, and the more selective people have to be, the more important their preferences become (Luskin, 1990; Prior, 2007). This includes people's political preferences (Arceneaux & Johnson, 2013; Iyengar & Hahn, 2009; Stroud, 2011).

The concern that selective exposure will lead to political polarization is spurred by the fact that people tend to prefer information that is consistent with their already held attitudes, beliefs, and behaviours (Nickerson, 1998; Hart et al., 2009). This tendency can be explained by people's motivation to defend their existing beliefs, rather than to form accurate beliefs of reality, which "facilitates psychological stability and personal validation" (Hart et al., 2009, p. 583). In pre-digital, low-choice media environments where news media had almost total dominance of the supply of news and political information, this might have been less of a problem, as restrictions in the supply of information made it more difficult for people to selectively expose themselves to attitude-consistent information. In contemporary high-choice media environments, the situation is radically different.

Among political attitudes, the most fundamental of all is political ideology — i.e. people’s “set of beliefs about the proper order of society and how it can be achieved” (Jost et al., 2009, p. 309). Political ideology, often discussed in terms of liberalism and conservatism in the US, and in terms of the left–right continuum in Europe, functions as an overarching belief system that helps to organize people’s political attitudes. As such, it permeates people’s other political attitudes (Jost, 2006; Lewis-Beck et al., 2008; Oscarsson & Holmberg, 2016). Although there are different views with respect to whether the belief systems of the mass public constitute one or more dimensions, and whether ideological polarization among the US public has increased (Carmines et al., 2012; Thurber & Yoshinaka, 2015; Treier & Hillygus, 2009), there is a broad consensus that attitude strength influences the impact on other political attitudes and behaviours. In other words, the more people are leaning towards either end of the ideological continuum (ideological extremism), the greater the impact on other political attitudes can be expected to be. This should include the impact on how much and what kind of news and political information people expose themselves to.

Relevant in this context, however, is that exposure to attitude-consistent and attitude-inconsistent information constitute two separate dimensions, and that some people have stronger motivations than others to seek out attitude-consistent information (Garrett, 2009a, 2009b; Hart et al., 2009). People might thus have a preference for attitude-consistent information without necessarily avoiding information that is anticipated to be attitude-inconsistent. Garrett (2009a), for instance, found that while people have an aversion towards attitude-inconsistent information, that aversion is weaker than their preference for attitude-consistent information. He thus concludes that people “do not seek to exclude other perspectives from their political universe, and

there is little evidence that they will use the Internet to create echo chambers, devoid of other viewpoints” (Garrett, 2009a, p. 279).

Also relevant is that there are several situations where people might be incidentally exposed to attitude-inconsistent information. For example, cable television viewers might be exposed to news after watching entertainment (Prior, 2007), while Internet users are likely exposed to political news on portal sites when seeking entertainment (Kobayashi and Inamasu, 2015). Research also suggests that selective exposure to attitude-consistent information rarely accounts for a particularly large share of an individual’s entire news consumption or online browsing (Dvir-Gvirsman et al., 2016). Equally important is that another preference, political interest, is associated with both media use and political sophistication, including ideological commitment (Arceneaux & Johnson, 2013; Mullinix, 2015; Skovsgaard et al., 2016).

Consequentially, those who have stronger ideological commitment are more likely to expose themselves not only to attitude-consistent political news and information, but to all kinds of political news and information (Arceneaux & Johnson, 2013; Skovsgaard et al., 2016). Consistent with such a scenario, Garrett, Carnahan, and Lynch (2013), for example, found that Americans’ use of attitude-consistent information was positively correlated with their use of information that challenges their attitudes. At the same time, there might be differences across countries, as political systems as well as the importance of the ideological continuum differ across countries. In the Swedish case, there is no study investigating the impact of ideological strength on the likelihood that people are exposing themselves to online news or attitude-consistent and attitude-inconsistent information. Based on this, we ask the following research questions:

RQ1: To what extent is ideological leaning related to use of (a) attitude-consistent and (b) attitude-inconsistent printed newspapers?

RQ2: To what extent is ideological leaning related to use of (a) attitude-consistent and (b) attitude-inconsistent online news websites?

### **Selective exposure and belief reinforcement**

While the impact of ideological leaning on exposure to news and political information, including attitude-consistent and attitude-inconsistent information, is important, the major concern is related to how selective exposure influences subsequent political attitudes and polarization (Arceneaux & Johnson, 2013; Bennett & Iyengar, 2008; Jamieson & Cappella, 2008; Levendusky, 2013; Stroud, 2010, 2011; Tsfati & Nir, 2017). Stroud (2010, p. 570), for example, found that “congenial media exposure contributes to higher polarization”. Following the broader literature on media selectivity (Knobloch-Westerwick, 2014), and media effects, there are indeed reasons to expect such an outcome.

Theoretically, the most relevant model for studying the *process* of ideological selective exposure and its effects is the *reinforcing spirals model*, RSM (Slater, 2007, 2015). According to this model, “selective exposure to attitude-consistent content and media effects” should be seen as “two components of a larger dynamic process by which such social identities, attitudes and behaviors are maintained” (Slater, 2015, p. 371). There are two fundamental assumptions of RSM (Slater, 2015). First, media use is conceptualized as both a predictor and an outcome. Second, media use and effects are conceptualized as dynamic and ongoing. In the words of Slater (2007, p. 283), “Cognitive or behavioral outcomes of media use also influence media use, particularly when the cognitions or behaviors are related to personal or social identity”. RSM is therefore well suited for research on the *mutual influence* between political ideology — a key aspect of people’s political identity — and selective exposure over time.

From the perspective of RSM, people's selection of political news can be expected to influence their political attitudes (Knobloch-Westerwick, 2012), which in turn can be expected to influence their subsequent exposure to political information, and so on. To the extent that people selectively expose themselves to attitude-consistent and avoid attitude-inconsistent information, one possible implication of RSM is therefore that political attitudes and selective exposure not only become reinforced, but also more extreme over time (Slater, 2015). This might happen, for example, when people habitually use attitude-consistent blogs (Borah et al., 2015; Johnson et al., 2009), attitude-consistent news sources (Stroud, 2011), or follow like-minded individuals who share attitude-consistent information on social networking sites (Bakshy et al., 2015; Heatherly et al., 2016).

Although repeated exposure to attitude-consistent information can be expected to have reinforcing effects, several factors might inhibit a process of increasing polarization (Arceneaux & Johnson, 2015, p. 321; Slater, 2015; Smith et al., 2008). First, those who expose themselves to attitude-consistent information might have strong opinions to begin with — i.e. opinions that do not change much over time (Druckman et al., 2012). Second, repeated exposure to the same type of information might de-sensitize people and influence the impact of the information rather than the attitude. Fischer et al. (2011), for example, showed in an experiment that selection of attitude-consistent information weakens over time. Third, and as noted earlier, although people tend to prefer attitude-consistent information, their avoidance of attitude-inconsistent information is not necessarily equally strong (Garrett, 2009a, 2009b; Hart et al., 2009). Regardless of motivation, most people are exposed to both attitude-consistent and attitude-inconsistent information, particularly when information is abundant or perceived as useful (Hart et al., 2009; Sears & Freedman, 1967).

While a number of studies, as well as the most extreme variant of RSM, suggest that selective exposure to attitude-consistent information will reinforce people's pre-existing ideological leaning — which in turn influences subsequent selective exposure — the extent to which this actually happens and to which selective exposure leads to political polarization is not clear. Important in this context is that there are yet few studies that track the mutual influence between political attitudes and media use *over longer periods of time*, which is necessary to unfold if reinforcing spirals are at work.

Nevertheless, here we will take the concern that selective exposure leads to polarization as the starting point. More specifically, we analyse selective use of two forms of news media: traditional printed newspapers and online news websites — both with distinct political profiles along the left-right ideological spectrum. Following RSM and research showing polarizing effects of selective exposure to attitude-consistent information (Levendusky, 2013; Slater, 2007, 2015, Stroud, 2010, 2011), we expect that exposure to *attitude-consistent* news media will reinforce while exposure to *attitude-inconsistent* news media will weaken people's pre-existing ideological leaning.

H1: Use of attitude-consistent newspapers reinforces pre-existing ideological leaning (H1a), while use of attitude-inconsistent newspapers weakens pre-existing ideological leaning (H1b).

H2: Use of attitude-consistent online news reinforces pre-existing ideological leaning (H2a), while use of attitude-inconsistent newspapers weakens pre-existing ideological leaning (H2b).

### **Data and methods**

To answer our research questions and test our hypotheses, we draw upon a three-wave panel survey conducted in Sweden between 2014 and 2016. Compared to many other panel surveys, this research design enables analyses of the long-term effects of selective news media use on citizens.

### **Sample**

Respondents were drawn using stratified probability sampling from a database of about 35,000 citizens from [blinded] web pool of web survey participants. Respondents were recruited via random digit dialling, and approximately 12% of those initially contacted agreed to be part of the pool. 7,652 respondents were invited to participate the first wave of the study in November 2014 (November 13–25). The second wave was conducted one year later (November 12–24, 2015), and the third and final wave two years after the first wave (November 10–22, 2016). Those who completed the survey (51%) in the first wave were invited to participate in subsequent waves. 2,254 respondents participated in all three waves, yielding a total cooperation rate of 29 percent.

### **Measures**

Our measure of *political ideology* is based on a standard left-right ideology survey item, where respondents' place themselves on a 11-point scale from 0 (clearly to the left) through 5 (neither to the left nor right) to 10 (clearly to the right). Very similar items have been used in previous election studies, the European Social Survey as well as in research on media effects and selective exposure (see Dvir-Gvirsman et al., 2016).

Taken together, the study uses four different measures of *news media use*. Since the Swedish media systems lack clear partisan news outlets typically found in the American

broadcasting system (Bennett & Iyengar, 2008; Skovsgaard et al., 2016), this study focuses on the opportunity structures for ideological selective exposure that exist in the Swedish media environment. In particular, we distinguish between traditional daily newspapers and online news websites, each with distinct political profiles that allow for ideological selective exposure. Although these news sources provide opportunities for political selective exposure, they also differ in important ways. With respect to daily newspapers, we focus on two outlets with clear historic political profiles on their *editorial pages*, although none of them can be considered partisan with respect to their news coverage: *Aftonbladet* (left-wing) and *Svenska Dagbladet* (right-wing). Thus, while the editorial pages provide clear political perspectives on political news and current affairs, the news sections strive for impartiality and journalistic objectivity. Use of the print versions of these newspapers was measured separately based on the following survey item: “How often did you in the past week read the following newspapers”, with response categories ranging from 1 (Daily) to 6 (Never). In addition, two of the most prominent alternative news websites with distinct political profiles are included: *Dagens ETC* (left-wing) and *Avpixlat* (right-wing). While *Dagens ETC* can be described as a left-wing, general news site, *Avpixlat* can be described as a more extreme right-wing website, focusing in particular on issues related to immigration (Holt, 2016). Use of these online sources was measured separately based on the following survey item: “How often do you typically visit the following news websites on the Internet?”, with response categories ranging from 1 (Daily) to 6 (Never).

In addition, several control variables are used in the analyses. Apart from background variables — gender, age and education — a number of potential confounders will be accounted for. First, *political interest* is measured by the following item: “In general, how interested are you in politics?”, with response categories ranging from 1 (Not interested at all) to 4 (Very

interested). Second, a set of general news media use variables are included, tapping the extent to which citizens use printed newspapers, television news and online news websites to “follow news about politics”. In particular, respondents were asked “How often do you follow news about politics by...”, where respondents indicated their frequency of use of different media separately; (1) by watching television news, (2) by reading print newspapers, and (3) by visiting online news websites. The response categories ranged from 1 (Daily), 2 (5-6 days a week), 3 (3-4 days a week), 4 (1-2 days a week), 5 (More seldom) to 6 (Never).

### **Data analysis**

In order to test our hypotheses and make full use of the three-wave panel design, we estimate a series of autoregressive cross-lagged models using structural equation modeling (Acock, 2013; Finkel, 1995). The basic setup of these cross-lagged models is fairly simple. By controlling for lagged values of each variable, we are able to analyze how each predictor is related in *changes* in the dependent variables over time. Lagged dependent variables also serve as a “catch-all” proxies for unmeasured omitted variables at each wave of the panel — thereby providing a much stronger set of controls than regression models on cross-sectional data. However, lagged dependent variables are no final solution to the problem of causal inference, especially in the presence of relatively long time lags. Since lagged dependent variables only serve as “catch-all” controls up until the previous wave of the panel, we also include additional control variables to assess the sensitivity of our findings.

### **Results**

Before presenting the findings of our cross-lagged panel models, Figure 1 presents the relationship between ideological leaning and exposure to left-wing and right-wing news media outlets, based on the first wave of the panel. Taken together, there is clear evidence of ideological selective exposure with respect to both printed newspapers and online news websites; right-wing citizens are more likely to use right-wing media, while the opposite is true for left-wing citizens.

When it comes to print newspapers, 12% of all respondents say they read the left-wing daily *Aftonbladet* at least 1 day/week. This number is 15% among left-wing respondents and 7% among right-wing respondents. The right-wing daily *Svenska Dagbladet* is read at least once a week by 8% of all respondents, 4% of left-wing respondents but 13% of right-wing respondents. The pattern is very similar with respect to online news websites. Six percent of the entire sample seek-out news from the left-wing website *Dagens ETC*, but this number increases to 16% among left-wing respondents and drops to only 2% among people with a right-wing ideological leaning. Finally, the extreme right-wing website *Avpixlat* is used by 5% of the general population, by 2% of left-wing citizens and by 9% of right-wing respondents.

A look at the bivariate correlations between political ideology and news media use further illustrates the presence of systematic patterns of ideological news selection. The left-right ideological scale correlates negatively with use of the left-wing newspaper (Pearson's  $r=-0.09$ ,  $p<0.001$ ) and the left-wing news website ( $r=-0.23$ ,  $p<0.001$ ), and positively with the right-wing newspaper ( $r=0.12$ ,  $p<0.001$ ) and extreme right-wing website ( $r=0.13$ ,  $p<0.001$ ). Importantly, however, there are also positive correlations between use of left-wing and right-wing news media. Such *cross-cutting* media use is evident among users of printed newspapers ( $r=0.12$ ,  $p<0.001$ ), and even more prominently in the online news environment ( $r=0.18$ ,  $p<0.001$ ). Thus, even though there is evidence of ideological selective exposure, citizens who use left-wing news

sources are in fact more likely to also use right-wing sources — and this is particularly striking among users of online news websites.

\*\*\*FIGURE 1 ABOUT HERE\*\*\*

Figure 2 presents findings from our main cross-lagged model speaking to the reciprocal relationship between news media use and political ideology over time. Since some of the news media use variables are skewed, we created relative exposure measures, with higher values indicating a relatively higher dosage of right-wing media usage. Similarly, low values correspond to relatively high dosage of left-wing media usage. Apart from the variables displayed in Figure 2, each equation also controls for age, gender and education (see Table 1 for full model). Taken together, the model fits the data well ( $\chi^2=42.895$ ,  $df=38$ ;  $RMSEA=0.023$ ;  $CFI=0.99$ )

Overall, the findings reveal a pattern of reciprocal effects. Ideology has an effect on *changes* in attitude consistent newspaper reading ( $b=0.02$ ,  $p<0.05$ ) as well as online news ( $b=0.09$ ,  $p<0.001$ ), controlling for lagged values of the dependent variables. That is, citizens with a stronger right-wing ideological leaning are more likely to seek-out right-wing news media one year later. The opposite is true for citizens with a stronger left-wing ideological leaning. At the same time, such news exposure also seems to influence ideology. Reading attitude-consistent newspapers ( $b=0.01$ ,  $p<0.05$ ) as well as online news websites ( $b=0.04$ ,  $p<0.001$ ) has reinforcing effects on ideology. This pattern lend support to the presence of reinforcing spirals over time, whereby ideology influences selective news media use, which in turn feeds back into ideology.

The findings in Figure 2 also seem to indicate that the spiral is somewhat stronger with respect to online news media use than newspaper reading — both when it comes to selection

effects and media effects. A formal statistical test of difference between coefficients gives further evidence for such differences. Both the selection effects ( $\chi^2=31.82$ ,  $p<0.001$ ) and the media effects ( $\chi^2=10.57$ ,  $p<0.01$ ) differ significantly between newspapers and online news websites. Reinforcing spirals thus appear to play out somewhat differently offline and online.

[FIGURE 2 ABOUT HERE]

[TABLE 1 ABOUT HERE]

To assess the sensitivity of our findings, Table 1 also presents findings from a second SEM model. Here we include four additional control variables to each equation: general use of online news websites, newspapers, television news as well as political interest. This model also performs well ( $\chi^2=74.265$ ,  $df=38$ ;  $RMSEA=0.016$ ;  $CFI=0.99$ ). Adding these control variables changes nothing with respect to the variables of primary interest. Ideology still exerts an impact on attitude-consistent newspaper reading ( $b=0.02$ ,  $p<0.05$ ) as well as online news media use ( $b=0.09$ ,  $p<0.001$ ), whereas both attitude-consistent newspaper reading ( $b=0.01$ ,  $p<0.05$ ) and online news website usage ( $b=0.04$ ,  $p<0.001$ ) in turn influences ideology.

### **Discussion and conclusion**

Amidst concerns that politically motivated selective exposure might lead to increasing political polarization, the purpose of this study was to investigate the mutual influences between selective exposure and political attitudes. Theoretically building on the reinforcing spirals model (Slater, 2007, 2015), and focusing on the use of both traditional print newspaper and online news websites on the one hand, and political ideology on the other, we used a three-wave panel survey

conducted in Sweden over a period of two years to study both the extent to which selective exposure occurs as well as the mutual influences between selective exposure and ideological leaning.

In sum, the findings reveal that people tend to seek-out ideologically consistent news both in their use of print newspapers (RQ1) and online news websites (RQ2). This does not mean, however, that they are avoiding attitude-inconsistent news. Rather, particularly in the online environment, use of left-wing websites is positively correlated with usage of right-wing websites — suggesting a pattern of cross-cutting exposure more than isolated echo-chambers. Moreover, the findings also lend support to our two hypotheses on reinforcing spirals: A relatively higher use of attitude-consistent newspaper reading (H1) and attitude-consistent online news (H2) had additional (reinforcing) effects on citizens' ideological leaning. That is, all else equal, people who seek-out left-wing news tend to develop a stronger left-wing ideological leaning over time, while the opposite occurs among those who seek-out right-wing news. The results presented here also indicate that these effects were stronger and more pronounced in the online environment compared to printed newspapers. In practice, however, such polarization effects may be largely hampered by the cross-cutting character of online news exposure. Citizens who are frequent users of online news from one side of the ideological spectrum, also tend to be more frequent consumers of news from the other political side.

These findings have several important implications and contribute to research on selective exposure and reinforcing spirals in several ways. In particular, by putting the assumed mutual influences between selective exposure and ideological reinforcement to a longitudinal test using several waves of panel data stretching over two years, we were able to confront some fundamental assumptions of the reinforcing spirals model. Most importantly, the extended time

span of the research design not only enabled analyses of the more *long-term* mutual influences between selective exposure and media effects, but also made it possible to study individual-level variables that are typically very stable in the short-run. Only by employing long-term research designs are we able to identify the more long-term reciprocal relations suggested by the reinforcing spirals model.

One of those variables considered to be highly stable over time is political ideology. In fact, political ideology could certainly be considered exactly the type of identity-relevant attitudes at the heart of Slater's reinforcing spirals theory (2007; 2015), with significant consequences for a wide range of more specific policy-related opinions (Jost, Federico & Napier, 2009; Oscarsson & Holmberg, 2016). Precisely because of its status as an identity-relevant attitude, political ideology is a highly stable individual-level characteristic among the adult population (Feldman, 2013). The fact that we found effects of selective news media use on such an identity-relevant attitude, even though the effects may be substantively small, is important, and suggests that media use may well be part of a continuous long-term process of identity formation and update that occurs throughout the life span — but that such processes are visible only in the long run. At the same time, if effects on ideology take place, there may be even stronger influences on other outcomes such as more specific policy opinions or perceptions.

Furthermore, the findings suggest stronger effects with respect to online news compared to printed newspapers. Put differently, the reinforcing spiral appear to play-out more strongly online than offline — even though effects pointed in the same direction. There may be various reasons for this. One is the obvious differences between the news sources. The “political profile” of the Swedish print newspapers are visible primarily on the editorial pages, while the rest of the newspaper strives for objectivity and impartiality. In that sense, political preferences may be a

rather marginal motivation for people to read these newspapers. Most readers may simply turn to these outlets for other reasons. On the other hand, the online news websites studied here aim at providing “alternative” political news and perspectives than traditional news media. As such, seeking an alternative point of view may be a more crucial motivation for using these online news sources. At the same time, it is important to remember that people who are exposed to attitude-consistent news and content may also be more exposed to attitude-inconsistent content — and these two opposing forces can counteract each other, contributing to less ideological extremity and less polarization. This interpretation is supported by our data showing positive correlations between attitude-consistent and attitude-inconsistent online media use. Also, previous research indicates that although individuals generally *select* attitude-consistent information when given the option, they are generally *exposed* to attitude-inconsistent information as well (Garrett et al., 2013; Hart et al., 2009; Kobayashi & Ikeda, 2009; Messing & Westwood, 2014; Sears & Freedman, 1967).

Finally, a number of limitations of the current study are worth highlighting. First, reliance on self-reported media exposure measures is not optimal, as these may be biased and potentially vulnerable to social desirability (Dvir-Gvirsman et al., 2016; Prior, 2009). By asking about use of specific news outlets however, we follow an increasing number of studies urging media effects research to move beyond more general measures that may cause measurement error. Second, we relied on a single-item measure of political ideology which, although standard in political science, may be more sensitive to measurement error than multi-item measures. Therefore, future research would gain from elaboration of more comprehensive measures of political ideology. Third, although our unique multi-wave panel data provide leverage when it comes to analyzing reciprocal relations over time, these data are no solution to the problem of causal inference.

Therefore, future research should therefore seek to combine longitudinal designs with more controlled conditions, especially when it comes to more specific political attitudes.

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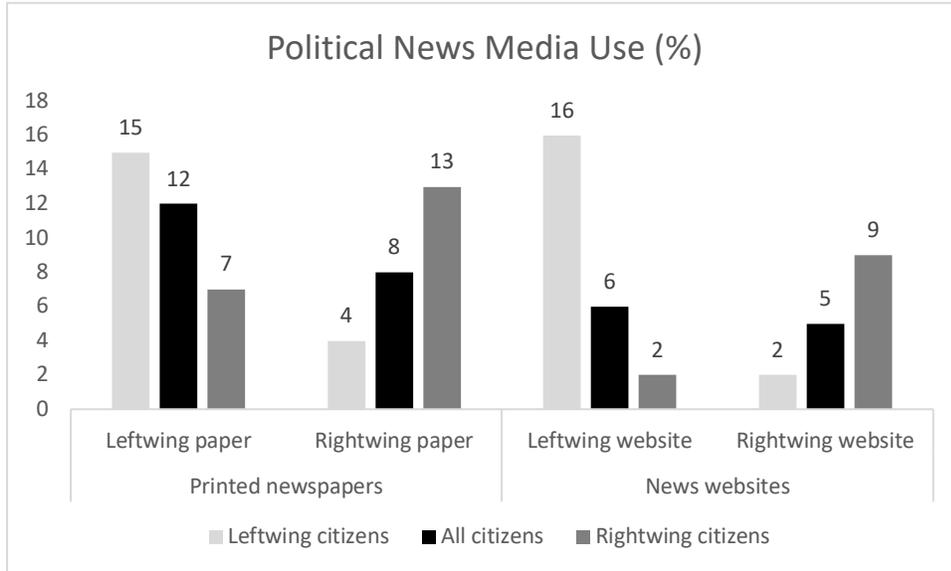
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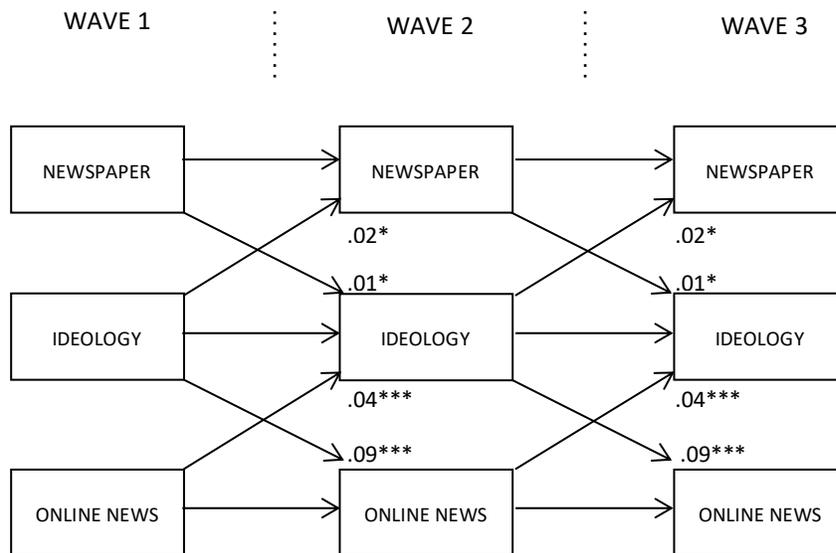
**Figures**

**Figure 1. Ideological selective exposure.**



*Note:* Bars represent the share (%) of respondents who uses left-wing and right-wing news media at least 1 day/week, based on data from panel wave 1. Classification of left-wing and right-wing respondents are based on scores in the 11-point ideology scale (0-10), where respondents with values 0-2 classified as left-wing (N=899) while respondents with values 8-10 classified as right-wing (N=842). The total number of respondents, N=3,861.

**Figure 2. Cross-lagged effects between political ideology and news media use.**



*Note:* N=3861. Estimates are standardized path coefficients. Correlations between all exogenous variables as well as between error terms at each panel wave allowed, though not displayed in the figure. All equations control for gender, age and education (see full model in Table 1).

Model fit:  $\chi^2(14) = 42.895$ , RMSEA = 0.023; CFI = 0.998 \*p < .05. \*\*p < .01. \*\*\*p < .001.

**Tables**

**Table 1. Cross-lagged models of ideology and news media use (standardized path coefficients).**

	Model 1 (Main model)		Model 2 (Robustness Model)	
	Wave 1-Wave 2	Wave 2-Wave 3	Wave 1-Wave 2	Wave 2-Wave 3
<u>Ideology</u>				
Newspaper	.01* (.01)	.01* (.01)	.01* (.01)	.01* (.01)
Online news	.04*** (.01)	.05*** (.01)	.04*** (.01)	.04*** (.01)
Age	.01 (.01)	.01 (.01)	.01 (.01)	.01 (.01)
Gender	.02 (.01)	-.01 (.01)	.02 (.01)	-.00 (.01)
Medium education	.03 (.02)	-.00 (.02)	.03 (.02)	-.00 (.02)
High education	.02 (.02)	-.01 (.02)	.02 (.02)	.01 (.02)
Ideology <sub>w1</sub>	.87*** (.00)	.37*** (.02)	.87*** (.00)	.37*** (.02)
Ideology <sub>w2</sub>	-	.56*** (.02)	-	.56*** (.02)
General online news	-	-	.01 (.01)	.02 (.01)
General newspaper	-	-	-.00 (.01)	-.01 (.01)
General TV news	-	-	.01 (.01)	.01 (.01)
Political interest	-	-	-.01 (.01)	-.02* (.01)
<u>Online News</u>				
Ideology	.09*** (.01)	.09*** (.01)	.09*** (.01)	.09*** (.01)
Age	-.03* (.01)	-.01 (.01)	-.03* (.01)	-.02 (.02)
Gender	.00 (.01)	-.02 (.01)	.00 (.01)	-.02 (.01)
Medium education	.03 (.02)	.01 (.02)	.03 (.02)	.01 (.02)
High education	.05* (.02)	.06* (.02)	.05* (.02)	.06* (.02)
Online news <sub>sw1</sub>	.73*** (.01)	.24*** (.02)	.73*** (.01)	.23*** (.02)
Online news <sub>sw2</sub>	-	.58*** (.02)	-	.57*** (.02)
General online news	-	-	-.01 (.01)	.01 (.01)
General newspaper	-	-	-.00 (.01)	.02 (.01)
General TV news	-	-	-.00 (.01)	-.01 (.01)
Political interest	-	-	.02 (.01)	.01 (.01)
<u>Newspaper</u>				
Ideology	.02* (.01)	.02* (.01)	.02* (.01)	.09*** (.01)
Age	-.02 (.01)	-.02 (.01)	-.00 (.02)	-.02 (.02)
Gender	-.02 (.01)	-.00 (.01)	-.02 (.01)	-.02 (.01)
Medium education	-.02 (.02)	-.00 (.03)	-.02 (.02)	.01 (.02)
High education	-.06* (.03)	-.05 (.03)	-.05* (.03)	.06* (.02)
Newspaper <sub>rw1</sub>	.70*** (.01)	.34*** (.02)	.70*** (.01)	.23*** (.02)
Newspaper <sub>rw2</sub>	-	.44*** (.02)	-	.57*** (.02)
General online news	-	-	-.00 (.01)	-.00 (.01)
General newspaper	-	-	-.03 (.02)	-.03 (.02)
General TV news	-	-	-.00 (.02)	.00 (.02)
Political interest	-	-	-.02 (.01)	.02 (.01)
$\chi^2$ (df)	42.895 (14)		74.265	
RMSEA	0.023		0.016	
CFI	0.998		0.998	
N	3,861		3,861	

*Note:* Results from cross-lagged structural equation models. Standardized path coefficients with standard errors in parentheses. Correlations between all exogenous variables as well as residuals from each panel wave allowed. Equality constraints imposed cross-lagged effects. \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.