The Combined Effects of Mass Media and Social Media on Political Perceptions and Preferences

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Changes in political perceptions and preferences may result from the combined effects of news from various media. Estimating these combined effects requires the best possible, albeit different, measures of news obtained from self-selected mass media and social media that can be linked to panel survey data concerning perceptions and preferences. For the 2017 Dutch national elections, such data is available. Political perceptions and preferences are affected by news statements in self-selected mass media on issue positions, support and criticism, real world conditions and success and failure, in accordance with the theories on agenda setting and issue ownership, social identity, retrospective voting and bandwagon effects, respectively. Combined effects emerge because many people use both mass media and social media. The latter do more than just reinforce predispositions. Social media also have a mere exposure effect, and a multistep flow effect that amplifies news about party successes and failures from self-selected mass media.

Keywords: election campaigns, mass media, social media, partisan selective exposure, news effects

doi:10.1093/joc/jqz038

Contemporary election campaigns are hard to imagine without voters being exposed to news from mass media such as radio and TV, and newer media such as Facebook and Twitter. The current study goes beyond the previous literature by directly addressing the research question: how are the perceptions and preferences of voters affected by self-selected news content from social media and mass media? Research into the combined effects of news from social media and classic media is still new for two major reasons.

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First, the effects of exposure to social media content were prematurely dismissed as spurious correlations. Voters in a hybrid high-choice media environment with an abundance of TV cable stations, websites and social media messages would expose themselves primarily to partisan media that would reinforce their political beliefs (Bennett & Nyergar, 2008; Dilliplane, 2014; Knobloch-Westerwick, 2012; Stroud, 2010): ‘As media audiences devolve into smaller, like-minded subsets of the electorate, it becomes less likely that media messages will do anything other than reinforce prior predispositions …’ (Bennett & Nyergar, 2008, p. 724). Reinforcement effects on partisans should not be equated with minimal effects (Holbert, Garrett, & Gleason, 2010) and are by themselves not yet proof of the absence of other effects (Dilliplane, 2014), most notably effects on activation–mobilizing voters to go to the ballot box to vote for a specific party—and conversion—persuading voters to vote for a different party (Lazarsfeld, Berelson, & Gaudet, 1948). Recent studies of media diets (Dubois & Blank, 2018; Newman, Fletcher, Kalogeropoulos, Levy, & Nielsen, 2018; Prior, 2013; Trilling & Schoenbach, 2015; Trilling, van Klingeren, & Tsfati, 2017) have shown that partisan selective exposure is an exception in a hybrid media system with news omnivores, who expose themselves to both mass media and social media, and news avoiders, who do not follow any medium to obtain political news. Media diet studies showed the effects of social media use on political participation (Strömbäck, Falasca, & Kruikemeier, 2018; Valeriani & Vaccari, 2016), but not on political knowledge (Lee & Xenos, 2019; Shehata, 2018; Strömbäck et al., 2018). The current study extends this line of research by analyzing the effects of the specific content to which social media users with specific media diets are exposed on political perceptions and preferences.

Second, the lack of uniform measurement tools to measure self-selected classical media content and self-selected social media content has deterred researchers from using the best possible measurement tools for each to combine their effects. In the case of newspapers and TV, detailed content analysis data about news content in various media outlets can be linked to respondents in panel surveys based on measures of their exposure to each of these outlets (Scharlow & Bachh, 2017). This enables an explanation of political perceptions and preferences based on four theories that speak about different news statements from ‘the rich’ informational domain (Neuman, 2018, p. 369) of messages that media offer: agenda setting and issue ownership, social identity theory and balance theory, theories of retrospective voting, and theories of herding and bandwagon effects (Kleinnijenhuis, Van Hoof, Oegema & De Ridder, 2007; hypotheses H1-H4 below). In the case of social media, we have to rely on self-reports, since digital tracing technologies have not yet been developed that would enable both measuring the use of social media content by respondents from representative samples of voters, and automatically scraping and coding this content (van Atteveldt & Peng, 2018). A new measure of the presence or ‘visibility’ of parties in self-selected social media is presented that apparently does not overrate exposure to political news excessively. We asked respondents in each wave of a multiple wave panel survey which politicians they encountered during the prior two weeks on Facebook and Twitter. This party-specific measure of social media
exposure allows the estimation of three different social media effects in relation to the effects of the content of mass media (hypothesis H5-H7). First, this measure makes it possible to determine whether the visibility of political parties on social media results in a mere exposure effect on voters. Visibility in the news has been identified in many studies as a key determinant of voter preferences (Blais, Gidengil, Fournier, & Nevitte, 2009; Hopmann, Vliegenthart, De Vreese, & Albaek, 2010), next to the tone of the news and more specific news frames that must remain unmeasured in the case of social media. Next, this measure makes it possible to estimate the multistep effect of the content of self-selected media through extra social media exposure to a party. This expected multistep flow effect means that influencers in social media environments reinforce the effects of opinions in self-selected news from mass media (Hilbert, Vásquez, Halpern, Valenzuela, & Arriagada, 2017; Weimann, 2017), just as opinion leaders in social environments reinforce the effects of opinions in self-selected news from mass media (Katz & Lazarsfeld, 1955). Third, this measure allows for the estimation of the reinforcement effect in which the visibility of the party is especially important for partisans. Thereby, the core reinforcement hypothesis in the literature about media effects in a hybrid high-choice media environment can be confirmed (Bennett & Iyengar, 2008; Hansen & Kosiara-Pedersen, 2017; Knobloch-Westerwick, 2012; Stroud, 2010), but the other effects that turn up are incompatible with a new era of minimal effects. Thus, the current study enables an assessment of the combined effects of mass media and social media content.

From News Content to Perceptions and Preferences

Hypotheses H1 to H4, which are detailed below, stem from four different theories about the influence of different types of news statements on attracting voters: statements on issue positions of parties, on political support and criticism, on real world conditions, and on the successes and failures of parties (Kleinnijenhuis et al., 2007). Different theories should be combined to account for the effects of visibility in the news and the positive or negative tone of the news (Fan, 1996; Hopmann et al., 2010), depending on whether effects of news statements are considered on the successes or failures that are attributed to parties, e.g., based on the polls (Schuck, de Vreese, & Stolwijk, 2016), of news statements about positive or negative real world conditions (Sanders & Gavin, 2004; Soroka, 2006), or of news statements expressing an editorial slant (Druckman & Parkin, 2005). The theory of agenda setting with regard to issue statements in the media, which still applies in a hybrid high-choice media environment (Djerf-Pierre & Shehata, 2017; Falasca, 2018; Shehata & Strömbäck, 2013), needs to be extended to the domain of party preferences by incorporating domain-specific theories such as issue ownership (Walgrave, Lefevere, & Tresch, 2012). The fourfold classification of news statements that underlies this study differs in two ways from the threefold acclaims-attacks-defenses classification of catalogue to classify different statements in election campaigns (Benoit, 2007). For three news types the use of not only the most common polarity (acclaiming positive real world conditions,
attacking another party, defending/re-emphasizing issue positions) is included but also the use of the least common polarity (emphasizing negative developments, supporting another party, shifting to a different issue position or another issue) is included. Statements on the success and failure of parties are also included.

**News statements on issue positions—agenda setting of owned issues.**

Issue news about the plans and ideological positions of candidates is crucial to enabling prospective voting (Benoit, 2006). Agenda setting theory maintains that the issues which dominate the media will become the most salient issues for voters (McCombs & Shaw, 1972; Sheafer & Weimann, 2005; Shehata & Strömbäck, 2013). To explain political perceptions and political preferences, agenda setting must be complemented with issue ownership theory (Budge & Farlie, 1983), which quite successfully predicts the vote share of a party at the aggregate level from increased campaign attention for ‘owned’ issues. However, increased news attention regarding an issue such as immigration, which is ‘owned’ by an anti-immigrant party, may still prompt a small percentage of voters to vote for a pro-refugee party. This entails at the level of individual voters that emphasizing a specific issue in the news will attract voters to a specific party if they *associate* that party with the issue and moreover *agree* with its issue positions (Walgrave et al., 2012; Lachat, 2014; Walgrave, Lefevere, & Tresch, 2019).

**Hypothesis H1.** The more attention that self-selected media give to a party’s positions on owned issues with which a voter agrees, the more favorable the perception of party performance/party leader performance will become.

**News statements on support and criticism—social identity theory and balance theory.**

News statements on support and criticism express endorsements, compromise and cooperation or attacks and conflict between actors. The theory of social identity suggests, similar to the older balance theory, that the media portrayal of the sides from which a party receives support and criticism matters to voters (Price, 1989). Support and criticism for a party or party candidate from self-selected media in editorials and opinionated news items or by talk show hosts are expected to lead to positive or negative perceptions, respectively, of the performance of that party or candidate (Druckman & Parkin, 2005). Similarly, support and criticism attributed to societal actors—e.g., firms, unions, churches, think tanks, celebrities, domain experts, interest groups—is expected to result in corresponding performance perceptions. Societal actors who support editorial stances may receive a disproportional amount of ‘synchronized’ attention, but this is not always the case (Adam et al., 2019). Criticisms and attacks from other parties are, in contrast, expected to lead to reversed effects. They activate the support of latent voters (Shah, Watts, Domke, & Fan, 2002), especially if the attacked party uses the attacks to defend, acclaim or re-emphasize, its positions on owned issues (Kleinnijenhuis et al., 2007). Thus, the expected effects...
of news statements on support and criticism depend on whether the medium itself, a societal actor, or a partisan actor provides support or criticism.

Hypothesis H2a. The more support and the less criticism that there is for a party that comes from societal actors according to self-selected media or from self-selected media themselves, the more favorable the perception of party performance will become.

Hypothesis H2b. The less support and the more criticism that there is from other parties according to self-selected media, the more favorable the perception of party performance will become.

News statements on real world issue conditions—retrospective voting.

News on real world conditions is news about the increase or decrease, rise or fall in issue variables such as unemployment, immigration, or health care insurance premiums. The theory of retrospective voting predicts that, whether voters perceive improving or deteriorating real world conditions and whether they vote for the incumbent government coalition or for the opposition, depends on whether real world conditions improved or deteriorated according to the media (Benoit, 2006; Hetherington, 1996; Sanders & Gavin, 2004).

Hypothesis H3. The more real world conditions improve according to self-selected media, the more favorable the perception of the performance of an incumbent party will become, and vice versa for opposition parties.

News statements on success and failure—bandwagon, herding effects.

News about success and failure, which includes news about gains and losses, the rise and fall of political parties and party leaders, political momentum and the horse race, is crucial to enabling voters to choose the side of either the expected losers or the expected winners. Attributions of success and failure in the news can be based on opinion polls, election debates, parliamentary debates, international prestige, sheer wishful thinking, and so forth. Attributions of success and failure involve point-of-reference framing (Chong & Druckman, 2007; McKenzie & Nelson, 2003) since the point of reference for a party’s performance is arbitrary: the previous elections, the previous polls, a competitor’s success, political scandals, etc. The bandwagon effect of news on success versus failure maintains that becoming associated with successes, gains and momentum will accrue votes, although not from highly involved latent sympathizers with the losing side to whom the underdog effect may apply (Geers, Bos, & de Vreese, 2018; Lazarsfeld et al., 1948; Nadeau, Cloutier, Van der Meer & Guay, 1993; Schmitt-Beck, 1996; Schuck et al., 2016; van der Meer, Hakhverdian, & Aaldering, 2016).

Hypothesis H4. The more success and the less failure that is attributed to a party in self-selected media, the more favorable the perception of party performance will become.
Visibility, Reinforcement and Multistep Flow Effects of Social Media

The hypotheses H5-H7 below entail that news from self-selected social media environments—Facebook, Twitter—may foster not only reinforcement—strengthening—of the ties of current voters to the party but also additional effects like the activation of new and undecided voters and the conversion of voters for a different party (Dilliplane, 2014; Lazarsfeld et al., 1948). In a study on partisan selective exposure to political TV programs in the 2008 US election campaign, Dilliplane (2014) found evidence that partisan news serves a reinforcement function, with more robust evidence for its role in motivating activation and conversion. Similar to Dilliplane (2014) our measure for (social media or TV news) content is based on survey questions rather than on a media content analysis, but here the focus is on news features that may cause activation and conversion next to reinforcement: visibility in the news and a multistep flow effect from classic media.

A mere exposure/visibility effect.

Hypothesis H5 assumes that voters will give credits to a party leader whom they encounter in their personal Facebook or Twitter environments. In alignment with the general hypothesis that visibility matters (Hopmann et al., 2010), it is not a politician’s social media activity that matters for the vote, but the further dissemination of posts and tweets by liking and sharing. ‘If mere exposure increases familiarity, and with familiarity comes positive attitude, then, in the setting of elections, mere exposure should translate into positive electoral effects.’ (Kovic, Rauchfleisch, Metag, Caspar, & Szenogrady, 2017).

Hypothesis H5. If a party leader is encountered on Facebook or Twitter, the perception of the performance of that party leader and his/her party will become more favorable.

A reinforcement effect.

According to Bennett and Iyengar (2008), the explosion of media outlets on the internet enables voters to seek out information that is expected to be congruent with their preexisting attitudes and that will not do anything other than reinforce prior predispositions. Subsequent research did, indeed, show reinforcement effects (Knobloch-Westerwick, 2012; Stroud, 2010). Reinforcement due to media exposure requires proof that partisan selective media exposure strengthens the autoregressive bond between past and current vote choice. Reinforcement can be considered as an effect of predispositions moderated by party leader visibility on social media. Reinforcement is likely for users of partisan media, but less likely for news omnivores, who follow all available media, and for news avoiders, who do not follow political news (Eady, Nagler, Guess, Zilinsky, & Tucker, 2019; Trilling & Schoenbach, 2015).
**Hypothesis H6.** If a party leader is encountered on Facebook or Twitter, the autoregression effect of prior party performance on current party performance will become stronger.

**A multistep flow effect.**

The two-step flow of the communication model hypothesizes that opinions in the news flow from classic media to opinion leaders, and from them to the opinions of a wider population. One obvious generalization is to expect a multistep flow effect of news statements about a party in self-selected mass media on the perceptions and preferences of those voters who encounter that political party in their social media environment (Hilbert et al., 2017; Weimann, 2017). The opinion leaders in a voter’s social media network likely share his or her background and predispositions and hence, his or her selection of mass media. Obtaining political information from newspapers and TV predicts the probability to post and to read political messages on social media (Vaccari et al., 2015, Table 1). The multistep flow effect of self-selected classic news content on perceptions and preferences of social media users can be considered as news effects in line with hypotheses H1-H4 that are moderated by party leader visibility on social media.

**Hypothesis H7.** If a party leader is encountered on Facebook or Twitter, the hypothesized effects of favorable or unfavorable news on that party in self-selected media (cf. H1-H4) will be amplified.

**Toward a model of combined classic and social media effects**

Overall, the self-reports of voters about which party leaders they encountered on social media allow for a test that social media messages will do more than just reinforce prior predispositions (H6): they may produce a visibility effect (H5) and a multistep flow effect of news from self-selected media (H7) in alignment with hypotheses H1-H4. The self-reports do not allow for the inclusion of direct effects of social media content in alignment with hypotheses H1-H4, or of multistep flow effects and intermedia agenda setting effects in other directions (Conway, Kenski, & Wang, 2015; Harder, Sevenans, & Van Aelst, 2017; Hilbert et al., 2017; Weimann, 2017; Wells et al., 2016).

Since perceptions of party leader performance are related to perceptions of party performance, both will be included in the research model. The hypotheses H1-H7 will also be tested with party leader performance as a dependent variable (Aaldering, van der Meer, & Van der Brug, 2018; Eberl, Wagner, & Boomgaarden, 2017b; Takes, Kleinnijenhuis, Van Hoof, & Van Atteveldt, 2015). Both perceived party leader performance and perceived party performance, which are continuous variables, are expected to determine the dichotomous preference of voting for a specific party over other alternatives.
**Hypothesis H8.** The more favorable the perception of party performance (H8a), and of leader performance (H8b), the higher the likelihood to prefer that party, that is, the higher the likelihood (to express an intention) to vote for that party.

**Figure 1** includes autoregressive controls for party choice at the previous elections and for prior party preference, prior perceived party leader performance and prior perceived party performance as measured in the previous panel survey wave. Autoregressive controls guarantee that voter perceptions and voter preferences will not be spuriously considered as effects of self-selected partisan campaign news. **Figure 1** also shows that reinforcement and multistep flow conversion effects (H6-H7) are actually moderation effects.

**Method**

The data were gathered during the 2017 national election campaign in The Netherlands. The Netherlands has a multiparty system with a low electoral threshold of .67% of the votes, a high use of mass media, a high internet penetration (98%), a high trust in the news, and a high electoral volatility (Dassonneville & Hooghe, 2017; de Vreese, Esser, & Hopmann, 2016; Newman et al., 2018). The 2017 elections, held on Wednesday March 15th, resulted in a turnout of 82% of the 12.9 million eligible voters. In Parliament, 25% of the seats moved to a different party compared to the 2012 elections. Thirteen parties entered Parliament.

A seven-wave panel survey study was conducted with six biweekly waves before the elections, and a seventh wave just after the elections. This allows for the detection of news effects between the panel survey waves. News content was recorded with a manual content analysis.
Panel Survey Data
The polling company GfK conducted the panel survey in alignment with ESOMAR and ISO 26362 guidelines for representative computer-assisted web interviewing panels. The respondents in the first wave of these panel survey studies represent a stratified sample of a large multi access panel (MAP) of respondents ($N$ above 100,000). Multiple recruitment strategies were used to enable large-scale samples that match the population characteristics of the Dutch population (95% internet penetration), including a not-so-heavy internet use on the average. Approximately 31% of MAP respondents were recruited from various difficult to reach population subgroups. Stratification for the first wave of the seven-wave panel survey was based on turnout and voting choice at the previous election, internet use, age, education, gender and Nielsen-regions. The stratification guaranteed that difficult to reach groups such as nonvoters, new voters, and voters for parties with low-education voters were proportionally represented. The number of respondents amounted to $n = 1834, 1450, 1394, 1402, 1399, 1377$ for the six biweekly preelection waves of the panel study and to $n = 1445$ for the postelection wave (cf. Suppl. A).

The first wave was administered in the week around Christmas 2016 and contained questions on issue ownership, media exposure, party choice at the previous elections, the party preference at this stage, and perceived party performance. The next five biweekly waves, which were administered during weekends, contained questions about media exposure during the prior two weeks, party preference and perceived party performance. The postelection wave contained questions about the final vote. Panel attrition was slightly associated with a young age, ethnicity (non European parents) and abstention at the previous national elections, but not with other sociodemographic variables, political variables or media exposure variables, and not with variables from the research model (cf. Suppl. A).

The analyses are based on responses from respondents in the first wave who participated in at least one of the subsequent waves. The lagged dependent variables were calculated on the basis of the prior wave in which the respondent participated (cf. suppl. B).

Content Analysis Data
To account for the news that was consumed by the majority of Dutch citizens, we analyzed the news from five national newspapers (Algemeen Dagblad, NRC Handelsblad, De Telegraaf, Trouw and de Volkskrant) and the news from two television stations (NOS and RTL).

Each newspaper article or television item containing the name of a party or the name of a politician in its headline, lead or in the opening sentences was analyzed with the core sentence approach to arrive at core sentences of different news types (Dolezal, Ennser-Jedenastik, Müller, & Winkler, 2014; Helbling & Tresch, 2011; Kriesi et al., 2008). Variants on this method have also been labeled as evaluative assertion analysis (Osgood, Saporta, & Nunally, 1956) and (semantic) network analysis of
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texts (Krippendorff, 2012). The coding instruction for the 2017 campaign (January 1st—election day March 15th 2017) is included in the accompanying DataVerse that includes also the research data (https://hdl.handle.net/10411/PR57QT). Coding was done by a team of 7 coders supervised by the second author. A reliability test was performed on articles that were assigned to all coders. Coding reliability of core sentences per article as measured by Krippendorff’s $\alpha$ amounts to .79 (cf. Suppl. C, also for split-ups per type of news statement and coding experience).

The coding procedure resulted in 7914 news statements about issue positions of parties (29.6%), real world conditions with respect to the issues (12.4%), support and criticism for parties (34.5%), either from other parties (11.7%), from societal actors (10.9%), or from the media (11.9%), and successes and failures (gains and losses, horse race) attributed to parties (23.4%). A series of ANOVA models to explain the news from differences between the involved parties, issues, media and biweekly periods (corresponding to the waves of the panel survey) shows that all sources of variation matter in interestingly different ways for different types of news statements (cf. suppl. C).

**Measures Panel Survey**

*Party voted for at previous elections.* In the precampaign wave, respondents were asked which party—if any—they had voted for at the previous elections in 2012.

*Party preference.* Voters were asked whether they intended to cast their vote, and if so, they were asked: ‘For which party would you vote if elections were held today?’ with the parties as possible answers. In the postelection wave, respondents were asked whether they had voted at the last election and if so, for which party.

*Perceived party performance.* Measures of perceptions tap appreciations of salient recent observations rather than long-standing attitudes (Sanders & Gavin, 2004). First, for each of the political parties respondents were asked, ‘To your opinion, how salient was the political party in the news during the last two weeks?’. In addition to the answer ‘do not know this party’ a five-point Likert scale was utilized, ranging from ‘not salient in the news’ to ‘highly salient in the news’. Next, for the parties that were mentioned as (somewhat) salient in the news during the previous two weeks, the follow-up question was posed: ‘In your opinion was the news about party X positive or negative for that party?’. The 10-point scale ranging from ‘very negative’ to ‘very positive’ was transformed to a $-1..+1$-value range.

*Perceived party leader performance.* Perceived party leader performance was measured similarly for each of the 13 party leaders.

*Issue agreement on owned issues.* In the preelection wave, respondents were asked which issues came to mind when considering each party. Issues could be listed freely, but 97% of the respondents chose issues from a list of 19 suggestions. For each party, two different issues could be selected. Next, voters were asked whether they disagreed completely ($-1$), disagreed ($-0.5$), nor agreed nor disagreed (0), agreed (.5) or agreed completely (1) with that party with respect to these issues (Kleinnijenhuis
& Pennings, 2001). The categorization of issues is explained in the Supplementary Materials (Suppl. C).

**Media use.** Respondents were asked in each wave of the panel survey which specific newspaper and television news programs they used during the last two weeks. Therefore, for each respondent a media-specific linkage with self-selected media content data on each party in the two weeks preceding each wave of the panel survey was obtained.

**Visibility of a party on social media.** To arrive at a measure of encountering specific parties on Facebook and Twitter, we asked for each party leader whether respondents encountered them on Facebook and/or Twitter during the last week. Combining all parties resulted in estimates of social media exposure that are about half lower than the estimates based on general questions about social media exposure to political news (cf. Suppl. B).

**Reinforcement** of partisan predispositions was measured for each party by multiplying party preference as measured in the previous panel survey wave by that party’s visibility on social media.

**Multistep flow** forces were measured for each party by multiplying party-specific news in line with hypotheses H1-H4 (see below) by that party’s visibility on social media.

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**Measures Content Analysis**

The political statements are reduced to relational statements of the type ‘source: subject/predicate/value (sentiment in predicate toward object) /object’ in the core sentence approach (cf. suppl. C).

**Issue positions** relate an actor to an issue (e.g., ‘regeringspartijen/pleiten voor uitstel/duurzame energiewinning [government parties/advocate postponement (-) /renewable energy]’).

**Support and criticism** statements relate actors to each other (e.g., ‘Rutte/ziet geen kans op samenwerking met/ PVV [Rutte (prime minister and party leader VVD) /sees no opportunity to cooperate with (-) /PVV (anti-immigrant party)]’).

Statements about **real world conditions** involve an issue as an object, but who is the responsible subject is unspecified (e.g., ‘??/stagnerend/klimaatbeleid [??/stagnating (−) /climate policy]’).

**Success or failure** statements involve an actor as an object, but who or what is responsible for the actor’s success or failure remains unspecified (e.g., ‘??/zakt weg in peilingen/ PVV [??/drop in polls for (-) /PVV (anti-immigrant party)]’).

Other types of statements could be relevant in an indirect way (cf. suppl. C), but exemplary tests show that they did not improve explanations (cf. suppl. E, Table S6).

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**Linking News Content to News Exposure**

The content of self-selected media was aggregated to fourfold nested combinations of the type of news statements, parties, media and biweekly periods corresponding
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to the periods in between the panel survey waves (cf. Suppl. B). For each type of news statement, each party, each medium and each biweekly period the square root of the (positive or negative) sum of positive and negative statements was linked to each respondent in the panel survey based on whether or not that medium was selected by a respondent (Scharkow & Bachl, 2017, cf. Suppl. B).

Data Analysis

The seven largest parties VVD, PVV, CDA, D66, GroenLinks, SP and PvdA were included in the analysis. Multilevel random intercepts regression models were estimated. In this model, respondents, parties and biweekly periods are cross-nested within each other. Both the independent media variables and the dependent perceived performance variables in the multilevel regression equations vary between respondents, between parties and between biweekly periods. Party choice in the previous elections varies only between respondents and parties. The intercept in the multilevel regression models is allowed to vary between parties and respondents. The variation in time is captured by fixed autoregression parameters. The multilevel regression model requires a ‘stacked’, ‘long’ dataset with a row for each possible combination of respondents, parties and biweekly periods, with a dependent variable interval measure for perceived party performance, and a binary yes/no-vote variable for party preference (cf. suppl. B). The standardized effects from this multilevel model in Table 2 reflect differences resulting from partially pooling the variances of the variables within different waves, different parties, and different respondents (Gelman & Hill, 2007, ch. 12). Since the estimated model is an autoregression equation in which the vote depends on autoregressive forces and on self-selected news content, the standardized effects of the latter can be interpreted as news effects on changes in political preferences and perceptions. Various alternative model specifications (suppl. D, Tables S6-S14) will be shortly discussed in the Results section.

Results

Table 1 describes the differences between voters with specific party preferences in terms of their average scores on the variables in the research model.

A comparison between the first two rows of the table shows that the largest loser during the campaign was the anti-immigrant party PVV (with a drop from 15% to 9%). The Socialist Party (SP), the liberal democrats (D66), the Christian-Democrats (CDA) and the environmental party (GL) did win, compared to the previous elections in 2012 and the start of the campaign. A comparison between the second and third row shows that the governing Social-Democrats (PvdA) lost by a large margin compared to the previous elections (from 16% in 2012 down to 10% in 2017). The VVD, which is the right-wing governing party of the incumbent prime minister, Mark Rutte, would recover during the campaign from 13% toward 17% of the votes.
### Table 1  Means of the variables in the research model per party

|                            | SP  | GL  | PvdA | D66 | CDA | VVD | PVV |
|-----------------------------|-----|-----|------|-----|-----|-----|-----|
| **Voter preferences**       |     |     |      |     |     |     |     |
| Party preference first wave | .06 | .07 | .08  | .09 | .06 | .13 | .15 |
| Party preference seventh wave | .10 | .09 | .10  | .10 | .10 | .17 | .09 |
| (= party voted for in 2017) |     |     |      |     |     |     |     |
| Party previously voted for in 2012 | .09 | .02 | .16  | .08 | .06 | .19 | .09 |
| Perceived performance party | .16 | .28 | .05  | .24 | .23 | -.08| -.33|
| Perceived performance party leader | .13 | .30 | .09  | .22 | .20 | -.04| -.39|
| **News content exposure**   |     |     |      |     |     |     |     |
| Owned issues                | .03 | .09 | .10  | .08 | .01 | .00 | -.32|
| Support and criticism       |     |     |      |     |     |     |     |
| - from other parties        | .20 | .17 | -.03 | -.30| -.06| -1.82| -1.33|
| - from societal actors      | -.19| .31 | -.13 | .16 | .23 | -1.08| .46 |
| - from (self-selected) media| .10 | .21 | -.51 | .24 | .36 | -.64| -.26|
| Real world conditions       | .24 | .24 | -.86 | .24 | .24 | -.86| .24 |
| Success and failure         | -.08| .52 | -.89 | .47 | .51 | -.92| -.43|
| Exposure social media       |     |     |      |     |     |     |     |
| Facebook                    | -.01| .13 | .02  | .02 | -.06| .18 | .23 |
| Twitter                     | -.02| .04 | .00  | .05 | -.03| .08 | .25 |

Legend: The means in the first three rows about voter preferences are proportions (min = 0, max = 1), the means in the lower rows are means of standardized variables (M = 0 and SD = 1). Don’t know, won’t vote and didn’t vote are included in the percentage base for voter preferences.

Compared to other parties, the anti-immigrant party PVV scored poorly on emphasizing its own issues (−.32). PVV-leader Wilders was almost absent from TV news during the 2017 campaign. The two largest parties at the elections, VVD and PVV, were most heavily criticized by competing parties during the campaign (−1.82, resp. −1.33). The environmental party (GL) and the Christian-Democrats (CDA), which both won at the elections, were strongly supported by societal actors (.31, resp. .23). They were also supported strongly in explicit editorial statements and in editorial slant (.21, resp. .36), which suggests synchronization (Adam et al., 2019). However, societal support attributed to the PVV was not synchronized with criticisms from the media (−.26). The Socialist Party (SP) obtained media support (.10), but criticisms from societal actors (−.19).

Great success was attributed to the later winners at the elections, GL (.52), D66 (.47) and CDA (.51), whereas failure was attributed to the later losers at the elections PVV (−.43) and VVD (−.64). Nevertheless, the VVD recovered and remained the largest party.

The means per party for social media exposure to their party leaders reveal that the parties that were most heavily criticized in mass media were most often...
encountered on Facebook (VVD 18%, PVV 23%). GroenLinks, which based its campaign strategy on social media, was also encountered quite often (13%). Overall voters encountered politicians, except for PVV-leader Geert Wilders (.25), less often on Twitter than on Facebook.

**Multilevel Model**

Table 2 presents the multilevel regression model with the two mediating variables, perceived party leader performance and perceived party performance, and the ultimate dependent variable, party preference in its columns. Even with autoregressive controls, the dependent variables at time $t$ are expected to depend on classic news content (H1-H4) and social media content (H5-H7). Table 2 also shows in its last column whether news content exerts unexpected direct effects on party preference.

Significant regression coefficients in the expected direction confirm all but one hypothesis about the news effects of mass media (H1-H4) and exposure to social media (H5-H7). Retrospective voting (H3) does not hold at the stringent significance level of $p < .001$, which is appropriate given the power of the study (Suppl. C). The absence of a retrospective voting effect is presumably due to the complication that the incumbent parties VVD and PvdA were supported by some other parties after they lost the majority in the First Chamber in 2013 (comparable to the Upper House in the UK or the Senate in the US). Two hypotheses hold with subordinate adjustments. First, attacks from other parties may signal that a party leader or party pursues the party’s issue positions, but only if the attacked party uses its newsworthiness immediately to emphasize its owned issues (Kleinnijenhuis et al., 2007). Only the negative interaction term of criticism from other parties with newson owned issues is significant, but not the main effect of criticism from other parties. Next, only the news about successes and failures of party leaders in self-selected mass media exerts additional multistep flow conversion effects on perceived party leader and party performance of voters who also encounter party leaders on social media. Thus, multistep flow effects through social media show up for easy-to-grasp news about the performance of politicians, but not for news statements about who addresses which issue and who supports whom.

As is indicated by the highly significant autoregression coefficients, the perceived performance of party leaders and parties is strongly affected by partisan selective exposure and perception.

The final hypothesis H8 states that perceived party performance (H8a) and perceived party leader performance (H8b) affect party preference, which is strongly confirmed (H8a, .27; H8b, .18). Unexpected direct effects of some types of news statements on party preference are non-significant given the significance level of $p < .001$ for this study.

Random effect variances and goodness-of-fit statistics all point out that the estimated models are an improvement compared to corresponding uninformed empty models, which are basically analyses of variance to explain the three dependent variables from theoretically empty differences between parties and between respondents.
Table 2 Explanation of perceived party performance (linear) and party preference (logistic)

| Effects standardized variables | Perceived party leader performance (t) | Perceived party performance (t) | Party preference (t) |
|-------------------------------|----------------------------------------|---------------------------------|---------------------|
| **Classic media**             |                                        |                                 |                     |
| H1 owned issues               | 0.02 ***                               | 0.03 ***                        | 0.07 *              |
| H2 support and criticism from ... |                                      |                                 |                     |
| : other parties               | 0.00                                   | 0.00                            | 0.04                |
| : s & c other parties * owned issues | -0.02 ***                          | -0.02 ***                       | -0.02               |
| : selected media themselves  | 0.03 ***                               | 0.04 ***                        | 0.01                |
| : societal actors             | 0.05 ***                               | 0.05 ***                        | 0.10 **             |
| H3 real world conditions      | 0.00                                   | 0.00                            | -0.02               |
| H4 success and failure        | 0.03 ***                               | 0.05 ***                        | 0.02                |
| **Social media**              |                                        |                                 |                     |
| H5 visibility effect          | 0.05 ***                               | 0.05 ***                        | 0.08 **             |
| H6 reinforcement party preference (t-1) | 0.03 ***                           | 0.03 ***                        | -0.03 *             |
| H7 multistep flow effect      |                                        |                                 |                     |
| : owned issues                | 0.00                                   | -0.01                           | -0.01               |
| : support and criticism from ... |                                      |                                 |                     |
| : other parties               | 0.01 *                                 | 0.01 *                          | 0.02                |
| : selected media themselves  | 0.01                                   | 0.00                            | 0.00                |
| : societal actors             | 0.01 *                                 | 0.00                            | -0.04               |
| : real world conditions       | 0.01 *                                 | 0.01 *                          | 0.03                |
| : success and failure         | 0.02 ***                               | 0.02 ***                        | 0.03                |
| **Autoregressive controls**   |                                        |                                 |                     |
| party voted for previous elections (t-n) | 0.04 ***                          | 0.05 ***                        | 0.59 ***            |
| party preference (t-1)        | 0.09 ***                               | 0.10 ***                        | 1.23 ***            |
| perceived party leader performance (t-1) | 0.21 ***                           | 0.18 ***                        | 0.18 ***            |
| perceived party performance (t-1) | 0.15 ***                           | 0.16 ***                        | 0.27 ***            |

**Random Effect variance**

| between parties | empty model | full model |                     |
|-----------------|-------------|------------|---------------------|
|                 | 0.06        | 0.06       | 0.05                |
|                 | 0.03        | 0.02       | 0.04                |

| between respondents | empty model | full model |                     |
|---------------------|-------------|------------|---------------------|
|                     | 0.15        | 0.13       | 0.23                |
|                     | 0.07        | 0.06       | 0.00                |

**Number of cases**

| number of waves, parties, respondents | 5; 7; 1747 | 5; 7; 1747 | 6; 7; 1767 |
|---------------------------------------|------------|------------|------------|
| number of combined cases              | 49154      | 49154      | 59269      |

(Continued)
The variance in the random intercepts per party and per respondent, and the AICs (Akaike Information Criterium) are lower for the full models than for the empty models, whereas $R^2$ Nagelkerke is higher for the full models.

The purport of Table 2 is that combined effects of mass media and social media on political perceptions and preferences show up in spite of autoregression. The robustness of the model that underlies Table 2 is tested against six alternative models (cf. Suppl. E). The robustness checks reveal that the model in Table 2 is the preferred model. Effect parameters become less strong or even change signs with broader definitions of potentially relevant types of news statements (cf. Suppl. E1). The second alternative model includes the tone and the amount, or visibility, of news statements for each type of news statement as separate variables (similar to Eberl, Boomgaarden, & Wagner, 2017a; Hopmann et al., 2010). With separate measures of visibility per news type, such models are hampered by multicollinearity problems (cf. Suppl. E2). Separate models for news users and news avoiders reveal that variations in attributions of successes and failure to parties throughout the campaign apparently also influenced news avoiders’ perceptions in a multistep flow process. Apparently, news avoiders grasp the opinion climate from the comments by compatriots who followed the news (cf. Suppl. E3). The model that is presented in Table 2 is also superior to models with random waves (cf. Suppl. E4) and random slopes per party (cf. Suppl. E5). Models with additional random coefficients bury significant effects in theoretically uninteresting parameters. Finally, random forest models show the existence of higher-order interactions between effects of different types of news statements, which implies that news content matters even more than Table 2 indicates (cf. Suppl. E6).

To arrive at an intuitive understanding of the goodness of fit of the party preference model, Figure 2 shows, at the aggregate level for the four largest parties, the
biweekly correspondence between party preference and the predictions thereof based on the values of news content variables for a party–see Table 1—and on the regression coefficients for variables–see Table 2.

Figure 2 shows that the model predictions for the four largest parties closely reflect actual shifts in party preferences for the Dutch population. To reconstruct why a particular party won or lost—see Figure 2—we have to look specifically at those news content variables with strong regression coefficients in Table 2 for which the party scores are relatively high or low in Table 1. In this way, we reconstruct why the combined effects of mass media and social media content predict a loss for the PVV. The PVV did not succeed in setting its owned issues on the media agenda (Table 1: −.32). Moreover, failures rather than successes are attributed to the PVV in mass media (Table 1: −.43). This affects perceived party leader performance and perceived party performance, and thus, party preference (Table 2: significant regression coefficients for H1 and H4 (p < .001)). Voters who intended to vote PVV were exposed more to political news from social media, compared to other voters (Table 2, bottom rows). Since news on successes and failures in mass media is the only type of news that has a multistep flow effect on social media users (Table 2, regression coefficients H7 (p < .001)), these potential voters were restricted from voting for the PVV.
Figure 2 also shows discrepancies between model-based predictions and actual party preferences. The reason for the wrong prediction of a partial comeback for the PVV in early March appears to be that, based on the coding instruction, the indignation in the media about detected leaks in the security of PVV leader Wilders was coded as support for Wilders. Voters may have perceived this as bad news for the performance of Wilders. The reason why the VVD performed better than the last week's model prediction is that early respondents to the last pre-election survey wave had not yet taken into account the news about the success of a crisis team headed by VVD prime minister Rutte in sending back Turkish minister Kaya who uninvitedly came to mobilize Dutch voters of Turkish descent to cast a vote in a Turkish referendum. Endlessly repeated TV images showed that the street protests by Turkish youngsters were no match for the horses and dogs that the Dutch police routinely uses in its crowd control tactics.

Discussion

The current article asks which theories on mass media and social media provide the fullest possible combined explanation of the long-studied phenomenon of changing political perceptions and preferences during an election campaign. This question is barely addressed in recent research, presumably because of the premature answer that media in a high-choice media environment would only foster reinforcement (Bennett & Iyengar, 2008), and next, because no uniform measures for the self-selected content of mass media and social media are currently available (Van Atteveldt & Peng, 2018). The research question regarding how perceptions and preferences of voters are affected by self-selected news content from social media and mass media can, however, also be answered by combining the best available measures for the self-selected content of mass media and social media. In the context of the 2017 national election campaign in the multiparty system of The Netherlands, content analysis data on mass media could be linked to respondents in a biweekly panel survey, based on biweekly questions about exposure to specific mass media (Scharkow & Bachl, 2017) and to a new measure of exposure to specific political leaders on social media.

Changes in the perceptions and preferences of eligible voters exposed to mass media can be explained from the latest news by combining theories on the effects of four different types of news statements (Kleinnijenhuis et al., 2007). Voters are attracted to a party by news about issues as predicted by the theories of agenda setting and issue ownership, by news about support and criticism as predicted by balance theory and social identity theory, and by news about party success or failure, as predicted by theories about herd behavior and bandwagon effects. The news on improving or deteriorating real world conditions did not exert significantly different effects on perceptions of the performance of incumbent parties and opposition parties at the \(p < .001\) significance level that was appropriate given the power of the study (Suppl. D). Random forest models suggest that effects of news on real world conditions interact in complex ways with other news effects (Suppl. E6). Overall,
news from mass media such as TV and newspapers have strong effects on political perceptions and preferences, even when controlled for the influence of social media and autoregression.

Changes in the perceptions and preferences of users of social media can be explained by exposure to specific party leaders on social media as predicted by the literature on media visibility, by a reinforcement effect and a multistep flow effect of the news on party successes or failures from self-selected mass media. Thus, social media in a high-choice media environment do more than reinforce prior predispositions (Bennett & Iyengar, 2008).

The combined effects of social media and mass media shape election outcomes. The percentage of eligible voters who only receive political news through social media is small, but exposure percentages differ for each party (Suppl. Table S1), as does the news for each party (Table 1). As an example, the predicted loss of the PVV (cf. Figure 2) was decomposed into news about failures rather than successes (Table 1), which exerted a significant direct effect on PVV support among users of mass media, as well as a significant indirect multistep flow effect on social media users (Table 2), who moreover happen to be overrepresented among potential PVV-voters (Suppl. Table S1).

Overall, this study shows that ‘media effects are neither characteristically strong nor are they characteristically minimal: they are characteristically highly variable’ (Neuman, 2018, 370) across issues and across parties. One may wonder why, in alignment with (Kleinnijenhuis et al., 2007), the strongest overall effect is exerted by news of party success and failure that spurs a bandwagon effect by affecting users of mass media directly, and users of social media indirectly through a multistep flow effect. First, news statements on failures, e.g., taken from election debate headlines, such as ‘Biden struggles in debate’; ‘Biden’s support slips 10% after debate, poll shows’ cannot be discounted by blaming the attacker, which is still possible after headlines on criticisms rather than on support, such as, ‘Harris drops a bomb on Biden’. Next, news on failures rather than successes spreads like wildfire because intermediary disagreement on who is successful and who fails is less pronounced than that on any other type of news statements (Suppl. Table S4).

Several limitations of the current campaign study in a multiparty system should be addressed in future research. In two-party systems, party strategies such as supporting some adversaries and neglecting others are not easily applicable—although they may apply in the primaries. Voters will agree with fewer parties on the issues, which renders party switching unlikely. Other measures of party-specific social media exposure are required, because almost everyone will encounter the candidates of both parties. In measuring the exposure to mass media, the frequency of exposure and the specific news items used were neglected, which is problematic now that digital devices are increasingly used to access very different mixes of the news from all types of media. Ultimately, a move is required from self-reports to digital measures of both online exposure and self-selected online content in a representative sample of voters, interfaces for various closed software ecosystems on mobile platforms have
to be developed, informed consent from random samples of respondents has to be obtained, their real-time news consumption has to be monitored, and a grammar-based automated content analysis has to be applied to the wide variety of pages that they visit (van Atteveldt & Peng, 2018).

This study is a plea for communication research into the combined effects of exposure to mass media content and social media content, based on the best possible, although imperfect, measures for each. Combined effects research is required to arrive at nontrivial advice on campaigning—and on the media coverage thereof. Which issues should be emphasized and which positions should be taken? Whom to neglect, support, or attack? How to mobilize endorsements from societal actors and the media? How to provoke the media and political adversaries with sharp criticisms and attacks? And above all, how to coauthor media events that will inspire the media to attribute success rather than failure to the party?

Supporting Information

Additional Supporting Information may be found in the online version of this article.

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Acknowledgement

The authors are grateful to Frans Louwen and Peter van de Vijver in setting up the VU-GfK 2017 election panel survey and to the coders who performed the manual content analysis. The authors are immensely grateful to the three reviewers and the editor for their detailed, constructive and refreshing comments.

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