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# Agenda-Setting With Satire: How Political Satire Increased TTIP's Saliency on the Public, Media, and Political Agenda

MARK BOUKES 

*Agenda-setting has mostly been investigated as the cognitive process set in motion by the salience of political issues in the traditional news media. The question, though, remained whether political entertainment shows—political satire, specifically—can also set the agenda. The current study investigates whether two episodes of Dutch satire show Zondag met Lubach (ZML) about the European Union-United States trade agreement Transatlantic Trade Investment and Partnership (TTIP) have triggered first-level agenda-setting effects. For that purpose, three studies have been conducted to investigate the three-step agenda-setting process (i.e., learning, understanding, acting) from saliency in satire to saliency on the public agenda, but also on the media and political agenda. Study 1: A two-wave panel survey shows that consumption of the satire show positively affected knowledge acquisition about TTIP, which is the first step in the cognitive process underlying agenda-setting. Study 2: A randomized experiment demonstrated that exposure to ZML increased the perceived understanding of TTIP, which subsequently had a positive impact on the saliency of TTIP on the public agenda. Study 3: Longitudinal time-series data provide evidence that the saliency of TTIP on the public agenda—short term—and on the political agenda—long term—were positively affected by the ZML satire episodes. The study, altogether, demonstrates satire's ability to set the agenda of both the individual and aggregate level and emphasizes the persistent relevance of agenda-setting theory in today's high-choice media environment.*

**Keywords** agenda-setting, political satire, intermedia agenda-setting, public agenda, political agenda, infotainment, political comedy

Agenda-setting is one of the most established theories in the field of political communication. Originating from the canonical work of McCombs and Shaw (1972), it started out as the study of traditional news in political communication. More recently, agenda-

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setting theory expanded to a more diverse set of media outlets (e.g., cable news, news websites, blogs), a broader range of areas within the communications field (e.g., health or corporate communication, public relations) as well as outside of this field (e.g., economics, educational, or political science) (see McCombs, 2005). With the proliferation of media channels and the ongoing audience fragmentation, however, political communication scholars seem to have shifted focus from so-called understanding-driven theories (including agenda-setting; see Lippmann, 1922) to consistency-driven theories (e.g., partisan selective exposure; see Holbert, Weeks, & Esralew, 2013). Whereas understanding-driven theories explain media effects by citizens' psychological need to understand the world and to make sense of their environment, consistency-driven theories are primarily the outcome of people's motivation to solve incongruence between one's attitudes and their behaviors as to reduce the tension that cognitive dissonance may cause (Pavitt, 2010).

Today's dominance of work inspired by consistency-driven theory, most likely, can be explained by scholars' tendency to study prominent and "hot" phenomena, such as selective exposure, filter bubbles, or polarization. However, this could come at the cost of researching phenomena relating to understanding-driven theories. Bennett and Iyengar (2008, p. 709) have even explicitly discouraged further work of this nature, and they highlighted agenda-setting in particular: "The agenda-setting paradigm reflects the capacity of ideas to motor on, unimpeded by inconvenient realities to the contrary." The current article, instead, tests whether agenda-setting may still "serve as an appropriate basis for studying new political communication realities" (Holbert et al., 2013, p. 1675); concretely, the agenda-setting effect that political satire may have. Thereby, it demonstrates the added value of having a diverse palette of theories within one field: Consistency-driven theories, indisputably, are useful to explain political communication phenomena in a high-choice media environment, but the explanatory principles of understanding-driven theories will continue to help better comprehend the influence of political media.

Not only does this article hope to spark theoretical diversity in the field generally, it also aims to stimulate diversity *within* agenda-setting theory: Agenda-setting will be conceptualized as a multidimensional theory, representing and extending the rich *diversity* of perspectives already present in the literature. First, it simultaneously examines first-level public agenda-setting, intermedia agenda-setting, and political agenda-setting in one overarching study. Second, it shows the need to study agenda-setting on the individual as well as the aggregate level (see Sheafer & Weimann, 2005). Whereas an aggregate-level approach is most visible in the literature, it is important to also investigate and understand the "frequently overlooked" individual cognitive processes underlying agenda-setting (McCombs, 2005, p. 548). After all, agenda-setting is based on a macro-notion of the press (i.e., salience of topics in the overall media landscape; see McCombs & Shaw, 1972), but its influence on the public agenda is *explained* on the individual level (Roessler, 2008; Watt, Mazza, & Snyder, 1993). Individual-level agenda-setting studies, however, are scarce; combinations of aggregate- and individual-level data are even scarcer.

Third and most centrally, this work adds to the diversity *within* agenda-setting research by introducing a new concept (i.e., political satire). Traditional news media are still primary in agenda-setting research; however, with today's prominence of political satire, this "reinvented form of political journalism" (Baym, 2005) could also have an agenda-setting impact. The playfulness of the genre, however, may limit its effect, because especially trustworthy outlets would influence evaluations of public importance (Iyengar, Peters, & Kinder, 1982).

I employ a combination of dynamic methods—panel survey, experiment, and longitudinal content analyses—to investigate the agenda-setting effect of political satire on the individual (i.e., psychological) and aggregate (i.e., societal) levels. Concretely, this article

investigates the effect that satire show *Zondag met Lubach* has had on the public, media, and political agenda regarding the Transatlantic Trade and Investment Partnership (TTIP) topic in the Netherlands. TTIP is the (proposed) partnership between the European Union and the United States. This topic is particularly suitable for the study of agenda-setting, because agenda-setting effects are most likely to occur for unobtrusive issues with which the audience and public legislators are unfamiliar (Maurer & Holbach, 2016; Walgrave & Van Aelst, 2006; Watt et al., 1993). Dutch satire show *Zondag met Lubach* (ZML) twice devoted half a broadcast to explain the topic of TTIP to its audience. ZML is produced by a mixed staff of comedians and (investigative) journalists, and takes on the feel of investigative journalism. Thereby, it is comparable to other satire shows that offer long and information-rich segments covering political issues in-depth for several minutes while combining this with humorous elements; for example, *The Daily Show* (Baym, 2005), *Last Week Tonight With John Oliver* (Becker & Bode, 2018), or *Full Frontal With Samantha Bee* (Boukes & Quintanilla, *in press*).

### Three Steps of Agenda-Setting on the Individual Level

Although mostly studied on the aggregate level, first-level agenda-setting is inherently an individual-level media effect (Scheufele, 2000). Citizens are exposed to the media, *learn* about the issues that are salient in the news, which makes these more accessible in memory, and subsequently take that as a cue for what they believe are the important issues that society is facing today (Sheafer & Weimann, 2005). This cognitive process (Watt et al., 1993), therefore, is similar to Bloom's (1956) taxonomy frequently applied in educational science: (a) students need to first *know* about a topic; then (b) *comprehend* the exact topic and its facts; before they can (c) *evaluate* (i.e., think it is important) or *act* upon it (i.e., treat it as important). Logically, learning about an issue is a precondition for agenda-setting to occur (see Iyengar et al., 1982). Before people consider a topic to be (more) important, they first need to *acquire (new) information* about the topic, and *understand* why it potentially would be important (Roessler, 2008).

### *Satire and Knowledge of the Issue*

Being an understanding-driven theory, agenda-setting is the result of a cognitive learning outcome (see McCombs, 2014). Any individual-level study on agenda-setting, thus, should assess whether the media—in this study political satire—informed citizens about a political issue (Watt et al., 1993). Previous research has shown that satire may increase the attentiveness to political issues; especially those citizens not interested before may acquire political information that is transferred via humorous news genres (Becker & Waisanen, 2013). Related to satire, political comedy positively affects people's knowledge of various political topics (Baek & Wojcieszak, 2009; Becker, 2013).

Citizens are aware of satire's information potential. They not only consume it for fun but also to contextualize the news and learn about current affairs (Young, 2013). Accordingly, *The Daily Show* has been shown to increase the attentiveness to issues as the Afghanistan war or political candidates (Cao, 2010; Young & Hoffman, 2012). *The Colbert Report* successfully informed citizens about the *complicated* issue of campaign financing (Hardy, Gottfried, Winneg, & Jamieson, 2014; LaMarre, 2013). traditional news media (Becker & Bode, 2018), satire may thus inform citizens about an unfamiliar yet complicated topic, such as TTIP, due to the increased attention and rehearsal that humorous materials evoke (Schmidt, 1994):

*H1*: Exposure to political satire about TTIP positively affects the knowledge of this topic.

### ***Satire and Understanding of the Issue***

Satire shows often contain a high proportion of politically substantive content (Brewer & Marquardt, 2007; Haigh & Heresco, 2010), even compared to traditional news broadcasts (Fox, Koloen, & Sahin, 2007). The explanation of political stories, moreover, differs from regular news in ways that could benefit comprehension. Concretely, traditional journalism may fail to effectively enlighten the citizenry (e.g., Williams & Delli Carpini, 2011), because television news would be too fast-paced and complicated for many citizens; moreover, its detached, abstract style might make citizens perceive the news as being irrelevant to their personal lives (Buckingham, 1997). Lacking emotional appeal or clear links to the everyday life, traditional news may stop people from paying the necessary attention to *understand* complex issues (Graber, 2004).

Satire presents its content in styles that potentially better match the capacities, experiences, and interests of non-elite citizens (Baym, 2010). Rather than assuming the audience already knows the background of complicated topics and rapidly presenting new facts, satire presents such topics in longer segments while explaining the background information in detail using common language (Baym, 2005). As in daily life, many citizens are more comfortable with such styles of communication than with the fact-based, objective reporting of traditional news.

Satire's presentation of complex issues—such as climate change (Feldman, 2013), economic recession (Jones, 2010), or science (Brewer, 2013)—by means of narrative and emotional appeal may thus contribute to the understanding of complicated issues (Baym, 2010; Graber, 2004). Comprehending the jokes in satire requires high cognitive load and central processing (as opposed to peripheral processing; see Nabi, Moyer-Gusé, & Byrne, 2007; Young, 2008). Together with its more detailed level of explanation in combination with everyday language, people will feel more confident about their ability to understand complicated political topics (Baumgartner & Morris, 2006; Becker, 2011). Altogether, the expectation is that political satire improves the understanding of complicated issues as perceived by the mass audience:

*H2*: Exposure to political satire about TTIP positively affects the feeling of being informed about this topic.

### ***Satire and the Public Agenda***

Precondition to evaluating a topic (Bloom, 1956), acquiring knowledge (H1), and enhancing feelings of being informed (H2) arguably affect the perceived importance of a topic positively. To summarize the agenda-setting hypothesis: The more salient a topic is in the media, the more opportunities exist for citizens to be informed about it, and hence consider the topic to be important (McCombs & Shaw, 1972). The strength of this effect, though, depends on the outlets that cover the topic. Media that are favorably perceived have a stronger agenda-setting effect, because citizens are less likely to counterargue their information (Iyengar et al., 1982).

Such counterarguing possibly limits the agenda-setting power of political satire. Since humorous messages are believed to be less informational and less credible than serious messages, citizens tend to counterargue the information from political comedy (LaMarre & Walther, 2013; Nabi et al., 2007), which restricts its influence (Boukes, Boomgaarden,

Moorman, & de Vreese, 2015). The funny approach in political satire may, thus, decrease the perceived importance of political topics (Becker & Bode, 2018). Yet, for more serious formats of political satire it seems *unlikely* that these are perceived as “just being a joke” (Hoffman & Young, 2011; LaMarre, Landreville, Young, & Gilkerson, 2014). Such satire frequently provides an open-ended rather than a funny punch line, which makes the relief of tension that lighter forms of humor cause unlikely (Paletz, 1990). Exactly this kind of more serious and “earnest” political satire (Carlson & Peifer, 2013) is recently gaining popularity both in the United States (*Last Week Tonight; Full Frontal*) and Europe (*Zondag met Lubach*). With their serious undertone and via its potential to create understanding, such “serious” kinds of satire may thus set the public agenda.

Originally, the public agenda was understood as the rank order of how frequently a sample of citizens mentioned a topic as “most important problem” in public opinion surveys (McLeod, Becker, & Byrnes, 1974; Sheafer & Weimann, 2005). Alternative, more concrete, and less inherently negative measurements on the individual level of issue saliency can also be found in the literature. Especially, the degree with which the media evoke interpersonal discussion about a topic is a valid operationalization for what is considered important (e.g., Iyengar et al., 1982; Weaver, 1980). Back in the 1930s, British researchers wrote, “Perhaps the influence of the press may best be estimated by considering it as the principal agenda-making body for the everyday *conversation* [italics added] of the ordinary man and woman, and, therefore, for that elusive element called public opinion” (in Roessler, 2008, p. 206). Research indeed demonstrated that satire may stimulate discussion intentions (Lee & Jang, 2017; Moy, Xenos, & Hess, 2005).

Another dimension of the public agenda is the actual civil action that follows from media attention. Infotainment has shown to make political issues so important in the public eye, that it encouraged more than 200,000 people to physically attend the Rally to Restore Sanity and/or Fear organized by satirists Jon Stewart and Stephen Colbert (Reilly & Boler, 2014). Undertaking such *acts of political participation* is an indicator of the public agenda, because citizens will only invest the effort, time, and resources if they deem a topic important enough.

Perceived importance, interpersonal talk, and participation intentions, altogether, thus indicate how salient a topic is on the (individual-level) public agenda. As a certain level of understanding is required before citizens can evaluate a topic’s importance and act accordingly (Bloom, 1956; Hoffman & Thomson, 2009; Hoffman & Young, 2011), the expectation is that satire indirectly sets the public agenda via an increased understanding of the issue at hand:

*H3*: Exposure to political satire indirectly affects the public agenda via its positive effect on the feeling of being informed about this topic.

### Three Domains of Agenda-Setting at the Aggregate Level

Agenda-setting occurs within three domains, including the public agenda, the media agenda, and the political agenda (Tan & Weaver, 2007). To study the agenda-setting process comprehensively, one ideally examines all three domains. With aggregate-level data, one can analyze agenda-setting effects over longer periods of time and the impact it has on the overall population. This longer time frame is particularly important for agenda-setting, because experiments have shown that agenda-setting effects last longer than one day (Iyengar et al., 1982).



### ***Public Agenda-Setting***

Longitudinal survey data are rare (especially for a specific issue such as TTIP) and, when available, may not be optimal to study the effects of agenda-setting that normally last only a few weeks (Maurer & Holbach, 2016). Public attention, generally, is “dynamic, episodic and ephemeral” (Ripberger, 2011, p. 239), which makes survey responses to questions about society’s “most important problem” too static and a “less than ideal measure” of the public agenda (p. 242).

Online search query data are a “promising” alternative: how often a term is searched for on platforms such as Google strongly correlates with traditional survey measurements of the public agenda (Scharkow & Vogelgesang, 2011). Because search queries require the investment of some degree of citizens’ scarce time and energy (Ripberger, 2011), these provide a real-time and valid measurement of a topic’s saliency on the public agenda (Whyte, 2016). Compared to surveys, these data are continuous and not faced with reactivity (i.e., questions influencing the outcome; see Maurer & Holbach, 2016). Moreover, it taps into the behavioral consequences of agenda-setting that manifest in everyday life and are directly, but unobtrusively, observable.

Previous research has shown that satire encourages viewers to tune in to traditional news or political debates to *retrieve* additional information (Feldman & Young, 2008; Landreville, Holbert, & LaMarre, 2010), arguably because satire shows make a political topic more salient among its audience, who therefore want to seek more information (Xenos & Becker, 2009). This is in line with the theoretical rationale as put forward by Hypotheses 1, 2, and 3: The *ZML* broadcast will have informed the audience about TTIP, which potentially increases the topic’s importance in the public’s eye, thus leading to an increased number of search queries on the topic:

*H4:* The number of TTIP search queries increased after the satire broadcast about this topic.

### ***Intermedia Agenda-Setting***

Intermedia agenda-setting effects have been found regarding elite newspapers that influence what other news outlets cover (McCombs, 2005; Roessler, 2008; Vliegenthart & Walgrave, 2008). It is unclear whether infotainment, such as political satire, will also have an intermedia agenda-setting effect. Empirical evidence is limited to the movie *Schindler’s List*, which had set the Canadian media agenda in 1994 (Soroka, 2000). With seven Academy Awards and three Golden Globes, *Schindler’s List* can, however, impossibly be understood as a regular case of infotainment.

The current study investigates whether *Zondag met Lubach*’s broadcast on TTIP stimulated journalistic reporting of this topic. The relationship between satire shows as this and journalism is tense (Feldman, 2007), because satirists regularly perform the role of media critic (Borden & Tew, 2007; Brewer & Marquardt, 2007), parody the news genre (Meddaugh, 2010), and hold the news media accountable for not living up to ethical or professional standards (Painter & Hodges, 2010). Moreover, journalists experience discomfort and struggle with the combination of entertainment and information that satirists display, especially when satirists exhibit “earnestness” in their presentation of topics (Carlson & Peifer, 2013). As the boundary between humor and seriousness in satire is so thin, it is hard for journalists to decide whether its content is newsworthy enough to consider it “real” politics. More strongly, journalists may perceive the opinionated satirists as “unwelcome visitor[s]” on a terrain that before was guarded by themselves (Carlson &



Peifer, 2013, p. 340). Experiencing a threat to their epistemic authority, journalists may try to resist an agenda-setting influence of satirists.

Nevertheless, satirist Jon Stewart of *The Daily Show* seemed to have set the media agenda on multiple occasions; for example, many news media (including the conservative Fox News) followed his lead regarding the coverage of the “9/11 Health and Compensation Act” (Hill & Holbert, 2017). Another memorable example of satire influencing the news media is Tina Fey’s parody of Sarah Palin on *Saturday Night Live* (*SNL*; Young, 2011). Arguably due to the substantive nature of this *SNL* sketch, news coverage turned more critical toward Palin’s performance (Michaud Wild, 2015). Journalists explicitly used the *SNL* parody as a negative point of reference when reporting about Palin (Abel & Barthel, 2013). Although more related to Palin’s portrayal than her saliency, it demonstrates the susceptibility of journalists to follow satire’s agenda:

*H5*: TTIP becomes more salient in the news media after the satire broadcast about this topic.

### ***Political Agenda-Setting***

Satirists are not just funny; they regularly become political advocates (Jones, Baym, & Day, 2012) and accordingly “speak truth to power” (Gray, Jones, & Thompson, 2009, p. 6). Using counter-narratives that portray societal issues in a different light than the news media would do, political satirists surprise their audience (including politicians) with convincing new insights and, thereby, could have a direct influence on political policy (Hill & Holbert, 2017). Interviews with communications directors of political parties showed that politicians, indeed, perceive satire as an influential medium due to its deviant message and diverse audience (Ferré-Pavia, Sintes, & Gayà, 2016). Holding the perception that satire has a considerable influence on the public, politicians regularly accept the invitation to participate in political satire shows (Coleman, Kuik, & Van Zoonen, 2009). Political actors unanimously believe, in contrast to citizens themselves (alike the third-person effect; Davison, 1983), that satire influences the public opinion considerably (Coleman et al., 2009; Ferré-Pavia et al., 2016).

Consequently, political actors may be responsive to satire’s coverage. After all, politicians frequently respond to a *presumed* public opinion when they believe voters are affected by the media (Walgrave & Van Aelst, 2006). Politicians are especially sensitive toward new and unobtrusive issues that they were unfamiliar with before (Walgrave & Van Aelst, 2006), because they not yet have developed a strong issue position toward these. Second, they especially respond to topics in the media for which politicians carry a clear responsibility. Both conditions (unfamiliar topic; responsibility) are met in the case of TTIP: This topic was (a) mostly unknown before the *ZML* broadcast and (b) the outcome of political negotiations. Third, the funny though unambiguous, dramatic, and critical portrayal of TTIP in *ZML* makes an effect on the political agenda plausible, because people in general (Sheafer, 2007), and politicians in particular, are sensitive to agenda-setting effects of *negative* information (Walgrave & Van Aelst, 2006).

The political agenda can be operationalized in a variety of ways, although one way is preferred when examining media effects (Walgrave & Van Aelst, 2006): Having a potential *impact* on policy as well as the possibility to respond to media coverage quickly (i.e., actual policy takes several years), the interpellations and questions of Members of Parliament (MPs) and the answers given by Ministers or State Secretaries are a suitable

measurement for the political agenda in agenda-setting research. Accordingly, the expectation is the following:

*H6*: TTIP is more frequently discussed in Parliament after the satire broadcast about this topic.

### Three Studies on Satire's Agenda-Setting Effects

Three studies using different methodologies were conducted: (a) a panel survey to investigate whether the satire show informed citizens about this topic; (b) an experiment to assess its impact on understanding of TTIP and subsequent individual-level public agenda indicators; and (c) longitudinal time-series analyses to study *ZML*'s agenda-setting effect over a longer period of time on the public, media, and political agenda. Not only do the three studies cover agenda-setting's three-step process (i.e., learning, understanding, acting), they also work as a collective because the strengths of one study make up for the weaknesses of another.

Concretely, Study 3 allows examining the over-time agenda-setting effects of *ZML*, whereas the experiment (Study 2) assesses the effect immediately after exposure. Moreover, the experiment allows disentangling the individual-level causal mechanisms set in motion by *ZML*, but it is faced with limited external validity due to a convenience sample. Studies 1 and 3, however, employ, respectively, a representative sample and aggregate-level data, thus leading to more generalizable results. The three studies, altogether, fully capture *Zondag met Lubach*'s agenda-setting influence on the individual and aggregate level.

#### *Study 1: Panel Survey (H1)*

*Method.* A panel survey was conducted to analyze the knowledge uptake regarding TTIP from political satire, which is a precondition for agenda-setting to occur. A three-wave online panel survey, of which only the first two waves are used, was conducted by I&O Research (International Organization for Standardization (ISO)-certified). Respondents were drawn from a sample of the Dutch population recruited using random sampling from population registers. Exact dates of fielding were February 23 (Wave 1) and April 20 (Wave 2), 2015. The *ZML* episode on TTIP was in the middle of this period: March 15, 2015.

A total of 9,112 people started the first questionnaire, of which 6,386 completed the survey (completion rate: 70.1%). Respondents who participated in the first wave were also invited for the second. Of these, 4,301 respondents completed the questionnaire (completion rate: 69.0%). In both survey waves, a majority responded within three days after the survey opened (Wave 1: 56%; Wave 2: 66%); results remain unchanged when controlling for the time of response.

*Independent Variable.* Wave 1 of the survey extensively measured people's media consumption. For a range of outlets, the following question was asked: "How many days per month/week do you watch/read/listen to this show/newspaper/website?" Included was a question tapping the frequency of exposure to *Zondag met Lubach*, which is broadcasted once per week, with an answer scale ranging from 0 (zero times per month) to 4 (four or five times per month).

*Dependent Variable.* A multiple-choice question in the second survey wave tested whether respondents knew what TTIP was. Answer options included (a) investment fund for pensions, (b) trade agreement between the European Union and United States, (c) policy proposal for new tax regulations, (d) new political party, and (e) I don't know. A dummy variable indicated whether people answered the question correctly (score 1; 59.9% of respondents) or not (0).

*Control Variables.* The analysis controls for factors that could also explain knowledge acquisition about TTIP. Control variables include age, gender, education, internal political-economic efficacy, political trust, ideology (left-right), and interest. Importantly, analyses control for alternative sources of information: the consumption of the mainstream news media (i.e., television news, newspapers, news website) and the frequency of talking with others about politics. To verify that it is not just the tendency to watch political satire, but actual exposure to *Zondag met Lubach*, a control variable is included that measures the consumption of other Dutch satire shows (*De Kwis; Cojones*) in which TTIP was not discussed. Finally, the analysis controls for the knowledge respondents held about other current affairs in Wave 1. A 0-to-5 scale was constructed that reflected the knowledge about five political-economic topics at the beginning of the survey ( $M = 3.69$ ;  $SD = 1.13$ ). All control variables were measured in the first survey wave.

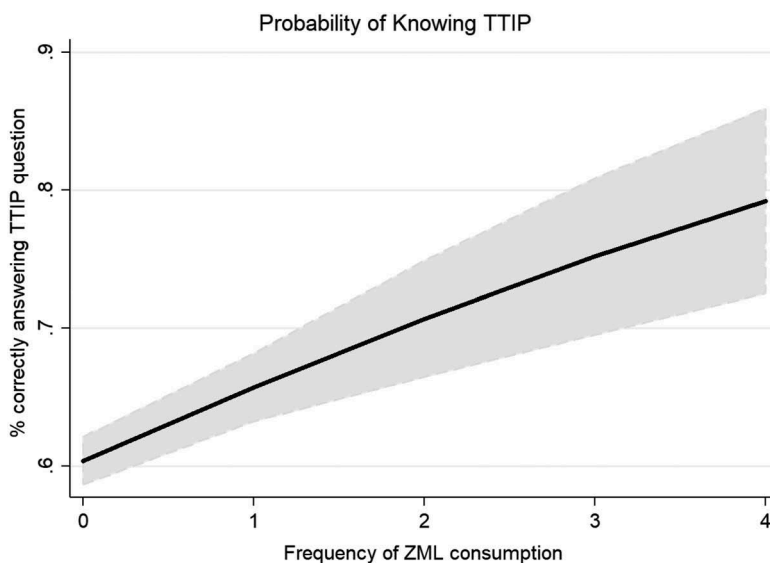
*Results.* Consumption of *Zondag met Lubach* strongly affected the probability of knowing about TTIP. A logistic regression analysis (Table 1) found that watching one additional episode of *ZML* per month increased the odds of a correct answer with factor 1.26. Figure 1 visualizes this increasing pattern. Altogether, this provides evidence confirming Hypothesis 1: *ZML* provided citizens with knowledge about TTIP. Regular *ZML* viewers, overall, were 31% (i.e., 19 percentage points) more likely to know what TTIP was than those not watching the show (i.e., 79% versus 60%).

**Table 1**

Logistic regression model predicting likelihood of answering TTIP question correctly.

Independent Variable	<i>b</i>	( <i>SE</i> )	OR	<i>p</i>
Intercept	-2.50	(0.29)	0.08	0.000
Existing knowledge (Wave 1)	0.49	(0.04)	1.63	0.000
Age	0.00	(0.00)	1.00	0.414
Gender (0 = male; 1 = female)	-0.43	(0.08)	0.65	0.000
Education	0.20	(0.02)	1.22	0.000
Internal efficacy	0.06	(0.01)	1.06	0.000
Political trust	-0.01	(0.01)	0.99	0.146
Political ideology (left-right)	-0.10	(0.02)	0.90	0.000
Talking about politics	0.06	(0.03)	1.07	0.013
Political interest	0.10	(0.02)	1.10	0.000
Mainstream news	0.01	(0.00)	1.01	0.008
Other satire shows	0.08	(0.10)	1.08	0.408
<i>Zondag met Lubach</i>	0.23	(0.05)	1.26	0.000

*Note.* Cells contain unstandardized coefficients (*b*) with standard errors (*SE*) in parentheses, odds ratios (OR) and probabilities (*p*).



**Figure 1.** Predicted probability of knowing what TTIP means with increasing levels of *ZML* consumption per month.

### **Study 2: Experiment (H2, H3)**

*Method.* Next, I examined whether *ZML*—besides knowledge—also increased the perceived understanding of TTIP and subsequently contributed to the salience of TTIP on the individual agenda of citizens. A posttest-only experiment was conducted to examine this (indirect) effect.

A three between-subjects experiment was fielded between May 19 and June 8, 2017. A sample of 122 respondents was recruited through the personal network of this study's principal investigator (40%), via Facebook advertisements (34%) and online political discussion or survey groups (7%).<sup>1</sup> The average age was 32 years ( $SD = 13.70$ ; min. = 18, max. = 67), 53.3% were female, and a majority was highly educated (higher professional education: 36.1%; university: 46.7%).

A convenience sample is not ideal from the perspective of external validity (i.e., generalizability). However, this study's primary intention is to investigate the causal relationship between variables rather than to provide exact point estimates of these variables. Employing a randomized design provides an internally valid test of *ZML*'s effect on perceived understanding and public agenda salience (indirectly). After all, participants' background characteristics are randomized across conditions and could not affect the outcome.<sup>2</sup> Moreover, the experiment sets the stage for the longitudinal analysis of Study 3, which examines the tested agenda-setting relationships more abstractly on the aggregate level with generalizable data.

*Independent Variable.* The independent variable was the condition to which participants were randomly allocated: political satire ( $N = 39$ ), traditional news ( $N = 40$ ), or documentary ( $N = 43$ ). In all conditions, respondents were asked to watch a six-minute

<sup>1</sup> The remaining 19% did not indicate method of recruitment. Data were collected in cooperation with Joy Schouten with the original purpose of conducting her master thesis research.

<sup>2</sup> Randomization checks showed that the conditions were indeed unrelated to age,  $F(2, 119) = 0.71, p = .492$ , gender,  $\chi^2(2) = 0.80, p = .670$ , and education,  $F(2, 119) = 0.94, p = .395$ .

video on the topic of TTIP, but the presentation differed widely across conditions. Manipulation checks confirmed that the satire video was perceived more humorous compared to the news and the documentary condition that were primarily considered to be informative,  $\chi^2(1) = 59.35, p < .001$ .

The political satire condition showed a fragment of a follow-up broadcast of *Zondag met Lubach* (date: October 4, 2015) in which TTIP was again explained humorously. This time the audience was informed about the complex investor-state dispute settlement (ISDS) and about the Comprehensive Economic and Trade Agreement (CETA), which is a similar proposed trade agreement between the European Union and Canada. TTIP was explained in an athlete-like (including sweatband) setup: The host had 30 seconds—stopwatch-timed—to explain what the consequences would be of easier trade regulations with the United States. Subsequently, funny cartoons of the evil twin sisters TTIP and CETA as well as of a “chlorine chicken” and humorous translations of the agreement—plus a baby hedgehog—were used to comprehensively explain the trade agreements.

The news condition showed a video of *NOS Journaal* (the most popular and trusted newscaster of the Netherlands; see Matsa, 2018). This news item reported on TTIP’s derivative CETA, explains the process of negotiations, interviews a Canadian Minister, and mentions some regulations that are part of the trade agreement. As a standard approach for a news item, it mainly focused on the event of a particular negotiation and the conflict between the parties that are involved but did not provide much in-depth explanation of the actual policy (Baym, 2005).

A documentary condition was included in the experimental design, because it (a) provides a comparable level of explanation as satire, which is normally lacking in regular news items, but (b) does so in a more serious and technical manner. Documentary, thereby, allows a more internally valid comparison with satire regarding the consequences of presentational style, because the level of detail in the explanation is kept relatively similar. The documentary condition showed a video of *Tegenlicht*, one of the most renowned documentary shows in the Netherlands, dealing with the consequences of TTIP and definitions of free market, and showed an interview with a professor from Oxford University explaining this topic.

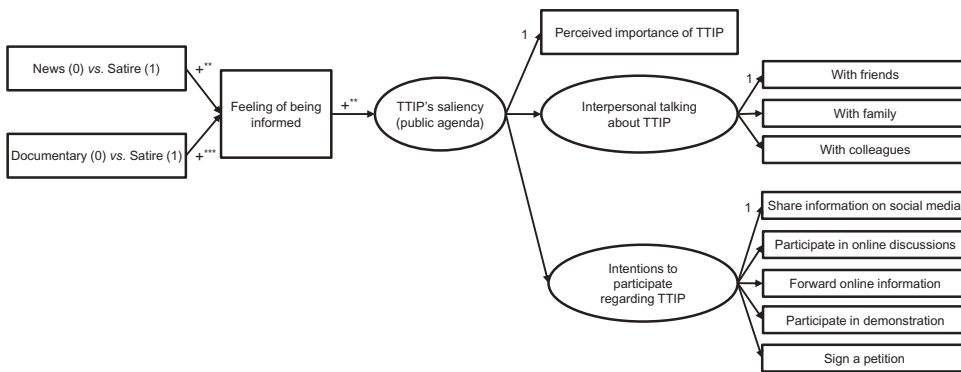
*Mediator.* The feeling of being informed was expected to function as a mediator between exposure to satire and subsequent indicators of the public agenda. The variable was measured with a scale inspired by Mattheiß et al. (2013) construct “subjective information.” The following six items verified the reliability of their scale ( $\alpha = .86$ ; running from 1 to 7,  $M = 5.06, SD = 1.07$ ) and measured on a seven-point Likert scale how well or strongly respondents (a) felt informed by the video, (b) thought they were able to place the information in a broader context, (c) understood the crucial facts of the video, (d) understood the complexity of the topic, (e) learned something, and (f) were able to explain facts of the video without too much difficulty.

*Dependent Variable.* Three dimensions of TTIP’s salience on the public agenda were combined in one latent construct. First, a single question tapped how important participants considered the trade agreement in the video on a 7-point scale (1–7;  $M = 5.68, SD = 1.19$ ) (see Holbrook & Hill, 2005). The second dimension was adopted from Lee and Jang (2017) and measured the intention to talk about trade agreements as TTIP with (a) colleagues, (b) family or (c) friends. These three 7-point items together formed a reliable scale ( $\alpha = .92$ ). Third, the intention to participate politically regarding trade agreements such as TTIP was measured with five political actions (inspired by Hooghe & Marien, 2013; Vesnic-Alujevic, 2012) tapped on 7-point scales ( $\alpha = .81$ ): (a) sign a petition, (b)

participate in protest, (c) forward online information to friends or family, (d) participate in online discussion, and (e) share information on social media.

Following the guidelines of Holbert and Grill (2015), confirmatory factor analysis with the separate survey items showed that perceived importance, interpersonal talk, and participation intentions are three dimensions of one overarching construct,  $\chi^2(25) = 30.25$ ,  $p = .215$ , confirmatory fit index (CFI) = .99, root mean square error of approximation (RMSEA) = .04 (90% CI = [.00, .09]), standardized root mean square residual (SRMR) = .05. No co-varied error terms were specified. Accordingly, one latent variable was constructed measuring TTIP’s saliency on the public agenda.

*Analysis.* Structural equation modeling is employed to analyze the indirect effect of exposure to satire (versus news, or versus documentary) on the public agenda via the feeling of being informed. Using two dummy variables for the condition to which participants were assigned, one structural regression model (see Figure 2) tested Hypotheses 2 and 3 simultaneously.



**Figure 2.** Structural equation model predicting the relationships between satire exposure, the feeling of being informed, and subsequent indicators of the public agenda. *Note:* For reasons of clarity, covariances that were specified between all exogenous variables and error terms of the endogenous variables were not visualized. \*\*\*  $p < .001$ . \*\*  $p < .010$ . \*  $p < .050$ .

*Results.* Results of the well-fitting structural equation model (SEM)— $\chi^2(51) = 63.90$ ,  $p = .106$ ; CFI = 0.98; RMSEA = 0.05 (90% CI = [.00, .08]); SRMR = .06—show that exposure to the satire video led to more perceived understanding of the topic than exposure to the news clip ( $b = 0.62$ ;  $SE = 0.23$ ,  $p = .007$ ) or the documentary ( $b = 0.82$ ;  $SE = 0.22$ ,  $p < .001$ ). This provides evidence in line with Hypothesis 2.

An additional ANOVA with Bonferroni corrected estimates confirmed this result,  $F(2, 119) = 7.38$ ,  $p = .001$ ,  $\eta^2 = .11$ : Participants exposed to satire ( $M = 5.54$ ,  $SE = 0.16$ ) felt more informed than those who saw news ( $M = 4.93$ ,  $SE = 0.16$ ,  $p = .025$ ) or documentary ( $M = 4.72$ ,  $SE = 0.16$ ,  $p = .001$ ). The latter two conditions did not differ significantly.

The feeling of being informed, subsequently, had a direct effect on the saliency of TTIP on the public agenda,  $b = 0.21$ ;  $SE = 0.07$ ,  $p = .001$ . Using 95% bias-corrected 10,000 bootstraps intervals of user-defined estimands, it could be assessed whether exposure to satire indirectly affected the public agenda. For the comparison news versus satire, a significant indirect effect is found,  $b = 0.13$ , 95% CI [0.04; 0.29]. A similar result was found for the indirect effect on the public agenda for the comparison between documentary and satire,  $b = 0.17$ , 95% CI [0.06;

0.40]. In sum, political satire *indirectly* affects the public agenda on the individual level via its effect on the feeling of being informed, which is in line with Hypothesis 3.

### **Study 3: Longitudinal Analyses (H4, H5, H6)**

*Method.* To analyze ZML's agenda-setting effects on the aggregate level, longitudinal analyses were conducted with weekly data representing three different agendas: public, media, and politics.

*Independent Variable.* The actual broadcasting of *Zondag met Lubach* episodes on TTIP is the independent variable in the analyses. Two episodes on this topic were aired in the period between November 2014 (first episode of ZML season 1) and August 2017 (moment of analysis); respectively, on March 15 (see Study 1) and October 4, 2015 (see Study 2). The first negotiations on TTIP took place in July 2013, which arguably is the first moment TTIP could have become salient on the public, media, or political agenda, and therefore is the starting point of the analysis.

Following the theory that agenda-setting is a cognitive process, studies generally find that effects on the public agenda decay rapidly, because people tend to forget the coverage or the covered topic becomes less prominent in one's mind (Watt et al., 1993). A structural comparison of different time lags showed that television news had the strongest effect within one week of its coverage and that this exponentially decreased over time: 12 weeks after original coverage hardly any effect on the public remained (Wanta & Hu, 1994) and the strongest effects for new, unobtrusive topics occur within 30 days after exposure (Watt et al., 1993).

Taking into account that agenda-setting effects weaken over time and eventually may dissipate, an independent variable was generated with value 1 in the week of a ZML broadcast on TTIP, and in every next week the value is divided into three (i.e., 1, 0.333, 0.111, 0.037, etc.). This independent variable returns to 1 for the second ZML broadcast on TTIP in October 2015, and again is divided into three for subsequent weeks. The Appendix provides additional analyses showing that this split-in-three decay curve reflects the most accurate prediction of how the agenda-setting effect decays with every next time lag when compared to, for example, an exponential decay, a linear decay, an immediate decay (only an effect directly after the broadcast), a slower decay (split-in-two), or a faster decay (split-in-four).

Different from a decaying effect, one may also expect a permanent agenda-setting effect of the first ZML episode: Once ZML covered TTIP, this topic may permanently become more salient on the agendas compared to the period before the broadcast. Therefore, a dummy variable was created indicating whether a week was *before* (0) or *after* (1) the first ZML episode on TTIP.

The current study analyzes data from July 7, 2013 (first negotiations about TTIP) until May 7, 2016. This end date was chosen because it allows for a data structure in which the number of weeks *between* the first ZML broadcast on TTIP and the second ZML broadcast on this topic is equal to the number of weeks *after* the second ZML broadcast. In that way, the effect of both episodes can be assessed in an equal number of weeks after their airing (i.e., 29 weeks), which allows for a balanced comparison. After 29 weeks, moreover, not much of an additional agenda-setting effect is expected (Roessler, 2008; Wanta & Hu, 1994; Watt et al., 1993).

*Public Agenda.* The public agenda was operationalized as the relative frequency with which search query requests on "TTIP" or "T.T.I.P." were made in Google by users in the Netherlands. The Dutch population has a very high Internet penetration (96% of population; see Newman, Fletcher, Kalogeropoulos, Levy, & Kleis Nielsen, 2017), making it a suitable and representative measure of the public agenda (Ripberger, 2011; Scharnow



& Vogelgesang, 2011). Google normalizes the variable in such a way that it ranges from 0, for weeks in which hardly anyone searched on these terms, to 100, for the week with the most searches ( $M = 7.00$ ,  $SD = 13.03$ ).

*Media Agenda.* The media agenda is operationalized by the saliency of TTIP in a combination of the four largest national newspapers (*Algemeen Dagblad*; *NRC*; *Volkskrant*; *Telegraaf*) and the dominant Dutch newswire *ANP*. Due to the very homogenous agenda of different news outlets, a valid estimate for the overall media agenda has been created by combining the saliency of TTIP within these newspapers and the newswire *ANP*. First, Dutch news websites have been shown to be highly dependent on the *ANP* newswire; between 50% and 75% of their articles are (partial) copies from this source (Boumans, Trilling, Vliegthart, & Boomgaarden, 2018; Welbers, Van Atteveldt, Kleinnijenhuis, & Ruigrok, 2018). Second, it has been shown that the agendas of newspapers and online media also closely overlap—at  $r > .90$  (Heim, 2013; Vargo & Guo, 2017). Third, newspapers have been shown to determine the agenda of television news (Golan, 2006).

The number of articles published per week containing the keywords “TTIP” or “T.T.I.P” were retrieved from LexisNexis ( $M = 3.06$ ,  $SD = 5.33$ ). When the media agenda was used as a control/independent variable, the same decaying agenda-setting effect curve as for the satire broadcast has been used. Accordingly, the value of this variable is equal to the number of articles in one week, plus the number of articles in the previous week divided by 3, plus the number of articles of two weeks ago *twice* divided by 3, etc.

*Political Agenda.* Having a political impact, being potentially responsive to media attention on a short term (Walgrave & Van Aelst, 2006) and “the most important non-legislative activities of many parliaments” (Vliegthart & Walgrave, 2011, p. 327), this study uses the interpellations and questions MPs ask in Parliament as well as the (required) answers given by government representatives (PM, Ministers, or State Secretaries) as a representative measurement of the political agenda (see Walgrave, Soroka, & Nuytemans, 2008). The weekly number of questions, interpellations, and ministerial answers that mentioned “TTIP” ( $M = 0.52$ ,  $SD = 0.79$ ) were retrieved from the Parliamentary database <https://zoek.officielebekendmakingen.nl/>.

*Control Variable.* To control for real-world events surrounding TTIP, analyses include dummy variables for all the weeks in which EU-US working groups came together for official negotiations regarding the trade agreement.<sup>3</sup> Potentially, these negotiations on themselves may also attract public, media, or political attention and, therefore, should be controlled for.

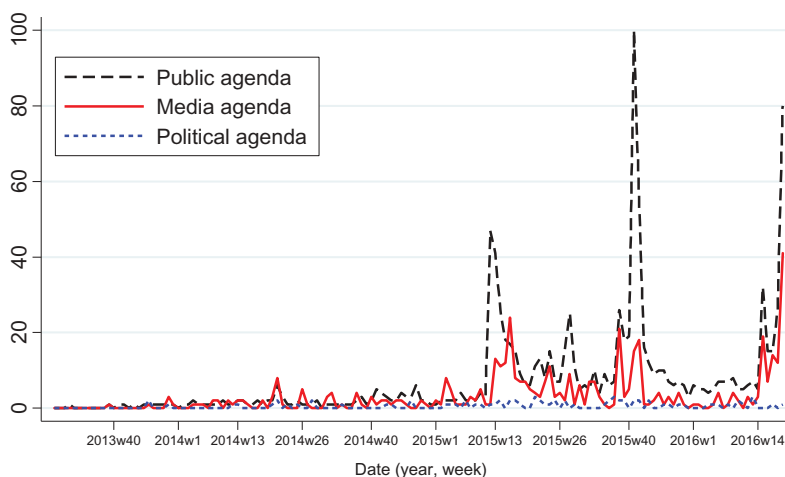
*Analysis.* Autoregressive integrated moving average (ARIMA) analyses have been conducted. First, all time-series were examined for issues of non-stationarity. Dickey-Fuller tests showed that for all series the null hypothesis of non-stationary could be rejected at  $p < .001$ ; so, the original data can be used, and differencing is unnecessary. Ljung-Box Q tests and Engle-Granger tests showed that including an AR(1) term, one autoregressive lag-dependent variable, was sufficient to achieve white noise in the residuals and to avoid autoregressive conditional heteroscedasticity for all three agenda time series.

Analyses control for the potential influence of the other agendas (respectively: public, media, or political) and the occurrence of TTIP negotiations. As the independent variable, analyses either include (a) the decaying influence of *ZML* broadcasts or (b) the permanent

<sup>3</sup> For an overview of negotiations, see [http://ec.europa.eu/trade/policy/in-focus/ttip/documents-and-events/index\\_en.htm#negotiation-rounds](http://ec.europa.eu/trade/policy/in-focus/ttip/documents-and-events/index_en.htm#negotiation-rounds).

influence of the first *ZML* broadcast. Both patterns are not included simultaneously, because that causes issues of multicollinearity: When the decaying variable is relatively high, the permanent influence is also at its maximum. Because *ZML* airs on Sundays, an episode can impossibly affect media coverage or parliamentary questions in that particular week (running from Monday to Sunday), but search queries by contrast can immediately be evoked during or after the show; the analyses predicting the media and political agenda, therefore, included lagged *ZML* independent variables.

*Results.* Six separate ARIMA models were run to estimate the effect of the *ZML* broadcast (i.e., decaying and permanent) on either the public, media, or political agenda (results shown in Table 2). Figure 3 provides a visual overview of the data, in which *ZML*'s effects can also be traced.



**Figure 3.** Visual overview of time series: public (dashed, black), media (solid, red) and political agenda (dotted, blue). *Note:* *Zondag met Lubach* (*ZML*) broadcasts on TTIP aired in 2015, weeks 12 and 41.

In line with general agenda-setting theory, the public agenda responded to attention for TTIP in the traditional news media ( $p < .001$ ), but not to the political agenda ( $p > .300$ ). A decaying effect was, additionally, found of the *ZML* broadcast itself. In the week of a *Zondag met Lubach* episode about TTIP, the number of search queries strongly increased with 58 points (on a scale from 0 to 100), which then weakened by factor three with every subsequent week. An insignificant permanent influence of the *ZML* episode was revealed ( $p = .093$ ). Comparing model fit of the estimation with the decaying effect versus the model with permanent influence, the first achieves a much better fit in terms of log-likelihood, Akaike information criterion (AIC), and Bayesian information criterion (BIC). The public agenda, thus, was positively affected by *ZML*, but especially on the short term.

The media agenda was insensitive to a direct agenda-setting influence of the *ZML* episode (s). Neither a decaying *nor* a permanent influence was found. This absence of an intermedia effect might be explained by satirists' regular criticism of journalists (Borden & Tew, 2007; Painter &

**Table 2**  
ARIMA model predicting the salience of TTIP on the public, media, and political agenda.

	Public Agenda (decaying effect)			Public Agenda (permanent effect)			Media Agenda (decaying effect)			Media Agenda (permanent effect)			Political Agenda (decaying effect)			Political Agenda (permanent effect)		
	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>	<i>b</i>	(SE)	<i>p</i>
Intercept	0.00	(1.10)	.998	-1.54	(4.64)	.741	1.12	(0.83)	.176	0.61	(0.94)	.512	0.38	(0.14)	.005	0.27	(0.14)	.053
Negotiations	-0.44	(1.37)	.749	-0.73	(4.40)	.868	-0.74	(1.29)	.566	-0.52	(1.25)	.676	-0.05	(0.23)	.832	0.00	(0.21)	.994
Public agenda	<i>0.47</i>	( <i>0.07</i> )	.000	<i>0.40</i>	( <i>0.07</i> )	.000	0.29	(0.01)	.000	0.28	(0.01)	.000	0.01	(0.01)	.282	0.01	(0.01)	.341
Media agenda	1.30	(0.04)	.000	1.26	(0.11)	.000	<i>0.34</i>	( <i>0.09</i> )	.000	<i>0.23</i>	( <i>0.08</i> )	.006	0.01	(0.02)	.488	0.00	(0.02)	.835
Political agenda	0.39	(0.45)	.389	1.38	(1.34)	.301	-0.11	(0.43)	.800	-0.15	(0.42)	.725	<i>0.07</i>	( <i>0.07</i> )	.369	<i>0.02</i>	( <i>0.08</i> )	.841
ZML: decaying effect	58.20	(1.17)	.000				<i>5.48</i>	( <i>11.64</i> )	.638				<i>1.58</i>	( <i>1.03</i> )	.127	<i>0.42</i>	( <i>0.15</i> )	.006
ZML: permanent effect				5.73	(3.41)	.093												
Log-likelihood	-404.92			-494.17			-390.92			-390.81			-159.32			-155.74		
AIC	823.83			1002.34			795.84			795.63			332.64			325.48		
BIC	844.52			1023.03			816.77			816.56			353.33			346.17		

Notes: AIC = Akaike information criterion; BIC = Bayesian information criterion. Cells contain unstandardized coefficients (*b*) with standard errors (*SE*) in parentheses, and probabilities (*p*). When the public agenda predicts the public agenda itself, the independent variable refers to the lagged dependent variable (similar for media and political agenda). The media and political agenda are predicted by lagged values of ZML, because the show broadcasts by the end of the week (Sunday) and media nor politicians can react so rapidly. Lagged predictors are printed in *italics*.

Hodges, 2010) or because journalists find it difficult to deal with satire's thin line separating humor and earnestness (Carlson & Peifer, 2013). No influence was found of the political agenda either. The only exogenous agenda that had an impact on the media agenda was the public agenda ( $p < .001$ ). When TTIP became more salient among citizens, media were more likely to report on it. This shows evidence of an indirect agenda-setting effect: The satire strongly affected the public agenda, which subsequently evoked more media coverage.

Neither the previous political agenda nor the public or media agenda influenced the political agenda regarding TTIP. However, this topic's saliency significantly *increased* after *ZML* broadcasted its first episode dedicated to TTIP. On average, 0.42 more questions, interpellations, or answers about TTIP were communicated in Parliament per week from the moment that the satire show covered it. This influence on the political agenda was permanent ( $p = .006$ ) and not decaying ( $p = .780$ ): Once *ZML* had put TTIP on the political agenda, it remained there.

## Discussion

The current study investigated the agenda-setting effect of satire show *Zondag met Lubach* (*ZML*) with regards to the EU-US trade agreement TTIP. Using a combination of methods, the agenda-setting process has been uncovered step-by-step. In a nutshell, viewing *ZML* positively affected knowledge acquisition of TTIP (Study 1); it improved the perceived understanding of this issue, which made the issue more salient on the individual-level public agenda (Study 2). On the aggregate level (Study 3), the *ZML* broadcast placed TTIP higher on the public (short-term) and political (long-term) agenda. Further research is needed to verify whether this agenda-setting effect is generalizable to other topics than TTIP and other satire subgenres than the one *ZML* belongs to. *ZML* is a rather earnest satire show along the lines of *Last Week Tonight With John Oliver*. The audience may perceive such shows as more serious than lighter forms of satire (e.g., late-night comedy or parody shows), which could have made *ZML* particularly powerful.

Every study presented in this article had its own set of strengths and weaknesses, but they work together as a unique collective to investigate the multiple dimensions of which agenda-setting consists. The panel survey demonstrated that consumption of *ZML* led to better scores on a measurement of TTIP knowledge, which is a crucial—but frequently overlooked—first step in the cognitive process that agenda-setting is (Watt et al., 1993; Weaver, 1980). However, the knowledge measurement was delayed about one month after the broadcast (with increasing media coverage; see Study 3), which decreased control over alternative explanations compared to a situation in which the survey would have been fielded closer to the day of broadcasting. Therefore, it most likely *underestimated* satire's learning effect. The delayed measurement, however, has had the advantage that effects due to time-shifting or online viewing have also been included. Because this study was part of a larger, representative panel survey (high sample quality), the timing could unfortunately not be controlled. Moreover, because at the time of Wave 1 it could not be known that *ZML* would dedicate an episode to TTIP, there was no repeated measurement of this topic's knowledge. By measuring the knowledge of five comparable political-economic topics in Wave 1, though, analyses could control for respondents' initial level of information, which strengthens the ability to draw causal conclusions.

Study 2, due to its randomized experimental design, allows for strong causal conclusions; yet, it was confronted with lower sample quality. Highly educated citizens were especially overrepresented. Because politically inattentive individuals are most susceptible to learn from infotainment (Baum, 2003), whereas the highly educated have fewer problems understanding traditional forms of news (Bas & Grabe, 2015), this probably caused another underestimation of

the true effect. After all, the extra explanation and common language in satire should especially benefit the understanding of citizens with less education, who were underrepresented in the experiment. One limitation, which is shared with most existing experiments on the effects of political satire, are the potential confounds in the stimuli. Utilizing (existing) real-world stimuli with differences in content means that conditions not only differ in terms of presentation style (satirical versus journalistic), but also regarding the information that is being provided (different conditions highlight different elements of TTIP). In terms of ecological validity, experiments on satire (such as the current study) would benefit from extra conditions in which exposure to satire is preceded or followed by exposure to regular news (see, e.g., Boukes et al., 2015). The people who tune in to satire normally do not do so in the complete absence of news consumption (Feldman & Young, 2008; Young & Tisinger, 2006), but rather use the knowledge that they acquired from news sources to understand the satire (Gray, 2006; Landreville & LaMarre, 2013). Ideally, this would be reflected in the experimental treatment(s) with stimuli that combine news *and* satire.

The aggregate-level longitudinal analyses of Study 3 are not confronted with limitations of generalizability or ecological validity. Using real-world data, the yielded effects will have reflected how the citizenry as a whole watches political satire in daily life. Compared to the panel survey, effects that directly followed the exposure to *ZML* can be immediately detected in the search query data. Although providing results of a more generalizable nature, analyses of this kind are faced with a less strict level of control. Whereas this study can convincingly demonstrate that the number of Parliamentary questions (permanently) and search queries on Google (short term) increased after the satire broadcast on TTIP, it cannot be verified that the citizens or politicians who took such action had been exposed to *ZML*. Moreover, it is impossible to prove that delayed agenda-setting effects on the audience (e.g., searching for TTIP three weeks after the episode) are the outcome of a decaying effect (i.e., people still consider TTIP as important due to the *ZML* episode) or external influences (i.e., variables omitted from the models). It might be that Google's autocomplete function encouraged people to search for this topic, but also that people saw the video at a later moment on social media or via YouTube. However, validations of this measurement have shown strong correlations between the number of online search queries and traditional survey measurements of the public agenda (Scharkow & Vogelgesang, 2011; Whyte, 2016); thus, *ZML* could indeed have had a decaying agenda-setting effect on the public. The current operationalization of the public agenda, moreover, is valuable, because it demonstrates a behavioral effect in the daily lives of citizens, which is difficult to examine with the usual survey measurements.

Altogether, this multi-study article demonstrated that political satire can set the public agenda as well as the political agenda. This conclusion underlines the continuing relevance of agenda-setting as an interpretative framework (Pavitt, 2010) and advances this theory by showing that it is *not* necessarily a repetition of messages as in the daily stream of news coverage that determines the agenda (Bennett & Iyengar, 2010, p. 36). By contrast, one specific satire episode can also have long-term agenda-setting effects. The two *ZML* episodes dedicated to TTIP caused clear spikes on the public agenda and a lasting influence on the political agenda. Like “media events” (Dayan & Katz, 1992) or “media storms” (Walgrave, Boydston, Vliegthart, & Hardy, 2017), a single political entertainment broadcast has the potential to significantly interrupt the routines regarding which topics are considered to be of high importance by both citizens and politicians. Instead of following the media or political agenda, the editorial staffs of satire shows such as *Zondag met Lubach* or *Last Week Tonight With John Oliver* consciously select non-trusive topics that they believe should be addressed—but are not yet in the mainstream media—and thereby influence the agendas of public and politics. This conclusion about satire's agenda-setting impact regarding the TTIP issue is shared with Lilianne Ploumen, former Dutch Minister

for Foreign Trade and Development Cooperation (2012–2017), who said, “I’ve been trying to attract attention for TTIP a long time. I wrote an opinion article, but no newspaper was interested in it. When *Lubach* paid attention, suddenly there was a debate, and questions were raised in Parliament” (Van Loon, 2017, p. 3). Having a real-world agenda-setting impact, political satire is, thus, far from “just a joke” (Brewer & Marquardt, 2007).

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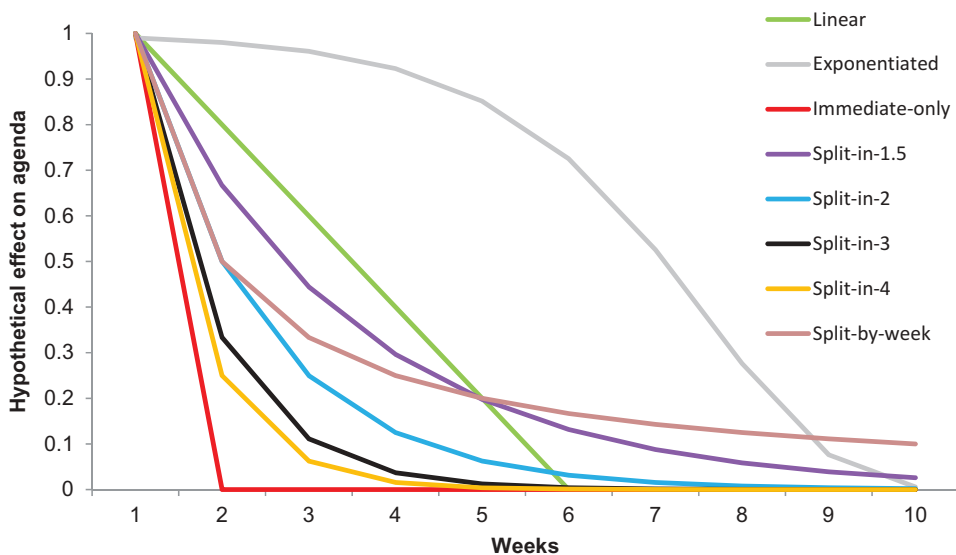
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## Appendix: Comparison of Different Decay Functions

To empirically test the optimal function with which the agenda-setting effect decays, a variety of decay functions—eight in total—have been compared. [Figure A1](#) visualizes how strongly the *ZML* broadcast would hypothetically affect the respective agenda (i.e., public, media, or political agenda) in the subsequent 10 weeks under different decay functions. These functions have been chosen by following literature on time-series effects and how these would decay (e.g., Clarke, Mishler, & Whiteley, 1990; Vliegthart & Boomgaarden, 2007). Moreover, different split functions are applied to allow for a faster or a weaker decaying effect. For example, a split-in-two function follows a decay curve of 1, 0.50, 0.25, 0.125, etc., whereas a split-in-4 function (i.e., faster) follows the following decay curve: 1, 0.25, 0.0625, 0.0156, etc.



**Figure A1.** Visual illustration of different decay functions per week.

Model fit statistics are compared to assess which decay function fits the data the best. A standard practice for analysis of longitudinal data, the following statistics are used to compare the model fit: log-likelihood, AIC, and BIC. [Table A1](#) presents the details.

Comparing the statistical fit of the models using different decay functions shows that for the prediction of the media agenda and the political agenda hardly any differences were observed. The reason is, as also explained in the manuscript, that there was no decaying effect of *ZML* on these specific agendas. Hence, different decay functions did not lead to a considerably better or worse model fit vis-à-vis each other.

When evaluating the model fit of ARIMA predictions regarding the public agenda, clear differences emerged. Obviously, the models that decayed faster had a better model fit than slower ones, such as the linear (1, 0.8, 0.6, 0.4, etc.) or the exponentiated decay function (0.990, 0.980, 0.961, 0.923, 0.851, 0.725). Printed in bold, the decay function in which the effect is divided by three for every subsequent lag (i.e., 1, 0.333, 0.111, 0.037) had the optimal model fit (log-likelihood = -404.92, AIC = 823.83, BIC = 844.52). This function yielded a better model fit than a slower decay function (split-in-2; 1, 0.5, 0.25, 0.125) or a faster decay function (split-in-4; 1, 0.25, 0.0625, 0.0156). Accordingly, the decay function in which the agenda-setting effect is divided by three for every next week is applied in this article's analyses.

**Table A1**

Model fit of ARIMA models predicting, respectively, the public, media, or political agenda while applying different decay functions.

<i>Decay function</i>	Public Agenda			Media Agenda			Political Agenda		
	Log-likelihood	AIC	BIC	Log-likelihood	AIC	BIC	Log-likelihood	AIC	BIC
Linear	-441.39	896.79	917.48	-390.38	794.75	815.69	-159.11	332.22	352.91
Exponentiated	-475.14	964.28	984.97	-389.92	793.84	814.77	-158.85	331.69	352.39
Immediate-only	-424.43	862.85	883.54	-390.89	795.78	816.71	-159.39	332.77	353.46
Split-in-1.5	-425.11	864.22	884.91	-390.35	794.71	815.64	-159.02	332.04	352.73
Split-in-2	-408.91	831.82	852.51	-390.75	795.51	816.44	-159.23	332.47	353.16
<b>Split-in-3</b>	<b>-404.92</b>	<b>823.83</b>	<b>844.52</b>	-390.92	795.84	816.77	-159.32	332.64	353.33
Split-in-4	-407.39	828.78	849.47	-390.93	795.86	816.79	-159.34	332.69	353.38
Split-by-week	-416.41	846.83	867.52	-389.94	793.88	814.81	-158.56	331.12	351.81

Notes. AIC = Akaike information criterion; BIC = Bayesian information criterion.