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van Reijmersdal, E.A.; Rozendaal, E.; Hudders, L.; Vanwesenbeeck, I.; Cauberghe, V.; van Berlo, Z.M.C.

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Effects of Disclosing Influencer Marketing in Videos: An Eye Tracking Study Among Children in Early Adolescence

Eva A. van Reijmersdal [a,*] & Esther Rozendaal [b] & Liselot Hudders [c] & Ini Vanwesenbeeck [c] & Veroline Cauberghe [c] & Zeph M.C. van Berlo [d]

[a] *Amsterdam School of Communication Research, University of Amsterdam, Amsterdam, The Netherlands*
[b] *Behavioral Science Institute, Radboud University, Nijmegen, The Netherlands*
[c] *Center for Persuasive Communication, Ghent University, Ghent, Belgium*
[d] *Department of Communication Science, University of Amsterdam, Amsterdam, The Netherlands*

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Abstract

This study focused on the effects of sponsorship disclosure timing on children's ability to understand that social influencer videos are sponsored. The study also investigated how sponsorship disclosure timing affects children's attitudes toward the sponsoring brand, the video, and the influencer. An experiment among 272 children in early adolescence (10–13 years of age) was conducted using eye tracking. Results show that a disclosure shown prior to the start of the videos leads to more visual attention than a disclosure shown concurrently with the start of videos. Consequently, disclosure prior to the start of videos is better processed, as indicated by disclosure memory, which then leads to a better understanding that the content is sponsored. This understanding evokes a more critical attitude toward the sponsored content in the video, and results in less positive attitudes toward the brands, the videos, and the influencers. Theoretically, this study provides insights into the mechanisms that explain disclosure timing effects among children in early adolescence. Practically, this study offers recommendations to policy makers to develop sponsorship disclosures that can increase transparency of online embedded advertising to minors.

Keywords: Disclosure; Sponsored content; Brand placement; Native advertising; Vlogs; Early adolescents; Children; Eye tracking

Online content creators—also referred to as YouTubers, vloggers, or influencers—who mention, use, or promote (unhealthy) products in their videos or posts, are an important topic of concern regarding fairness (Federal Trade Commission 2013). These influencers have millions of young viewers and many influencers are used by companies to advertise their products (McAlone 2017). As a result, embedded advertising in online videos has become common practice (Escalas and Bettman 2017).

However, with embedded advertising, the boundaries between commercial and non-commercial online content (e.g., information or entertainment) are blurred (Campbell and Evans 2018). Therefore, children and adolescents have great difficulty recognizing that they are exposed to commercial content (Hudders et al. 2017). This increases their risk of being unwittingly manipulated and hinders them in making a truly informed choice, which may be considered a form of deception (Cain 2011).

To tackle deception, in the United States, both the Federal Trade Commission (FTC) and the Worth of Mouth Marketing Association (WOMMA) issued guidelines on the disclosure of sponsorship in social media (Federal Trade Commission 2013; WOMMA 2013). Similarly, several initiatives have been employed in Europe (Committee of Advertising Practice 2017). However, clear and evidence-based rules on how disclosures should be placed (i.e., implemented) so as to be noticeable for children and adolescents are lacking. Research among adults has shown that many people do not notice

* Corresponding author at: ASCoR, P.O. Box 15791, 1001NG Amsterdam, The Netherlands.
E-mail address: e.a.vanreijmersdal@uva.nl (E.A. van Reijmersdal).

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disclosures that accompany embedded advertising (Boerman, van Reijmersdal, and Neijens 2015; Tessitore and Geuens 2013). It is thus expected that this will also be the case for children and adolescents, in particular because the online media they use are characterized by emotionally appealing and attention-getting features (Rozendaal et al. 2011). This is likely to distract children's and adolescents' attention from advertising disclosures.

Therefore, this study aims to examine the noticeability and processing of disclosures for embedded advertising—that is, sponsored online videos created by influencers—with different timings (i.e., disclosure displayed *prior to* the start of sponsored videos or *concurrent with* the start of the videos) among children in early adolescence (10 to 13-year olds). The study also investigates both whether disclosure timing increases children's understanding that the sponsored content in online videos is a form of advertising and their critical attitude regarding the sponsored content in the videos (Boerman, van Reijmersdal, and Neijens 2014; Boerman, Willemsen, and van der Aa 2017). In addition, the study examines whether this in turn affects children's evaluation of the sponsoring brands, the online videos, and the influencers.

We focus on the timing of a sponsorship disclosure because this is assumed to be an important determinant of disclosure noticeability (Boerman, van Reijmersdal, and Neijens 2014; Choi et al. 2018; De Pauw, Hudders, and Cauberghe 2017). The moment the disclosure is shown determines a child's opportunity to process the disclosure and the extent to which the disclosure triggers persuasion knowledge (Boerman, van Reijmersdal, and Neijens 2014; MacInnis, Moorman, and Jaworski 1991). The target age group of this study are children in early adolescence (ages 10–13 years) because children in this developmental phase are active and independent users of online media, including video platforms such as YouTube (Livingstone et al. 2010). In addition, children in this age group show a fairly good understanding of advertising's intent (John 1999). Only if this knowledge is present can disclosures be used to activate it. Moreover, during early adolescence, children's cognitive abilities evolve rapidly, which enable them to understand the meaning of sponsorship disclosures and process sponsored online videos in a systematic and critical manner (Buijzen, van Reijmersdal, and Owen 2010).

The effects of disclosure timing are tested for sponsored online videos. In the current study, two sponsored online videos created by different YouTube influencers are included in order to draw conclusions beyond one instance of a sponsored video. To examine whether disclosure timing affects the noticeability of the disclosure, we use eye tracking devices that can measure children's visual attention in an unobtrusive way. This offers a unique opportunity to yield insights into the automatic responses that underlie disclosure effectiveness and shows why specific disclosures are better noticed and recognized than others (Guo et al. 2018; Potter and Bolls 2012; Wojdynski et al. 2017).

This study intends to provide insights into the theoretical processes that explain effects of sponsorship disclosure on the transparency of online embedded advertising among children in early adolescence. Such insights may aid not only in theoretical developments but also in the development of guidelines for disclosure regulations. From a societal perspective, it is therefore important to provide evidence-based recommendations on how to best inform children of a particular age about the persuasive nature of sponsored online videos created by influencers.

Theoretical Background

Effects of Sponsorship Disclosure on Understanding that Content is Sponsored

Sponsorship disclosures are assumed to empower consumers, both adults and children, because they may help them distinguish sponsored content from other online media content and thereby increase their awareness of the commercial nature of the sponsored media content (An and Stern 2011; Campbell and Evans 2018). Only a few studies have investigated the effectiveness of sponsorship disclosures in activating children's persuasion knowledge (An and Stern 2011; De Pauw, Hudders, and Cauberghe 2017; Panic, Cauberghe, and De Pelsmacker 2013; Van Reijmersdal et al. 2017; Vanwesenbeeck, Opree, and Smits 2017). The findings of these studies do not provide conclusive evidence. While some studies did find a disclosure to be effective in increasing children's understanding of sponsored content as a form of advertising (De Pauw, Hudders, and Cauberghe 2017; Van Reijmersdal et al. 2017), others did not find such an effect (An and Stern 2011; Panic, Cauberghe, and De Pelsmacker 2013; Vanwesenbeeck, Opree, and Smits 2017).

The studies in which the disclosure was not effective used various timings (at the beginning, throughout the exposure). The authors explain the lack of effect by stating that children may not have been aware of the disclosure because it did not catch their attention. When children do not notice a disclosure or do not have the opportunity to process the disclosure, for example because they are distracted by other appealing media content such as a game or television show, the disclosure is expected to miss its goal. Information processing theories indeed suggest that for a disclosure to lead to any kind of effect, children need to pay a minimum amount of attention to the disclosure (Lang 2000). This means that their gaze has to touch upon the disclosure. If this happens, the disclosure may enter the information processing system and generate other kinds of effects such as activated persuasion knowledge (Wojdynski and Evans 2016).

Because early adolescents' executive functions (e.g., working memory, inhibitory control, attentional flexibility) are still emerging, they experience more difficulties with monitoring and controlling their attention than adults (Best and Miller 2010; Blakemore and Choudhury 2006; Crone 2009). As a result, early adolescents' ability to focus on and process a disclosure may be lower than adults. One disclosure implementation variable that is assumed to help people, in particular children, focus their attention on the disclosure is the timing of the disclosure (i.e. the moment a disclosure is displayed;

Boerman, van Reijmersdal, and Neijens 2014; Choi et al. 2018; De Pauw, Hudders, and Cauberghe 2017). Disclosures that are displayed prior to an online sponsored message are expected to be more effective in drawing attention than disclosures that are displayed concurrent with the sponsored message, because children have a better opportunity to allocate cognitive resources to process such an "a priori" disclosure (Boerman, van Reijmersdal, and Neijens 2014). That is, children's opportunity to process a disclosure is higher when the disclosure is not accompanied by other information, such as online video content. Also, when the disclosure is shown concurrently with other online media content, children may have fewer cognitive resources available to process the disclosure because they have to engage in two processing tasks at the same time: they have to process both the online media content and the disclosure. Processing both the media content and the disclosure at the same time is especially challenging for children in early adolescence since their working memory capacity has not yet fully developed and because they have more difficulty than adults focusing their attention (Buijzen, van Reijmersdal, and Owen 2010; Roedder 1981). Therefore, compared to adults, the processing benefits of a disclosure prior to the video versus concurrent with the video are expected to be even more pronounced among children in early adolescence. It is expected that the disclosure will suffer most (compared to the video itself) from children's limited cognitive processing abilities because the online videos they like to watch oftentimes contain highly emotionally appealing content (Valkenburg and Piotrowski 2017). Emotional cues are known to be very attention grabbing and are therefore expected to distract children from processing the disclosure, resulting in reduced attention to the disclosure (Buijzen, van Reijmersdal, and Owen 2010). Consequently, the disclosure will be less well encoded, leading to lower recognition of it. Thus, we expect that the more salient the disclosure, the more likely children are to process the disclosure (i.e., pay attention to the disclosure and recognize it).

Information processing models suggest that as a result of more thorough processing of the disclosure children are also more likely to retrieve relevant persuasion knowledge from memory (Buijzen, van Reijmersdal, and Owen 2010; Wojdynski and Evans 2016). Therefore, because children can better process the disclosure, it is expected that a disclosure which appears prior to, as compared to concurrent with, the start of the video leads to clearer understanding (i.e., higher activation of children's persuasion knowledge). Although a disclosure concurrent with the start of sponsored videos is expected to elicit less awareness that the sponsored content is advertising, we do expect it to be more effective than no disclosure. Children's opportunity to process the disclosure is lower, but not totally absent. We hypothesize:

H1. A disclosure prior to the start of sponsored online videos leads to the highest understanding among children that the videos are sponsored, followed by a disclosure concurrent with the start of the sponsored online videos, followed by no disclosure.

H2. The effect of disclosure timing on children's understanding that videos are sponsored is mediated by visual attention to the disclosure and subsequently by disclosure recognition (see Fig. 1).

Effects of Understanding of Sponsorship on Brands, Videos, and Influencers

The Persuasion Knowledge Model (Friestad and Wright 1994) suggests that a higher awareness of the persuasive nature of a message (e.g., an advertisement) can change the way people respond to the message (e.g., the advertisement) and its source (e.g., the brand). When a persuasion attempt is understood, people can retrieve and apply their general persuasion knowledge to cope with the attempt. That is, when people understand the persuasion attempt, they may realize that the message is not just entertaining or informative but is meant to persuade. This awareness can trigger critical feelings about the honesty, trustworthiness, and credibility of the message. According to Brehm and Brehm's (1981) reactance theory, people do not want to be manipulated and desire to maintain the freedom to feel and think what they want. As a consequence, people are motivated to actively restore this freedom. They tend to become critical toward a persuasion attempt when they recognize it as such; they try to resist it, which results in

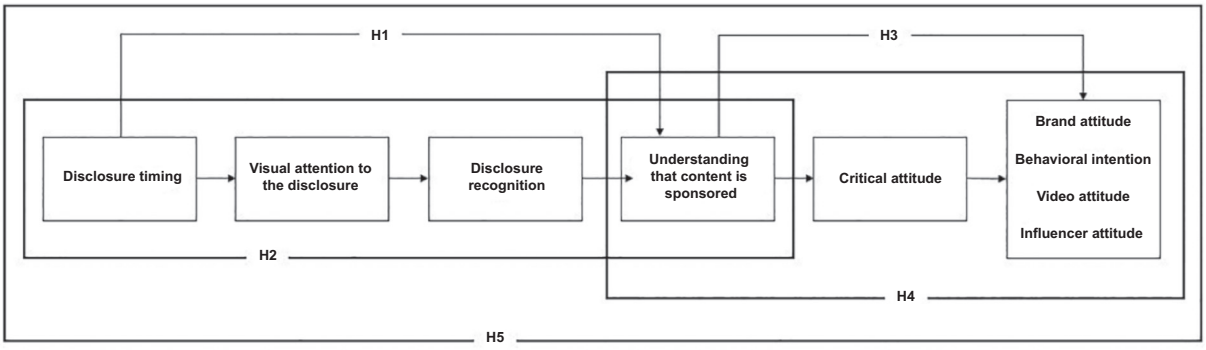

Fig. 1. Conceptual model of effects of disclosure timing.

negative responses (e.g., more negative brand attitudes, less purchase intentions).

Earlier research has found that, among adults, a better understanding of sponsored content resulted in a more critical attitude toward not only the sponsored content but also toward the brands (Boerman, van Reijmersdal, and Neijens 2014). However, the empirical evidence among children for this relationship is less conclusive (for an overview, see Mizerski et al. 2017). Only a few studies found that a better understanding of the persuasive nature of an advertisement leads to less persuasion among children (e.g., less positive brand attitudes and lower advertised brand desire; for an exception see Waiguny, Nelson, and Terlutter 2012). Most studies failed to demonstrate a (direct) connection between understanding of the persuasive nature of an advertisement and persuasion (e.g., Mallinckrodt and Mizerski 2007; Van Reijmersdal, Rozendaal, and Buijzen 2012). One reason why these studies did not find a direct relationship between an understanding of the persuasive nature of advertising and persuasion is because it arises indirectly via a critical attitude toward sponsored content (see Boerman, Willemsen, and van der Aa 2017).

The current study adds to existing literature by investigating the role of children's attitudinal defense mechanism, in this case a more critical attitude towards sponsored content in online videos. In particular, it examines the relationship between an increased understanding of sponsored content and their brand responses. The study also investigates whether better understanding that content is sponsored also affects children's evaluation of online videos and the influencers. Affect transfer theory states that an evaluation or feeling induced by an object can be transferred to another object (Raney et al. 2003). In the case of this study, this means that the less positive evaluation of the sponsored content due to critical processing, may be transferred or misattributed to the online videos and the influencers. Earlier research among adults indeed showed that increased awareness of the persuasive nature of sponsored content in blogs can have negative consequences for the perceived quality and credibility of the blog and the influencer (Carr and Hayes 2014; Wojdynski and Evans 2016).

The relationship between children's critical processing of sponsored content and their evaluations of the medium and the influencer is yet to receive research attention. As with adults, a better understanding of the persuasive nature of sponsored online videos might trigger critical attitudes towards the sponsored content, and in turn to more negative attitudes toward the advertised brand, the online video, and the influencer. However, there are also reasons to expect that, for early adolescents, this may not be the case. Due to the immature executive functioning skills (e.g., working memory, inhibitory control, attentional flexibility, emotion regulation; Best and Miller 2010; Blakemore and Choudhury 2006; Crone 2009) that characterize early adolescence, children at this age may be more likely to be swayed by entertaining and emotionally appealing features of the sponsored video and the social influencer and may be less likely to activate a critical manner of processing (Rozendaal et al. 2011), even when they understand that the video is sponsored. This would indicate that understanding of sponsorship in online videos has no effect on early adolescents' attitudes toward the brand, the video, and the influencer.

To test the relationship between a better understanding of sponsorship in online videos on early adolescents' attitudes toward the brand, the video, and the influencer, the following hypotheses were formulated:

H3. Better understanding that videos are sponsored leads to a) less positive brand attitudes, b) less behavioral intentions, c) less positive attitudes toward the online videos, and d) less positive attitudes toward the social influencers.

H4. The effects of understanding that the videos are sponsored on children's responses to the brands, videos, and social influencers (see H3) are mediated by children's critical attitude toward sponsored content.

Effects of Sponsorship Disclosure on Brands, Videos, and Social Influencer

Finally, combining all of the above-described relationships, we expect that disclosure timing in online videos indirectly affects children's responses toward the sponsoring brand, the online videos, and the influencers who created the videos. Specifically, it is expected that the disclosure prior to the start will have the largest negative effect on these outcome variables (as compared to the disclosure concurrent with the start and no disclosure) because it is assumed to attract the highest visual attention and therefore results in the best recognition of the disclosure, the highest understanding that the content is sponsored, and the highest level of critical attitude regarding the sponsored content, consecutively. Similarly, we expect a disclosure concurrent with the start to have a negative effect on responses toward the brand, the video and the influencer compared to no disclosure. The following hypothesis was formulated:

H5. As compared to disclosure concurrent with the start and no disclosure, disclosure prior to the start of a video, through visual attention, recognition of the disclosure, understanding of sponsored content and thus a more critical attitude toward that sponsored content, will indirectly lead to more negative behavioral intentions and attitudes towards a) brands, b) the videos, and c) social influences.

Method

Sample and Design

A total of 272 children between 10 and 13 years old (M = 10.90; SD = 0.78, 50.0% female) from the 7th and 8th grade of three elementary schools in urban and suburban areas in The Netherlands participated in the study. The children watched one of two sponsored online videos. We employed a one factor (disclosure timing: prior to the start of the videos, concurrent with the start of the videos, no disclosure) between-subjects

design with two sponsored online videos. This means that there were six conditions. Children were randomly assigned to one of the six conditions.

Procedure

IRB approval was granted by the university. Before the experiment started, active informed consent was obtained from the heads of the schools and the children, and passive informed consent was obtained from the parents. The children participated one by one. The experiment took place in quiet rooms in the school. The children were exposed to videos without a disclosure (n = 94), the same videos with a disclosure prior to the start of the videos (n = 89), or a disclosure concurrent with the start of the videos (n = 89). Each child watched one video.

We used the SMI RED eye tracker with 60 Hz per second gaze sample rates. The eye tracker was integrated in the computer screen which made it possible to measure attention without the participants noticing. To calibrate, participants followed a moving dot on the screen with their eyes. After successful calibration, the video started. When they had watched the video, they were brought to an adjacent room to fill out the questionnaire on a laptop so the next child could start watching the video.

The questionnaire started with questions about the children's attitude toward the videos, familiarity with the videos, and their frequency of watching videos from the influencers. Then questions were posed about the children's persuasion knowledge, brand responses, attitudes towards both the videos and the influencers who created the videos, and the control variables.

Stimulus Materials

To select the stimulus materials, short interviews were conducted with 15 children between 9 and 12 years old (M = 9.60, SD = 1.24, 47% female). The children were asked to list which YouTube influencers they regularly watch. Based on the results of this pretest, two popular influencers were selected that appeal to both boys and girls. The influencers were all males, because males are attractive for both boys and girls, whereas females are usually only attractive for girls (Valkenburg and Piotrowski 2017).

We choose to use two influencers in order to draw conclusions that are not specific for one particular influencer. From each influencer, one video was selected that included sponsored content. In the first video, a male YouTuber goes to a theme park to do a challenge for Fanta, a well-known soft drink brand. He makes a graffiti of the Fanta logo and designs a new logo for Fanta while riding a rollercoaster. The Fanta logo was visible for 18 seconds of which 14 seconds prominently (large part of the screen, close up, and/or central focus) and 4 seconds subtly (small part of the screen, and/ or in the periphery). The brand name was not mentioned. The video lasted for 6 minutes and 24 seconds.

The second video is made by a group of three male YouTubers. With sponsorship by Iglo, one of the biggest frozen food brands in Europe, they are challenged to create the largest fish stick. For inspiration, they first buy a large amount of Iglo fish sticks in the supermarket. They bring these to a brainstorm session in which they determine their strategy. Then they go to a restaurant to prepare the largest fish stick in the world. Packages of Iglo fish sticks were visible for 50 seconds of which the brand logo was visible for 13 seconds. The packages were shown subtly most of the time, that is, they were small and part of the periphery. For 4 seconds, the placement was prominent, which means that the logo was large and clearly visible in the center of the screen. The brand name was mentioned once. This video lasted 6 minutes and 13 seconds. In the analyses, the responses to the videos were grouped and a dummy variable, a video which the child watched, was added as a covariate. In this way, we can draw conclusions that go beyond one specific video.

Based on social media advertising codes (FTC 2013; WOMMA 2013), we used the following disclosure "X (Name influencer) is paid by brand Y to advertise their products in his video" which was visible for 10 seconds at the top of the screen. In the disclosure prior to the start condition, the disclosure was visible only before the videos started in a white font on a black background also for 10 seconds. In the concurrent with the start of the videos conditions, the disclosure appeared after the start of videos at the same position on the screen, in the same size, also in white fonts, also for 10 seconds, and in a black box, see Figs. 2 and 3. In the no disclosure conditions, children watched the videos without any disclosure.

Measures

Visual Attention. Visual attention to the disclosure was measured with eye tracking, using SMI BeGaze software. To determine the visual attention to the disclosure, an Area of Interest (AOI) was created around the disclosure. The time the children's eye fixated inside the disclosure AOI (sum of all fixation durations) was used as the attention measure in seconds (M = 2.45; SD = 0.78, range 0–9.5 seconds). Previous studies showed that fixation time is a valid indicator of attention (e.g., Christianson et al. 1991). In the no disclosure condition, the same area of interest was used to serve as a reference point. The visual attention in all three conditions (including the no disclosure condition) were analyzed when testing the hypotheses. By including the control group's visual attention in the analyses, we use a more conservative or more strict comparison as this takes random fixations into account. That is, we compare the visual attention to the disclosures and we control for random eye movements or fixations in that same area by including the visual attention in the control group.

Recognition of the Disclosure. Disclosure recognition was measured by asking the children: "Which text did you see at the beginning of the video?" (Boerman, van Reijmersdal, and Neijens 2015). They had to choose the disclosure they had seen from a list of four disclosures, one of which was correct, and an option "I did not see a disclosure." For all children, the answering option with the disclosure text that was used in the experimental conditions was coded as 1 and the other options as 0 to be able to analyze the effect of disclosure recognition

Fig. 2. Screenshot of the disclosure prior to the start of the video.

across all conditions (overall 58.5% correct). By coding the answers as such, a score of 1 means the same across conditions, namely that the child claims to remember seeing the disclosure that was used in the study, which makes it possible to compare the conditions in the analyses.

It may be interesting to note that a total of 75% of the children in the control condition correctly indicated that they did not see a disclosure. Only 1% of the children in the control condition choose the disclosure text that was visible in the experimental conditions (the rest choose the fake disclosure options).

Understanding that the Content is Sponsored. Understanding that the videos are sponsored was measured with two questions: "Was the video sponsored by a brand?" and "Was there advertising for a brand in the video?" (Rozendaal, Opree, and Buijzen 2016) on a scale ranging from 1 (*no, definitely not*) to 6 (*yes, definitely*). Mean scores were calculated to create a single measure of understanding sponsorship (Spearman–Brown = 0.74, M = 4.47, SD = 1.35, range 1–6).

Critical Attitude Regarding Sponsored Content. Critical attitude was measured with four questions: "What do you think about the presence of brand X in the video? Do you think that is …," followed by "honest" (reverse), "bad," "good" (reverse), and "wrong" (Van Reijmersdal et al. 2017). The scale anchors were adjusted to the questions, for example 1 (*totally*

Fig. 3. Screenshot of the disclosure concurrent with the video.

not honest) to 6 (*very honest*). Mean scores were calculated (Cronbach's alpha = 0.85, M = 2.69, SD = 1.01, range 1–6).

Brand Responses. Brand attitude was measured with three questions "Do you think brand X is …." followed by "tasty, nice, and good" (Batra and Ray 1986; Van Reijmersdal et al. 2017). Again, the scale anchors were adjusted to the questions, for example 1 (*totally not tasty*) to 6 (*very tasty*). Mean scores were calculated (Cronbach's alpha = 0.80, M = 4.91, SD = 1.09, range 1–6). Behavioral intention was measured with three questions: "Do you want to buy brand X from your allowance?," "Will you ask your parents to buy brand X?," and "Do you want to drink/eat brand X?" on a scale ranging from 1 (*no, definitely not*) to 6 (*yes, definitely*). Mean scores were calculated (Cronbach's alpha = 0.68, M = 2.75, SD = 1.20, range 1–6; Rozendaal, Buijzen, and Valkenburg 2009).

Responses to the Videos and the Influencers. Attitudes toward the online videos and toward the influencers who created the videos were both measured with one question on a scale ranging from 1 (*most negative*) to 10 (*most positive)*: "Please give X (Name influencer)/the video a grade," ($M_{influencer}$ = 8.16; SD = 1.61; M_{video} = 7.74; SD = 1.44, ranges 1–10; Yang and Roskos-Ewoldsen 2007). In the country where the research was conducted, children's schoolwork is also graded on a scale from 1 to 10, so children are familiar with the scale.

Control Variables. As control variables, age, gender, and the grade (7th or 8th grade) that children were in were recorded. In addition, we measured prior exposure to the specific video (20% yes), familiarity with the influencer (89% yes), and brand familiarity (96% yes). We also measured how often the children watched videos from the influencer (M = 3.14, SD = 1.40, range 1–6), online videos created by influencers (M = 3.78, SD = 1.44, range 1–6), and brand use (M = 2.52, SD = 0.92, range 1–6) on a scale ranging from 1 (*never*) to 6 (*every day*). All of these variables were measured with one question each.

Analyses

To test the hypotheses, the conceptual model (see Fig. 1) was estimated using structural equation modeling in *Mplus* version 7.31 (Muthén and Mythén, 1998-2012). Because the disclosure timing was categorical (prior to videos, concurrent with videos, or absent), dummy variables were first created for the conditions. Then two models were estimated (Hayes and Preacher 2014). In the first model, the dummies for the conditions prior to the start and concurrent with the start were included, making no disclosure the reference group. In the second model the dummies for no disclosure and the disclosure concurrent with the start were included making the disclosure prior to the start the reference group. The disclosure timing variables were entered as exogenous variables (i.e., not caused by any other variables in the model); the manifest variables visual attention to the disclosure, disclosure recognition, attitude toward the video, and attitude toward the influencer were entered as endogenous variables (i.e., caused by other variables in the model). Understanding that the content is sponsored, critical attitude to sponsored content in the video, brand attitude, and behavioral intention were entered as latent variables estimated from their manifest items and were also entered as endogenous variables.

Bootstrapping was used because there is a dichotomous mediator (recognition of the disclosure) in the model and unstandardized path coefficients and 95% bias-corrected confidence intervals are reported for all direct and indirect effects (MacKinnon, Lockwood, and Williams 2004)

Results

Randomization

The disclosure conditions did not differ with respect to a number of control variables: the children's gender, chi^2 (2) = 3.55, p = 0.17, the group they were in, chi^2 (2) = 0.15, p = 0.93, the school they attended, chi^2 (4) = 1.55, p = 0.82, prior exposure to the sponsored online video, chi^2 (2) = 1.62, p = 0.45, familiarity with the influencers, chi^2 (2) = 1.23, p = 0.54, how often they watched videos from the influencers, F(2, 269) = 1.29, p = 0.28, partial eta^2 = 0.01, frequency of watching online videos created by influencers, F(2, 269) = 0.24, p = 0.79, partial eta^2 = 0.002, brand use, F(2, 269) = 0.92, p = 0.40, partial eta^2 = 0.01, and brand familiarity, chi^2 (2) = 1.71, p = 0.43. Thus, randomization was thus successful. The conditions did differ with respect to age, F(2, 269) = 3.37, p = 0.04, partial eta^2 = 0.04. However, age was not significantly related to the mediating or dependent variables. Therefore, the control variables were not included as covariates.

Analyses showed that the two sponsored online videos that were used, did not differ with respect to prior exposure to the video, chi^2 (1) = 0.01, p = 0.93, familiarity with the influencers, chi^2 (1) = 0.01, p = 0.97, attitude toward the influencers, F(1, 270) = 0.23, p = 0.88, partial eta^2 = 0.001, attitude toward the video, F(1, 270) = 1.94, p = 0.17, partial eta^2 = 0.01, frequency of watching videos from the influencers, F(2,266) = 1.54, p = 0.22, partial eta^2 = 0.01.

The two video groups did differ significantly with respect to children's frequency of watching influencer videos in general, F(1,266) = 9.84, p = 0.002, partial eta^2 = 0.004, video 1, M = 3.52, SD = 1.39, video 2, M = 4.06, SD = 1.44, and brand familiarity, chi^2 (2) = 13.71, p < 0.001, video 1: 100%, video 2: 91%. Because the frequency of watching influencer videos, brand familiarity, and the video children watched were related to some of the mediating or dependent variables (see Tables 1 and 2), these three variables were added as covariates in the analyses. As background information, Table 1 shows the correlations between the variables used in the experiment. Table 2 presents the mean scores for the mediating and dependent variables per video.

Hypotheses Testing

Two hypothesized models were tested: one with the no disclosure condition as the reference group and one with the disclosure prior to the start of the video as the reference group. The hypothesized model with no disclosure as reference group

Table 1
Correlations between all independent, mediating, and dependent variables and covariates.

	Prior disclosure	Concurrent disclosure	No disclosure	1. FT	2. DR	3. US	4. CA	5. BA	6. BI	7. VA	8. IA	9. BF
1. Fixation time disclosure (FT)	0.72**	−0.06	−0.65**									
2. Disclosure recognition (DR)	0.32**	0.17**	−0.49**	0.52**								
3. Understanding sponsoring (US)	0.10	0.05	−0.14*	0.16**	0.33**							
4. Critical attitude (CA)	−0.03	0.08	−0.05	0.03	0.04	0.18**						
5. Brand attitude (BA)	0.10	−0.12*	0.02	0.06	0.04	0.00	0.47**					
6. Behavioral intent (BI)	0.04	−0.08	0.03	−0.01	−0.02	0.01	0.43**	0.61**				
7. Video attitude (VA)	−0.01	−0.09	0.10	−0.08	−0.02	0.05	0.37**	0.32**	0.28**			
8. Influencer attitude (IA)	−0.02	−0.08	0.10	−0.03	−0.02	0.05	0.35**	0.31**	0.25**	0.72**		
9. Brand familiarity (BF)	−0.08	0.04	0.04	0.01	0.11	0.19**	0.04	0.16**	0.08	0.04	0.04	
10. Frequency of watching influencer videos (FV)	0.04	−0.04	−0.01	0.04	0.06	0.02	0.21**	0.17**	0.22**	0.36**	0.35**	0.00

resulted in an unacceptable CFI-value and an acceptable RMSEA-value: χ^2 (df = 146; N = 272) = 242.58, $p < 0.001$, CFI = 0.89, RMSEA = 0.05 with p-close 0.53. CFI-values between 0.90 and 0.95 are considered as being acceptable, CFI-values above 0.95 as being good. In addition, RMSEA-values between 0.05 and 0.08 are considered as being acceptable, RMSEA-values below 0.05 as being good (Byrne, 2013). The RMSEA value is ideally accompanied by a p of close fit statistic of 0.05 or higher, indicating minor specification error and thus good fit (Kline, 2005).

Therefore, model modification indices were explored and model fit was improved by allowing two items measuring brand attitude ("tasty" and "good") to correlate (Byrne, 2013; Kline, 2005). This model resulted in acceptable fit: χ^2 (df = 145; N = 272) = 239.89, $p < 0.001$, CFI = 0.90, RMSEA = 0.05 with p-close 0.54.

The second model, with the disclosure prior to start of the video as the reference group and including the correlation between the two brand attitude items, resulted in good fit as well: χ^2 (DF = 142; n = 272) = 198.30, $p < 0.001$, CFI = 0.94, RMSEA = 0.04 with p-close 0.95. With these two model, all comparison between the three conditions were analyzed. Table 3 shows all direct effects. Indirect effects are reported in the text.

The results of the adapted models indicated that there were no direct effects of disclosure timing on understanding that the content is sponsored, see Table 2. This means that no disclosure, disclosure prior to the video, and disclosure concurrent with the start of the video did not differ in activating children's awareness that the sponsored content is advertising. Thus, H1 is rejected. However, as hypothesized in H2, there were significant *indirect* effects of disclosure timing on children's understanding that the videos are sponsored via visual attention to the disclosure and subsequently disclosure recognition. All three disclosure conditions differed

Table 2
Mean scores per video for the mediating and dependent variables.

	Video 1	Video 2	F (1, 269)
Visual attention to the disclosure [1]	2.52[a](2.85)	2.42[a] (2.67)	0.09
Disclosure recognition [2]	54%[a]	44%[a]	x
Understanding sponsoring [3]	4.94[a] (1.20)	3.97[b] (1.33)	40.41 *
Critical attitude [3]	2.70[a] (1.02)	2.68[a] (1.01)	0.03
Brand attitude [3]	4.81[a] (0.93)	4.45[b] (1.08)	8.56 *
Behavioral intention [3]	3.05[a] (1.26)	2.44[b] (1.06)	18.66 *
Video attitude [4]	7.63[a] (1.58)	7.87[a] (1.26)	1.94
Influencer attitude [4]	8.18[a] (1.68)	8.15[a] (1.54)	0.2

Note: Mean scores with standard deviations between parentheses are portrayed. Except for cued disclosure recall and brand familiarity.[ab] Scores with different superscripts within the same row differ significantly at $p < .05$ in post hoc Bonferroni tests, [x] Chi^2 (1) = 0.54, p = .46.

* F-test significant at $p < .05$

[1] Total fixation time in seconds.

[2] Percentages of children recognizing the disclosure.

[3] Scores on a six-point scale.

[4] Scores on ten-point scale.

Table 3
Direct effects in the conceptual model.

	Effect of	on	b	se	95% CI
H1	Disclosure prior vs concurrent	Understanding sponsoring	−0.32	0.22	−0.83; 0.10
	Concurrent vs no	–	−0.10	0.25	−0.57; 0.52
	Prior vs no	–	−0.37	0.28	−0.91; 0.20
H2	Disclosure prior vs concurrent	Visual attention disclosure	**30.26**	**2.44**	**23.48; 36.47**
	Concurrent vs no	–	**51.14**	**12.74**	**37.45; 55.43**
	Prior vs no	–	**71.91**	**13.19**	**58.95; 77.99**
	Visual attention disclosure	Disclosure recognition	**0.03**	**0.01**	**0.02; 0.04**
	Disclosure recognition	Understanding sponsoring	**0.38**	**0.10**	**0.13; 0.54**
H3	Understanding sponsoring	Brand attitude	0.05	0.07	−0.17; 0.24
	–	Behavioral intention	−0.06	0.10	−0.38; 0.16
	–	Video attitude	0.02	0.08	−0.22; 0.23
	–	Influencer attitude	−0.03	0.09	−0.36; 0.18
H4	Understanding sponsoring	Critical attitude	**0.17**	**0.05**	**0.05; 0.46**
	Critical attitude	Brand attitude	**−0.70**	**0.12**	**−0.98; −0.45**
	–	Behavioral intention	**−0.98**	**0.18**	**−1.38; −0.59**
	–	Video attitude	**−0.63**	**0.10**	**−0.92; −0.33**
	–	Influencer attitude	**−0.64**	**0.12**	**−0.98; −0.33**

Note: Bootstrapped unstandardized coefficients with standard errors and 95% bias corrected confidence intervals are portrayed. – same variable as above; figures in bold are significant at $p < .05$.

significantly in their indirect effects on the understanding that the videos are sponsored (prior vs. concurrent: indirect = 0.28, se = 0.08, 95% [0.11; 0.62]; concurrent vs. no: indirect = 0.56, se = 0.19, 95% CI [0.16; 0.87]; prior vs. no: indirect = 0.79. se = 0.23, 95% CI [0.24; 1.27]) with the disclosure prior to the start leading to significantly higher levels of visual attention ($M_{seconds}$ = 5.32, SD = 2.36) than the disclosure concurrent with the start ($M_{seconds}$ = 2.22, SD = 1.76) and then no disclosure ($M_{seconds}$ = 0.02, SD = 0.08), see Table 3. And the disclosure concurrent with the start of the video also led to significantly higher visual attention then no disclosure, see also Fig. 4.

Consequently, visual attention to the disclosure led to more disclosure recognition, which in turn lead to better understanding that the videos are sponsored, see Table 3. Thus, H2 is accepted, meaning that, through visual attention and disclosure recognition, disclosure prior to the start resulted in the highest understanding of a video's sponsored content, followed by disclosure concurrent and no disclosure as leading to the lowest understanding of sponsored content..

With respect to H3, the models showed that understanding that the videos are sponsored has no direct effect on brand attitude, behavioral intention, attitudes towards online videos, or towards the social influencers who created the videos, see Table 3. This means that H3 is not supported. However, as hypothesized in H4, due to a more critical attitude to the sponsored content in a video, the understanding that videos were sponsored had significant indirect effects on brand understanding (indirect = −0.12, se = 0.04, 95% CI [−0.30; −0.03]), behavioral intention (indirect = −0.17, se = 0.04, 95% CI [−0.41; −0.05]), attitudes toward the online video (indirect = −0.11, se = 0.03, 95% CI [−0.30; −0.03]), and toward the influencer (indirect = −0.11, se = 0.04, 95% CI [−0.28; −0.03]). This means that understanding that the content is sponsored, led to more critical attitudes toward the sponsored content, which resulted in more negative brand, video and influencer responses. Thus, H4 is supported.

Finally, as hypothesized in H5, the models showed that disclosure timing had significant indirect effects on brand attitude, behavioral intention, attitudes toward the online video, and toward the social influencer, through visual attention, recognition of the disclosure, understanding that the content is sponsored, and critical attitudes toward the sponsored content, see Table 4. This means that a disclosure prior to the start of the video leads to the most negative brand, video, and influencer responses due to eliciting more visual attention, higher recognition of the disclosure, better understanding that the content is sponsored, more critical attitudes toward the sponsored content, followed by a disclosure concurrent with the start of the video and finally no disclosure. Thus, H5 is supported by the data.

Table 4
Indirect effects of disclosure timing on brand, video and influencer responses via visual attention, disclosure recognition, understanding sponsoring, and critical attitude (H5).

Indirect effect of disclosure	On	*b*	*se*	95% CI
Prior vs concurrent	Brand attitude	**0.03**	**0.01**	**0.01; 0.11**
Concurrent vs no	–	**0.07**	**0.03**	**0.01; 0.16**
Prior vs no	–	**0.09**	**0.04**	**0.02; 0.23**
Prior vs concurrent	Behavioral intention	**0.04**	**0.02**	**0.01; 0.15**
Concurrent vs no	–	**0.09**	**0.04**	**0.02; 0.23**
Prior vs no	–	**0.13**	**0.05**	**0.03; 0.32**
Prior vs concurrent	Video attitude	**0.07**	**0.01**	**0.02; 0.50**
Concurrent vs no	–	**0.06**	**0.02**	**0.01; 0.16**
Prior vs no	–	**0.09**	**0.03**	**0.02; 0.22**
Prior vs concurrent	Influencer attitude	**0.03**	**0.01**	**0.01; 0.10**
Concurrent vs no	–	**0.06**	**0.02**	**0.01; 0.15**
Prior vs no	–	**0.09**	**0.03**	**0.02; 0.21**

Note: Bootstrapped unstandardized effects with standard errors and 95% bias corrected confidence intervals are portrayed; – same variable as above; figures in bold are significant at $p < .05$.

Discussion

This study aimed to provide insights into the effects of disclosure timing on early adolescents' understanding of sponsored online videos, their critical attitudes, and their responses to sponsoring brands, online videos in which the brands are embedded, and the influencers who created the videos. Based on our findings four conclusions can be drawn.

First, disclosure timing is an important factor that determines the noticeability and processing of disclosures for sponsored online videos among children in early adolescence. Eye tracking shows that when the disclosure is shown prior to the start of videos, children look at the disclosure around two and a half times longer, which results in better disclosure recognition than when the disclosure is displayed concurrent with the start

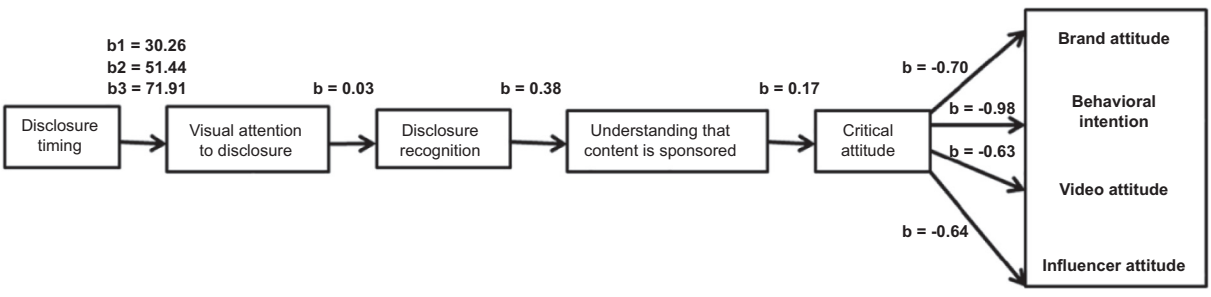

Fig. 4. Model of effects of disclosure timing. *Note*: understandardized coëffients are portrayed, all b's are significant at $p < .05$, b1 = disclosure prior versus concurrent, b2 = disclosure concurrent versus no disclosure, b3 = disclosure prior versus no disclosure.

of the videos. These findings are in line with limited processing capacity theory (Lang 2000), and they show that, when there is no competing information, children are more inclined to direct their visual attention to a sponsorship disclosure. These findings are also in line with findings among adults (Boerman, van Reijmersdal, and Neijens 2015; Wojdynski and Evans 2016) that showed that visual attention to the disclosure was an important underlying mechanism that explained disclosure processing.

Theoretically, these findings support the notion that increasing the opportunity to process information, in our case presenting the disclosure before the start of the video, also leads to better processing among children (MacInnis, Moorman, and Jaworski 1991). Because children in early adolescence have limited information processing skills and are easily distracted by visuals and moving images (Lapierre 2015; Luciana and Nelson 1998; Moses and Baldwin 2005; Rozendaal et al. 2011), enhancing the opportunity to see a sponsorship disclosure seems essential for these children.

Second, disclosure timing affects the understanding that the content is sponsored. Our results show that, compared to no disclosure or a disclosure concurrent with the start of the video, the disclosure prior to the start of the video is most effective in activating early adolescents' understanding that the content is sponsored. These effects are explained by children's increased visual attention to the disclosure prior to the video, which consequently facilitates processing of the disclosure. These findings are in line with findings among 9-year-old children that disclosures of brand placement in a movie elicited more persuasion knowledge when displayed before the movie than during the placement (De Pauw, Hudders, and Cauberghe 2017). Our study adds to the literature by showing that not only visual attention to, but also processing of, the disclosure, as indicated by disclosure recognition, is an important underlying mechanism of disclosure timing effects on children's understanding that the content is sponsored.

Third, this study shows that an enhanced understanding that content is sponsored due to the disclosure affects early adolescents' susceptibility to the persuasive effects of sponsored online videos because of a more critical attitude towards the sponsored content. When children in early adolescence understand that a video is sponsored, they show more critical attitudes, which results in less susceptibility and more negative attitudes toward videos and the influences who create them. Most studies that focused on the link between the understanding that content is sponsored and persuasion found no direct effects (e.g., Mallinckrodt and Mizerski 2007; Van Reijmersdal, Rozendaal, and Buijzen 2012). One of the reasons maybe that critical attitudes regarding sponsored content as an underlying mechanism was not taken into account.

Fourth, our study is the first to show that disclosure timing has consequences for persuasion and attitudes toward the video and the influencers themselves. A disclosure that is shown prior to the start of the sponsored online video indirectly results in the most negative brand, video, and influencer responses. Studies among adults that examined the consequences of sponsorship disclosures for the content and the social influencer showed mixed results: some studies showed no effects of disclosures on the evaluation of the content and influencer (Kruikemeier, Sezgin, and Boerman 2016; Liljander, Gummerus, and Söderlund 2015), whereas others showed negative consequences (Carr and Hayes 2014; Colliander and Erlandsson 2015; Hwang and Jeong 2016; Wojdynski and Evans 2016). Our study shows that for children in early adolescence, although indirectly, disclosures can have a negative impact on the attitudes toward the content and the influencer who created the content.

Limitations and Suggestions for Future Research

Despite its limitations, this article is one of the first to pay attention to children's responses to various online disclosures in influencer marketing. The empirical evidence provided in this article may serve as a stepping stone for future research in this area. Below we elaborate on the limitations of this study but also provide suggestions for future research on disclosure of influencer marketing.

In this study, two sponsored videos were included. The videos came from two YouTubers and included different products and levels of visibility of the brands. Yet, our findings hold for both videos, which is an indication of the robustness of the findings. However, future research is needed to be able to further generalize our findings to other types of sponsored videos, for various types of brands and for sponsorships that are more or less prominent.

The present study used an explicit disclosure based on current regulations in the United States and Europe. The disclosure explicitly mentioned the name of the social influencer who created the video, the brand, the relationship between the two, and the fact that the brand paid for the advertising. The formulation of the disclosure may determine its effectiveness in activating persuasion knowledge (e.g., Dekker and van Reijmersdal 2013; Evans et al. 2017). Future research could examine disclosure formulations to provide more insights into the effectiveness of sponsorship disclosures for young viewers.

Future research could also investigate the duration of disclosure effects. Up until now, all studies on this topic have focused on the immediate effects of disclosures. However, it would be interesting to see whether the effects of disclosures on understanding that content is sponsored fade or remain over time. Similarly, the effects on persuasion may disappear when people forget the commercial nature of the content after a while. If they just remember the brand and the positive context, in time the brand responses may become positive.

Finally, the present study focuses on children in early adolescence (10–13 years of age). The advantage of this limited focus is that there are large similarities between children in this age group when it comes to their cognitive and social development, their knowledge of, and attitudes toward, advertising, and their media use and preferences. This reduces the variability (error) in the study. A disadvantage, however, is that the results of this research cannot be generalized to children in younger or older age groups. Future

research could examine the effects of disclosing influencer marketing in online videos among children in other developmental stages.

Theoretical Implications

From a theoretical perspective, our study implies that visual attention to, and processing of, the disclosure, as indicated by disclosure recognition, explain how timing affects early adolescents' understanding that the content is sponsored and also critical attitudes. For the disclosure to be effective in informing children in early adolescence, it has to attract attention and give them the opportunity to process it. This study provided and tested these theoretical explanations for how disclosures affect children's persuasion knowledge.

Although the aim of disclosures is to inform the audience about the persuasive nature of sponsored content and to enhance transparency (Cain 2011; Federal Trade Commission 2013; Kuhn, Hume, and Love 2010), it is important to take into account how disclosures affect the persuasion process. By testing the theoretical mechanisms that underlie disclosure effects on persuasion among children in early adolescence, we offer refinement to existing theories on disclosure effects and persuasion knowledge activation (Friestad and Wright 1994; Hudders et al. 2017): more critical attitudes towards the sponsored content arise as a consequence of understanding that content is sponsored explain why disclosures negatively impact susceptibility to persuasion among early adolescents.

Practical Implications

One important question in the current debate about transparency of sponsored online videos is how to empower children to understand the commercial nature of this practice. Our study has some concrete implications for legislators, advertisers, and social media influencers.

To increase early adolescents' opportunity to process a sponsorship disclosure, it is important to portray the disclosure prior to the start of the sponsored online video without any competing information. Compared to a disclosure concurrent with the start of the video, early adolescents are better able to direct their visual attention to the disclosure when shown prior to the video, which leads to more thorough processing and recognition of the disclosure. Consequently, this helps them understand the commercial nature of sponsored online videos. As empowerment of the audience and informing them are the goals of sponsorship disclosures, disclosures prior to the start of online videos are recommended for children in early adolescence.

In addition, our study shows that the noticeability of disclosures and early adolscents' opportunity to see and process them is important for disclosure effectiveness. Therefore, noticeability of sponsorship disclosures should be a priority in developing or adjusting current guidelines for sponsorship disclosure among children. Only when disclosures are noticed and processed, can they effectively inform children and guarantee fair communication.

For advertisers, our study implies that transparency about the persuasive nature of online videos through disclosures may have negative consequences for the brand among children. In particular disclosures prior to the video, can indirectly evoke skepticism and resistance toward the content and the brand. However, our findings imply that disclosures are important to guarantee fair communication and to empower children to understand the commercial nature of sponsored online videos. This is in line with the goals of national and international advertising and media policy makers who want to promote the transparency of advertising by making disclosures mandatory (e.g., the European Union's Audiovisual Media Services Directive [AVMSD] and the United States' Federal Trade Commission). Thus, for advertisers, the use of a disclosure is advised, even though it may have negative consequences for the brand.

Similarly, for social media influencers, our findings imply that disclosures do aid children in understanding that sponsored videos are commercial. When the goal is to communicate openly and transparently, disclosures are valuable tools. However, indirectly, evaluations of the influencers who create the content and the content itself may suffer.

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Declaration of Competing Interest

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References

An, Soontae and Susannah Stern (2011), "Mitigating the Effects of Advergames on Children," *Journal of Advertising*, 40, 1, 43–56.

Batra, Rajeev and Michael L. Ray (1986), "Affective Responses Mediating Acceptance of Advertising," *Journal of Consumer Research*, 13, 234–49.

Best, John R. and Patricia H. Miller (2010), "A Developmental Perspective on Executive Function," *Child Development*, 81, 6, 1641–60.

Blakemore, Sarah Jane and Suparna Choudhury (2006), "Development of the Adolescent Brain: Implications for Executive Function and Social Cognition," *Journal of Child Psychology and Psychiatry*, 47, 3–4, 296–312.

Boerman, Sophie C., Eva A. van Reijmersdal, and Peter C. Neijens (2015), "Using Eye Tracking to Understand the Effects of Brand Placement Disclosure Types in Television Programs," *Journal of Advertising*, 44, 3, 196–207.

———, Eva van Reijmersdal, and ——— (2014), "Effects of Sponsorship Disclosure Timing on the Processing of Sponsored Content: A Study on the Effectiveness of European Disclosure Regulations," *Psychology & Marketing*, 31, 3, 214–24.

———, Lotte M. Willemsen, and Eva P. van der Aa (2017), "'This Post is Sponsored': Effects of Sponsorship Disclosure on Persuasion Knowledge and Electronic Word of Mouth in the Context of Facebook," *Journal of Interactive Marketing*, 38, 82–92.

Brehm, Sharon S. and James W. Brehm (1981), *Psychological Reactance: A Theory of Freedom and Control*. San Diego, CA: Academic Press.

Buijzen, Moniek, Eva A. van Reijmersdal, and Laura H. Owen (2010), "Introducing the PCMC Model: An Investigative Framework for Young People's Processing of Commercialized Media Content," *Communication Theory*, 20, 4, 427–50.

Byrne, Barbara M. (2013), *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. Routledge & Muthén.

Cain, Rita M. (2011), "Embedded Advertising on Television: Disclosure, Deception, and Free Speech Rights," *Journal of Public Policy & Marketing*, 30, 2, 226–38.

Campbell, Colin and Nathaniel J. Evans (2018), "The Role of a Companion Banner and Sponsorship Transparency in Recognizing and Evaluating Article-Style Native Advertising," *Journal of Interactive Marketing*, 43, 17–32.

Carr, Caleb T. and Rebecca A. Hayes (2014), "The Effect of Disclosure of Third-Party Influence on an Opinion Leader's Credibility and Electronic Word of Mouth in Two-Step Flow," *Journal of Interactive Advertising*, 14, 1, 38–50.

Choi, Dongwon, Hyejin Bang, Bartosz W. Wojdynski, Yen-I. Lee, and Kate M. Keib (2018), "How Band Disclosure Timing and Brand Prominence Influence Consumer's Intention to Share Branded Entertainment Content," *Journal of Interactive Marketing*, 42, 18–31.

Christianson, Sven-Åke, Elizabeth F. Loftus, Hunter Hoffman, and Geoffrey R. Loftus (1991), "Eye Fixations and Memory for Emotional Events," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 17, 4, 693.

Colliander, Jonas and Susanna Erlandsson (2015), "The Blog and the Bountiful: Exploring the Effects of Disguised Product Placement on Blogs that are Revealed by a Third Party," *Journal of Marketing Communications*, 21, 2, 110–24.

Committee of Advertising Practice (2017), "Online Affiliate Marketing," Retrieved from https://www.asa.org.uk/advice-online/affiliate-marketing.html.

Crone, Eveline A. (2009), "Executive Functions in Adolescence: Inferences from Brain and Behavior," *Developmental Science*, 12, 6, 825–30.

De Pauw, Pieter, Liselot Hudders, and Verolien Cauberghe (2017), "Disclosing Brand Placement to Young Children," *International Journal of Advertising*, 37, 4, 508–25.

Dekker, Kim and Eva A. van Reijmersdal (2013), "Brand Placement Disclosures to Mitigate Persuasion: The Role of Celebrity Endorsement and Disclosure Type," *Journal of Promotion Management*, 19, 2, 224–40.

Escalas, Jennifer E. and James R. Bettman (2017), "Connecting with Celebrities: How Consumers Appropriate Celebrity Meanings for a Sense of Belonging," *Journal of Advertising*, 46, 2, 297–308.

Evans, Nathaniel J., Joe Phua, Jay Lim, and Hyoyeun Jun (2017), "Disclosing Instagram Influencer Advertising: The Effects of Disclosure Language on Advertising Recognition, Attitudes, and Behavioral Intent," *Journal of Interactive Advertising*, 17, 2, 138–49.

Federal Trade Commission (2013), "Com Disclosures. How to Make Effective Disclosure in Digital Advertising," Retrieved from http://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-staff-revises-online-advertising-disclosure-guidelines/130312dotcomdisclosures.pdf.

Friestad, Marian and Peter Wright (1994), "The Persuasion Knowledge Model: How People Cope with Persuasion Attempts," *Journal of Consumer Research*, 22, 1, 1–31.

Guo, Fu, Guoquan Ye, Vincent G. Duffy, Mingming Li, and Yi Ding (2018), "Applying Eye Tracking and Electroencephalography to Evaluate the Effects of Placement Disclosures on Brand Responses," *Journal of Consumer Behaviour*, 17, 6, 519–31.

Hayes, Andrew F. and Kristopher J. Preacher (2014), "Statistical Mediation Analysis with a Multicategorical Independent Variable," *British Journal of Mathematical and Statistical Psychology*, 67, 3, 451–70.

Hudders, Liselot, Pieter De Pauw, Veroline Cauberghe, Katharina Panic, Brahim Zarouali, and Esther Rozendaal (2017), "Shedding New Light on How Advertising Literacy can Affect Children's Processing of Embedded Advertising Formats: A Future Research Agenda," *Journal of Advertising*, 46, 2, 333–49.

Hwang, Yoori and Se-Hoon Jeong (2016), "'This is a Sponsored Blog Post, but All Opinions are My Own': The Effects of Sponsorship Disclosure on Responses to Sponsored Blog Posts," *Computers in Human Behavior*, 62, 528–35.

John, Deborah R. (1999), "Consumer Socialization of Children: A Retrospective Look at Twenty-Five Years of Research," *Journal of Consumer Research*, 26, 3, 183–213.

Kline, Rex B. (2005), *Principles and practice of structural equation modeling 2nd ed.* . New York: Guilford.

Kruikemeier, Sanne, Minem Sezgin, and Sophie C. Boerman (2016), "Political Microtargeting: Relationship Between Personalized Advertising on Facebook and Voters' Responses," *Cyberpsychology, Behavior and Social Networking*, 19, 6, 367–72.

Kuhn, Kerri-Ann L., Margee Hume, and Anita Love (2010), "Examining the Covert Nature of Product Placement: Implications for Public Policy," *Journal of Promotion Management*, 16, 1, 59–79.

Lang, Annie (2000), "The Limited Capacity Model of Mediated Message Processing," *Journal of Communication*, 50, Winter, 46–70.

Lapierre, Matthew A. (2015), "Development and Persuasion Understanding: Predicting Knowledge of Persuasion/Selling Intent from Children's Theory of Mind," *Journal of Communication*, 65, 423–42.

Liljander, Veronica, Johanna Gummerus, and Magnus Söderlund (2015), "Young Consumers' Responses to Suspected Covert and Overt Blog Marketing," *Internet Research*, 25, 4, 610–32.

Livingstone, Sonia, Leslie Haddon, Anke Görzig, and Kjartan Ólafsson (2010), *Risks and Safety on the Internet: The Perspective of European Children. Final Findings from the EU Kids Online Survey*. London, UK: London School of Economics.

Luciana, Monica and Charles A. Nelson (1998), "The Functional Emergence of Prefrontally-Guided Working Memory Systems in Four-to-Eight Year-Old Children," *Neuropsychologia*, 36, 3, 273–93.

MacInnis, Deborah J., Christine Moorman, and Bernard J. Jaworski (1991), "Enhancing and Measuring Consumers' Motivation, Opportunity, and Ability to Process Brand Information from Ads," *Journal of Marketing*, 55, 4, 32–53.

MacKinnon, David P., Chondra M. Lockwood, and Jason Williams (2004), "Confidence Limits for the Indirect Effect: Distribution of the Product and Resampling Methods," *Multivariate Behavioral Research*, 39, 1, 99–128.

Mallinckrodt, Victoria and Dick Mizerski (2007), "The Effects of Playing an Advergame on Young Children's Perceptions, Preferences, and Requests," *Journal of Advertising*, 36, 2, 87–100.

McAlone, Nathan (2017), "These Are the 18 Most Popular YouTube Stars in the World and Some Are Making Millions," *Business Insider*.Retrieved from https://www.businessinsider.nl/most-popular-youtuber-stars-salaries-2017/?international=true&r=US.

Mizerski, Dick, Sasha Wang, Alvin Lee, and Claire Lambert (2017), "Young Children as Consumers: Their Vulnerability to Persuasion and its Effect on Their Choices," in *Routledge International Handbook of Consumer Psychology.* Cathrine V. Jansson-Boyd, Magdalena J. Zawisza, editors. New York, NY: Routledge, 327–46.

Moses, Louis J. and Dare A. Baldwin (2005), "What Can the Study of Cognitive Development Reveal About Children's Ability to Appreciate and Cope with Advertising?" *Journal of Public Policy & Marketing*, 24, 186–201.

Panic, Katarina, Veroline Cauberghe, and Patrick De Pelsmacker (2013), "Comparing TV Ads and Advergames Targeting Children: The Impact of Persuasion Knowledge on Behavioral Responses," *Journal of Advertising*, 42, 2–3, 264–73.

Potter, Robert F. and Paul D. Bolls (2012), *Psychophysiological Measurement and Meaning: Cognitive and Emotional Processing of Media*. New York, NY: Routledge.

Raney, Arthur A., Laura M. Arpan, Katrik Pashupati, and Dale A. Brill (2003), "At the Movies, on the Web: An Investigation of the Effects of Entertaining and Interactive Web Content on Site and Brand Evaluations," *Journal of Interactive Marketing*, 17, 4, 38–53.

Roedder, Deborah L. (1981), "Age Differences in Children's Responses to Television Advertising: An Information-Processing Approach," *Journal of Consumer Research*, 8, 2, 144–53.

Rozendaal, Esther, Moniek Buijzen, and Patti M. Valkenburg (2009), "Do Children's Cognitive Advertising Defenses Reduce Their Desire for Advertised Products?" *Communications*, 34, 3, 287–303.

———, Matthew A. Lapierre, Eva A. van Reijmersdal, and Moniek Buijzen (2011), "Reconsidering Advertising Literacy as a Defense Against Advertising Effects," *Media Psychology*, 14, 3, 333–54.

———, Suzanna J. Opree, and Moniek Buijzen (2016), "Development and Validation of a Survey Instrument to Measure Children's Advertising Literacy," *Media Psychology*, 19, 1, 72–100.

Tessitore, Tina and Maggie Geuens (2013), "PP for 'Product Placement' Or 'Puzzled Public'?" *International Journal of Advertising*, 32, 3, 419–42.

Valkenburg, Patti and Jessica Piotrowski (2017), *Plugged In: How Media Attract and Affect Youth*. New Haven, CT: Yale University Press.

Van Reijmersdal, Eva A., Sophie C. Boerman, Moniek Buijzen, and Esther Rozendaal (2017), "This Is Advertising! Effects of Disclosing Television Brand Placement on Adolescents," *Journal of Youth and Adolescence*, 46, 2, 328–42.

———, Esther Rozendaal, and ——— (2012), "Effects of Prominence, Involvement, and Persuasion Knowledge on Children's Cognitive and Affective Responses to Advergames," *Journal of Interactive Marketing*, 26, 1, 33–42.

Vanwesenbeeck, Ini, Suzanna J. Opree, and Tim Smits (2017), "Can Disclosures Aid Children's Recognition of TV and Website Advertising?" in *Advances in Advertising Research VIII.* Vesna Zabkar, Martin Eisend, editors. Wiesbaden, Germany: Springer Gabler, 45–57.

Waiguny, Martin K., Michelle R. Nelson, and Ralf Terlutter (2012), "Entertainment Matters! The Relationship Between Challenge and Persuasiveness of an Advergame for Children," *Journal of Marketing Communications*, 18, 1, 69–89.

Wojdynski, Bartosz W., Hyejin Bang, Kate Keib, Brittany N. Jefferson, Dongwon Choi, and Jennifer L. Malson (2017), "Building a Better Native Advertising Disclosure," *Journal of Interactive Advertising*, 17, 2, 150–61.

——— and Nathaniel J. Evans (2016), "Going Native: Effects of Disclosure Position and Language on the Recognition and Evaluation of Online Native Advertising," *Journal of Advertising*, 45, 2, 157–68.

WOMMA (2013), "Social Media Disclosure Guidelines," Retrieved from http://members.womma.org/p/cm/ld/fid=99&tid=86&sid=4.

Yang, Moonhee and David R. Roskos-Ewoldsen (2007), "The Effectiveness of Brand Placements in the Movies: Levels of Placements, Explicit and Implicit Memory, and Brand Choice Behavior," *Journal of Communication*, 57, 3, 469–89.

Muthén, L.K. and B.O. Muthén (1998–2012), *Mplus User's Guide* Seventh edition. Los Angeles, CA: Muthén & Muthén.