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### Shared enjoyment

*Online videos, social information, and hedonic entertainment experiences*

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# SHARED ENJOYMENT

ONLINE VIDEOS, SOCIAL INFORMATION,  
AND HEDONIC ENTERTAINMENT EXPERIENCES

Anne Marthe Möller

**SHARED ENJOYMENT:  
ONLINE VIDEOS, SOCIAL INFORMATION,  
AND HEDONIC ENTERTAINMENT EXPERIENCES**

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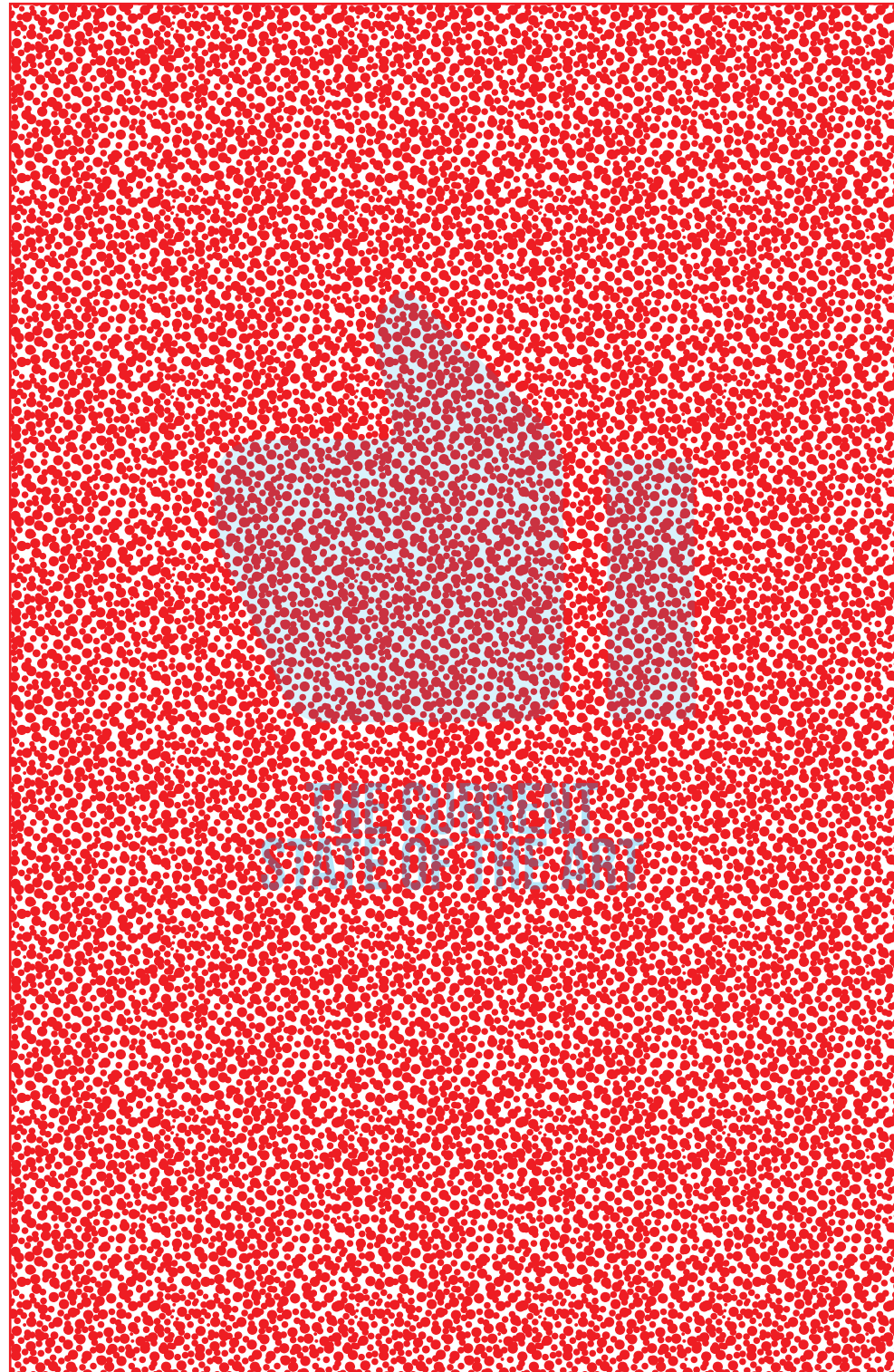
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## CHAPTER 1 A NEW WAY OF CONSUMING ENTERTAINMENT CONTENT (INTRODUCTION)

Since the 1970's, researchers have sought to understand how entertainment experiences emerge in response to media content (Vorderer & Hartmann, 2009). In doing so, they have often focused on viewers' entertainment experiences of television content (e.g., Tannenbaum, 1981). But with the rise of digital media, the way in which audiovisual media content is consumed has fundamentally changed, raising questions about its consequences for viewers' entertainment experiences. To date, people frequently access videos through online social media platforms such as YouTube (i.e., Kaplan & Haenlein, 2010). On these platforms, video viewers are members of large audiences whose presence is evidenced by the social information that they provide, such as user comments and video (dis)likes. Online social information in the form of user comments and (dis)likes is an essential part of YouTube and other social media. Indeed, one of the main reasons why people use YouTube is to interact with others (Haridakis & Hanson, 2009; Khan, 2017): By writing user comments and assigning (dis)likes to videos, viewers can discuss and evaluate videos together. In order to understand how entertainment experiences emerge in response to online videos, it is therefore imperative that we study the role of this new, social way of consuming media content.

Theories on media effects suggest that social-context factors may shape viewers' responses to media content (Valkenburg & Peter, 2013). Accordingly, the effects of online social information have been studied in various fields, ranging from persuasive communication to political communication. The results of this

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research suggest that online social information can indeed affect individuals' responses to the social media content that they are exposed to (Hsueh, Yogeewaran, & Malinen, 2015; Shi, Messaris, & Cappella, 2014; Walther, DeAndrea, Kim, & Anthony, 2010). However, how social information affects entertainment experiences specifically is less well understood. This is striking because entertainment is an important reason for consuming social media content (Lin & Lu, 2011). The present dissertation addresses this research gap by studying how social information affects viewers' entertainment experiences of online videos.

### ENTERTAINMENT AS A SOCIAL EXPERIENCE

The term *entertainment* is a broad concept that has been used to describe various audience responses (Wirth, Hofer, & Schramm, 2012). However, Vorderer, Klimmt, and Ritterfeld (2004) state that the core of entertainment is enjoyment. Accordingly, scholars have often described entertainment as experiences of fun or excitement (Bartsch & Hartmann, 2017; Oliver & Raney, 2011; Wirth et al., 2012). They have labelled such experiences as *hedonic entertainment experiences* (Rieger, Reinecke, Frischlisch, & Bente, 2014; Vorderer et al., 2004; Waterman, 1993; Wirth et al., 2012). In line with this literature, the present dissertation investigates the effects of social information on video viewers' hedonic entertainment experiences specifically. Applied to the current topic of social information and online videos, viewers' hedonic entertainment experiences refer to viewers' video enjoyment. Hence, in this dissertation, the terms hedonic entertainment experiences and video enjoyment are used interchangeably.

The idea that individuals' experiences of media content can be influenced by others

is not new. Research about television has often investigated viewing behavior within households and approached television consumption as a social process (e.g., Gauntlett & Hill, 1999; Lull, 1980; Morley, 2005; Saxbe, Graesch, & Alvik, 2011; Silverstone, 2003). Literature discussing how this process shapes viewers' experiences includes studies that investigated how the reactions of co-viewers towards television content can change viewers' own experiences of that content (Banjo et al., 2015; Raghunathan & Corfman, 2006; Salomon, 1977; Tal-Or, 2016; Wilson & Weiss, 1993; Zillmann, Weaver, Mundorf, & Aust 1986). For example, Raghunathan and Corfman (2006) found that verbal comments on television advertisements made by confederates altered participants' enjoyment of those advertisements. Similarly, Tal-Or (2016) found that verbal comments on a movie fragment made by confederates altered participants' experiences of that movie fragment.

Following the research about the effects of co-viewers' reactions to media content on viewers' own media experiences, scholars studying online social influence introduced the concept of socially shared TV viewing. Socially shared TV viewing refers to watching a television program while simultaneously discussing the program with others on social media (Cesar & Geerts, 2011; Cohen, 2017; Cohen & Lancaster, 2014; Raney & Ji, 2017). Nowadays, these two activities can take place on the same online platforms, albeit often not simultaneously. Social media platforms such as Facebook or YouTube (i.e., Kaplan & Haenlein, 2010) present both videos and their accompanying social information on the same webpage. Accordingly, researchers have argued that viewers' media experiences are affected by the interactions between media content and other peoples' reactions

to that content (i.e., Raney & Ji, 2017). This dissertation follows this view by studying the role of others' reactions to online video content in the form of comments and likes.

### INVESTIGATING HOW ONLINE SOCIAL INFORMATION SHAPES VIDEO ENJOYMENT

Understanding how online social information affects viewers' entertainment experiences requires a clear definition of the concept and a description of its main characteristics. In this dissertation, the term *social information* refers to evaluative information about media content that is provided by the audience of that content. Extant research has studied various forms of social information, such as verbal reactions to television content by co-viewers, or written reviews about stories (e.g., Shedlosky-Shoemaker, Costabile, DeLuca, & Arkin, 2011; Tiede & Appel, 2020). Social information accompanying online entertainment content on social media is typically present in the form of (dis)likes and user comments. By assigning (dis)likes to videos, viewers can evaluate them, and by writing comments, they can discuss videos with others (Schultes, Dorner, & Lehner, 2013).

Online social information in the form of user comments or (dis)likes is characterized by three features. First, online social information's presence on social media platforms is often permanent: once a user has assigned a (dis)like to a video or written a comment in response to it, it remains visible to everyone who watches the video afterwards. This is relevant to scholars because the user comments and video (dis)likes that are permanently available on social media make online social information more measurable than many other forms of social information, such as spoken reactions to television content. Hence, online social information provides researchers with

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the opportunity to investigate its content characteristics and effects in a systematic way (Cheung & Thadani, 2012; Lee, Park, & Han, 2008). Second, online social information is typically presented together with the video that it refers to on the same webpage. Hence, online social information is often available to all viewers of the same video. As a consequence, it has the potential to influence – over time – the experiences of large groups of people, making it particularly relevant to investigate its effects. However, the fact that social information is available to a large group of video viewers does not mean that video viewers are always willing to pay attention to it (Jalilvand, Esfahani, & Samiei, 2011).

Third, online social information on social media can be provided by anyone who has access to the internet. Hence, the source of online social information can vary greatly, ranging from laypersons to experts and from strangers to friends. Literature on persuasion and social influence suggests that individuals' relationship with the source of information is an important factor determining the influence of that information (Mackie, Worth, & Asuncion, 1990; Samu & Bhatnagar, 2008; Walther, DeAndrea, et al., 2010; Walther, 2017). Hence, the wide variety of sources of online social information may be consequential for the effects that social information has on viewers' hedonic entertainment experiences.

Investigating the effects of online social information in particular is relevant for entertainment scholars because it can show how social influences on entertainment experiences emerge in online contexts. While research on the effects of online social information is emerging, studies on its effects on entertainment experiences specifically are scarce (for four studies that do focus on entertainment experiences, see: Möller

& Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter, Krämer, Benninghoff, & Gallus, 2018). By investigating how social information affects viewers' enjoyment in response to online videos, this dissertation expands on classical research lines investigating social influences on entertainment experiences in offline settings, such as co-viewing studies (Banjo et al., 2015; Raghunathan & Corfman, 2006; Salomon, 1977; Tal-Or, 2016; Wilson & Weiss, 1993; Zillmann et al., 1986). Investigating online social information and its effects can identify what consequences the specific characteristics of online social information have for video viewers' enjoyment. Moreover, it can show how likely it is that social information affects viewers' enjoyment when they watch video content online, what may strengthen or weaken this effect, and through what mechanisms the effect emerges.

### STUDYING VIEWERS' EXPERIENCES OF ENTERTAINMENT CONTENT

To study how entertainment experiences arise in response to online videos, this dissertation focuses on viewers' experiences of entertainment videos in particular. Entertainment is a broad content genre that includes different types of media messages (Potter, 2009). Accordingly, communication scholars have studied individuals' entertainment experiences in response to various types of entertainment content. For example, studies within the co-viewing literature have investigated viewers' experiences of various television programs, ranging from Sesame Street (i.e., Salomon, 1977) to horror movies (i.e., Zillmann et al., 1986). In addition, studies investigating social influence on online video viewers' experiences have focused on viewers' enjoyment of comedy shows (i.e., Waddell & Bailey, 2019; Waddell & Sundar, 2017) and

talent shows (i.e., Winter et al., 2018). This dissertation studies viewers' enjoyment in response to another specific type of media content, namely online animated short films. Specifically, this dissertation studies viewers' enjoyment of short online videos that present a narrative through hand-drawn or computer animations and that contain no dialogue.

There are three reasons why this dissertation focuses on viewers' enjoyment of online animated short films. First, previous studies on the effects of online social information on entertainment experiences typically used episodes of series that are regularly aired on television (e.g., Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). Viewers' responses to such content may be shaped by their pre-existing opinions of the series based on what they have previously seen on television or on their opinion of the actors that are featured in it. In contrast, animated short films are not aired on television regularly, nor do they feature famous actors, making it more likely that viewers approach them in a relatively neutral manner. This reduces the risk that any variation in viewers' enjoyment is due to viewers' prior attitudes instead of the social information to which they are exposed. Second, animated short films constitute a popular video genre which is illustrated by the fact that the Academy of Motion Picture Arts and Sciences includes an award category specifically dedicated to animated short films (<https://oscars.org>). On YouTube, the number of video views that accompanies animated short films can be as high as 100 million (YouTube, 2020). Investigating viewers' experiences of media content that is often watched in real life settings increases the ecological validity of the studies in this dissertation. Third, while extant research on social influence has studied individuals' experiences in response to various types of media content, one consistency in

this literature is that most studies focus on media content that contains a narrative (e.g., Shedlosky-Shoemaker et al., 2011; Tal-Or, 2016; Tiede & Appel, 2020; Waddell & Bailey, 2019; Zillmann et al., 1986). By studying viewers' enjoyment of animated short films presenting a narrative, this dissertation ensures comparability with previous studies and adds knowledge to the existing literature on this topic.

### THE CURRENT STATE OF THE ART: WHAT DO WE (NOT) KNOW ABOUT THE EFFECTS OF ONLINE SOCIAL INFORMATION?

Although research on the effects of online social information on video enjoyment is scarce, a few studies on the topic do exist. These studies found that the valence of user comments alters viewers' video enjoyment (Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). The valence of social information refers to its positivity or negativity. For example, a comment indicating that a viewer thoroughly enjoyed a video has a positive valence, while a comment in which the author indicates that she disliked a video has a negative valence. Extant research found that video viewers who were exposed to positive social information reported more video enjoyment than viewers who were exposed to negative social information (Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). This suggests that there is a valence effect of social information on viewers' video enjoyment.

While extant research shows that online social information can indeed affect viewers' video enjoyment, at least four gaps in the literature still exist. First, we know little about the characteristics of the social information that accompanies online entertainment videos. For

example, although previous studies showed that the valence of social information plays an important role (i.e., Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018), we know little about how positive or negative the comments that are created in response to entertainment videos on YouTube actually are. Second, it is unclear how much attention video viewers typically pay to social information. It is unlikely that social information affects viewers' video enjoyment if viewers do not pay attention to it. Therefore, it is important that we learn more about viewers' attention to social information.

Third, we lack knowledge on how the source of social information may strengthen or weaken its effect on viewers' video enjoyment. Because social information can be created by different sources – and theory indicates that the source of information plays an important role for its effects (e.g., Terry & Hogg, 1996; Turner, 1982; Turner, Oakes, Haslam, & McGarty 1994) – scholars have called for research on this factor (Waddell & Sundar, 2017; Walther, DeAndrea, et al., 2010; Winter et al., 2015, 2018). Fourth, although previous studies indicate that social information affects viewers' video enjoyment, we know little about the underlying mechanisms of this effect. As a consequence, we do not know how this effect emerges, limiting our understanding of how social influences shape entertainment experiences.

Table 1.1  
Overview of the empirical studies discussed in the dissertation

Chapter:	Study focus:
2	The characteristics of social information
3	Video viewers' attention to social information
4	The role of the source of social information
5	The mechanisms underlying the effect of social information

This dissertation addresses each of these gaps in a separate empirical study. The empirical studies are described in chapters 2 through 5 of this dissertation (see Table 1.1). Each of these chapters is written as an individual paper and is published in an academic journal (in case of chapters 3, 4, and 5 as advance online publications).

### THE CHARACTERISTICS OF ONLINE SOCIAL INFORMATION

A first glance at the literature on online social information shows that its effects have typically been studied through experiments. These experiments compared the video enjoyment of viewers who were exposed to positive social information to that of viewers who were exposed to negative social information, or to no social information (Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). But if we want to understand how social information affects viewers' video enjoyment outside of experimental settings, it is necessary that we learn more about the characteristics of the social information that viewers are exposed to when they watch entertainment videos presented on social media. However, researchers have paid scant attention to the characteristics of social information created in response to online entertainment content.

By means of an automated content analysis, the second chapter of this dissertation

addresses this gap and explores the characteristics of online social information on YouTube. While research on the characteristics of social information created in response to entertainment media content is scarce, several studies investigated the characteristics of online social information created in response to political media content, such as comments written in response to online newspaper articles (e.g., Abdul-Mageed, 2008; Coe, Kenski, & Rains, 2014; Ksiazek, 2018; Liu, Zhou, & Zhao, 2015; Tatar et al., 2011; Weber, 2014). To continue on existing research and to contextualize the characteristics of social information created in response to entertainment content, the second chapter compares social information accompanying entertainment videos to social information that accompanies political videos.

### VIDEO VIEWERS' ATTENTION TO SOCIAL INFORMATION

A second gap in the literature on the effects of social information emerges from the fact that previous studies take video viewers' attention to social information for granted. To study the effects of social information, researchers have used forced exposure designs, which ensured that participants carefully examined the social information of videos (Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). For example, Möller and Kühne (2019) explicitly instructed participants to spend a few minutes reading user comments. However, when viewers watch videos online, they are not necessarily willing to pay attention to social information. If viewers do not pay any attention to social information, an effect on their enjoyment is unlikely to occur. Hence, although previous studies found a valence effect of social information on video enjoyment, we need to know how much attention viewers pay to social information when they watch online

videos on YouTube in order to understand how social information affects viewers' video enjoyment in real life.

In line with this notion, chapter 3 focuses on video viewers' attention to social information. Using an eye tracker, participants' gaze was monitored while they watched a video on a YouTube page. Through this approach, the study investigates how the valence of social information affects viewers' attention to social information and how it alters viewers' video enjoyment when viewers can decide how much attention they pay to social information. This study is based on literature on the negativity bias indicating that people pay more attention to and are more affected by negative information than positive information (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001). Chapter 3 thus investigates whether a negativity bias occurs when individuals watch online videos by testing whether people spend more time looking at and are more affected by negative social information than positive social information.

### THE SOURCE OF SOCIAL INFORMATION

A third gap in the literature on the effects of online social information is that while studies indicate that a valence effect emerges when video viewers are exposed to social information, it is unclear what makes this effect more or less likely to occur. Scholars suggest that this effect may depend on who created the social information (Waddell & Sundar, 2017; Walther, DeAndrea, et al., 2010; Winter et al., 2015, 2018). Specifically, they suggest that social information created by a source with which viewers identify (i.e., in-group) has a stronger effect on their enjoyment than social information that is created by a source which viewers do not identify with (i.e., out-group).

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However, this notion has not been empirically tested in the specific context of online social information so far. Yet, it is important to do so because on social media, social information can be created by different sources and understanding the role of the source of social information can indicate when the effect of social information is most likely to occur.

Chapter 4 consequently investigates how the source of social information alters the effect of social information. Based on research suggesting that the source of social information is an important factor (Waddell & Sundar, 2017; Winter et al., 2018) and on literature on the Social Categorization Theory (Tajfel & Turner, 1986; Terry & Hogg, 1996; Turner, 1982; Turner et al., 1994), the chapter tests if individuals who feel that they belong to the same social group as the source of social information are more affected by that social information than viewers who do not feel that they belong to the same social group as the source of social information. In this way, the chapter aims to study how the source of social information strengthens or weakens its effect.

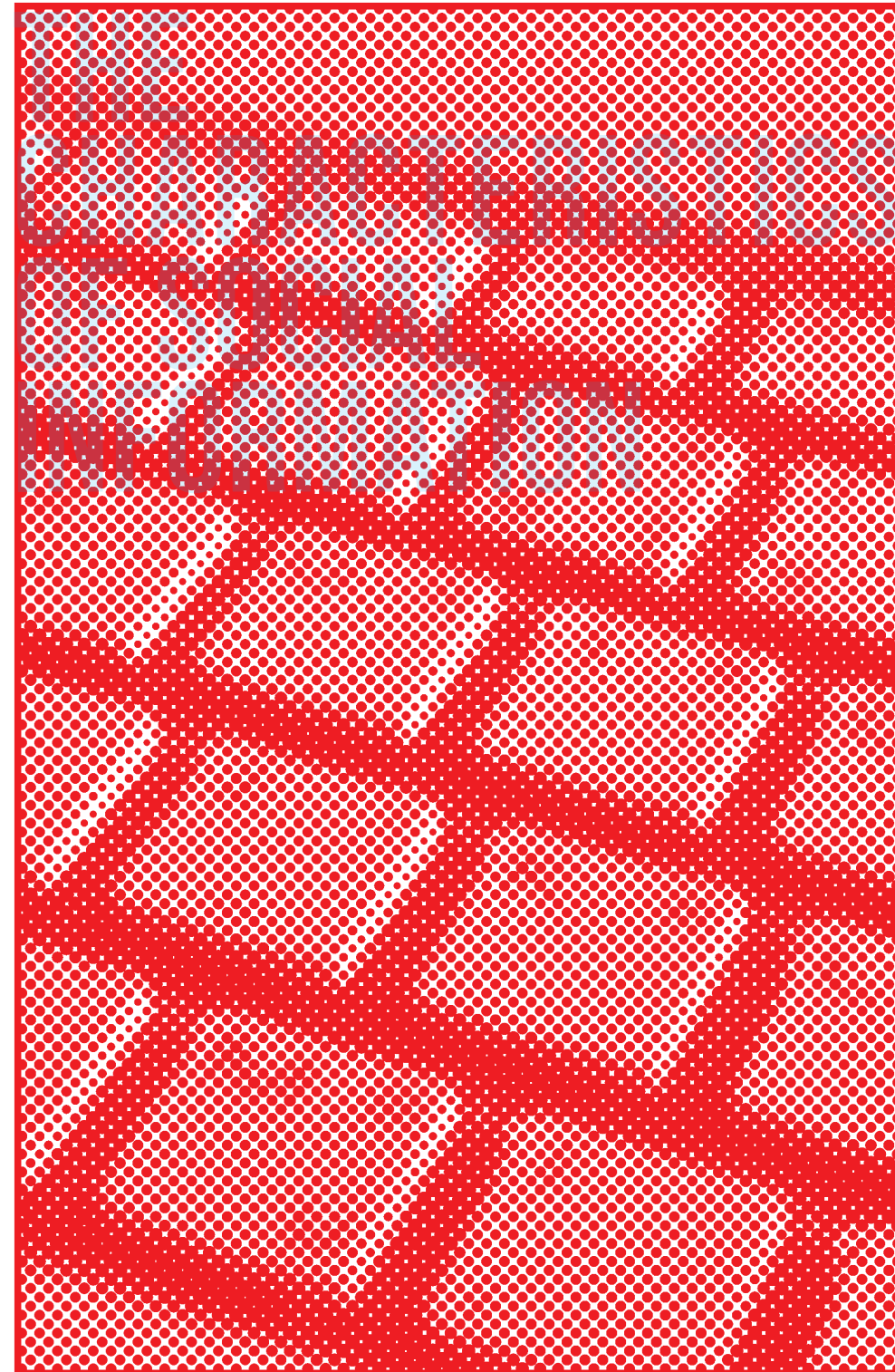
### THE MECHANISMS UNDERLYING THE EFFECTS OF SOCIAL INFORMATION

Although research shows that social information can affect viewers' video enjoyment, we know little about how this effect emerges. However, scholars provide two possible hypotheses about the mechanisms underlying the effect. The judgement effect hypothesis states that video viewers alter their evaluations of a video so that it is in line with the opinions of other viewers as reflected in social information (Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). An alternative explanation for the effect of social information is offered by the processing effect hypothesis. The processing effect hypothesis

poses that social information influences how viewers process videos, thereby changing their experiences (Shedlosky-Shoemaker et al., 2011; Tiede & Appel, 2020). Thus, while the judgement effect hypothesis states that social information only alters viewers' video evaluations, the processing effect hypothesis poses that social information changes viewers' actual experiences while watching a video.

While both the judgement effect hypothesis and the processing effect hypothesis offer plausible explanations for the effect of social information, we currently do not know which of these two hypotheses is most accurate. To advance our knowledge about how the effect of social information emerges, study 5 investigates both the judgement effect hypothesis and processing effect hypothesis.

Taken together, the empirical studies of this dissertation address four gaps in our knowledge about online social information and its effects on video viewers. This way, this dissertation shows how social information shapes viewers' hedonic entertainment experiences in response to online videos. By investigating how entertainment experiences arise in the digital media landscape of the 21<sup>st</sup> century, this dissertation takes a next step in the work that scholars started over 50 years ago.



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## CHAPTER 2 EXPLORING USER RESPONSES TO ENTERTAINMENT AND POLITICAL VIDEOS: AN AUTOMATED CONTENT ANALYSIS OF YOUTUBE

*On YouTube, videos are always presented together with additional user-generated information about those videos. This social information is presented in the form of number of views, (dis)likes, or comments. However, we know little about the characteristics of social information about entertainment videos. To fill this gap, the present study examined the amount and valence of online entertainment videos' social information and compared this to the social information of online political videos. An automated content analysis of (dis)likes, views, and 39,602 comments presented alongside 463 videos showed that entertainment videos received more views and comments than political videos. Moreover, entertainment videos' comments were more neutral than political videos' comments. We also found that comments with a stronger positive or negative valence received more replies and likes, with the exceptions that the positive valence of political videos had no effect and that, for political videos, a stronger negative valence led to fewer likes. Finally, we found that as political videos received more comments, the positive valence of their comments became more consistent. Overall, these results show that the specific type of video influences the amount and valence of social information it receives.*

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Social media have not only changed how people communicate and interact with each other, but also how media contents are presented and how recipients use these contents. A platform which has substantially changed the presentation and use of audiovisual content is the video-sharing website YouTube. A special feature that distinguishes videos on YouTube from traditional offline videos is that they typically are presented together with user-

generated information about those videos. This information is presented in the form of views, (dis)likes, and comments. It forms an essential part of YouTube's content because it informs viewers about the evaluations that videos receive by their audience. For example, video (dis)likes inform viewers about how positive or negative the overall audience of the video evaluated it. Therefore, we define this information as *social information*. Despite the prevalence of online social information on YouTube, we still lack a sufficient understanding of its essential characteristics, such as its amount and valence (e.g., Thelwall, Sud, & Vis, 2012; Walther, DeAndrea, et al., 2010).

It is important to understand the characteristics of social information on YouTube for at least two reasons. First, the social information created in response to YouTube videos is an important outcome in its own right because it can provide insights into how video viewers use the platform. Khan (2017) distinguishes two uses of YouTube, namely active participation and passive consumption. Active participation describes how users actively engage with the platform by creating comments and (dis)likes to express their opinion about videos. The amount of social information created in response to videos is an indication of users' active engagement with YouTube. Second, because social information is a prevalent feature on social media platforms, it constitutes a crucial context factor which influences viewers' passive consumption of YouTube, that is, how they experience the platform's content (Cameron & Geidner, 2014; Khan, 2017; Waddell & Sundar, 2017; Walther, DeAndrea, et al., 2010). Studying the characteristics of online social information thus contributes to a thorough understanding of how responses to online videos unfold.

To learn more about viewers' engagement

with YouTube and their experiences of its content, this study systematically explores the social information that is presented alongside YouTube videos. As our knowledge of the social information of videos on YouTube is limited, the present study explores multiple aspects of social information, namely user comments, video views, and (dis)likes. This study employs an exploratory approach by focusing specifically on the social information of *popular* YouTube videos, that is, videos that are among the most viewed videos on YouTube. The 10% most popular videos on YouTube create the majority of the platform's video views (Cha, Kwak, Rodriguez, Ahn, & Moon, 2007). Thus, focusing on popular videos will increase our knowledge of the social information to which YouTube users typically are exposed.

As the content of YouTube is user-generated, the platform contains a wide variety of videos. This study will explore how the characteristics of user comments, views, and (dis)likes vary depending on video genre. A genre is a content category which distinguishes itself through characteristic features that match individuals' motivations for using media contents (Potter, 2009; Prior, 2005). For example, entertainment media content is primarily sought out by individuals who are looking for enjoyment (Potter, 2009; Prior, 2005; Rubin, 1983). Thus, genres are helpful for content providers and audiences because they efficiently signal which gratifications are likely to be satisfied through usage (Potter, 2009; Prior, 2005; Rubin, 1983). As viewers' motivations for watching specific video genres may differ and different gratifications are fulfilled by specific video genres, the characteristics of social information are likely to depend on the genre of the video.

In the present study, we focus on two major types of media content that have been

identified in research: Entertainment media content which is aimed at fulfilling users' need for enjoyment and relaxation, and political content that mainly fulfills users' information seeking need (Potter, 2009; Prior, 2005; Rubin, 1983). Although entertainment forms the main motivation for people to use YouTube (Chau, 2010; Khan, 2017), existing research on online social information has primarily focused on user responses to political media content, whereas research on the social information of entertainment media content is scarce. Therefore, this study takes the literature from political communication as a starting point to compare the social information of entertainment and political videos.

#### RESEARCH ON THE ONLINE SOCIAL INFORMATION OF POLITICAL MEDIA CONTENT

Researchers studying online social information have often focused on political media content. These studies show that the characteristics of political media content influence the *amount* of social information that is created in response to it (Abdul-Mageed, 2008; Ksiazek, 2018; Ksiazek, Peer, & Lessard, 2016; Liu et al., 2015; Tatar et al., 2011; Weber, 2014). Scholars found that the topics of online news items and the terminology that is used to describe those topics influence the number of comments they receive (Abdul-Mageed, 2008; Ksiazek, 2018; Tatar et al., 2011; Tsagkias, Weerkamp, & De Rijke, 2009). For example, researchers found that discussing topics surrounded by controversy such as gun control increased the number of comments that articles received (Ksiazek, 2018; Liu et al., 2015).

Not only does the *amount* of online social information depend on the characteristics of political media content, studies also suggest that social information's *valence* (e.g., the

positivity and negativity of comments) can depend on them. Multiple content analyses investigated negative valence in the form of hostility in comments posted in response to online news articles (e.g., Coe et al., 2014; Ksiazek, 2018). In one of these studies, Coe et al. (2014) found that online articles discussing news related to law and order, taxes, or the economy received more uncivil comments than articles discussing lifestyle or health. In addition, Ksiazek (2018) identified gun control, defense, and foreign policy as topics that increase the hostility in comments, in comparison to the topic of labor. The literature discussed here thus shows that the characteristics of media content can influence the amount and the valence of social information that it receives. However, when users create social information, they do not only do so in response to the media content, but also in response to social information created by previous users. The characteristics of social information are therefore likely to depend not only on the media content, but also on the characteristics of previously created social information.

Several scholars studied how the amount of comments written in response to online news articles depends on the characteristics of previously written comments. In an experiment, Ziegele, Weber, Quiring, and Breiner (2018) investigated how previously written user comments influence users' willingness to post new comments. They found that comments including questions or incivility increased users' tendency to reply to these comments. Yun, Park, Holody, Yoon, and Xie (2013) found that in comment threads discussing articles about abortion, comments expressing an opinion incongruent to the opinion expressed in the article received more replies than comments expressing an opinion congruent to the article. Moreover, Song,

Dai, and Wang (2016) conducted a content analysis of comments discussing a political topic on a Chinese social network site. They found that messages which are very positive or very negative are shared by others more often than neutral messages, with messages expressing anger being shared most often (Song et al., 2016). In sum, these studies show that the amount of user comments written is influenced by previously written comments.

Previously written user comments also affect the *valence* of political media content's social information. Ziegele et al. (2018) found that users are less likely to write uncivil comments if previous comments include questions or information supplementary to the media content, while users are more likely to post uncivil comments if previous comments included incivility (Ziegele et al., 2018). Chmiel and colleagues (2011) found that replies on political websites often contain the same valence as the comments in response to which they were written. That is, while negative comments received mostly negative replies, positive comments received mostly positive replies (Chmiel et al., 2011). Finally, a study by Siersdorfer, Chelaru, Nejdil, and San Pedro (2010) researching a large sample of YouTube videos discussing various topics implies that this pattern also occurs across different aspects of social information. Siersdorfer et al. (2010) found that as comments are more positive, users are more inclined to assign a like to them.

In sum, the literature on online political media content showed that the amount and valence of political media content's social information depends on content characteristics and on previously created social information. However, with the exception of Siersdorfer et al. (2010), the studies discussed here focused exclusively on political media content

and it is unknown if these findings also apply to entertainment media content. Because entertainment media content is typically geared toward creating enjoyment and political media content typically aims at informing audiences (Potter, 2009; Prior, 2005; Rubin, 1983) there may be differences between entertainment and political videos' social information. However, the literature described here did not systematically compare the social information of entertainment and political media content. It is therefore necessary to investigate which specific differences in the social information of entertainment and political videos may occur.

### VIDEO TYPE AND ONLINE SOCIAL INFORMATION

One of the differences between the social information of entertainment videos and that of political videos that is likely to occur is a difference in the number of video views that both types of videos receive. Video type is likely to affect the number of views for a rather simple reason: One of the most important motivations for people to watch YouTube videos is entertainment (Chau, 2010; Khan, 2017). Audiences are likely to seek out media content that adheres to their needs (Rubin, 2009), and as entertainment videos directly address viewers' motivations, their number of views is likely to be high. It is therefore plausible that overall, entertainment videos receive more video views than political videos. Based on this, we hypothesize:

*H1:* Online entertainment videos receive more views than online political videos.

Entertainment and political videos may also differ with regard to the number of comments they receive. Previous research indicates that political videos may elicit more intense discussions and more user comments because political content is often

controversial (Chen & Berger, 2013; Jeong, 2003; Liu et al., 2015). Political videos often address issues that are relevant and have consequences for a considerable part of society, such as immigration, gun control, or tax policy. Moreover, these issues are often presented using frames that emphasize the conflict between political camps and viewpoints (Schuck et al., 2013; Semetko & Valkenburg, 2000). Because of this, the audience of political videos is likely to be more inclined to express its opinion than the audience of entertainment videos which is not exposed to political issues. Hence, once they are viewed, political videos should elicit more comments than entertainment videos. In line with this reasoning, Choi et al. (2015) found that conversation threads on the online platform Reddit that discuss news include more comments than threads discussing other topics. Hence, we hypothesize:

*H2:* Online political videos receive more comments than online entertainment videos.

Next to the amount of views and comments, the valence of videos' social information may also differ. On YouTube, the valence of social information can be presented in different ways. While video likes express a positive valence, video dislikes express a negative valence. Similarly, comments can include positive expressions (e.g., "This is a fantastic video!") or negative expressions (e.g., "I hate this video!"). It should be noted that social information can simultaneously be positive and negative, for example, when a video receives both likes and dislikes. Similarly, a comment may include positive expressions as well as negative expressions (e.g., "Great story in this video, music in it was horrible though."). Moreover, comments can vary in the intensity of their valence. For example, a comment with a high proportion of positive words (e.g., "This

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video is super amazing awesome and so much fun!") is more positive than a comment with a low proportion of positive words (e.g., "This video is fun!").

In the case of YouTube videos, video genre is likely to influence the valence of social information. Political videos are likely to elicit more negative responses than entertainment videos. As discussed before, political videos often discuss topics about which people disagree and present them in a manner that emphasizes these conflicts (Schuck et al., 2013; Semetko & Valkenburg, 2000). Expressions of disagreement are often associated with a negative valence (Hancock, Landrigan, & Silver, 2007). The negative valence of online political videos is likely to be adopted in the (dis)likes and the comments that they receive: Scholars found that people adopt the valence that they detect in messages and express it in their own messages (Hancock, Gee, Ciaccio, & Lin, 2008; Kramer, Guillory, & Hancock, 2014). Moreover, comments written by individuals who engage in an online discussion of controversial issues are likely to include disagreement, which can result in a negative valence (Hancock et al., 2007).

In contrast, entertainment videos are likely to elicit relatively positive responses. While the content of political videos is likely to address topics about which people disagree, entertainment videos primarily aim to create positive experiences by entertaining viewers. The content of entertainment videos is therefore likely to be more positive than that of political videos. As viewers are likely to adopt the valence expressed in entertainment videos in their own comments (Hancock et al., 2008; Kramer et al., 2014), the social information of entertainment videos is likely to be more positive than that of political videos. We thus hypothesize:

*H3a:* Online entertainment videos receive more likes than online political videos.

*H3b:* Online political videos receive more dislikes than online entertainment videos.

*H3c:* Comments written in response to online entertainment videos are more positive than comments written in response to online political videos.

*H3d:* Comments written in response to online political videos are more negative than comments written in response to online entertainment videos.

### THE ROLE OF PREVIOUSLY CREATED SOCIAL INFORMATION

In addition to the type of video, previously created social information may influence the amount and valence of new social information (Chmiel et al., 2011; Siersdorfer et al., 2010; Ziegele et al., 2018). With regard to the *amount* of social information, previous studies found that comments that are very positive or very negative trigger more responses than neutral messages (Song et al., 2016; Ziegele et al., 2018). This can be explained by the notion that comments that are very positive or very negative elicit more arousal than neutral comments, making recipients more inclined to respond (Berger & Milkman, 2012). Thus, the amount of replies that comments receive is likely to depend on their valence. Specifically, comments with a strong positive or negative valence are likely to receive more replies than neutral comments. With regard to the *valence* of social information, scholars found that people's responses to comments often have the same valence as that of the comment to which they respond (Chmiel et al., 2011; Siersdorfer et al., 2010; Ziegele et al., 2018). This is in line with the general finding that people tend to adopt the valence of messages that they read

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and express it their own messages as (Hancock et al., 2008; Kramer et al., 2014). Based on this, we propose that the more positive a comment is, the more likes it receives, while the more negative a comment is, the fewer likes it receives. Hence, we hypothesize:

*H4:* The more positive the comment, (a) the more replies and (b) the more likes it receives.

*H5:* The more negative the comment, (a) the more replies but (b) the fewer likes it receives.

However, previously posted comments might not only influence replies and likes to these comments, but the valence of the entirety of previous comments might also influence the valence of subsequent comments. To explain this, the referent informational influence framework (Turner, 1982) is useful. The framework describes social influences within groups. A group is formed by two or more people if they are aware of a common social category membership (Turner, 1982). On social media, a group can be formed when individuals collectively participate in creating social information by expressing their opinion about media content (Postmes, Spears, & Lea, 2000). The referent informational influence theory states that when individuals consider themselves members of a social group, they conform to behavioral norms that characterize that group (Turner, 1982). In line with this reasoning, Postmes et al. (2000) found that, in online conversations, group members increasingly conformed to communication patterns of the group: As time passed, the communication style of group members became increasingly similar because members increasingly used humor or incivility in their messages.

On YouTube, user comments provide information about how people communicate

with each other. As the number of comments increases, characteristics of a group's communication style (e.g., the valence of messages) become more evident and authors of new comments are more likely to conform to these standards. Thus, when new comments are posted to a video, either the positively or negatively toned expressions are likely to become more salient because the authors of the new comments conform to the group norm. Through this self-reinforcing process, the homogeneity of the comments' valence should increase over time. Or put differently: The variance in the positive and negative valence of user comments should decrease when the number of comments increases. Based on this reasoning, we hypothesize:

*H6:* As the number of comments written in response to a video increases, the comments' valence becomes more consistently positive or negative.

Hypotheses 4 to 6 describe how previously created social information affects the amount and valence of subsequently created social information in response to entertainment and political videos. Presumably, the experiences that viewers have when watching entertainment videos may differ from their experiences when watching political videos. As discussed before, the audience of political videos are likely to be more actively engaged in the content than entertainment video viewers because they are exposed to political issues presented in a manner that emphasizes conflict and controversy. Because of this, political video viewers may also be more actively involved in examining and creating social information than entertainment video viewers. As a consequence, the influence of previously created social information on new social information may differ depending on the video type. However, based on our

current knowledge, it is unclear how these differences emerge and how they are reflected in the social information of entertainment and political videos. To learn more about how the effects of previously created social information on the number of likes and replies that comments receive (H4, H5), and on the consistency of their valence (H6) may vary between entertainment and political videos, we propose three research questions:

*RQ1:* How do the relationships between the positive valence of user comments and (a) the number of replies that they receive, and (b) the number of likes that they receive differ between online entertainment videos and online political videos?

*RQ2:* How do the relationships between the negative valence of user comments and (a) the number of replies that they receive, and (b) the number of likes that they receive differ between online entertainment videos and online political videos?

*RQ3:* How does the relationship between the number of comments written in response to videos and the consistency of the comments' valence differ between online entertainment videos and online political videos?

## METHOD

### SAMPLE SELECTION

To draw a conclusion about the proposed hypotheses and research questions, the social information of frequently viewed entertainment videos and political videos on YouTube was collected. To determine the initial sample of videos, we used the website Social Blade (<https://www.socialblade.com>), which presents statistics about several social media platforms, including YouTube. The statistics about YouTube provided by Social Blade were used for two reasons. First, the

statistics presented a starting point to identify videos that were likely to be entertainment or political videos. Social Blade categorizes YouTube video channels according to their topic. This categorization is based on the topic of the channels' most recent videos, as determined by the uploaders of the videos. We selected potential entertainment videos from channels with videos categorized in one of 11 topics, namely entertainment, comedy, films, gaming, shows, how to and style, music, people and blogs, pets and animals, sports, or travel. In addition, potential political videos were selected from channels with videos on news and politics.

Second, the statistics presented by Social Blade ensured that the sample included only popular videos. For entertainment videos, for each of the 11 entertainment topics, we selected the 50 YouTube channels with the highest total number of viewers. From each of these channels, the most frequently watched video was selected. When, in five cases, data were missing on how often each of a channel's videos had been watched, we selected the most recent video. In the two cases where information about the channel's most recent videos was also missing, we selected the highest rated video. This resulted in 550 potential entertainment videos.

As political videos were only selected from channels on news and politics, selecting only the 50 most popular channels would result in few political videos. Thus, to increase the number of political videos in the sample while at the same time ensuring that only the most popular political videos would be included in the sample, the 150 channels with the most viewers discussing news and politics were selected. From each of the selected channels, the most frequently watched video was chosen. In one case, data were missing on the

number of times that videos were watched. We selected the most recent video instead. In total, 150 potential political videos were selected.

### DATA COLLECTION

After identifying potential entertainment and political videos, the social information of the videos was collected between January and April 2017. This was done through a Python 3.5 script that employs the Google Application Programming Interface (API) and is openly accessible (Van de Velde, 2017). Through the Google API, the data of 537 entertainment videos were found, as well as the data of 147 political videos. Manual inspection of the 16 videos with missing social information showed that three videos were not available on YouTube and two videos were not found because the video links retrieved from Social Blade were invalid. The remaining 11 videos were available on YouTube but for unknown reasons they were not found by the Google API. These videos were searched for again and this time, the social information of eight more videos was found through the API. Hence, the social information of 544 entertainment videos and 148 political videos was collected.

The information that was found through the Google API was downloaded in two steps. First, information and summary statistics about each video were collected. This includes the videos' title, the video description, the number of likes and dislikes that the video received, the number of times that it was viewed, and the number of comments that it received. Second, the comments of each video were collected. This was done for the first five pages of comments posted in response to each video, which are the approximately 147 newest comments of each video. For each comment, we extracted data including information indicating to which video the comment was

posted, the text of the comment, the number of likes that the comment received and the number of replies that it received. In total, the information of 101,889 comments written in response to 692 videos was collected.

### SAMPLE VALIDATION

At the outset of the study, we planned to work with the categorization of entertainment and political videos as provided by Social Blade. However, after manual inspection of some of the videos and doubts about the validity of the Social Blade categorization, we decided to hand code whether the videos were entertainment or political videos. At the time of hand coding however, 43 videos were no longer available, resulting in 649 videos that could be hand coded.

Entertainment videos were defined as videos discussing topics that can offer entertainment either while watching the videos or as a direct consequence of watching them. Videos can do so by (a) offering amusement, for example through comedy or games (Gray, 2009), (b) offering escapism, for example through a (fictional) narrative (Vorderer et al., 2004), or (c) connecting to viewers' personal interests, for example by presenting sports or music (Vorderer, 2001). Political videos were defined as videos that discuss topics which are relevant for, and have a direct or indirect influence on, a considerable number of individuals within a society and therefore create a need for discussion or action (Potter, 2009; Prior, 2005; Rubin, 1983; Young & Leonardi, 2012).

As the videos were coded based on their topic, it was important that the content of the video was clearly understandable. Therefore, coders were instructed to only code videos in English or with English subtitles. In the sample, 185 videos were neither spoken in English nor did they have English subtitles. Thus, in total,

464 videos were hand coded to categorize them as either entertainment or political. A preliminary look at a selection of the videos showed that the first five minutes of a video provides sufficient information to understand its content. Therefore, coders were instructed to watch half of each video plus one additional minute before they coded it, except when a video was shorter than 5 minutes, in which case coders were instructed to watch the entire video ( $n = 284, 61.2\%$ ). One coder coded all the videos and a second coder coded a randomly selected 22% of the videos ( $n = 102$ ) to determine inter coder reliability. The coders agreed in 92% percent of the cases, indicating a good intercoder reliability. Subsequent discussion about the remaining 8% led to the agreement to include the coding results of the first coder in the analyses. Based on the results of the coding procedure, 416 videos of which the social information was collected were categorized as entertainment videos and 47 videos were categorized as political videos. One video was coded as neither entertainment nor political. This video was excluded from the analyses.

### DATA PROCESSING

After the final sample for the study was determined, the collected data were processed using a second Python 3.5 script. With this script, the language of each comment was determined using Google's language detection library (Google, 2017). Because the algorithm used in the subsequent part of the script can only deal with texts written in English, comments that were not written in English were excluded from the analyses. The remaining 39,602 English comments were further analyzed to test the hypotheses of this study.

The valence of each comment was assessed through the Sentistrength algorithm (Thelwall,

Buckley, & Paltoglou, 2012). This algorithm is designed to detect the tone of voice of short web texts and has been tested and validated for online forum posts, Tweets and comments written on YouTube (Thelwall, Buckley et al., 2012). After applying the Sentistrength algorithm, each comment received a score indicating the strength of the comment's positive valence, ranging from 1 (*neutral*) to 5 (*extremely positive*). In addition, comments received a score indicating the strength of their negative valence ranging from -1 (*neutral*) to -5 (*extremely negative*).

For the data on the video level, the average positive valence of all comments written in response to a video was calculated by taking the mean of the positive valence of all comments of this video. In a similar manner, a variable indicating the mean negative valence of all comments written in response to a video was created. To assess the variability of positive valence, the variance of the positive valence of all the comments written to each video was calculated. Finally, a similar variable was created for the variance of the negative valence of all the comments written to each video (see Table 2.1). As the variance of comments' negative and positive valence could only be calculated for videos with at least two or more collected comments, 48 videos with less than two comments were not included in the analyses of the variability in the comments' valence.

### DATA ANALYSIS

The processed data were analyzed using the Statistical Package for the Social Science (SPSS) 24. Before the hypotheses were tested, it was checked whether the data were normally distributed. Scores on variables that had a distribution with a skew and kurtosis between -3 and 3 were regarded as normally distributed. A descriptive analysis showed that for variables

Table 2.1  
Descriptives of dependent variables

Variable	Min.	Max.	M	SD	Skewness	Kurtosis
<b>Video level</b>						
Mean comment positive valence	1.00	2.47	1.61	0.27	0.20	0.54
Mean comment negative valence	-2.70	-0.92	-1.39	0.32	-1.27	1.86
Variance comment positive valence	0.00	1.67	0.66	0.28	-0.01	0.56
Variance comment negative valence	0.00	2.15	0.62	0.44	0.63	-0.10
Video view count (original)	127,133	3,000,000,000	151,185,432	355,980,233	3.93	17.45
Video view count (logged)	11.75	21.73	17.32	1.76	0.01	0.37
Video comment count (original)	0.00	4,780,584	63,136.13	253,820.77	14.91	269.87
Video comment count (logged)	0.00	15.38	9.32	1.99	-0.41	1.07
Video like count (original)	140	13,000,632	530,953.49	1391,092.87	5.22	34.30
Video like count (logged)	4.95	16.38	11.46	1.96	-0.15	0.23
Video dislike count (original)	5.00	1,680,907	46,565.36	133,741.49	7.31	70.56
Video dislike count (logged)	1.79	14.33	9.06	2.00	-0.45	0.87

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Table 2.1 (continued)  
Descriptives of dependent variables

Comment level	Min.	Max.	M	SD	Skewness	Kurtosis
Comment like count (original)	0.00	2,022.00	1.40	21.84	54.91	3,832.25
Comment like count (logged)	0.00	7.61	0.25	0.61	3.69	18.80
Comment reply count (original)	0.00	193.00	0.29	2.46	35.86	2,023.13
Comment reply count (logged)	0.00	5.27	0.10	0.37	4.94	30.32

on the video level, the scores on video view count, video comment count, video like count, and video dislike count were skewed (see Table 2.1). Another descriptive analysis showed that for variables on the comment level, the scores on the comments' like count and reply count were skewed (see Table 2.1). Therefore, a log transformation was performed on these variables using the following formula:  $\text{logged variable} = \text{LN}(\text{original variable} + 1)$ . Inspection of the new, logged variables showed that the scores on the logged variables of video view count, video comment count, video like count, and video dislike count were now normally distributed. Analyses including these variables were therefore run with the new, transformed variables. Scores on the comments' like count and reply count, however, remained skewed (see Table 2.1).

To test hypotheses 1 through 3d, scores of entertainment videos and political videos on several variables were compared. The comparisons were conducted by running a series of analyses of variance (ANOVA) with the following dependent variables: video view count (H1), video comment count (H2), video like count (H3a), video dislike count (H3b), video comments' mean positive valence (H3c) and video comments' mean negative valence (H3d). When testing hypotheses 2 through 3d, we included the video view count as a control variable in the model to preclude that differences in the dependent variables were caused by different numbers of video views for entertainment and political videos. To test hypotheses 4a through 5b and to answer research questions 1 and 2, analyses were performed on the comment level. The analyses tested the relationship between comments' positive valence and the number of replies (H4a) and likes (H4b) they receive, as well as the relationship between comments' negative valence and the number

of replies (H5a) and likes (H5b) they receive. As indicated earlier, the scores on the comment reply count and the comment like count were skewed. Thus, we employed regression models for count data. More specifically, we ran negative binomial regression models on the original, untransformed variables because the assumption of equidispersion was violated (Coxe, West, & Aiken, 2009). Regression coefficients indicate how a one-unit increase in comment valence multiplicatively affects the respective count outcome. For the measure of positive valence, coefficients above 1.0 indicate that a more positive valence increases the expected count. For the measure of negative valence, coefficients below 1.0 indicate that a more negative valence increases the expected count. When hypotheses 4a and 5a were tested, only data of comments that were not replies were used because on YouTube, comments that are replies cannot receive replies. The analyses were repeated for comments written in response to entertainment videos and political videos separately to answer research question 1 and 2. Finally, hypothesis 6 was tested by running linear regression analyses on the video comment count and the variance of comments' positive valence and negative valence. These analyses were repeated for entertainment videos and political videos separately to answer research question 3.

## RESULTS

Hypothesis 1 stated that entertainment videos receive more views than political videos. In support of this hypothesis, we found that there was a difference between entertainment videos and political videos with regard to their number of views,  $F(1,460) = 39.96, p < .001, \eta_p^2 = .08$ . Online entertainment videos received more views ( $M_{\text{logged}} = 17.49, SD_{\text{logged}} = 1.73$ ) than online political videos ( $M_{\text{logged}} = 15.84, SD_{\text{logged}} = 1.31$ ). According to the second hypothesis,

political videos should receive more comments than entertainment videos. Contrary to our hypothesis, entertainment videos received more comments ( $M_{\text{logged}} = 9.38, SD_{\text{logged}} = 1.99$ ) than political videos ( $M_{\text{logged}} = 8.77, SD_{\text{logged}} = 1.91$ ),  $F(1,444) = 10.61, p = .001, \eta_p^2 = .02$ , when controlling for the number of received views. Based on these results (see Table 2.2), hypothesis 1 was supported while hypothesis 2 was rejected.

Hypothesis 3a stated that online entertainment videos receive more likes than online political videos. We found (see Table 2.2) no difference between the number of likes that entertainment videos received and the number of likes that political videos,  $F(1,452) = 1.94, p = .164$ , received. Thus, hypothesis 3a was rejected. Hypothesis 3b stated that online political videos receive more dislikes than online entertainment videos. Contrary to our hypothesis, we found (see Table 2.2) that entertainment videos received more dislikes ( $M_{\text{logged}} = 9.20, SD_{\text{logged}} = 2.00$ ) than political videos ( $M_{\text{logged}} = 7.83, SD_{\text{logged}} = 1.65$ ),  $F(1,452) = 6.94, p = .009, \eta_p^2 = .02$ , while controlling for the number of received views. Therefore, hypothesis 3b was rejected. According to hypothesis 3c, comments written in response to online entertainment videos have a stronger positive valence than comments written in response to online political videos. In contrast to this hypothesis, we found (see Table 2.2) that comments written in response to political videos had a stronger positive valence ( $M = 1.74, SD = 0.23$ ) than comments written in response to entertainment videos ( $M = 1.59, SD = 0.27$ ),  $F(1,417) = 9.84, p = .002, \eta_p^2 = .02$ . Hypothesis 3d stated that comments written in response to online political videos have a stronger negative valence than comments written in response to online entertainment videos. Our results supported this hypothesis as we found (see Table 2.2) that comments

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Table 2.2  
Mean scores of entertainment and political videos on video views, video comments, likes, dislikes and comment valence (H1, H2 & H3)

	Entertainment videos		Political videos		$\eta_p^2$	p	Hypotheses
	M	SD	M	SD			
Video views count (logged)	17.49	1.73	15.84	1.31	.08	< .001	H1 supported
Video comment count (logged)	9.38	1.99	8.77	1.91	.02	.001	H2 not supported
Video like count (logged)	11.64	1.91	9.91	1.75	.00	.164	H3a not supported
Video dislike count (logged)	9.20	2.00	7.83	1.65	.02	.009	H3b not supported
Mean comment positive valence	1.59	0.27	1.74	0.23	.02	.002	H3c not supported
Mean comment negative valence	-1.33	0.24	-1.98	0.40	.34	< .001	H3d supported

written in response to political videos had a stronger negative valence ( $M = -1.98, SD = 0.40$ ) than comments written in response to entertainment videos ( $M = -1.33, SD = 0.24$ ),  $F(1,1417) = 209.88, p < .001, \eta_p^2 = .34$ .

According to hypothesis 4a, the positive valence of comments has a positive effect on the number of replies that they receive. In support of this hypothesis, we found a significant, positive effect of the comments' positive valence on the number of received replies (see Table 2.3). An increase in a comment's positive valence led to more replies ( $e^{0.033} = 1.03, p = .013$ ). Hypothesis 4b stated that as comments have a stronger positive valence, they receive more likes. There was a significant, positive effect of comments' positive valence on the number of received likes which supported hypothesis 4b (see Table 2.3). An increase in a comment's positive valence led to more likes ( $e^{0.221} = 1.25, p < .001$ ).

According to hypothesis 5a, comments receive more replies as they express a stronger negative valence. Supporting hypothesis 5a, the results showed a significant, positive effect of the comments' negative valence on the number of received replies (see Table 2.3). As a comment's negative valence increased, it received more replies ( $e^{-0.295} = 0.74, p < .001$ ). Hypothesis 5b stated that as comments' negative valence becomes stronger, they receive less likes. We found a significant, positive effect of the comments' negative valence on the number of received likes (see Table 2.3). As a comment's negative valence increased, it received more likes ( $e^{-0.060} = 0.94, p < .001$ ). As this is not in line with hypothesis 5b, the hypothesis was rejected.

Hypothesis 6 posed that as a video receives more comments, the comments' valence

becomes more consistently positive or negative. The results showed (see Table 2.4) that the number of comments that videos receive did not affect the variance of the positive valence expressed through comments ( $p = .853$ ), nor did it affect the negative valence expressed through comments ( $p = .813$ ). Based on these results, hypothesis 6 was rejected.

Research question 1a asked how the relationship between the positive valence of user comments and the number of replies that they receive differs for entertainment and political videos. For entertainment videos, we found that an increase in a comment's positive valence led to more replies ( $e^{0.032} = 1.03, p = .031$ ). For comments written in response to political videos, we found that an increase in a comment's positive valence did not lead to more replies ( $p = .973$ ). Thus, only for comments written in response to entertainment videos did we find that they received more replies as their positive valence became stronger (see Table 2.3). Research question 1b asked how the relationship between the positive valence of comments and the number of likes that they receive differs between entertainment and political videos. For comments written in response to entertainment videos, the results showed that an increase in a comment's positive valence led to more likes ( $e^{0.249} = 1.28, p < .001$ ). For comments written in response to political videos, we found that an increase in a comment's positive valence had no significant effect on the likes that the comment receives ( $p = .533$ ). Thus, while the positive valence did positively affect the number of likes that comments of entertainment videos receive, it did not affect the number of likes that comments of political videos receive (see Table 2.3).

Research question 2a asked how the relationship between the negative valence of

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Table 2.3

Effect of the mean comment positive and negative valence on the number of received replies and comments (H4, H5, RQ1 & RQ2).

Variables	All videos						Entertainment videos					
	Mean comment positive valence			Mean comment negative valence			Mean comment positive valence			Mean comment negative valence		
	PR	CI 95%	p	PR	CI 95%	p	PR	CI 95%	p	PR	CI 95%	p
Comment reply count (original)	1.03	.01 ; .06	.13	0.74	-.32 ; -.27	< .001	1.03	.00 ; .06	.031	1.28	.23 ; .27	< .001
Comment like count (original)	1.25	.21 ; .24	< .001	0.94	-.07 ; -.05	< .001	1.28	.23 ; .27	< .001	1.14	.10 ; .16	< .001

Table 2.3 (Continued)

Effect of the mean comment positive and negative valence on the number of received replies and comments (H4, H5, RQ1 & RQ2).

	Entertainment videos						Political videos					
	Mean comment negative valence			Mean comment positive valence			Mean comment positive valence			Mean comment negative valence		
	PR	CI 95%	p	PR	CI 95%	p	PR	CI 95%	p	PR	CI 95%	p
Comment reply count (original)	0.75	-.31 ; -.26	< .001	1.00	-.06 ; -.07	n.s.	0.86	-.20 ; -.11	< .001	1.14	.10 ; .16	< .001
Comment like count (original)	0.87	-.15 ; -.12	< .001	0.99	-.06 ; .03	n.s.	1.14	.10 ; .16	< .001	1.14	.10 ; .16	< .001

Table 2.4  
Effect of the number of comments posted in response to a video on the variance in the comments' valence (H16, RQ3).

Variables	All videos			Entertainment videos			Political videos		
	B	SE	p	B	SE	p	B	SE	p
Variance comment positive valence	-.00	.01	n.s.	.01	.01	n.s.	-.06	.02	< .001
Variance comment negative valence	.00	.01	n.s.	.01	.01	n.s.	.01	.03	n.s.

user comments and the number of replies that they receive differs for entertainment and political videos. For entertainment videos, we found that an increase in a comment's negative valence led to more replies ( $e^{-0.284} = 0.75, p < .001$ ). For comments written in response to political videos, we found that an increase in a comment's negative valence led to more replies ( $e^{-0.154} = 0.86, p < .001$ ). Thus, for both comments written in response to entertainment videos and to political videos we found that they received more replies as their negative valence became stronger (see Table 2.3). Research question 2b asked how the relationship between the negative valence of comments and the number of likes that they receive differs between entertainment and political videos. For comments written in response to entertainment videos, we found that an increase in a comment's negative valence led to more likes ( $e^{-0.136} = 0.87, p < .001$ ). However, for comments written in response to political videos, we found that an increase in a comment's negative valence led to fewer likes ( $e^{0.132} = 1.14, p < .001$ ). Thus, while for entertainment videos, comments' negative valence increased the number of likes that comments received, for political videos, comments' negative valence decreased the number of likes that comments received (see Table 2.3).

Research question 3 asked how the relationship between the number of comments that videos receive and the variance of the comments' valence differs for entertainment and political videos. The result of the regression analysis on the entertainment videos showed that the number of comments that an entertainment video received had no significant effect on the variance of its comments' positive valence ( $p = .365$ ). The results of the regression analysis on the political videos showed that as the number of received comments increased, the

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variance of their positive valence decreased,  $\beta = -0.58, B = -.06, SE = .02, p < .001$ . For entertainment videos, we found that the number of received comments did not affect the variance of its comments' negative valence ( $p = .175$ ). For political videos, the results showed also that the number of comments that an entertainment video received had no significant effect on the variance of its comments' negative valence ( $p = .758$ ). Thus, only for political videos did the number of received comments decrease the variance of the comments' positive valence (see Table 2.4).

## DISCUSSION

The present study analyzed the characteristics of the social information of YouTube videos. The results contribute to our knowledge in multiple ways. First, our results indicate that the video type is related to viewing frequency and to the amount of social information that is created in response to the video. Entertainment videos were watched more often than political videos, as differences in the numbers of views between entertainment and political videos indicate. We also found that when controlling for the number of video views, entertainment videos received more comments and more dislikes than political videos. These findings imply that YouTube users are more engaged with the content of entertainment videos, leading them to express their opinions about entertainment videos more often than their opinions about political videos. This is in line with previous studies which found that YouTube is predominantly used to satisfy entertainment needs (Chau, 2010; Khan, 2017).

In addition, our results show that the comments that entertainment videos receive are more neutral than the comments of political videos, which, accordingly, contain information with a more extreme positive as

well as negative valence. The more extreme valence of user comments to political videos may have different causes: The controversial nature of political media content (Chen & Berger, 2013; Jeong, 2003; Liu et al., 2015), polarization that often occurs when political content is discussed (Sunstein, 2002), or the higher inclination of viewers of political videos to express extreme views. Thus, our first conclusion is that the audience of entertainment videos is more active in creating user comments, but the audience of political videos writes more extreme comments.

A second main contribution of this study is the finding that existing social information itself is a driver of new social information. We hypothesized that more positive comments receive more replies and more likes. However, we only found this to be true for entertainment videos, but not for political videos. This indicates that viewers of political videos respond differently to previously created social information than entertainment video viewers. But more research is needed to fully understand the mechanisms behind these findings. In line with our assumptions, we found that more negative comments receive more replies. We also hypothesized that more negative comments receive fewer likes because likes express a positive valence instead of a negative valence. However, for entertainment videos, we found that more negative comments receive more likes. A reason for this may be that when video viewers assign a like to a negative comment, they do so to express agreement with the negative comment. In that case, the like confirms the negative valence of the comment.

A third contribution of this study is that the results expand our knowledge of how Turner's (1982) referent informational influence framework applies to online social information.

Based on Turner's framework, we hypothesized that as more comments are written in response to a video, a more consistent usage of positive and negative valence would emerge. However, we only found this relationship for the positive valence of comments written in response to political videos. This pattern of results could have arisen for two reasons. First, positive comments may stand out against the negativity prevalent in political videos: Because political videos are often negative, positive comments are easily noticed and, thus, the group norm of expressing a positive valence in comments may be more visible. A second, alternative explanation is that group norms in the comments section of political videos are more visible because of the more extreme valence of the comments: As the valence of comments about political videos is more extreme, it can be more easily recognized, have a stronger impact on the valence of newly created comments, and, thus, increase the homogeneity of the comments' valence. In contrast, comments about entertainment videos are more neutral and thus less likely to indicate group norms and to increase the homogeneity of user comments' valence. This implies that in online communication through social information, the visibility of group norms might be an important factor: If norms are visible enough, they can be adopted by users as this study found to be the case for comments about political videos. Future research could thus benefit from investigating how attributes of social information affect its visibility and impact on media users' behaviors.

In addition to making an empirical and theoretical contribution, our findings have practical implications for online platforms. Many platforms want to prevent users from posting negative comments and using uncivil language. Although strategies exist to deal with this problem, such as moderating comments,

or actively engaging with commenters to influence group norms (Ksiazek, 2015; Stroud, Scacco, Muddiman, & Curry, 2015), they require a large effort for platform managers. Our findings offer an alternative to these labor-intensive solutions. Platforms can design the presentation of social information in such a way that the visibility of comments which present undesired behaviors is decreased. For example, platform managers can detect the valence of comments and decrease the visibility of negative comments by placing them at the end of the list of comments. This would make it less likely that the behavioral norms presented in these comments are adopted in new comments. This way, they can decrease the presence of negative comments in a more efficient manner.

At least three limitations of the current study must be noted. First, because YouTube contains a plethora of videos and their social information, a representative sample of videos can hardly be collected. For feasibility reasons, we relied on information provided by Social Blade to initially sample potential English-language entertainment and political videos with a high number of video views. The initial reliance on information from Social Blade and the focus on English-language videos biases our sample. Hence, the findings of this study should be interpreted as a first exploration of online videos' social information and more research on this topic is needed to complete our knowledge of the characteristics of online social information. Second, the strength of the effect sizes found in this study varied substantially. While some of the effect sizes were relatively strong (e.g., the effect of video type on the negative valence of comments), other effect sizes were relatively weak (e.g., the effect of video type on the number of received comments and dislikes). These differences in effect sizes should be

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considered when evaluating the results of this study. Third, this study found that the social information of YouTube videos depends on the type of the video and on previously created social information. However, our research design does not allow us to preclude that there exist additional determinants of social information. Notably, the characteristics of the audiences of entertainment and political videos may influence social information too. For example, Khan (2017) found that men are more likely to read comments on YouTube than women. In addition, men are more likely to watch political videos because they have a relatively high political engagement compared to women (Jerit & Barabas, 2017; Verba, Burns, & Schlozman, 1997). Future research could shed more light on this matter by investigating what differences exist between audiences of different video types and how this relates to systematic differences in the amount and valence of videos' social information. By gathering information about YouTube audiences using survey data or by analyzing commenters' avatars and user names, scholars could investigate possible relationships between audience characteristics and the social information that they create.

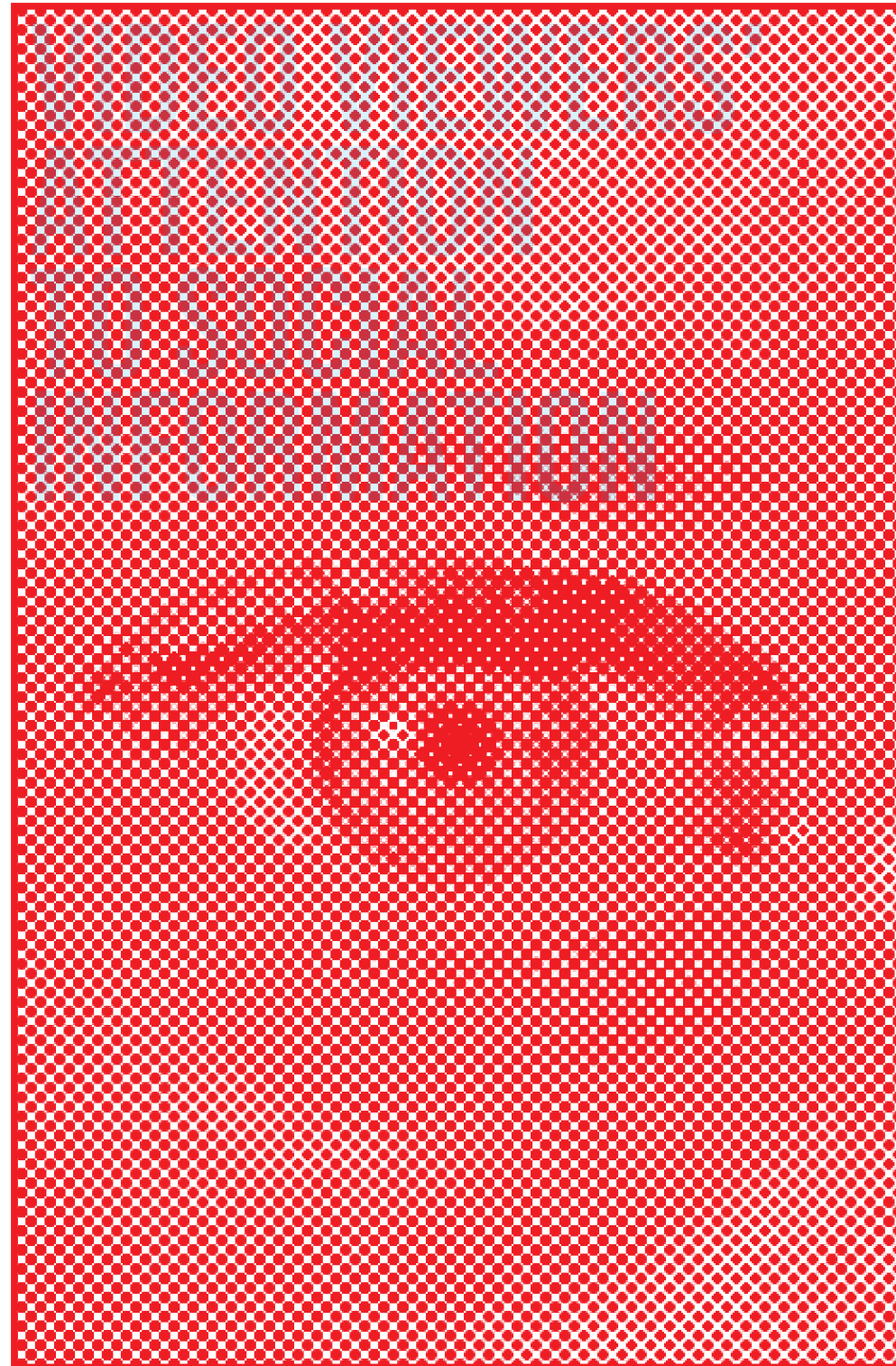
The current study explored a topic about which little research exists and which lacks an established theoretical framework. Hence, this study was a first attempt to systematically investigate the social information of entertainment media content and the factors that determine its amount and valence. As there is still much left to explore with regard to the current topic, future research could contribute to our knowledge by developing theories that deepen our understanding of the factors that determine the characteristics of online social information. This could be done by expanding the present study through the investigation of social information on other

online platforms. Although social information constitutes a major part of YouTube's content, it also plays an important role on other social media, such as Facebook. A notable difference between YouTube and Facebook is that while on the first platform users are exposed to social information that is mainly created by strangers, on Facebook this social information is created mostly by acquaintances. Research indicates that this factor may alter how users respond to social information created by others (Postmes, Spears, Sakhel, & De Groot, 2001; Walther, DeAndrea, et al., 2010). Hence, investigating social information on other platforms such as Facebook can broaden our insights into the factors on which online social information's characteristics depend.

The present study contributed to our knowledge by exploring to what social information YouTube users are exposed and how this depends on the type of video that they watch. This way, it contributed to a broader understanding of how social information is created and what consequences this may have for the video views, (dis)likes, and comments seen by online video viewers. For researchers studying social media it is important to know that much can be gained by looking beyond the content that is provided by social media platforms – knowledge about the total content to which social media users are exposed can be gained by examining platforms' social information.

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### CHAPTER 3 THE EFFECTS OF SOCIAL INFORMATION ON THE ENJOYMENT OF ONLINE VIDEOS: AN EYE TRACKING STUDY ON THE ROLE OF ATTENTION

*Recent experiments showed that the valence of user comments (i.e., social information) presented alongside online videos can alter viewers' enjoyment of videos. However, it is unclear how much attention video viewers pay to social information and whether the effects found in previous studies occur if participants are not forced to view the social information. Therefore, this study investigated how the valence of social information presented alongside online videos affects viewers' enjoyment when viewers are free to determine whether and how much attention they pay to social information. Using an eye tracker, we found that most video viewers pay attention to social information which then elicits a valence effect on their enjoyment. Results also showed that a negativity bias occurred: Participants paid most attention to negative social information. Accordingly, the effect of social information on enjoyment was stronger for negative social information. This study is the first to show that social information of online videos affects the experiences of video viewers in settings where viewers are in charge of how much attention they pay to social information.*

On social media platforms, users are not only exposed to content created by professional content providers, they are also exposed to content created by average users, notably, to evaluative information in the form of comments and (dis)likes. This evaluative information is referred to as *social information*. One frequently studied characteristic of social information is its valence (i.e., its positivity or negativity) (Cameron & Geidner, 2014;

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Waddell & Sundar, 2017; Walther, DeAndrea, et al., 2010; Winter et al., 2018). Research shows that the valence of social information is an important determinant of media users' entertainment experiences. While positive social information leads to more enjoyment, negative social information leads to less enjoyment of online videos (Waddell & Sundar, 2017; Winter et al., 2018).

The influence of social information's valence on the experiences of video viewers has mainly been studied in experimental settings (Cameron & Geidner, 2014; Möller & Kühne, 2019; Waddell & Sundar, 2017; Walther, DeAndrea, et al., 2010). These experiments are somewhat limited in their ecological validity: Either they embed the social information into the online videos (Cameron & Geidner, 2014; Waddell & Sundar, 2017) or they explicitly instruct participants to examine the social information (Möller & Kühne, 2019; Walther, DeAndrea, et al., 2010). Thus, these experiments are forced-exposure designs in which it is certain that video viewers pay attention to the social information of videos. On major video platforms such as YouTube, in contrast, social information is often not immediately visible (e.g., because the user has to scroll down to see comments). It is, therefore, unclear whether and how much attention users of online video platforms typically pay to the various types of social information. Moreover, forced exposure to information may alter individuals' processing of that information (Cho, Lee, & Tharp, 2001; McQuarrie & Mick, 2003). For example, Cho et al. (2001) found that individuals are more likely to remember online advertisements under forced-exposure conditions than when they are in control of how much attention they pay to advertisements. Applying this to the case of online social information, it is plausible that participants in forced-exposure experiments

reacted differently to the social information than they would have done if they could decide how much attention they pay to social information. Thus, because of the limited psychological realism of previous forced-exposure experiments (i.e., Wilson, Aronson, & Carlsmith, 2010), we do not know whether the effect of social information on viewers' video enjoyment that they found also occurs outside of experimental settings.

In response to the two problems described above, the present study has two goals. The first goal of this study is to investigate whether and how much attention video viewers pay to different types of social information (i.e., (dis) likes and comments) when no instructions on whether or not to look at social information are given. The second goal is to examine the effects of the valence of social information on viewers' enjoyment in response to online videos. This study employs a media use setting in which viewers can decide if and how much attention they pay to the social information. This allows us to investigate the attention paid to social information and its effects on users in a naturalistic setting. This paper thereby contributes to the literature on the effects of social information in two ways. First, by studying individuals' attention to social information, this study will show how likely individuals are to pay attention to social information when they watch videos in their daily life. Second, the results of this study will increase our understanding of how social information's valence changes users' experiences of online videos when they can choose how much attention they pay to social information.

### VIDEO VIEWERS' ATTENTION TO SOCIAL INFORMATION

Multiple studies have demonstrated the effect of the valence of social information on viewers'

self-reported video enjoyment (Möller & Kuhne, 2019; Waddell & Sundar, 2017; Winter et al., 2018). Their results are consistent: While video viewers who are exposed to positive social information experience more enjoyment of a video, video viewers who are exposed to negative social information experience less enjoyment (Waddell & Sundar, 2017; Winter et al., 2018). Two explanations for this finding are offered by researchers. Shedlosky-Shoemaker et al. (2011) argue that the valence of social information read prior to exposure to the main media content shapes people's expectations of that content. These expectations then guide people's attention to those elements of the main content that are in line with their expectations, thus changing people's experience of the main media content. Alternatively, Waddell and Sundar (2017) suggest that, by noticing the valence of social information, video viewers become aware of others' opinions of a video. This makes them adjust their own video evaluations because people have a tendency to adjust their evaluations to that of the group. Thus, while Shedlosky-Shoemaker et al. (2011) argue that social information can alter individuals' actual experiences of media content, Waddell and Sundar (2017) suggest that social information only alters individuals' evaluations of media content. Although these are two different explanations, both imply that the valence of social information is an important predictor of viewer responses.

A fundamental assumption of the explanations described above is that, in their daily life, video viewers pay attention to videos' social information and notice its valence. However, this assumption has not actually been tested because previous studies are set up in a way that ensures that participants are exposed to social information. For example, Waddell and Sundar (2017) exposed participants to a video

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### THE VALENCE OF SOCIAL INFORMATION AND VIEWERS' ATTENTION

A better understanding of what may drive online video viewers to pay attention to social information can be derived from the literature on information processing. Studies in this field indicate that the valence of information influences how much attention the information receives. Specifically, research on the negativity bias suggests that compared to positive information, negative information generally draws more attention and can be detected more easily (Baumeister et al., 2001; Rozin & Royzman, 2001). The negativity bias is said to have evolutionary origins: The ability to quickly detect and react to negative events increases a species' chance to survive threats and, thus, supports its adaptation to the environment (Baumeister et al., 2001). However, scholars found that the negativity bias occurs in a wide range of contexts, also when individuals' safety is not at risk. For example, Dijksterhuis and Aarts (2003) conducted three experiments in which they presented participants with words that appeared on a screen for approximately 13 milliseconds. They consistently found that participants are better at detecting negative words than positive words. In addition, the negativity bias has been found in situations where individuals engage in a task while they are presented with additional, superfluous information. Scholars found that in such situations, negative information draws more attention than positive information (Pratto & John, 1991). In the context of online video viewing, these findings suggest that negative user comments are likely to be detected faster and to draw more attention than positive user comments. Moreover, Dijksterhuis and Aarts' (2003) finding that the valence of single words can bias the allocation of attention implies that a negativity bias should also emerge with regard to video viewers' attention to the

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together with social information in the form of Twitter messages. In their study, the Twitter feed was embedded on-screen so that viewers could hardly avoid the Twitter messages. Similarly, Winter et al. (2018) let participants watch a video while social information about that video appeared in a chat box on a tablet. While chatting about the video, participants most likely read the comments about the video posted by other viewers in the chat box. Finally, Möller and Kühne (2019) instructed participants to examine user comments before they were exposed to a video.

Survey studies investigating YouTube usage have shown that viewers may pay at least some attention to social information in their daily life. YouTube use is often motivated by the need for entertainment (Chau, 2010; Hanson & Haridakis, 2008; Klobas, McGill, Moghavvemi, & Paramanathan, 2018). The entertainment motive, in turn, was found to positively predict reading comments on YouTube (Khan, 2017). Although the literature suggests that YouTube users pay attention to both online videos and their social information, it is unclear how much attention they pay to social information exactly. Moreover, social information on online video platforms often consists of at least two parts: User comments placed below the video as well as likes and dislikes. Neither the experimental studies nor the survey studies discussed above indicate how much attention video viewers pay to the different aspects of social information. Hence, the present study aims to answer the following research question:

RQ1: How much attention do video viewers pay to the social information presented alongside online videos?

likes and dislikes that are presented alongside videos.

Because studies on the valence of social information did not investigate video viewers' attention to social information in particular, it is still unknown whether a negativity bias also exists for social information. However, scholars investigating consumers' attention to online product reviews do provide some support for a negativity bias in online contexts. In these studies, negative online product reviews received more attention than positive or neutral product reviews (Daugherty & Hoffman, 2014; Hoffman & Daugherty, 2013; Sen & Lerman, 2007).

Still, it is important to consider two crucial differences between online product reviews and social information of online videos that may affect the emergence of a negativity bias. First, the visibility of the social information may differ. In the studies discussed above, the product reviews constituted the focal point of the online content to which participants were exposed, and it is likely that most participants paid attention to the reviews. On platforms such as YouTube, in contrast, videos constitute the focal point. Indeed, (dis)likes are typically placed right next to the videos, but user comments are often not immediately visible and users have to scroll down to see them. Second, product reviews and social information of online videos may differ in their relevance. When individuals shop online, they spend money and they often rely on online product reviews to decide whether an investment is adequate (Cheung & Thadani, 2012). Consumers are often motivated to seek out product reviews because they typically provide relevant information (Goldsmith & Horowitz, 2006). In contrast, viewers of online videos have relatively little to lose – they only spend time – and the diagnostic value of the

accompanying social information is often unclear. Comments, for instance, may not refer to the video or they may not constitute valid assessments. This may limit the relevance of social information and users' motivation to process social information. Differences in visibility and relevance thus give rise to the question of whether the negativity bias found in research on product reviews also emerges when individuals use video-sharing websites.

The negativity bias has also been demonstrated in research on attention to news. Studies show that people are more likely to select negative news articles than positive news articles (Trussler & Soroka, 2014). More importantly, Kätsyri, Kinnunen, Kusumoto, Oittinen, and Ravaja (2016) investigated individuals' attention to secondary social information about online news videos in the form of Tweets appearing on a tablet. They found that participants looked longer at negative Tweets than positive Tweets. In addition, participants recalled negative Tweets better than positive Tweets (Kätsyri et al., 2016). This further corroborates the negativity bias with regard to social information, but again in a context in which the social information has a high visibility (second screen) and in which the relevance of the social information to the main content is clear. As it is unclear how much attention individuals pay to social information that is not immediately visible and whose relevance is unknown, this study sets out to test the following hypothesis:

*H1:* Individuals who are exposed to an online video with solely negative social information pay more attention to the social information than individuals who are exposed to an online video with solely positive social information.

The studies on online product reviews and news content discussed above found that

solely negative information receives more attention than solely positive information (Daugherty & Hoffman, 2014; Hoffman & Daugherty, 2013; Kätsyri et al., 2016; Sen & Lerman, 2007; Trussler & Soroka, 2014). However, social information on video platforms such as YouTube seldom contains exclusively negative or positive comments. Instead, the social information is often mixed, that is, it usually consists of both positive and negative comments (see chapter 2). This raises the question of how video viewers allocate their attention to social information if it contains both positive and negative elements. If the negativity bias holds, video viewers would pay more attention to negative comments posted in response to online videos than to positive comments. Moreover, it implies that viewers pay more attention to dislikes assigned to videos than to likes. We therefore expect that:

*H2:* Individuals who are exposed to an online video with positive as well as negative social information pay more attention to the negative social information than to the positive social information.

### THE VALENCE OF SOCIAL INFORMATION AND VIEWERS' ENJOYMENT

By investigating how much attention video viewers pay to social information, it remains unclear if the attention that video viewers pay to social information is sufficient to notice its valence and to be influenced by it. Consequently, we do not know if the aforementioned effects of social information's valence on video viewers' enjoyment also occur when video viewers can choose how much attention they pay to the social information.

In the current study, the control over how much attention is paid to the social information of a video lies with the video viewers. Therefore, it

is uncertain that everyone participating in the study pays attention to the social information; some people may not pay any attention to the social information at all. It is likely that the valence of social information only affects the experiences of viewers who pay attention to the social information. Therefore, the effect of the valence of social information should only emerge among those video viewers who pay attention to the social information while they should not emerge among those who did not pay any attention to the social information at all. To test this notion, we propose the following:

*H3:* The valence of social information has an effect on individuals' enjoyment which is moderated by individuals' attention to the social information. (a) Video viewers who are exposed to solely positive social information enjoy the video more than viewers who are exposed to solely negative social information, or to both positive and negative social information. Video viewers who are exposed to both positive and negative social information enjoy the video more than viewers who are exposed to solely negative information. (b) However, these differences only emerge among video viewers who pay attention to the social information, not among video viewers who do not pay attention to the social information.

## METHOD

We conducted a laboratory experiment in which participants watched an online video in a way that resembles how they would watch online videos in their daily life. To this end, we built a webpage that mimics the online video platform YouTube. We choose to use YouTube as a stimulus because YouTube is frequently used to watch online videos (Khan, 2017). We chose to mimic a YouTube page because this allowed us to control which comments and

(dis)likes were presented and to create a stable stimulus (see Figure 3.1 for a screenshot of the mimicked YouTube page).

While participants watched the video, their gaze was tracked using a binocular SMI RED remote eye tracker with a sampling rate of 120 Hz. After watching the video, all participants filled out the same questionnaire in the laboratory. The ethical committee of the authors' university granted Institutional Review Board approval for this study.

### STIMULUS MATERIAL

During the experiment, all participants watched the same online video, namely the 13-minute animated short film *Reversal of the Heart* (Chrisman, 2011) which is available on YouTube (<https://www.youtube.com/watch?v=rHLwG3ioD4Y>). This film was chosen for the present study because animated short films constitute a popular genre of YouTube videos. All participants indicated that they had never seen this video before the experiment.

The video was embedded within the mimicked YouTube page. The page was presented to the participants through an Internet Explorer web browser on a 1680 x 1050 pixels monitor. Below the video on the webpage, the video's (dis)likes were presented. The (dis)likes had size of 150 x 55 pixels and were presented at a 3.47° x 1.30° visual angle at a 66 cm viewing distance. After scrolling down, participants could see the video's comments. The comments had a size of 910 x 1100 pixels and were presented at a 20.67° x 25.04° visual angle at a 66 cm viewing distance.

The social information presented below the video differed across the three conditions. Participants in the positive condition viewed a YouTube page which presented the video together with "35K likes" and "1K dislikes",

as well as eight positive comments (e.g., "lovely!!!!"). As stated before, YouTube videos typically do not receive comments that all have the same valence. Thus, to make the comments on the YouTube page look more authentic, two neutral comments (e.g., "What year was this made?") were included in addition to the positive comments. In total, the ten comments consisted of 83 words. To reduce the possibility that the specific order of the user comments would play a role, two versions of this YouTube page were created. The two pages were identical except for the fact that the order of the comments differed between the two pages. Participants who were assigned to the negative condition viewed a YouTube page, with "1K likes" and "35K dislikes", eight negative comments (e.g., "stupid!!!!"), and two neutral comments (85 words in total). Again, two versions of this page were created that differed with regard to the order in which the comments were presented. Finally, participants in the mixed condition viewed a YouTube page with both positive and negative social information. Two versions of this page were created. One version showed "35K likes" and "31K dislikes" under the video while the other version showed "31K likes" and "35K dislikes" under the video. Both versions displayed the same comments of which four were positive, four were negative, and two were neutral. The order of the comments was varied for both versions of the YouTube page so that participants who saw more likes first saw a negative comment. Participants who saw that the video received more dislikes first saw a positive comment. In total, the comments displayed to participants in the mixed condition consisted of 84 words.

A pilot study was conducted to test the manipulation of the social information's valence. A group of 25 participants who did not participate in the main experiment rated

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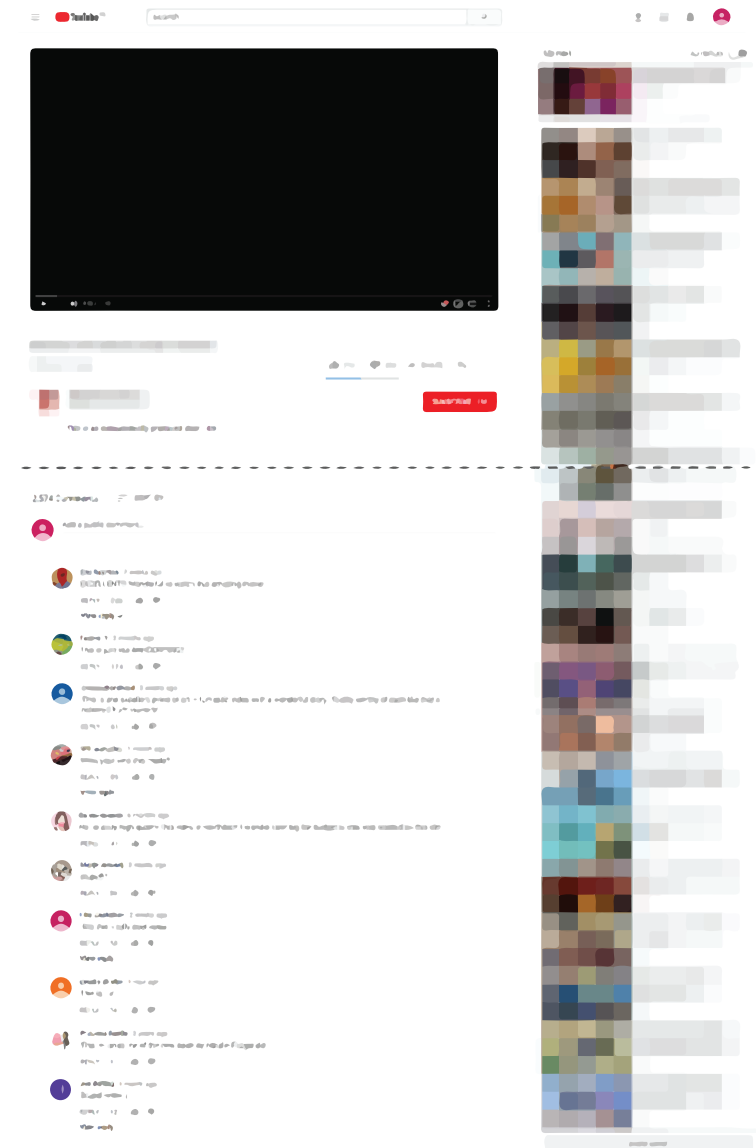


Figure 3.1.

Example screenshot of mimicked YouTube page shown to participants (mixed condition). Video title, name of video creator, and recommended videos were not blurred in the original stimulus. The dotted line indicates which part of the page was visible before scrolling (above dotted line) and which area was visible only after scrolling down (below dotted line).

the valence of each comment. Participants could rate the valence on a 9-point scale (-4 = *extremely negative*, 4 = *extremely positive*). We ran a repeated-measures ANOVA with participants' valence assessment of the positive comments, the negative comments, and the neutral comments as the dependent variables. Positive, negative, and neutral comments differed significantly from each other in their valence as assessed by the participants,  $F(2,48) = 791.58, p < .001$ . Negative comments were rated as more negative ( $M = -2.71, SD = .47$ ) than positive comments ( $M = 2.74, SD = .43$ ),  $p < .001$ , and neutral comments ( $M = .14, SD = .54$ ),  $p < .001$ . In addition, positive comments were rated as more positive than neutral comments,  $p < .001$ . Based on this, the manipulation of the valence of the social information was deemed successful.

### PARTICIPANTS

Participants for this study were recruited via the website of a large European university's psychology lab. An a priori power analysis indicated that to detect a small effect (i.e., with  $\eta_p^2 = .05$ ), a total sample of 186 participants was required (Cohen, 1988; Faul, Erdfelder, Lang, & Buchner, 2007). However, using an eye tracker poses a risk of having to exclude data due to insufficient eye tracking data quality (Holmqvist et al., 2011). To account for this risk, we aimed for a sample size of 232 participants (125% of the required sample size as indicated by the power analysis).

In exchange for participating, students received either €5 or extra course credits. In total, 228 students reported to the lab to participate in the study. The data of nine participants were excluded from the analysis because the participants did not follow the instructions and visited other websites in addition to the stimulus webpage. The data

of another seven participants were excluded from the analysis because of unsuccessful calibration, (i.e., the horizontal and/or vertical deviation was larger than  $1.50^\circ$ ). The final sample consisted of 212 participants (25.9% Male,  $M_{age} = 21.18, SD_{age} = 2.78$ ).

Participants were randomly assigned to one of the three valence conditions. This resulted in 71 participants in the positive valence condition, 69 participants in the negative valence condition, and 72 participants in the mixed valence condition.

### PROCEDURE

Upon arrival at the lab, participants were informed about the procedure of the study. After giving their consent to participate, participants took a seat in front of a desktop computer and an eye tracker. The researcher informed the participants that instructions would be presented on the computer screen and that a YouTube page with a video would then appear. Participants were further told that they could do anything they liked and that they could use the mouse to click or to scroll, as long as they would not set the video to full screen mode. The latter instruction was given in order to assure that all participants were exposed to the same screen during the study, which was required for subsequent analysis of the eye tracking data. Participants were also told that after the video, there would be some questions that they could answer using a tablet, but that these were not knowledge questions about the video and that they did not need to memorize the video while watching. Finally, the researcher explained that the study would start with calibrating the eye tracker and that the eye tracking part of the study would end with a calibration validation screen.

After the instructions were given, the eye

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tracker was calibrated using a 9-point calibration method available in the software of the eye tracker. It displayed black circles (approximately 30 by 30 pixels) against a white background. Participants were seated at an average distance from the monitor of approximately 66 cm. If the horizontal or vertical deviation was greater than  $0.60^\circ$  the calibration was repeated until the deviation was satisfactory with a maximum of three repetitions (see Table 3.1 for descriptive statistics of the eye tracking data quality). After calibration, a text appeared reminding the participants of the instructions (i.e., repeating the information given by the researcher) and informing them that they could take as much time as they wanted to explore the YouTube page. Finally, the text instructed participants to close the web browser once they were done. After this, the YouTube page with the video was presented to the participants. After watching the video, participants could choose how long they would stay on the webpage before closing it. Participants spent an average of 13.35 minutes on the webpage, which includes the time they spent watching the video. Once participants closed the web browser, an instruction text appeared reminding the participants that next, a calibration validation screen would appear. After the validation screen was presented, the final instructions asked the participants to tell the researcher that they were ready to fill out

the questionnaire on a tablet.

### MEASURES

#### ATTENTION TO SOCIAL INFORMATION.

To measure participants' attention to social information, the eye tracking data were exported to the SMI BeGaze analysis software (2014). Participants' attention to social information was operationalized as the sum of durations (in seconds) of all fixations and saccades that occurred within an Area of Interest (AOI), referred to as the dwell time. The AOIs used for data analysis were created by drawing rectangles around the relevant areas on the stimulus webpages. This was done by a volunteer who was unaware of the hypotheses tested in this study. For all webpages used in the study, two AOIs of 71 x 49 pixels were created: one for the likes and one for the dislikes. In analyses in which no distinction was made between participants' attention to the likes and their attention to the dislikes, attention to the (dis)likes was operationalized as the sum of participants' attention to the likes and the dislikes. For the comments presented on each YouTube page, AOIs of approximately 825 x 1118 pixels were created. Finally, AOIs for each individual comment were created with sizes ranging from 810 x 74 pixels to 810 x 114 pixels, depending on the length of the comment. When comparisons were made between participants' attention to comments, attention

Table 3.1  
*Eye tracking data quality report*

Variable	Min.	Max.	Mean	SD
Number of calibration trials	1	4	2.61	.67
Calibration accuracy X before video presentation	.11	1.49	.52	.22
Calibration accuracy Y before video presentation	.18	1.49	.53	.24
Calibration accuracy X after video presentation	.12	3.23	.65	.42
Calibration accuracy Y after video presentation	.10	3.96	.67	.53

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to comments was measured by dividing the dwell time by the number of words to which participants were exposed as this varied slightly (see Table 3.2 for descriptive statistics of participants' attention to social information).

**ENJOYMENT.** Participants' enjoyment of the video was measured using a scale developed by Wirth et al. (2012). The scale consists of three items (i.e., "I felt well entertained watching the video", "It was fun watching the video", and "It was pleasurable to watch the video"). Participants were asked to indicate the extent to which they agree with each of the items on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). To verify that the items together form one construct, we conducted a principal axis factor analysis with oblique rotation (direct oblimin). Results indicated that all items loaded on a single factor (eigenvalue = 2.63). By averaging the scores on the three items, an overall score was created ( $M = 4.62$ ,  $SD = 1.42$ ). The results of a reliability analysis showed that the items form a reliable scale (Cronbach's Alpha = .93).

**YOUTUBE USAGE.** We used one item to measure the frequency with which participants use YouTube in their daily life. Participants were asked to indicate how often they watch videos on YouTube on a 7-point scale (1 = *never*, 7 = *more than once every day*) ( $M = 5.62$ ,  $SD = 1.42$ ). This item was used as part of a randomization check.

**ATTENTION TO COMMENTS IN DAILY LIFE.** We measured how often participants pay attention to user comments in their daily life using one item. Participants indicated how often they read user comments when they use YouTube in their daily lives on a 5-point scale (1 = *never*, 5 = *always*) ( $M = 3.00$ ,  $SD = 1.17$ ). The data gathered through this item

were used as part of a randomization check.

**PREFERENCE FOR ANIMATED SHORT FILMS.** One item was used to measure participants' preference for animated short films. Participants were asked to indicate how much they (dis)liked animated films and videos on a 7-point scale (1 = *dislike a great deal*, 7 = *like a great deal*) ( $M = 4.83$ ,  $SD = 1.60$ ). This item was part of a randomization check

**BACKGROUND INFORMATION.** We acquired background information about the sample through three questions. First, participants were asked to indicate if they had seen the video that they watched during the study before their participation (1 = *yes*, 2 = *no*). Second, an open question asked participants to indicate their age in years. Third, participants were asked to indicate their biological sex (1 = *male*, 2 = *female*, 3 = *I prefer not to answer*).

### RESULTS RANDOMIZATION

The enjoyment that viewers experience in response to online videos may depend on their gender and their preference for specific content genres (Hixson, 2006; Oliver, Weaver, & Sargent, 2000). To ensure that there were no systematic differences between the conditions with regard to participants' gender, we ran a chi-square test. The results of this test indicated that there were no differences between the conditions with regard to participants' gender,  $\chi^2(2, N = 212) = .14$ ,  $p = .934$ . In addition, we checked with an ANOVA whether the experimental conditions differed with regard to participants' preference for animated films and videos. The results indicated that there were no differences between the conditions with regard to participants' preference for animated films and videos,  $F(2,209) = .02$ ,  $p = .980$ .

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Table 3.2  
Descriptive statistics of participants' attention to social information

Variable	Mean	SD
Attention to:		
Likes (positive condition) <sup>a</sup>	.25	.37
Dislikes (positive condition) <sup>a</sup>	.34	.42
All comments (positive condition) <sup>ab</sup>	.10	.10
Individual comments (positive condition) <sup>ab</sup> :		
EXCELLENT!!!	.17	.16
This is just too amaaazing!	.16	.16
This is one excellent piece of art – fantastic video with a wonderful story. Totally worthy of each like that it received from viewers!	.07	.09
What year was this made? (neutral comment)	.16	.24
Very high quality, this video is awesome! I wonder how big the budget is that was spent on this film	.06	.08
lovely!!!!	.22	.33
i like this. really cool video.	.08	.11
This is fun	.12	.18
This reminds me of the new book by Natalie Fitzgerald (neutral comment)	.07	.10
Nice video :)	.11	.17
Likes (negative condition) <sup>c</sup>	.49	.83
Dislikes (negative condition) <sup>c</sup>	.72	1.36
All comments (negative condition) <sup>b,c</sup>	.18	.15
Individual comments (negative condition) <sup>b,c</sup> :		
HORRIBLE!!! Annoying to watch this stupid movie	.23	.23
This is just too ANNOOOYING!!	.25	.25
This is one failed attempt to make a film – annoying video with a crappy story. Totally worthy of each dislike it received from viewers	.12	.13
What year was this made? (neutral comment)	.30	.35
(continued on next page)		

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Table 3.2 (continued)

Descriptive statistics of participants' attention to social information.

Variable	Mean	SD
Attention to:		
Not exactly high quality, this video is worthless! I wonder how big the budget is that was wasted on this film	.10	.10
stupid!!!!	.54	.78
i don't like this. really dumb.	.18	.22
This is boring	.24	.25
This reminds me of the new book by Natalie Fitzgerald (neutral comment)	.12	.13
Stupid video :(	.28	.38
Likes (mixed condition) <sup>d</sup>	.36	.56
Dislikes (mixed condition) <sup>d</sup>	.44	.76
All comments (mixed condition) <sup>b,d</sup>	.13	.14
Individual comments (mixed condition) <sup>b,d</sup> :		
EXCELLENT!!!	.21	.23
This is just too ANNOOOOYING!!	.22	.35
This is one excellent piece of art – fantastic video with a wonderful story. Totally worthy of each like that it received from viewers!	.07	.11
What year was this made? (neutral comment)	.22	.29
Not exactly high quality, this video is worthless! I wonder how big the budget is that was wasted on this film	.08	.11
stupid!!!!	.35	.61
i like this. really cool video.	.09	.13
This is fun	.11	.18
This reminds me of the new book by Natalie Fitzgerald (neutral comment)	.08	.10
Stupid video :(	.15	.24

<sup>a</sup> This only includes data from participants in the positive condition (n = 71).<sup>b</sup> Statistics indicate the number of seconds per word that participants spent looking at comments.<sup>c</sup> This only includes data from participants in the negative condition (n = 69).<sup>d</sup> This only includes data from participants in the mixed condition (n = 72).

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We further checked whether the experimental conditions differed with regard to participants' use of YouTube in their daily lives. The results of an ANOVA indicated that there were no differences between the conditions in terms of participants' YouTube usage,  $F(2,209) = 1.60$ ,  $p = .205$ . Finally, we checked whether the experimental conditions differed with regard to how often participants read comments posted in response to YouTube videos. Results of an ANOVA indicated that there were no differences between conditions in terms of how often they read comments on YouTube,  $F(2,209) = .82$ ,  $p = .443$ .

### ANALYSIS OF RESEARCH QUESTION AND TEST OF HYPOTHESES

Research question 1 asked how much attention video viewers pay to the social information of YouTube videos. To answer this question, we first examined the descriptive statistics of all participants' attention to videos' (dis)likes ( $N = 212$ ). We found that 72.6% of the participants paid at least some attention to the (dis)likes. The mean duration of their attention to the (dis)likes was .86 seconds ( $SD = 1.36$ ). 27.4% of the participants did not spend any time looking at the (dis)likes. Regarding participants' attention to user comments, we found that 70.3% of the participants paid at least some attention to the comments. Participants who paid attention to the comments spent 11.47 seconds on average ( $SD = 11.65$ ) looking at them. Approximately 29.7% of the participants did not pay any attention to the comments at all.

The first hypothesis of this study stated that viewers who are exposed to a video with negative social information pay more attention to that social information than video viewers who are exposed to positive social information. To test this hypothesis, we ran a

multivariate analysis of variance (MANOVA) on the data of all participants ( $N = 212$ ). This analysis was run with participants' condition as the independent variable and their attention to the (dis)likes, as well as their attention to the comments as the dependent variables. Roy's largest root indicated that there was a significant difference in the attention that participants paid to social information, depending on participants' condition,  $\Theta = .08$ ,  $F(2,209) = 8.70$ ,  $p < .001$ . The analysis further showed that participants differed across conditions in terms of how much attention they paid to (dis)likes,  $F(2,209) = 3.99$ ,  $p = .020$ ,  $\eta_p^2 = .04$ , and to user comments,  $F(2,209) = 6.62$ ,  $p = .002$ ,  $\eta_p^2 = .06$ . Results of Bonferroni post-hoc tests showed that participants in the negative condition spent significantly more time looking at the (dis)likes ( $M = 1.21$ ,  $SD = 1.88$ ) than participants in the positive condition ( $M = .58$ ,  $SD = .68$ ),  $p = .018$ . Moreover, participants in the negative condition spent on average significantly more time looking at the comments ( $M = .18$ ,  $SD = .15$ ) than participants in the positive condition ( $M = .10$ ,  $SD = .10$ ),  $p = .002$ .

Because Levene's test showed that the assumption of homoscedasticity was violated both for participants' attention to (dis)likes,  $F(2,209) = 12.54$ ,  $p < .001$ , and for their attention to user comments,  $F(2,209) = 6.21$ ,  $p = .002$ , we validated these findings using Games-Howell post-hoc tests, which do not assume homogenous variances. The results corroborated the findings of the Bonferroni post-hoc test. In addition, descriptive statistics of participants' attention to (dis)likes indicated that the scores on this variable were non-normally distributed with a skewness of 3.37 ( $SE = .17$ ) and a kurtosis of 16.36 ( $SE = .33$ ). Therefore, the findings of this analysis were validated using bootstrapped standard errors. The results corroborated the original

findings. These results support Hypothesis 1.

According to Hypothesis 2, video viewers who are exposed to both positive and negative social information pay more attention to the negative social information on the YouTube page than to the positive social information. To test this, we ran two paired-samples *t*-tests including only the data of participants who were in the mixed condition and who thus were exposed to both positive and negative social information ( $n = 72$ ). The first analysis compared participants' attention to the dislikes to their attention to the likes. Results showed that although participants spent more time on average looking at the dislikes ( $M = .44$ ,  $SD = .76$ ) than at the likes ( $M = .36$ ,  $SD = .56$ ), this difference was not significant,  $p = .213$ . The second analysis compared participants' attention to the positive comments to their attention to the negative comments. Results of this analysis showed that participants spent more time looking at the negative comments ( $M = .20$ ,  $SE = .03$ ) than at positive comments ( $M = .12$ ,  $SE = .02$ ) presented on the YouTube page. This effect was significant, 95% CI [-.12, -.04],  $t(71) = -3.70$ ,  $p < .001$ , and represented a small-sized effect,  $d = -0.44$ . These results partially support Hypothesis 2.

Hypothesis 3 stated that the valence of social information has an effect on individuals' enjoyment which is moderated by individuals' attention to the social information. More specifically, participants exposed to solely positive social information should experience more enjoyment than participants who are exposed to solely negative social information, and participants exposed to both positive and negative social information should experience more enjoyment than participants who are exposed to solely negative social information. This effect

is presumed to occur only for video viewers who paid attention to the social information. To test Hypothesis 3, two dummy variables were created. The first dummy indicated whether or not participants had looked at the (dis)likes, and the second dummy indicated whether or not participants had scrolled down and looked at the comments. If Hypothesis 3 holds, we would expect significant interaction effects between participants' condition and their attention to the (dis)likes or their attention to the comments on participants' video enjoyment to emerge. We ran two ANOVA's using the data of all participants ( $N = 212$ ). The first ANOVA included participants' condition and the dummy variable indicating if participants had paid attention to the (dis)likes as the independent variables. Participants' video enjoyment was included as the dependent variable. Results showed no main effect of participants' condition,  $p = .084$ , nor of their attention to the (dis)likes,  $p = .085$ . Furthermore, there was no interaction between participants' condition and their attention to the (dis)likes,  $p = .845$ .

Second, we ran an ANOVA with participants' condition and the dummy variable indicating if participants had paid attention to the comments as the independent variables and video enjoyment as the dependent variable. We found no main effect of participants' condition,  $p = .264$ , and no main effect of attention to the comments,  $p = .072$ , on participants' enjoyment of the video. However, there was a significant interaction between participants' condition and their attention to the comments,  $F(2,206) = 3.67$ ,  $p = .027$ ,  $\eta_p^2 = .03$ . The results of a Bonferroni post-hoc test indicated that for participants who saw the comments, solely positive social information led to more enjoyment ( $M = 5.05$ ,  $SD = 1.30$ ) than solely negative social information ( $M = 4.01$ ,  $SD = 1.35$ ),  $p$

< .001. For participants who paid attention to the comments, there was no difference in video enjoyment between those who saw solely positive social information those who saw a mixture of positive and negative social information,  $p = .150$ . In addition, among participants who looked at the comments, there was no difference in video enjoyment between those who saw solely negative social information and those who saw both positive and negative social information,  $p = .246$ . For participants who did not look at the comments, the valence of social information did not affect their enjoyment.

To further refine our understanding of the interaction effect, we also compared, within each experimental condition, participants who looked at the comments to participants who did not look at the comments (see Figure 3.2). We ran an independent samples *t*-test in each of the experimental conditions in which participants' attention to the comments was included as the independent variable and video enjoyment was included as the dependent variable. Results showed that for participants exposed to solely positive social information ( $n = 71$ ), there was no difference

in video enjoyment between participants who paid attention to the comments and those who did not,  $t(69) = -.57$ ,  $p = .57$ . Similarly, for participants exposed to both positive and negative social information ( $n = 72$ ), there was no difference in enjoyment between participants who did pay attention to the comments and those who did not,  $t(70) = .43$ ,  $p = .67$ . For participants exposed to solely negative social information ( $n = 69$ ), however, participants who did pay attention to the comments experienced less enjoyment ( $M = 4.01$ ,  $SE = .19$ ) than participants who did not pay attention to the comments ( $M = 5.20$ ,  $SE = .31$ ). This difference was significant, 95% CI [.44, 1.93],  $t(67) = 3.17$ ,  $p = .002$ , and represented a large effect size,  $d = 0.89$ . In all, these results partially support Hypothesis 3.

## DISCUSSION

Recently, scholars have investigated how the valence of social information affects the enjoyment of people watching online videos (Waddell & Sundar, 2017; Winter et al., 2018). In their studies, researchers typically assumed that people pay attention to social information and notice its valence. The current study set

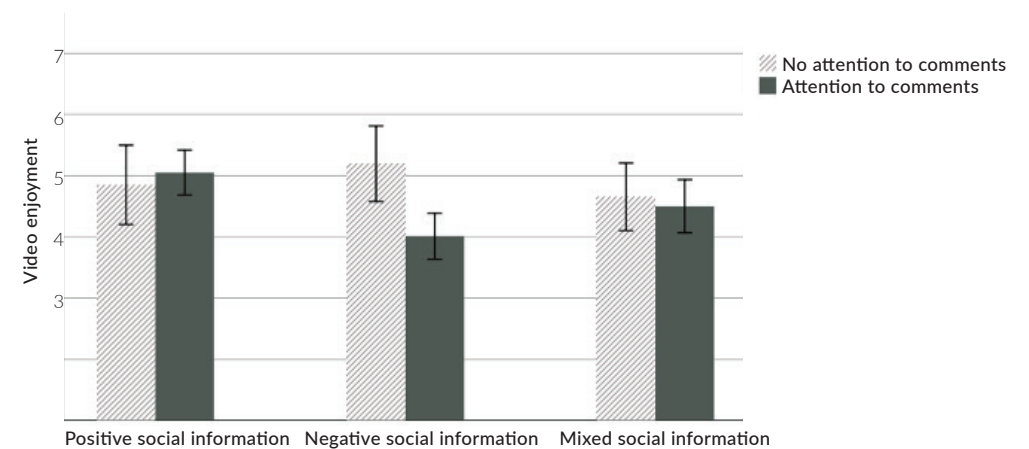


Figure 3.2. Video enjoyment as a function of the valence of social information and attention to comments.

out to test this assumption by examining how the valence of social information affects video viewers' enjoyment when viewers can determine how much attention they pay to social information. While doing so, this study distinguished between two components of social information that are often represented on social media, namely (dis)likes and user comments.

With regard to video (dis)likes, we found that most participants paid at least some attention to them. In addition, participants who saw a video that received mostly dislikes paid more attention to the (dis)likes than participants who saw a video that received mostly likes. However, when participants saw a video that received equal amounts of likes and dislikes, attention to likes and dislikes did not differ. Moreover, participants' video enjoyment was not affected by their attention to the video's (dis)likes. Thus, our results regarding (dis)likes did not fully support our expectation that video viewers would pay more attention to negative social information and would be more affected by it. Our findings seem to contradict the study by Dijksterhuis and Aarts (2003), who found that negative words had a stronger impact than positive words. A possible reason for this discrepancy is that single negative words may have an intrinsic value that is more comprehensible than a symbol in the form of a like or a dislike that is accompanied by a number. This may explain why the negativity bias was less evident in the current study where individuals were exposed to (dis)likes presented below a video. However, additional research is needed to test the notion that a negativity bias is more likely to occur when individuals are exposed to words than when they are exposed to symbols and numbers as is the case for online videos' (dis)likes.

With regard to video viewers' attention to user

comments, our results showed a negativity bias in two ways. First, participants who were exposed to solely negative social information spent more time looking at the comments than did participants who were exposed to solely positive social information. Second, participants who were exposed to both positive and negative social information spent more time looking at the negative comments. Whereas these findings are in line with research on the negativity bias, the results related to viewers' enjoyment were more complex. Our results suggest that participants who saw solely positive comments enjoyed the video more than did participants who saw solely negative comments. However, the effect of social information's valence on video enjoyment only occurred for those participants who paid attention to the user comments; there was no effect for video viewers who did not pay attention to the user comments. Moreover, among participants who were exposed to solely positive social information and among participants who were exposed to both positive and negative social information, the enjoyment of those who paid attention to the user comments was similar to the enjoyment of those who did not pay attention to the user comments. Among participants who were exposed to solely negative social information, however, those who did pay attention to the user comments enjoyed the video notably less than those who did not pay attention to the user comments.

On the one hand, the significant difference in the negative comments condition and the non-significant difference in the positive comments condition can be regarded as further support for the literature on the negativity bias (Baumeister et al., 2001; Rozin & Royzman, 2001). On the other hand, the non-significant difference in the mixed comments condition can be interpreted as a contradiction to

the negativity bias assumption: If negative comments have a stronger effect than positive comments, then paying attention to mixed comments should lead to less enjoyment than paying no attention to mixed comments. Overall, the results regarding negativity biases in the effects of social information are thus not fully consistent, and future research that investigates the effects of comments' valence in more detail is required.

A limitation of the present study is related to our aim of creating a setting in which participants were free to choose how much attention they pay to the social information of a video. To this end, participants did not receive specific instructions about which elements of the stimulus webpage to examine or how much time to spend examining the page. The fact that 27.4% of the participants did not pay any attention to the (dis)likes and that 29.7% of the participants did not pay any attention to the comments indicates that this study succeeded at creating a setting in which participants felt free to determine how much attention to social information they would pay. Nevertheless, participants were aware that their gaze was being monitored, which is different from watching a YouTube video in a natural setting and may have influenced participants' viewing behavior. For example, participants may have felt obliged to pay close attention to the video, leading them to scroll down to the comments less often than they would do when they are watching videos at home. However, it is also possible that participants looked at the social information more than usual because they felt obliged to carefully examine the entire webpage. Both scenarios are possible and constitute a limitation that should be considered when interpreting the results of this study.

In previous studies, scholars have investigated

which people are most susceptible to the influence of social information by including personality traits as moderators in their models. These studies did not find interaction effects that could support the moderating role of personality traits (Waddell & Sundar, 2017; Walther, DeAndrea, et al., 2010). This suggests that social information affects all viewers in the same way. However, we found that only the enjoyment of video viewers who pay attention to user comments is affected by social information's valence. Previous studies on YouTube usage indicate that some video viewers are more inclined to pay attention to comments than others (Khan, 2017). This, in turn, implies that there are systematic individual differences between those video viewers who are likely to be affected by the valence of social information and those who are not. For example, Khan (2017) found that reading comments on YouTube positively correlated with individuals' motive to use YouTube for entertainment or for information seeking, and that men are more likely to read comments than women. In addition, Waddell and Sundar (2017) studied how individuals' need for uniqueness and need for affiliation moderate the effect of social information. By investigating how these individual differences predict attention to social information, future studies may unravel which YouTube users are most susceptible to the influence of social information's valence.

The present study advances our knowledge on the effects of the valence of social information on video viewers' enjoyment. Its contribution to the literature is twofold. First, the study increases our knowledge on how much attention video viewers pay to social information if they are in control and how this depends on the valence of social information. Second, our findings help to better understand the external validity of previous studies that

were set up in such a way that all participants paid attention to social information. On the one hand, our findings indicate that the valence effect found in previous studies likely occurs in real life, although the set-up of these earlier studies is somewhat unrealistic. On the other hand, our findings imply that, in real life, the valence effect is less discernible because not all YouTube users pay attention to the social information of videos. Nevertheless, this study showed that the collective creation of content is not the only factor that makes social media social. Just like the videos uploaded on YouTube, a part of our video experiences is user-generated.

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SHARED ENJOYMENT: ONLINE VIDEOS, SOCIAL INFORMATION, AND HEDONIC ENTERTAINMENT EXPERIENCES

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## CHAPTER 4 A SOCIAL IDENTITY PERSPECTIVE ON THE EFFECT OF SOCIAL INFORMATION ON ONLINE VIDEO ENJOYMENT

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To date, videos are often presented on social media platforms where they are accompanied by social information in the form of user comments. Research suggests that this social information can alter viewers' video enjoyment. The present study aimed to learn more about two factors that may enhance this effect by conducting a 2x2 between-subjects experiment with a control group ( $N = 290$ ,  $M_{age} = 20.82$ ,  $SD_{age} = 2.49$ ) in the Netherlands. First, we investigated the role that the source of social information (i.e., in-group vs. out-group) plays in the effect of social information. Second, we explored how writing a comment while watching a video (i.e., commenting vs. no commenting) may alter the effect of the source of social information. Results indicated that social information created by in-group members is more influential than social information created by out-group members. However, writing a comment did not increase viewers' susceptibility to the effects of social information. These results are discussed in light of the social identity framework, leading to new insights into what may bolster the effect of social information on video enjoyment when individuals watch videos presented on social media.

Increasingly, audiences use social media platforms such as YouTube to access online videos. These platforms typically present videos together with video (dis)likes and user comments. As video (dis)likes and user comments can indicate how other viewers experience videos, scholars refer to video (dis)likes and user comments as *social information* (Hsueh et al., 2015). Scholars have started to investigate how social information alters

viewers' enjoyment when they watch online videos to understand how entertainment experiences arise in response to online media content. Their research indicates that negative social information, in particular, can decrease viewers' video enjoyment (Waddell & Bailey, 2019; Waddell & Sundar, 2017; see also chapter 3).

To date, research on the effects of social information on video viewers' entertainment experiences has mainly focused on how the valence of social information (i.e., its positivity or negativity) alters viewers' video enjoyment. However, the valence effect of social information on video enjoyment may be altered by specific characteristics of the social information, for example whether social information is written by others whom viewers perceive as in-group members or by others whom viewers perceive as out-group members. According to the literature on social influence, the extent to which a receiver acknowledges the source of information as a member of the same group determines the influence that the information has on the receiver (Terry & Hogg, 1996; Turner, 1982; Turner et al., 1994). Hence, this study aims to learn more about how the source of social information (i.e., in-group versus out-group) alters the effect of social information on video enjoyment. Moreover, as the effect of the source of information is explained by social identification with that source (Terry & Hogg, 1996; Turner, 1982; Turner et al., 1994), we also test the mediating role of social identification in this effect.

Another factor that may alter the influence of social information on video enjoyment is whether video viewers write their own comment in response to online videos. Khan (2017) notes that there are two different ways in which individuals can use YouTube, namely

through passive consumption (e.g., reading comments or watching videos) or active participation (e.g., writing comments). Extant research suggests that active participation on websites can increase individuals' focus on the content of those websites (e.g., Oh & Sundar, 2019; Van Noort, Voorveld, & Van Reijmersdal, 2012; Xu & Sundar, 2016). Applied to the case of social information about online videos, this means that writing one's own comment in response to a video may increase viewers' focus on the social information. This may make them more susceptible not only to the influence of social information itself, but also to the influence of the source of social information. This study aims to learn more about this by investigating the role of writing one's own comment.

### THE SOURCE OF SOCIAL INFORMATION

In response to the rising popularity of online videos presented on social media, researchers have studied how enjoyment emerges when individuals watch videos and read user comments. They found that negative social information about a video can decrease the enjoyment that viewers experience in response to that video (Waddell & Bailey, 2019; Waddell & Sundar, 2017). Waddell and Bailey (2019) as well as Waddell and Sundar (2017) suggest that when video viewers see social information and notice that others disliked a video, they apply a bandwagon heuristic stating that if other viewers disliked a video, they should do so as well. Similarly, Winter and his colleagues (2018) argued that viewers' video experiences might be altered through a conformity effect whereby viewers adjust their opinions about a video to the opinion expressed by the group.

The notion that video viewers adjust their own video evaluations so that they fit in

with the group gives rise to the question of whether video viewers' tendency to adjust their evaluation depends on the source of social information. A theoretical perspective on the role of the source of information is offered by literature on social identity and the Social Categorization Theory (Tajfel, 1974; Turner, Hogg, Oakes, & Wetherell, 1987). This literature has been used by scholars to investigate various types of user-generated information, such as movie reviews and product reviews (e.g., Chae, Dahl, & Zhu, 2017; Ren et al., 2012), and it is useful to study the current topic of social information about online videos as well. Social Categorization Theory suggests that individuals are more likely to conform to information provided by people whom they regard as members of their in-group than to information that is provided by people who are not part of the same group (Terry & Hogg, 1996; Turner, 1982; Turner et al., 1987; Turner et al., 1994).

Empirical support for the notion that the source of information plays an important role for individuals' susceptibility to the influence of this information has been found in multiple studies (Mackie, 1986; Mackie et al., 1990; Samu & Bhatnagar, 2008; Terry & Hogg, 1996; Yanovitzky, Stewart, & Lederman, 2006). For example, Mackie (1986) found that, during a discussion about the usage of standardized tests in universities, individuals' attitudes changed toward the opinion expressed by other discussants only if those individuals regarded themselves and the other discussants as members of the same group. In a study about smoking cessation, Samu and Bhatnagar (2008) found that individuals were more influenced by information about an anti-smoking advertisement provided by one's friends (i.e., in-group) than by information provided by strangers (i.e., out-group). In the case of social information about online videos,

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this implies that video viewers' enjoyment is influenced more by social information provided by a source that belongs to the same group as the viewers than by social information provided by a source that belongs to a different group.

For a more thorough explanation of the role of groups, scholars have used the concept of social identification (Reicher, Spears, & Postmes, 1995; Tajfel & Turner, 1986; Turner et al., 1987). Social identification is central to Social Categorization Theory and it is based on the notion that people's self-concept consists of two different types of identity. First, personal identity refers to individual characteristics that people use to describe themselves (e.g., motivated, optimistic, or patient). The second type of identity is social identity. Individuals' social identity is determined by the groups, or social categories, to which they feel that they belong. One's social identity can be, for example, woman, democrat, or dentist (Reicher et al., 1995; Tajfel & Turner, 1986; Turner et al., 1987). However, while individuals can base their social identity on meaningful factors such as their profession, one's social identity can also be based on arbitrary groups. Literature on the minimal-group paradigm indicates that individuals can base their social identity on their membership of a group even if they know that they were assigned to this group based on random or meaningless criteria (Billig & Tajfel, 1973; Tajfel, 1970; Tajfel, Billig, Bundy, & Flament, 1971).

Social Categorization Theory primarily focuses on social identity and it deals with the antecedents and consequences of social identification: the act of positioning oneself within a specific group while distancing oneself from other groups, and attaching value to one's membership of this group, leading a

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person to adopt this group membership as a part of her social identity (Reicher et al., 1995; Tajfel, 1974; Tajfel, 1982; Turner et al., 1987; Turner et al., 1994; Turner & Reynolds, 2012). When studying the effect of viewers' shared group membership with the source of social information on video enjoyment, social identification is an important concept. Research indicates that as individuals identify with a group of people more, they are more susceptible to the influence of that group (Mackie, 1986; Mackie et al., 1990; Samu & Bhatnagar, 2008; Terry & Hogg, 1996; Yanovitzky et al., 2006). Individuals' social identification with other people, in turn, is determined by their awareness of a common social category membership with those people (Turner, 1982; Turner et al., 1987; Turner et al., 1994). In sum, individuals who are exposed to information provided by people of whom it is clear that they belong to their in-group (either because they have something meaningful in common or merely because they were assigned to be in the same group) are likely to identify with the creators of that information more. This, in turn, makes these individuals more susceptible to the influence of the information.

In line with the literature on social identity, scholars studying social information and video enjoyment explored the role of social identification. Walther, DeAndrea, et al. (2010) and Winter and colleagues (2018) conducted studies on the effect of user comments in which they also measured viewers' social identification with the commenters. They found that while the valence of social information affected viewers' video evaluations, it did so more among video viewers who experienced a stronger sense of social identification with the commenters. Although this provides some support for Social Categorization Theory in this context,

these studies only found evidence for the notion that when viewers identify with the source of social information more strongly, they are more susceptible to the influence of that social information. However, as these studies did not manipulate the source of social information, it remains unclear whether social information created by in-group members alters viewers' enjoyment more than social information created by out-group members. Moreover, it is unclear whether an effect of the source of social information on video enjoyment is mediated by social identification as indicated by the literature on social identity.

In sum, we pose the following hypotheses (note that H1 is a replication of earlier research that is necessary for H2 and H3):

*H1:* Video viewers who are exposed to negative social information experience less enjoyment than video viewers who are not exposed to negative social information.

*H2:* Video viewers who are exposed to negative social information provided by a source that belongs to the same group experience less enjoyment than video viewers who are exposed to negative social information provided by a source that does not belong to the same group.

*H3:* The effect of a shared group membership with the source of negative social information on video enjoyment is mediated by social identification: (a) When video viewers belong to the same group as the source of negative social information, they identify more with this source compared to when they do not belong to the same group. (b) As video viewers' identification with the source of negative social information increases, they experience less enjoyment.

### WRITING ONE'S OWN COMMENT

When individuals watch videos presented on social media platforms, the way in which they use these platforms can vary. Investigating YouTube usage, Khan (2017) notes that in addition to passive consumption (e.g., watching videos and reading comments), video viewers can actively participate on the platform, for example by writing their own comments. These different ways of using social media platforms may be relevant for how video viewers respond to social information. Specifically, writing one's own comment in response to a video may increase video viewers' focus on the social information that was created by other viewers. Support for this notion is provided by Winter et al. (2018). In their study, Winter and his colleagues (2018) asked participants to watch an episode of a talent show on television. While they were watching the episode, participants could read comments about the episode written by others and write their own comments on a tablet. The researchers found that the valence of the comments that participants were exposed to influenced the valence of the comments that participants wrote themselves, indicating that participants paid attention to the comments written by others. This implies that when viewers write their own comment to express their opinion about a video, they first focus on the comments that were written by previous viewers to acquire a sense of how others evaluated the video. As a consequence, they may be more susceptible to the influence of social information.

Additional empirical support for the idea that individuals who actively participate on websites are focused on the content presented on these websites and are more susceptible to its influence can be found in

the literature on persuasive communication. Several studies investigated how various forms of active participation on websites can alter how people perceive the content of these websites (e.g., Oh & Sundar, 2019; Van Noort et al., 2012; Xu & Sundar, 2016). Overall, the studies suggest that when individuals are actively interacting with the content of a website as opposed to only passively reading it, their focus on this content increases, making them more susceptible to its influence. For individuals watching online videos, this implies that writing a comment in response to a video can make viewers more susceptible to the influence of its social information. We thus hypothesize:

*H4:* Video viewers who write a comment in response to a video that is accompanied by negative social information experience less enjoyment than video viewers who do not write a comment in response to a video that is accompanied by negative social information.

In addition to increasing video viewers' susceptibility to the effect of social information, writing one's own comment may also impact viewers' social identification with the source of social information. In their study on social identification in the context of online communities, Ren et al. (2012) proposed that focusing people's attention on a group and its activities increases their identification with the group. As stated above, writing one's own comment in response to a video is likely to increase viewers' focus on the social information created by previous viewers. Similarly, writing one's own comment can draw viewers' attention to the source of the social information, making them more susceptible to the influence of that source. Based on this,

it seems plausible that the effect of a shared group membership with the source of social information on social identification is stronger for individuals who write their own comment in response to a video. We hypothesize:

*H5:* The effect of a shared group membership with the source of negative social information on viewers' identification with the source of negative social information is moderated by writing one's own comment: The effect is stronger for video viewers who write their own comment than for video viewers who do not write their own comment.

### METHOD

The hypotheses of this study were tested with a 2 (social information source: in-group vs. out-group) x 2 (writing one's own comment: commenting vs. no commenting) between-subjects experimental design with a control group<sup>1</sup>. The data collection for this study started in January 2019 and was completed in March 2019. The authors received Institutional Review Board approval for this study by the ethical committee of their university.

### PARTICIPANTS

We ran a power analysis using G\*power version 3.1 (Faul et al., 2007), to determine the required sample size needed to detect an effect with  $\eta_p^2 = .035$ . The results of this analysis ( $\alpha$  error probability = 0.05,  $1-\beta$  error probability = 0.8, numerator df = 1, number of groups = 5) indicated that a sample size of 219 participants was required. Participants in the experiment were Communication Science and Psychology students of a large Dutch university who were recruited through the website of the university laboratory.

1. The data collected for this study as well as the script used to analyze the data are available via the Open Science Framework (see: <https://osf.io/hu84t/>)

As data from student populations may be prone to problems that lead to exclusion of a sometimes large number of participants, we recruited a total of 296 students. Because participants' prior attitudes toward the video used as stimulus material in our study could bias the results, only the data of participants who had not seen the video before partaking in the study were included in the analyses. Hence, the data of six participants were excluded because these participants had already seen the video. This resulted in a final sample size of 290 participants ( $M_{age} = 20.82$ ,  $SD_{age} = 2.49$ , 22.1% male) who were randomly assigned to one of five conditions, namely the in-group/no commenting condition ( $n = 54$ ), the in-group/commenting condition ( $n = 59$ ), the out-group/no commenting condition ( $n = 57$ ), the out-group/commenting condition ( $n = 60$ ), or the control condition ( $n = 60$ ).

### PROCEDURE

After consenting to participate, participants were led to a cubicle with a desktop computer. Participants in the experimental conditions first answered a number of questions about their media usage. These questions were part of the manipulation of group membership (see the description of the stimulus material provided below). Afterwards, an online video and user comments were presented to the participants in the experimental conditions. While watching the video, participants in the commenting conditions were asked to write their own comment about the video in a textbox below the comments supposedly written by other viewers. Participants in the control condition only watched the video presented on a webpage that did not depict any comments. After watching the video, all participants filled in a survey.

Upon completion of the study, participants received a reward of their choice (i.e., either

€5 or extra course credits). Once the data collection for the study was completed, all participants were debriefed with an email.

### STIMULUS MATERIAL AND MANIPULATION OF THE INDEPENDENT VARIABLES

All participants watched the same 6-minute animated short film titled *Nobody Nose Cleopatra* (Isart Digital, 2016) which is publicly available on YouTube (<https://www.youtube.com/watch?v=8Tc7PMuHTJQ>). The selection of an animated short film as the single stimulus material for this study was based on three reasons. First, by using an animated short film as the stimulus material for our study, we follow previous studies that used similar videos as their stimulus material (i.e., Möller & Kühne, 2019; see also chapter 3). Using an animated short film as stimulus material in this study ensured comparability with extant research on the effects of social information. Second, an animated short film is suitable stimulus material to study the effects of social information on video enjoyment. Unlike episodes of television series used in other studies (e.g., Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018), animated short films are not aired on television on a regular basis and do not feature famous actors that participants may know. So, participants are unlikely to hold preexisting attitudes towards it based on what they have seen on television or on celebrities that are featured in it (Suckfüll, 2010). Third, animated short films are frequently watched on YouTube and numerous videos of animated short films are available on the platform. The specific video that was used as the stimulus material for this study presents a narrative which characterizes the genre of animated short films. By using one specific video that is representative for animated short films in general, we increase the external validity of

our study (Slater, Peter, & Valkenburg, 2015).

In addition to watching the video, participants in the four experimental conditions saw the same four comments displayed on the left side of the video (see Figure 4.1). All four comments referred to the video negatively. Negative comments were used because previous studies consistently showed that they can reduce video enjoyment, while the results regarding positive social information are less consistent (Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018).

**SOCIAL INFORMATION SOURCE.** Participants in the in-group source conditions saw user comments that were manipulated to look as if they were written by people who belonged to the same group. Participants in the out-group source conditions saw comments that were manipulated to look as if they were written by members of a different group. The distinction between groups was based on a short test that participants completed at the start of the study. In this test, participants

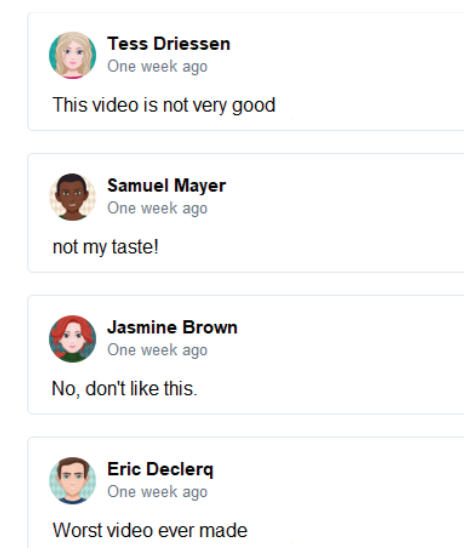


Figure 4.1. Social information presented to participants in the experimental conditions.

stated their opinion about several statements about media usage (e.g., "When I feel tired, I prefer watching television over reading a book."). They were led to believe that, based on their opinions about these statements, they can be categorized as either 'horizontal' or 'vertical' media content processors. Unknown to the participants, all participants were informed that they were horizontal content processors, regardless of the answers they had provided. Subsequently, participants in the in-group source conditions were told that they would watch the video together with some comments written by other people with the same, horizontal content processing style. Instructions for participants in the out-group source conditions said that the comments were written by people who have a different content processing style, namely a vertical content processing style. When participants watched the video, a short text above the comments repeated whether the people who wrote the comments belonged to the same group or to a different group of content processors.

The manipulation of group membership was based on previous studies that manipulated group membership using a minimal-group paradigm (i.e., Billig & Tajfel, 1973; Tajfel, 1970; Wang, Walther, & Hancock, 2009). For example, Wang et al. (2009) asked participants to indicate in which month they were born and then told them that based on this information, they could be categorized into specific groups using Egyptian Zodiac. We followed this approach and asked participants to provide some information about themselves which we then allegedly used to categorize them into a specific group. On the one hand, we aimed for participants to believe that they would be categorized into distinct groups. On the other hand, we also aimed for participants to believe that they would be categorized

into groups that did not differ in terms such as status or likeability. In addition, we aimed for the manipulation to be logically related to the cover story of our study which was that the study aimed at learning more about individuals' experiences of online videos.

To achieve these goals, we adjusted the approach used by Wang et al. (2009) and asked participants to provide information about their media usage by answering eight short questions. We told them that based on this information, they could be categorized into one of two groups of media content processors, either horizontal media content processors or vertical media content processors. Because this distinction between people was based on the fictional concept of media content processors, participants had no prior information about this categorization which could lead them to assume that the groups differed in their likeability or status. In addition, laypersons are likely to perceive a connection between processing style and the experience of online videos, making it plausible that this categorization was related to the cover story of the study.

**COMMENTING.** Participants in the commenting conditions saw a textbox below the four comments in which they were asked to write their own comment. Participants in the no commenting conditions were not asked to write their own comment.

## MEASURES

During the study, participants answered several questions. Unless stated otherwise, they did so by indicating how much they (dis)agreed with statements (further described below) on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Results of analyses provided in the measures section are based on the data of all participants ( $N =$

290), unless stated otherwise.

**MANIPULATION CHECKS.** Three questions were asked to participants in the experimental conditions ( $n = 230$ ) to verify if our manipulations were perceived as intended. First, we checked if participants perceived the comments as negative. Participants completed the following sentence: "In the user comments, the video was discussed...". They did so by either selecting one point from a scale ranging from 1 (*very negatively*) to 7 (*very positively*), or by selecting *I cannot remember*. Second, we checked whether participants were aware if the people who wrote the comments were similar to, or different from them in terms of their content processing style. Participants chose one out of three options stating that (1) the comments were written by people who are similar to me in terms of their content processing style, (2) the comments were written by people who are different from me in terms of their content processing style, or (3) I cannot remember. Third, we verified if participants knew whether or not they could write a comment while watching the video. Participants selected one of three options, namely (1) on the page with the video, I could watch the video and read user comments, (2) on the page with the video, I could watch the video, read user comments, and write my own comment, or (3) I cannot remember.

**VIDEO ENJOYMENT.** Participants' enjoyment of the video was measured using Wirth et al.'s (2012) scale to assess individuals' hedonic entertainment experiences. Participants indicated their (dis)agreement with three statements, namely: "I felt well entertained watching the video", "It was fun watching the video", and "It was pleasurable watching the video". By averaging participants' scores on the three items, we created an overall video enjoyment score (see Table 4.1 for

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Table 4.1.  
Results of factor analyses, scale reliability indices and descriptive scale statistics.

	Eigenvalue <sup>a</sup>	Explained variance <sup>a</sup>	Cronbach's Alpha	M (SD)	Skewness	Kurtosis
Video enjoyment	2.62	87.34%	.93	5.04 (1.34)	-.92	.48
Social identification	n.a.	n.a.	n.a.	2.50 (1.48)	1.01	.17
Perceived similarity	2.95	73.77%	.88	2.49 (1.03)	.48	-.11
Social attraction	3.14	78.36%	.91	3.56 (1.08)	-.13	.02
Perceived trustworthiness	2.99	59.86%	.83	4.22 (.92)	-.80	1.70
Perceived social distance	n.a.	n.a.	n.a.	5.36 (1.23)	-.67	.23
Genre preference	n.a.	n.a.	n.a.	5.17 (1.53)	-.82	-.05

<sup>a</sup>The items of the video enjoyment, perceived similarity, social attraction, and perceived trustworthiness scales were subjected to a principal axis factor analysis with oblique rotation (direct oblimin).

detailed information about the results of a factor analysis, scale reliability indices and descriptive scale statistics).

**SOCIAL IDENTIFICATION.** Participants' social identification with the people who wrote the comments was measured using Postmes, Haslam, and Jans' (2013) single-item measure of social identification. Because participants in the control condition were not exposed to any comments, the measure of social identification was only administered in the four experimental conditions ( $n = 230$ ). Participants were asked to indicate their (dis)agreement with the following item: "I identify with the people who wrote the comments about the video" (see Table 4.1).

**ALTERNATIVE MEDIATORS.** In addition to social identification, literature has used perceived similarity (e.g., Billig & Tajfel, 1973), social attraction (e.g., Hogg & Hains, 1996; Hogg & Turner, 1985), perceived trustworthiness (e.g., Lin & Xu, 2017; Reichelt, Sievert, & Jacob, 2014) and perceived social distance (e.g., Lin & Xu, 2017; Yanovitzky et al., 2006) to explain social influences. Although scholars consider social identification to be a distinct concept and the key factor explaining the influence of information sources (Turner, 1982; Turner et al., 1987), these alternative factors may play a role in the effect of social information source on enjoyment. In the current case of the source of negative social information and video enjoyment, individuals may experience more similarity to the source, may feel more social attraction to the source, may have more trust in the source, and may perceive a smaller social distance to the source if that source belongs to the same social group. This, in turn, may decrease individuals' video enjoyment. To control for these alternative mediators for the effect of the source of social information, we measured

them among participants in the experimental conditions ( $n = 230$ ).

Participants' perceived similarity to the people who wrote the comments was measured with the four items of the perceived attitude similarity dimension of McCroskey, Richmond, and Daly's (1975) perceived homophily scale. Social attraction was measured using four items that are part of the social attraction dimension of the interpersonal attraction scale developed by McCroskey, McCroskey, and Richmond (2006). Perceived trustworthiness was measured by a scale consisting of five indicators based on the perceived trustworthiness component of the source-credibility scale as developed by Ohanian (1990). For each scale, we assessed whether the items loaded on one factor. Furthermore, we checked whether reliable scales could be formed based on these items. Results of factor analyses and reliability checks confirmed that this was indeed the case for all three scales (see Table 4.1). Finally, participants' perceived social distance to the people who wrote the comments was measured with Aron, Aron, and Smollan's (1992) inclusion-of-other-in-the-self measure. For each participant, this led to a score between 1 and 7 where a higher score indicates a larger perceived social distance to the people who wrote the comments (see Table 4.1).

**GENRE PREFERENCE.** One question asked participants to indicate how much they (dis)liked animated films and videos. Participants could do so by selecting one out of seven options ranging from 1 (*dislike a great deal*) to 7 (*like a great deal*). This question served as a randomization check (see Table 4.1).

## RESULTS

### RANDOMIZATION CHECK

Individuals' entertainment experiences in response to media content are dependent on their media genre preferences and their biological sex (Hixson, 2006; Oliver et al., 2000). To minimize the risk that these two factors affect our results, we tested whether the randomization across conditions with regard to these two factors was successful. Participants' preference for animated films and videos did not differ between conditions,  $F(4, 285) = 2.01, p = .094$ . However, participant's biological sex differed between the conditions,  $\chi^2(4, N = 290) = 16.46, p = .002$ . Therefore, when testing the hypotheses, we conducted an additional series of analyses with biological sex as a covariate. However, including biological sex as a covariate did not alter the results of any hypothesis test, and, thus, we report the findings of the analyses without covariates below.

### MANIPULATION CHECKS

To check if participants perceived the user comments presented alongside the video as negative, we inspected their scores on the item assessing how positive or negative they perceived the comments to be. Descriptive statistics showed that overall, participants perceived the comments as negative ( $M = 1.49, SD = .73$ ). Furthermore, 98.7% of participants believed that the comments were somewhat negative, negative, or very negative. Based on this, we deemed the manipulation of the valence of the user comments successful.

Next, we checked whether participants in the experimental conditions perceived themselves to be similar to the people who wrote the comments in terms of their content processing style. Three participants indicated that they did not remember whether or not they were similar to the people who wrote the

comments. To test whether our manipulation was successful among the participants who did believe that they knew whether or not they were similar to the people who wrote the comments, we ran a binary logistic regression using the data of these participants ( $n = 227$ ). This analysis included social information source, writing one's own comment, and the interaction term of these two variables as the predictor variables and participants' answer to the questions about who wrote the comments as the dependent variable. The model explained 70% of the variance (Nagelkerke  $R^2$ ) and correctly classified 87.2% of the cases. Participants in the in-group conditions were more likely to indicate that they were similar to the people who wrote the comments ( $e^{4.16} = 63.78, p < .001$ ), controlling for whether or not they could write their own comment.

A further look at the data showed that 85 participants (75.2%) in the in-group conditions ( $n = 113$ ) realized that the people who wrote the comments were similar to them in terms of their content processing style. However, 27 participants (23.9%) indicated that they believed that the people who wrote the comments were different from them. The results further showed that 113 participants (96.6%) in the out-group conditions ( $n = 117$ ) realized that they differed from the people who wrote the comments in terms of their content processing style. In addition, two participants (1.7%) believed that they were similar to the people who wrote the comments. Thus, while these results show that overall, our manipulation was successful, 32 out of 230 participants (13.9%) did not remember or did not remember correctly if the comments were posted by in-group or out-group members. As the effect of information source requires individuals to be aware of their common social group membership with that source (Turner, 1982; Turner et al., 1987) and following the

procedure of previous studies (e.g., Mackie, 1986; Samu & Bhatnagar, 2008), the data of these 32 participants were excluded when testing the hypotheses.

To check whether the manipulation of writing one's own comment worked, we ran a binary logistic regression on the data of participants in the experimental conditions ( $n = 230$ ). The analysis included writing one's own comment, social information source, and the interaction term of these two variables as the predictor variables. Participants' answer to the questions about whether they could write their own comment while watching the video was included as the dependent variable. The model explained 85% of the variance (Nagelkerke  $R^2$ ) and correctly classified 95.2% of the cases. Participants who were in the commenting conditions were more likely to indicate that they could write their own comment ( $e^{5.88} = 357.50, p < .001$ ), controlling for the source of the social information.

To learn more about the effect of our manipulation, we checked how many participants correctly remembered whether they could write a comment. We found that 113 participants (95.0%) in the commenting conditions ( $n = 119$ ) realized that they could write their own comment while watching the video. However, further manual inspection of the data showed that of these 113 participants, one participant did not actually write a comment. In addition, six participants (5.0%) in the commenting conditions were not aware that they could write their own comment. Further inspection of the data provided by these six participants showed that although they believed it was not possible to write their own comment, five of them did in fact write a comment while watching the video. In the no commenting conditions ( $n = 111$ ), 106 participants (95.5%) knew that they

could not write their own comment while five participants (4.5%) believed that they could write their own comment while watching the video. However, it is certain that none of these five participants wrote their own comment, as it was not possible for them to do so. In sum, the results show that, overall, our manipulation was successful. However, one participant was neither aware that (s)he could write a comment despite the fact that (s)he was in the commenting condition, nor did (s)he actually write a comment. Therefore, the data of this one participant were excluded when testing the analyses.

Based on the results of the manipulation checks reported here, the data of a total of 33 participants were excluded from the analyses testing the hypotheses. Given the number of participants that were excluded from the analyses, we conclude the results section with a discussion of the analyses run on the full sample.

### TESTS OF HYPOTHESES

The first hypothesis stated that exposure to negative social information decreases the enjoyment of video viewers. To test this, we ran an ANOVA using Welch's test. The analysis included a dummy variable indicating whether participants were exposed to negative social information as the independent variable and participants' video enjoyment as the dependent variable. Supporting Hypothesis 1, the results showed that participants who saw negative social information experienced less enjoyment ( $M = 4.87, SD = 1.32$ ) than participants who did not see negative social information ( $M = 5.52, SD = 1.40$ ),  $F(1, 93.53) = 10.07, p = .002, \eta_p^2 = .04$ .

Hypothesis 2 stated that negative social information provided by one's in-group would lead to less video enjoyment than negative

social information provided by one's out-group. Hypothesis 4 stated that writing one's own comment in response to the video decreases video enjoyment. To test this, we analyzed the data of participants in the experimental conditions ( $n = 197$ ). We ran a two-factorial ANOVA with social information source and commenting as the independent variables, and participants' video enjoyment as the dependent variable. Results showed that participants who saw negative social information provided by in-group members experienced less video enjoyment ( $M = 4.65, SD = 1.47$ ) than participants who saw the same information provided by out-group members ( $M = 5.04, SD = 1.18$ ),  $F(3, 193) = 4.20, p = .042, \eta_p^2 = .02^2$ , supporting Hypothesis 2. However, there was no difference in video

enjoyment between participants who did and who did not write their own comment,  $p = .759$ , contradicting Hypothesis 4 (see Figure 4.2 for an overview of the enjoyment scores across conditions).

Hypothesis 3 stated that the effect of a shared group membership with the source of social information on video enjoyment is mediated by viewers' social identification with the source. To test this, we used PROCESS (Hayes, 2018) (version 3, model 4) with which we analyzed the data of participants in the four experimental conditions ( $n = 197$ ). The source of social information was included as the independent variable, participants' social identification with the source of the social information was the mediator, and participants'

2. For all ANOVA's that were run to test the hypotheses, we verified whether the assumptions of homoscedasticity and normality were met. For this model, results of Levene's test indicated that the assumption of homoscedasticity was violated,  $F(3, 193) = 3.24, p = .023$ . Therefore, we also ran Welch's test to test this hypothesis. Results indicated that social information provided by one's in-group led to less enjoyment than social information provided by one's out-group ( $p = .050$ ).

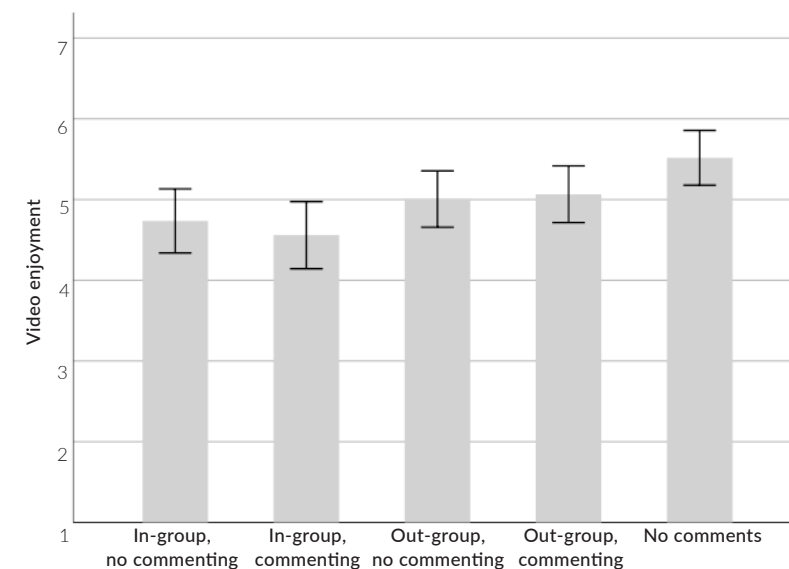


Figure 4.2. Video enjoyment across conditions (error bars depict the 95% confidence intervals).

video enjoyment was the dependent variable. In addition, writing one's own comment was included as a covariate<sup>3</sup>. The results showed no effect of a shared group membership with the source of social information on participants' social identification with that source,  $p = .070$ . In addition, the indirect effect of a shared group membership with the source of social information on viewers' video enjoyment via social identification was not significant, Bootstrapped CI[-.54, .04]. However, an increase in participants' social identification with the source of negative social information led to less enjoyment,  $B = -.64$ ,  $SE = .04$ ,  $p < .001$ , CI[-.72, -.55]. Overall, these results do not support Hypothesis 3<sup>4</sup>.

Hypothesis 5 proposed that the effect of a shared group membership with the source of social information on social identification was moderated by writing one's own comment in response to the video. To test this, we ran an ANOVA that included the source of the negative social information and writing one's own comment in response to the video as independent variables and participants' identification with the source of the social information as the dependent variable. The results showed no interaction effect of the source of social information and writing one's own comment on participants' social identification with the source of social information,  $p = .314$ <sup>5</sup>. Hypothesis 5 was not supported.

### ANALYSES OF ALTERNATIVE MEDIATORS

To investigate the role of the alternative

mediators, we ran PROCESS (version 3, model 4) once again and included the alternative mediators. The resulting model included social information source as the independent variable, video enjoyment as the dependent variable, five mediators (i.e., social identification, perceived similarity, social attraction, trustworthiness, and social distance), and writing one's own comment as a covariate. The results (see Figure 4.3) showed that participants' perceived similarity to the source of the social information and their perceived trustworthiness of the source of social information were not affected by the source of social information, nor did they affect video enjoyment. Although social attraction correlated with the source of social information and with video enjoyment, these relations were not in a direction that one would expect based on the literature. Specifically, when the source of social information consisted of in-group members, participants experienced less social attraction toward the source than when it consisted of out-group members. Moreover, as participants felt more social attraction toward the source of the negative social information, their video enjoyment increased. Both relations are in the opposite direction of what would be expected if social attraction played a similar role as social identification.

Finally, we found that participants perceived the social distance to the source of social information to be larger when that source consisted of in-group members than when it consisted of out-group members. In addition, an increase in perceived social distance to

3. To verify if including this variable in the model substantially altered the results, we ran the model again without the variable indicating whether participants wrote their own comment. The results corroborated the original findings.  
 4. We ran this model a second time using heteroscedasticity-consistent estimators. The results corroborated the original findings.  
 5. Results of Levene's test indicated that the assumption of homoscedasticity was violated,  $F(3, 193) = 4.23$ ,  $p = .006$ . Therefore, we ran a model with heteroscedasticity-consistent estimators. The results corroborated the original findings.

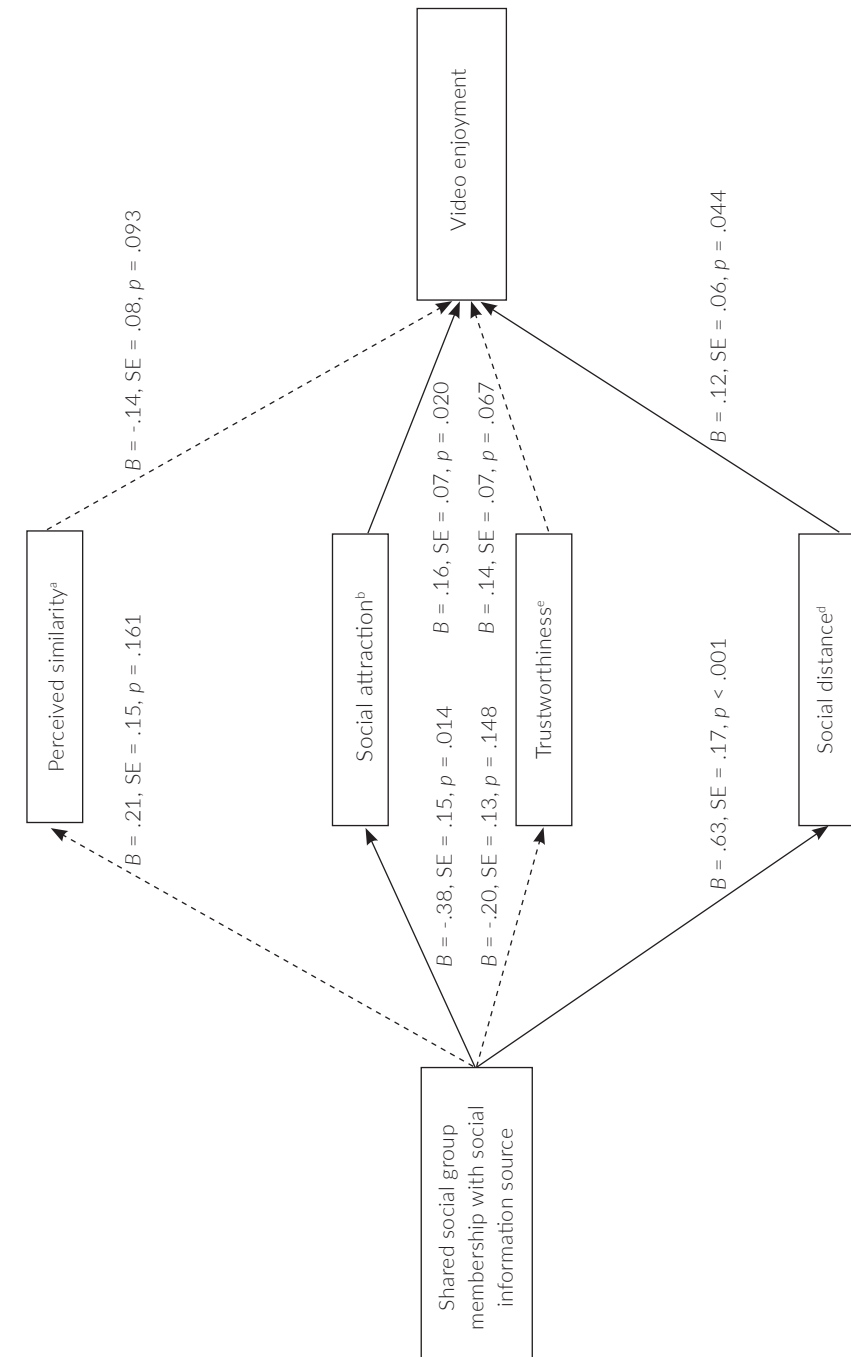


Figure 4.3. Role of Alternative Mediators. Bootstrapped Confidence Intervals of Indirect effects: <sup>a</sup> 95% CI [-.15, .02], <sup>b</sup> 95% CI [-.10, .02], <sup>c</sup> 95% CI [-.09, .01], <sup>d</sup> 95% CI [.00, .18]

the source of negative social led to more video enjoyment. Although the latter is to be expected based on the literature discussed above, the fact that participants who saw social information provided by their in-group experienced a greater social distance to that group is not. Therefore, social distance does not seem to explain the effect of a shared group membership with the source of social information in a way that is similar to that of social identification.

### ANALYSES ON THE FULL SAMPLE

Given that the data of 33 participants were excluded based on the results of the manipulation checks, we repeated the analyses testing the hypotheses using the full sample ( $N = 290$ ). As to H1, results showed that participants who were exposed to negative social information experienced less enjoyment ( $M = 4.92$ ,  $SD = 1.30$ ) than participants who were not exposed to negative social information ( $M = 5.52$ ,  $SD = 1.40$ ),  $F(1, 87.37) = 9.07$ ,  $p = .003$ ,  $\eta_p^2 = .03$ , supporting the hypothesis. These results corroborate the original findings.

We then ran the ANOVA testing Hypotheses 2 and 4 on the full sample of participants in the experimental conditions ( $n = 230$ ). Results showed no difference between participants who saw negative social information provided by in-group members and participants who saw negative social information provided by out-group members in terms of video enjoyment,  $p = .161$ . There was also no difference in the video enjoyment of participants who could write their own comment in response to the video and those who could not,  $p = .777$ . Thus, when using the full sample, neither Hypothesis 2 nor Hypothesis 4 was supported. The results regarding Hypothesis 2 are in contrast to the original results based

on the sample excluding participants who failed the manipulation checks.

Next, we ran PROCESS (version 3, model 4) using the data of all participants in the experimental conditions ( $n = 230$ ) to test Hypothesis 3. Results showed that a shared group membership with the source of negative social information did not affect participants' social identification with that source,  $p = .421$ . In addition, the indirect effect of the source of social information on video enjoyment via social identification was not significant, Bootstrapped CI[-.35, .14]. However, an increase in participants' social identification with the source of negative social information decreased their video enjoyment  $B = -.63$ ,  $SE = .04$ ,  $p < .001$ , CI[-.71, -.55]. In line with the original findings, Hypothesis 3 was not supported.

Finally, we tested Hypothesis 5 using the data of all participants in the experimental conditions ( $n = 230$ ). As in the original findings, we found no interaction effect of the source of social information and writing one's own comment on social identification,  $p = .994$ .

### DISCUSSION

By studying the role of the source of social information and of writing one's own comment in response to a video, the current study offers two contributions to the literature on the effects of social information on video enjoyment. First, it replicated the finding of extant research indicating that exposure to negative social information decreases viewers' video enjoyment. Second, it advanced our knowledge about what makes this effect more likely to occur when individuals watch videos on social media. Our results showed that the influence of social information on video enjoyment was affected by a shared group membership with the source of social

information. However, in contrast to our expectations, writing one's own comment did not play a role in this process.

Negative social information created by in-group members led to less video enjoyment than negative social information created by out-group members. Similar to previous studies on the effects of social information on video enjoyment (i.e., Winter et al., 2018; see also chapter 3), our study found a modest effect of social information on video enjoyment. However, because social information is an inherent part of the content presented on social media and all viewers of a video are exposed to it, such a modest effect can alter the entertainment experiences of large groups of people. This is an important result in its own, but it is also relevant because viewers' experiences while watching a video may affect their subsequent behavior: If viewers do not experience sufficient enjoyment while watching a video, they may stop watching it, or it may make them less willing to repeat the activity. Our results indicate that this is more likely to happen if videos are accompanied by negative social information that is created by viewers' in-group members.

The effect of a shared group membership only occurred when tested exclusively among participants who were aware that they belonged to the same group as the source of the social information. Analyses on the full sample including viewers who were not aware if they belonged to the same group as the source of the social information did not show an effect of a shared group membership. These findings are in line with the notion of Social Categorization Theory that in order for individuals to comply with a group, a common social category membership with that group must be salient (Turner, 1982; Turner et al., 1987). However, it should be noted that

excluding participants who did not know if they shared a group membership with the source of social information from our analyses negatively affects the random assignment procedure, leading to reduced internal validity (Christ, 2007). Although the exclusion of these participants is theoretically plausible, implications of excluding participants have to be considered when discussing the findings of this study.

The fact that not all of the participants realized that they (did not) belong to the same group as the source of the social information gives rise to the question of when social media users feel that they (do not) belong to the same social group as other viewers. In the current study, participants were explicitly told that they did (not) belong to the same social group as the people who wrote the comments based on the minimal-group paradigm. Apart from this information, they did not know anything else about the people who wrote the comments. However, on social media, there are likely to be multiple cues available about people who write comments, such as their age, gender, or their preferences. Thus, in real life settings, the effect of the source of social information is likely to be stronger than the effect reported here, as video viewers' shared group membership with the people who write comments is based on more meaningful information.

Our results also showed that the source of social information did not affect participants' social identification with that source. Thus, our results failed to support our hypothesis that the effect of a shared group membership with the source of social information on video enjoyment is mediated by social identification. A possible explanation is that participants did not believe that the user comments which they saw were created by other participants

as they were told. However, our finding that the source of social information did affect viewers' social attraction and social distance to that source contradicts this notion. The results regarding these alternative mediators did not, however, provide any theory-consistent mediation mechanisms that could explain the effect of the source of social information on video enjoyment. In fact, the alternative mediators were either not simultaneously related to predictor and outcome, or the direction of at least one relationship contradicted the theoretical expectations.

Our results further indicated that social identification with the source of negative social information negatively predicted viewers' video enjoyment. However, because in the current study social identification was measured and not manipulated, our results do not preclude that the causal relationship between the two variables is reversed (Pirlott & MacKinnon, 2016; Spencer, Zanna, & Fong, 2005; Stone-Romero & Rosopa, 2008). Thus, it is possible that less video enjoyment leads viewers to experience more social identification with the source of the social information. For example, video viewers who experience less enjoyment may identify with the creators of social information more strongly because they agree with the negative opinion about the video as reflected in the comments.

Finally, according to our results, writing one's own comment does not affect video enjoyment, nor does it moderate the effect of a shared social group membership with the source of the social information on social identification with the source. This contradicts our expectations based on the literature on interactivity showing that various forms of active user participation increase users' focus

on the content of websites. There are two possible explanations for this finding. On the one hand, interactivity is a broad concept (Sundar, 2004) and can be operationalized in different ways. The results of our study imply that the findings of extant research on specific operationalizations of interactivity (e.g., using a contact form) cannot be generalized to different operationalizations of the concept. On the other hand, our finding that writing one's own comment has no effect may be due to the fact that participants in our study wrote a comment because they were instructed to do so, and not because they choose to do so. Outside of experimental lab settings, media users may choose to add their own comment to social information because the previously created comments caught their interest, making them more susceptible to the influence of these comments. In that case, writing a comment would still be a relevant variable to the influence of social information on video enjoyment. Additional research is necessary to fully understand this process.

Our study is subject to at least three limitations. First, the participant sample used in this study was a convenience sample with an average age of approximately 20 years old. Although this is an appropriate sample of social media users in the sense that these platforms are frequently used by young people, our sample existed exclusively of university students, which limits the external validity of our findings. Second, to collect the data for this study, participants were asked to come to the lab and watch an online video. While this approach helped to ensure that participants paid sufficient attention to the video and the questions, it also added a certain level of artificiality that reduced the ecological validity of our findings.

A third limitation is that we used a single

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video as the stimulus material for our study. On the one hand, we do not have a clear reason to assume that the effect of social information differs depending on the specific entertainment video that it accompanies, because previous studies consistently reported a valence effect while using various types of entertainment content (e.g., Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). On the other hand, the effects of social information may differ when it accompanies other media genres, such as videos containing political messages. There are two reasons why this may be the case. First, content characteristics are likely to differ between videos from different genres. Hence, the stimulus material used in this study is not representative of all video genres that are available online. Second, serious media content such as political videos are likely to be processed in a more systematic way than purely hedonic content, which may lead viewers to be more critical of the social information that accompanies them. Based on this, we suggest that scholars investigate how the effects of social information depend on the specific media genre that individuals are exposed to.

The current study contributes to the literature on the emergence of enjoyment in response to online content by investigating when the social information accompanying online videos is most likely to change viewers' video enjoyment. In doing so, this study focused on two factors that are likely to vary when individuals use social media, namely the source of social information and whether or not viewers write their own comments in response to a video. Its results indicate that viewers' shared group membership with the source of social information is an influential factor that needs to be considered. For future research, it seems that studying the effects of

online social information from the theoretical lens of Social Categorization Theory is a promising approach that can advance our knowledge of how entertainment experiences emerge in online contexts.

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## CHAPTER 5 SHARING THE FUN? HOW SOCIAL INFORMATION AFFECTS VIEWERS' VIDEO ENJOYMENT AND VIDEO EVALUATIONS

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*Online video platforms often present videos together with social information in the form of user comments and likes. This study tested two hypotheses about how this merger of mass and interpersonal communication on online video platforms shapes viewers' evaluations and enjoyment of online videos. Whereas the judgement effect hypothesis states that social information alters viewers' video evaluations, the processing effect hypothesis poses that it influences viewers' enjoyment while they are watching videos. Using real time response measures, this experiment pitted both hypotheses against each other. The results indicate that if viewers are exposed to social information before watching a video, a processing effect emerges on their enjoyment as they are watching. If viewers are exposed to social information after watching a video, a judgement effect on their retrospective video enjoyment occurs but not on their video evaluations. These new insights advance our understanding of how social information affects video viewers.*

Social media platforms are indispensable in today's media landscape and many people use them to watch online videos. In 2019, the video platform YouTube was used by 73% of the U.S. adult population, making it more popular than Facebook or Twitter which are used by 69% and 22% of U.S. adults respectively (Perrin & Anderson, 2019). Indeed, a survey by Google (2016) indicated that six out of ten people prefer online video platforms over live television. With so many people turning to online platforms for their daily dose of entertainment, scholars have

started to investigate how entertainment experiences arise when individuals watch online videos. They found that the social information that accompanies online videos plays an important role in this process (Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018).

Social information refers to evaluative information about media content provided by users, often presented in the form of user comments or (dis)likes. Scholars found that social information influences the enjoyment that viewers experience when they watch online videos. The term enjoyment refers to viewers' experiences of fun and pleasure in response to online videos and scholars have labeled such experiences as hedonic entertainment experiences (Wirth, Hofer, & Schramm, 2012). In line with this literature, we regard enjoyment as a psychological response state that (although it includes physiological and cognitive dimensions) is predominantly the result of viewers' affective responses to media content (Vorderer, Klimmt, & Ritterfeld, 2004). Scholars found that when individuals watch a video accompanied by social information and afterwards they are asked to indicate how much they enjoyed it, viewers who saw positive social information indicate that they experienced more fun when watching the video than viewers who saw negative social information (Möller et al., 2019; Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). Hence, when individuals use online video platforms, the videos and the social information presented on those platforms jointly shape viewers' video enjoyment.

By presenting videos and social information, online video platforms contain aspects of both mass communication and interpersonal

communication. Mass communication refers to one-way message transmissions from a central, organizational source to a large audience (Flanagin, 2017; Walther, Carr, 2010). This is typically being done by broadcasting identical content to a large and relatively undifferentiated population (Cathcart & Gumpert, 1983; Walther, Carr, et al., 2010). Online video platforms contain mass communication because they show the same videos *and* social information to anyone who uses the platform. However, the social information that is presented on online video platforms is also the result of interpersonal communication. Interpersonal communication is, amongst other things, characterized by a bidirectional exchange of messages between communicators who exchange the roles of sender and receiver (Cathcart & Gumpert, 1983; Flanagin, 2017). The exchange of the roles of sender and receiver is typical for social information. When writing user comments about a video, the viewers of the video take on the role of senders: They convey messages to other viewers of the video. Conversely, when reading the comments that those others wrote about the video, they take on the role of receivers: They obtain the messages that other viewers conveyed about the video.

The finding that social information can alter viewers' video enjoyment implies that the merger of mass and interpersonal communication (Walther, 2017) in social information on online video platforms affects users' enjoyment when they watch online videos. After all, social information, which is produced through interpersonal communication processes, may itself influence video viewers as it is mass communicated to viewers. In this context, however, it is still unclear how precisely this effect emerges. The literature offers two possible theoretical explanations. First, the

judgement effect hypothesis suggests that social information alters viewers' evaluations of a video because viewers tend to adjust their own video evaluations so that they are similar to the evaluations as reflected by other viewers (Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). Second, the processing effect hypothesis suggests that social information creates expectations about media content. Such expectations steer viewers' focus toward those elements of the content that are in line with their expectations and away from those elements that contradict their expectations. This way, social information affects how people process and experience media content (Shedlosky-Shoemaker et al., 2011; Tiede & Appel, 2020).

Both the judgement effect hypothesis and the processing effect hypothesis suggest that video viewers are influenced by the social information that they are exposed to, albeit in different ways. While the judgement effect hypothesis suggests that social information affects viewers' evaluations of a video, the processing effect hypothesis implies that social information changes viewers' video enjoyment. Viewers' evaluations refer to viewers' overall assessment of a video after having watched it and it is often measured by asking individuals how much they liked media content (Nabi & Krmar, 2004). Enjoyment, on the other hand, refers to viewers' experiences that emerge and vary while they are watching a video. Although these concepts are related, they are not the same. For example, a viewer may not have enjoyed a video because it was not particularly funny, but may still evaluate it positively because she liked the scenery or the music used in it.

Although both explanations for the effect of social information on video enjoyment seem plausible, it is yet unclear which mechanism

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is at work. To learn more about this, the present study tests both the judgement effect hypothesis and the processing effect hypothesis. Investigating how social information presented alongside online videos alters viewers' evaluations and experiences of these videos will advance our understanding of the implications that the merger of mass and interpersonal communication into single platforms has for the emergence of viewers' video enjoyment.

### THE JUDGEMENT EFFECT HYPOTHESIS

Several scholars have stated that researchers need to develop a new approach in order to advance our theoretical understanding of how mass and interpersonal communication simultaneously shape users' perceptions and experiences of media content (e.g., Chaffee & Metzger, 2001; Walther, Carr, et al., 2010; Walther & Valkenburg, 2017). Walther (2017) proposes that researchers should not view interpersonal and mass communication as distinct processes, but rather study constructs that are relevant in both mass communication and interpersonal communication contexts (i.e., metaconstructs). By investigating the role of such metaconstructs in situations where interpersonal and mass communication merge – as it is the case with social information on online video platforms – researchers can not only investigate if the merger of mass and interpersonal communication affects media users, but also study *how* such effects arise (Walther, 2017).

Following the suggestion by Walther (2017), the present study examines the role of a specific metaconstruct that can help to understand how the effect of social information on video enjoyment emerges. Next to other metaconstructs, Walther (2017) has identified message characteristics as a metaconstruct

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that applies to both mass and interpersonal communication. He defines this construct as aspects of messages related to, for example, their content, or the manner in which they are presented Walther (2017). In the context of social information accompanying online videos, a message characteristic that has frequently been studied by researchers is the valence of social information (Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018).

To study the influence of the valence of social information, scholars conducted multiple experiments in which they manipulated the valence of social information so that it either indicated that others were positive about a video (e.g., through positive user comments or the presence of likes) or that they were negative about a video (e.g., through negative user comments or the presence of dislikes). They found that viewers who were exposed to positive social information indicated that they had enjoyed the video more than individuals who were exposed to negative social information (Möller & Kühne, 2019; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). Scholars argue that social information may influence video viewers because of a judgement effect where viewers adjust their video evaluations to the social information of a video (Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018).

There are two reasons why a judgement effect may emerge when video viewers are exposed to social information. Winter et al. (2018) propose that when video viewers are exposed to social information, they use that information to learn how the other viewers evaluated a video. This can elicit a process of social influence where viewers conform to the opinion of others when providing their

own evaluations. Research on conformity effects suggests that individuals may either do so because of a perceived pressure to adjust to others in order to avoid negative consequences, or because they perceive the opinions of others as valuable and meaningful information which they can use when forming their own opinion (Deutsch & Gerard, 1955). Both notions imply that when viewers think back about a video to evaluate it, they adjust their video evaluations so that it is in line with the opinions of others. In support of this, Winter et al. (2018) found that viewers' own comments about a video varied in line with the social information to which they were exposed: Video viewers who were exposed to negative social information wrote more negative comments themselves than viewers who were exposed to positive social information.

Similar to the suggestion by Winter and his colleagues (2018), Waddell and Bailey (2019) and Waddell and Sundar (2017) propose an explanation based on the literature about the bandwagon effect which states that individuals adjust their behavior to the behavior of the majority (Dahlgard, Hansen, Hansen, & Larsen, 2017; Kiss & Simonovits, 2014; Marsh, 1985; Simon, 1954). Applying this to the context of online social information, Waddell and Bailey (2019) and Waddell and Sundar (2017) exposed participants to a video and its social information and asked them to evaluate the video afterwards by rating their enjoyment of it on a self-report scale. Participants were also asked to indicate the extent to which they believed that it is likely that other people would endorse the video (i.e., their bandwagon perception). Both studies showed an effect of the valence of social information on viewers' video evaluations which was mediated by viewers' bandwagon perception (Waddell & Bailey,

2019; Waddell & Sundar, 2017). In sum, then, research supports the judgement effect hypothesis stating that the valence of social information of online videos can influence viewers' evaluations of those videos.

### THE PROCESSING EFFECT HYPOTHESIS

In addition to affecting viewers' video evaluations, researchers state that social information may also affect viewers' experiences *while watching* a video. Insights into such processing effects are provided by Shedlosky-Shoemaker and her colleagues (2011). In their experiment, participants were first exposed to written reviews about a story and then were instructed to read the story themselves. In line with the researchers' hypothesis, the reviews affected participants' expectations of the story. Participants who read positive evaluations expected the story to be better than participants who read negative evaluations. Moreover, participants who read negative reviews that centered explicitly on the plot of the story emphasized the plot in their own reviews too (Shedlosky-Shoemaker et al., 2011, experiment 1). In their interpretation of their results, the authors propose that evaluative information provided by others can elicit expectations that steer individuals' attention to specific parts of media content, thus, altering their experiences.

The notion that expectations can bias individuals' experiences has been tested in multiple studies (Klaaren, Hodges, & Wilson, 1994; Tiede & Appel, 2020; Wilson, Lisle, & Kraft, 1989). For example, Klaaren and her colleagues (1994) manipulated participants' expectations about a movie by telling part of the participants that others enjoyed it a lot. In addition, they manipulated participants' actual experiences by having some of them watch it from a comfortable chair, while

SHARED ENJOYMENT: ONLINE VIDEOS, SOCIAL INFORMATION, AND HEDONIC ENTERTAINMENT EXPERIENCES

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others watched the same movie with a poor picture quality and while they were seated in an uncomfortable chair, holding their head in a strange angle from the screen by placing their chin on a chinrest. Afterwards, the researchers asked participants to indicate how much they had enjoyed watching the movie. They found that participants' retrospective reports of their enjoyment of the video was affected not only by the actual pleasantness of the experience, but also by their expectations (Klaaren et al., 1994). This implies a processing effect in which evaluative information about an experience provided by others alters individuals' experiences.

The idea that the valence of social information can alter viewers' experiences by creating expectations implies that the timing of exposure to social information plays an important role. If social information alters viewers' experiences through expectations about videos, the effect can only emerge if viewers see the social information *before* they see the video because, otherwise, expectations cannot be created. Accordingly, Waddell and Sundar (2017) varied the timing of the appearance of comments about a video. While some participants saw comments near the beginning of a video, other participants saw comments near the end of a video. Afterwards, participants were asked to indicate how much they had enjoyed watching the video. However, in contrast to their hypothesis, the authors found that viewers' retrospective assessment of their video enjoyment was affected by the user comments regardless of the timing of exposure to the comments (Waddell & Sundar, 2017).

The unexpected finding of the study by Waddell and Sundar (2017) may be the result of how viewers' video enjoyment was measured in that study. Applied to

this specific study, the processing effect hypothesis implies that the social information shown near the beginning of the video elicits bigger changes in viewers' experiences while watching the video than the social information that is presented near the end of the video. However, although the researchers varied the timing of the appearance of comments and asked participants to rate their enjoyment after having watched the video, they did not measure participants' enjoyment *during* video exposure. Consequently, the results of the study by Waddell and Sundar (2017) do not indicate if comments shown near the beginning of the video affected viewers' experiences *while watching* the video more than comments shown near the end of the video. Thus, while the study found no support for the processing effect hypothesis, it did not provide sufficient empirical evidence to dismiss the hypothesis either. A thorough assessment of the processing effect hypothesis, thus, requires that viewers' video enjoyment is measured while they are watching a video.

### DISENTANGLING THE MECHANISMS

In sum, the literature discussed above proposes two explanations for the effect of the valence of social information on viewers' video enjoyment, both of which seem plausible. Thus, it is possible that the valence of social information affects viewers' video evaluations as stated by the judgement effect hypothesis, their enjoyment while watching a video as suggested by the processing effect hypothesis, or both. To learn more about each of these scenarios, the present study tested the judgement effect hypothesis and the processing effect hypothesis by measuring both viewers' video evaluations as well as their enjoyment while watching a video. Moreover, the present study manipulated the timing of when social information was presented to

the viewers such that viewers were exposed to it either before or after they watched the video. In this way, we aimed to broaden our understanding of how the valence of social information as a message characteristic affects online video viewers.

In the case that only the judgement hypothesis is true, there should be a direct influence of the valence of social information on viewers' video evaluations: Viewers who are exposed to positive social information should provide more positive video evaluations than viewers who are exposed to negative social information. This effect should occur regardless of whether the social information is presented before or after video exposure. However, even if such a direct effect of the valence of social information on viewers' video evaluation emerges, it seems unlikely that viewers' video evaluations depend solely on the social information to which they are exposed. It seems plausible that viewers' evaluations of a video are, at least partly, also based on how they experienced the video. Thus, although the judgement effect hypothesis implies a direct effect of the valence of social information on viewers' video evaluations, a direct effect of viewers' enjoyment while watching the video on their video evaluations is also expected to emerge. Importantly, in a scenario that is based solely on the judgement effect hypothesis, no

effect of the valence of social information on viewers' enjoyment while watching the video should emerge (see Figure 5.1).

If the effect of the valence of social information occurs solely based on the processing effect hypothesis, the valence of social information should alter viewers' enjoyment while watching the video. Subsequently, viewers' enjoyment while watching the video should influence their video evaluations. For example, if viewers are exposed to social information in which previous viewers discuss a video in a negative way, this should draw viewers' attention to the negative aspects of the video when they watch it themselves, leading them to experience less enjoyment while watching the video. This, in turn, should lead viewers to provide more negative video evaluations. In such a scenario, no effect of social information should occur if social information is presented after video exposure. Importantly, no direct effect of the valence of social information on viewers' video evaluations should emerge (see Figure 5.2).

As both the judgement effect hypothesis and the processing effect hypothesis are supported by the literature, it is possible that both a judgement effect and a processing effect occur simultaneously. In this case, a direct effect of the valence of social information on viewers' video evaluations should emerge,

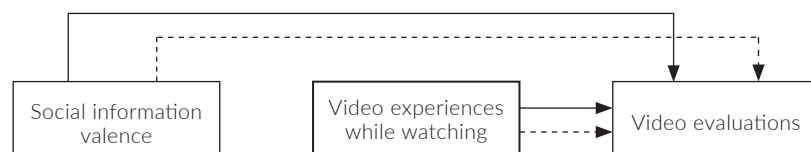


Figure 5.1. Expected effects according to a scenario based solely on the judgement effect hypothesis (solid lines indicate effects that are expected to emerge for viewers who are exposed to social information before watching the video, dotted lines indicate effects that are expected to emerge for viewers who are exposed to social information after having watched a video).

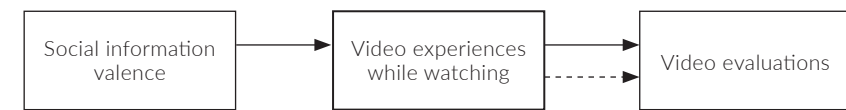


Figure 5.2. Expected effects according to a scenario based solely on the processing effect hypothesis (solid lines indicate effects that are expected to emerge for viewers who are exposed to social information before watching the video, dotted lines indicate effects that are expected to emerge for viewers who are exposed to social information after having watched a video).

regardless of the timing of exposure to social information and in line with the judgement effect hypothesis. In addition, based on the processing effect hypothesis, the valence of social information should affect viewers' enjoyment while watching a video, but only if viewers are exposed to social information before they watch the video. Finally, viewers' enjoyment while watching the video should affect their video evaluations (see Figure 5.3).

## METHOD

We tested the hypotheses of this study through a laboratory experiment with a 2 (social information valence: positive vs. negative) x 2 (timing of exposure to social information: before video vs. after video) between-subjects design. Participants watched a video during which we measured

their video enjoyment. Afterwards, participants completed a questionnaire. The collected data were imported and analyzed using R (version 3.6.1). The study was pre-registered through the Open Science Framework<sup>6</sup> and the authors received Institutional Review Board approval by the ethical committee of their faculty at the University of Amsterdam before the study was conducted.

## PARTICIPANTS

We recruited 220 students from a the University of Amsterdam via the university's lab subject pool. In line with the pre-registered criteria for data exclusion, the data of six participants were excluded from the analyses because these participants indicated that they had not paid any attention to the social information that they were exposed

6. See <http://osf.io/jd5zk> for the full project pre-registration

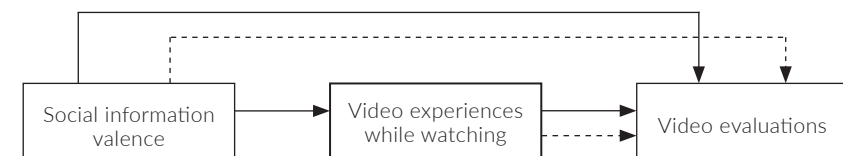


Figure 5.3. Expected effects according to a scenario based on both the judgement effect hypothesis and the processing effect hypothesis (solid lines indicate effects that are expected to emerge for viewers who are exposed to social information before watching the video, dotted lines indicate effects that are expected to emerge for viewers who are exposed to social information after having watched a video).

to<sup>7</sup>. Thus, the final sample size of this study was 214 participants ( $M_{age} = 20.97$ ,  $SD_{age} = 4.23$ , 23.8% male). A power analysis using G\*Power ( $\alpha$  error probability = 0.05,  $1-\beta$  error probability = 0.8, numerator df = 1, and number of groups = 4) indicated that this is sufficient to detect a small to moderate effect of  $\eta_p^2 = 0.05$  (Cohen, 1988; Faul et al., 2007). Participants were randomly assigned to one of four conditions such that they either saw positive social information before watching the video ( $n = 54$ ), negative social information before watching the video ( $n = 52$ ), positive social information after watching the video ( $n = 58$ ), or negative social information after watching the video ( $n = 50$ ).

### PROCEDURE

Upon their arrival at the lab, participants were asked to read an informed consent form about the study. After giving informed consent, participants were led to a cubicle with a desktop computer to which a joystick was connected. The researcher explained that the study would consist of two parts, namely watching a movie and filling out a short questionnaire. The researcher further explained that the study was about how much enjoyment people experience when they watch online videos, and that participants could indicate this by using the joystick to move a slider while watching the movie. Then, participants were presented with a short (43 seconds) practice video showing different images as well as the slider. Participants could use this video to practice working with the

joystick. The researcher stressed that it was important that participants would constantly use the joystick to indicate their enjoyment while watching the video. After trying out the joystick, the researcher instructed participants to have a look at everything that appeared on the screen during the study and told them that they could call the researcher when they had finished the first part of the study. Once participants had completed the first part, they filled in an online questionnaire. Upon completion of the survey, participants received the reward of their choice, which was either €5,- or extra course credits. After the data collection was completed, all participants received a debriefing e-mail explaining the goal of the study and the fact that the social information to which they were exposed was fabricated by the researchers.

### STIMULUS MATERIALS

During the experiment, all participants watched the same 6-minute animated movie *Monkaa* (Weybec Blender Animation Studio, 2014). An animated short movie was chosen as the stimulus material for this study because animated short movies constitute a popular genre of YouTube videos. In addition to the movie, participants saw a screen presenting six user comments as well as video statistics indicating how many people allegedly had watched the video before and how many previous video viewers assigned a like to the video. Four different versions of this screen existed, which differed with regard to the valence of the social information and the

7. We asked participants to indicate how much attention they had paid to the user comments and the likes about the video on a continuous scale ranging from 1 (*I paid no attention to the likes and the comments at all*) to 7 (*I paid full attention to the likes and the comments*) ( $M = 4.24$ ,  $SD = 1.54$ , Skewness = -0.35, Kurtosis = 1.96). In response to this question, six participants indicated that they had not paid any attention to the likes and the comments. The data of these participants were excluded from the analyses. Despite our preregistration that participants who indicated that they had not paid any attention to the social information would be excluded from the analyses, self-reported attention may be biased. Therefore, we ran the analyses testing the hypotheses as well as the post-hoc analyses a second time using the data of the full sample. The results corroborated the original findings.

### MEASURES

#### VIDEO ENJOYMENT WHILE WATCHING THE VIDEO.

To measure participants' enjoyment while watching the video, we recorded their real time responses to the video. Participants were asked to move a slider that was presented on the screen next to the video. The slider consisted of a vertical axis with a block that appeared at the midpoint of the axis. By using a joystick, participants could either push the block upwards symbolizing more enjoyment or they could pull the block down on the axis which symbolized less enjoyment. If participants did not actively position the block by using the joystick, the block remained at the midpoint of the axis, indicating that participants' experiences were neutral. The axis ranged from -1000 (*no enjoyment at all*) to 1000 (*maximum enjoyment*). Approximately every 50 milliseconds, the position of the block was recorded, resulting in over 7000 real time responses per participant. For each participant, we created an overall score by averaging their real time responses to the video ( $M = 146.90$ ,  $SD = 205.41$ , Skewness = -0.36, Kurtosis = 3.84).

**VIDEO EVALUATIONS.** Participants' video evaluations were measured by asking them to indicate how much they liked the video. Participants could do so by selecting one point from a 7-point scale ranging from 1 (*dislike a great deal*) to 7 (*like a great deal*), ( $M = 4.61$ ,  $SD = 1.39$ , Skewness = -0.68, Kurtosis = 2.59). When video viewers are asked to evaluate videos outside of experimental settings, they are often asked to do so in one single way as opposed to answering multiple questions (e.g., movie review sites Rotten Tomatoes and IMBD ask users to rate videos on 10-point and 5-point scales respectively). Hence, a single-item scale measuring video

moment at which it was presented.

For participants in the positive social information conditions, the screen presented five user comments that referred to the video positively (e.g., "I had such a good time watching this") and one neutral comment (i.e., "Max you also writing a comment now?"). The comments scrolled through the screen such that four comments were visible at the same time. The video statistics on the screen indicated that 41 people had watched the video before and that 39 of them assigned a like to the video. Once all six comments had scrolled through, the screen closed. Participants in the negative social information conditions saw the same screen, only it presented five user comments that discussed the video negatively (e.g., "I had such a bad time watching this") and one neutral comment, and the video statistics indicated that of the 41 people who watched the video, two people had assigned a like to the video.

Participants who were exposed to the social information before the video saw the screen prior to the start of the video. To reduce the risk that participants would understand the goal of the study and realize why the social information was presented to them, a text on the screen presenting the social information said that the video that participants were about to watch was loading. While the video was allegedly loading, the user comments scrolled by. For participants who were exposed to the social information after the video, the screen appeared after they had watched the video. To reduce the risk that participants got suspicious about the appearance of the social information, the text on the screen indicated that the data that participants had provided while watching the video were being saved. While the computer was allegedly saving the data, the user comments scrolled by.

evaluations resembles how video evaluations are typically measured outside of experimental settings. Based on this and in line with extant research using single-items scale to measure evaluations (e.g., Peterson, 2004), the present study measured viewers' video evaluations using a single-item scale.

**RETROSPECTIVE VIDEO ENJOYMENT.** We included a scale used in previous research on the effects of social information that measured viewers' retrospective video enjoyment (Möller & Kühne, 2019). This scale was developed by Wirth and colleagues (2012). It asked participants to think back about the video they had seen and rate their video enjoyment by indicating their (dis)agreement with three items, namely "I felt well entertained watching the video", "It was fun watching the video", and "It was pleasurable watching the video". For each statement, participants could select one point from a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). To assess whether the three items formed a single factor, we conducted a principal axis factor analysis with oblique rotation (direct oblimin). The results indicated that all items loaded on one factor (eigenvalue = 2.3) explaining 79% of the variance. The results of a reliability analysis showed that together, the items formed a reliable scale (Cronbach's Alpha = .92). By averaging participants' scores on the three items, we created an overall score ( $M = 4.50$ ,  $SD = 1.39$ , Skewness = -0.61, Kurtosis = 2.69).

**MANIPULATION CHECKS.** To assess if participants perceived the manipulation of the valence of the social information as intended, we asked them to select the best option regarding two statements, namely "In the user comments, the video was discussed:", and "Based on the likes that the video received, it seems that most previous viewers evaluated

it:". Participants could answer these questions by either selecting one point from a 7-point scale ranging from 1 (*very negatively*) to 7 (*very positively*), or by selecting "I cannot remember". To assess whether participants perceived the manipulation of the timing of exposure to the social information as intended, we asked them to complete the following sentence: "During the study, I...". Participants could complete this sentence by choosing one out of three options, namely (1) "...first saw a screen presenting likes and user comments about a video and then I watched that video", (2) "... first watched a video, and afterwards, I saw a screen presenting likes and user comments about it", or (3) "I cannot remember".

**JOYSTICK USAGE.** To get a sense of how participants experienced using the joystick while watching the video, we asked them to answer the following question: "While you watched the video, how much did you move the joystick to indicate how much enjoyment you experienced?". Participants could answer this question by moving a slider on a continuous scale ranging from 1 (*I did not move the joystick at all during the video*) to 7 (*I moved the joystick constantly during the video*) using the computer mouse, ( $M = 5.66$ ,  $SD = 1.04$ ). In addition, we asked participants to indicate their (dis)agreement with the following statement: "While I was watching the video, I found it difficult to remember to move the joystick". Participants could indicate their (dis)agreement by selecting one point from a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), ( $M = 2.34$ ,  $SD = 1.34$ ).

**PRIOR EXPOSURE TO VIDEO.** We assessed whether participants had already seen the video before they took part in the study. All participants indicated that they had not seen the video before they participated in the study.

**DEMOGRAPHIC INFORMATION.** Finally, we asked participants to answer three questions in order to provide a description of the study sample. In an open question, we asked participants to indicate their age in years. Participants were also asked to answer the question "What is your biological sex?", which they could answer by selecting one out of three options, namely "male", "female", or "other, namely: ...". Answering this question, 23.8% of the participants indicated that their biological sex was male and 76.2% of the participants that their biological sex was female. No participant indicated that their biological sex was something other than male or female. Finally, we asked participants to indicate how much they (dis)like animated films and videos. They could do so by selecting one point from a 7-point scale ranging from 1 (*dislike a great deal*) to 7 (*like a great deal*), ( $M = 5.5$ ,  $SD = 1.27$ , Skewness = -0.83, Kurtosis = 3.21).

## RESULTS

### PARTICIPANT DISTRIBUTION

Research has shown that individuals' biological sex and their media genre preference predicts their entertainment experiences in response to media content (Hixson, 2006; Oliver et al., 2000). To limit the risk that these two factors influence our results, we tested if the randomization ensured that participants were distributed equally across conditions in terms of their biological sex and their media preferences. First, a chi-square test showed that there were no differences between conditions with regard to participants' biological sex  $\chi^2(3, N = 214) = 2.23$ ,  $p = .527$ , Cramer's  $V = .10$ . Second, a one-way ANOVA indicated that the conditions did not differ in terms of participants' (dis)liking of animated short films,  $F(3, 210) = 0.74$ ,  $p = .529$ ,  $\eta_p^2 = .01$ . These results indicate that the participants were distributed approximately

equally across conditions in terms of their biological sex and in terms of how much they (dis)like animated short films.

### MANIPULATION CHECKS

To assess how participants perceived the manipulation of the valence of the social information, we first examined how participants had perceived the user comments to which they were exposed. The data showed that 11 participants indicated that they did not remember how positively or negatively the user comments discussed the video. An ANOVA using the data of the other 203 participants showed that those who were exposed to positive social information believed that the comments were more positive ( $M = 6.69$ ,  $SD = 0.70$ ) than participants who were exposed to negative social information ( $M = 2.29$ ,  $SD = 1.26$ ),  $F(1, 201) = 972.64$ ,  $p < .001$ ,  $\eta_p^2 = .83$ . Second, we examined how participants had perceived the likes that were presented together with the user comments. We found that 29 participants could not remember how positively or negatively previous viewers evaluated the video based on the likes. An ANOVA using the data of the remaining 185 participants showed that participants in the positive social information condition believed that previous viewers evaluated the video more positively ( $M = 6.20$ ,  $SD = 0.92$ ) than participants in the negative social information condition ( $M = 2.70$ ,  $SD = 1.39$ ),  $F(1, 183) = 407.57$ ,  $p < .001$ ,  $\eta_p^2 = .69$ .

Finally, we assessed whether participants knew if they had seen the social information before they watched the video, or after they had watched the video. We found that one participant could not remember whether (s)he first saw the video or the social information. The results of a chi-square test on the data of the remaining 213 participants indicated that of the 106 participants who were

exposed to the social information before the video, 3 participants believed that they saw it afterwards. Of the 108 participants who were exposed to the social information after the video, one participant believed that the social information was presented before the video,  $\chi^2(1, N = 213) = 193.53, p < .001$ , Cramer's  $V = .95$ . Based on the results discussed above, we deemed that overall, our manipulations were successful. Accordingly, and in line with the pre-registered criteria for data exclusion, no participants were excluded from the analyses based on their answers to the manipulation checks.

### ANALYSES OF THE JUDGEMENT EFFECT HYPOTHESIS AND THE PROCESSING EFFECT HYPOTHESIS

To unravel how social information affects viewers' evaluations and enjoyment of online videos, we ran two analyses. First, we focused on the judgement effect hypothesis by testing whether video viewers' video evaluations were affected by the valence of the social information and whether this depends on the timing of exposure to social information. To this end, we ran an ANOVA that included participants' video evaluations as the dependent variable. The valence of the social information (negative versus positive social information) and the timing of exposure to the social information (exposure to social information after the video versus exposure to social information before the video) were included as the independent variables. Although no main effect of the timing of exposure to social information was expected, the results regarding this main effect are reported below. This analysis was included in the preregistration of this study<sup>6</sup>.

The results of this analysis showed no difference between the video evaluations of

participants in the positive social information condition ( $M = 4.77, SD = 1.30$ ), and the video evaluations of participants in the negative social information condition ( $M = 4.44, SD = 1.47$ ),  $F(1, 210) = 2.96, p = .087, \eta_p^2 = .01$ . Furthermore, there was no difference between the video evaluations of participants who were exposed to the social information before watching the video ( $M = 4.56, SD = 1.39$ ) and those who were exposed to the social information after having watched the video ( $M = 4.67, SD = 1.39$ ),  $F(1, 210) = 0.28, p = .595, \eta_p^2 < .001$ . Finally, there was no interaction effect of the valence of social information and timing of exposure to social information on video evaluations,  $F(1, 210) = 0.01, p = .943, \eta_p^2 < .001$ .

The ANOVA described above tested whether the valence of social information affected viewers' video evaluations. For a more nuanced comparison of the judgement effect hypothesis and the processing effect hypothesis, we tested the mediating role of viewers' enjoyment while watching the video. To do so, we ran a path model (see Figure 5.4) using Lavaan (version 0.6.5) that included participants' video evaluations as the dependent variable. The valence of the social information, the timing of exposure to social information, and their interaction term were included as the independent variables. Participants' enjoyment while watching the video were included as the mediator. This path model was pre-registered except for an explicit mentioning of an interaction term<sup>6</sup>. The model had perfect fit because it was saturated (i.e., the number of estimated model parameters equaled the number of unique elements in the model's covariance matrix).

The results showed no significant interaction effect of the valence of social information and the timing of exposure to social information

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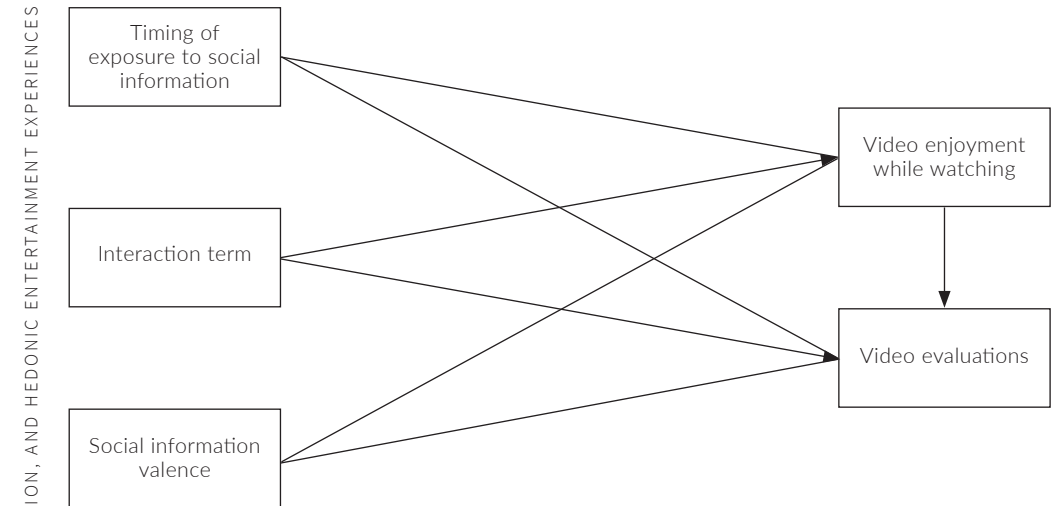


Figure 5.4. Path model run to test the judgement effect hypothesis and the processing effect hypothesis.

on viewers' video evaluations,  $\beta = -0.09, B = -0.28, SE = 0.27, p = .289$ , nor did they show a significant interaction effect on viewers' enjoyment while watching the video,  $\beta = 0.14, B = 0.65, SE = 0.56, p = .244$ . Based on these results, the valence of social information did not seem to affect viewers' video evaluations or their enjoyment while watching the video. This contradicts the judgement effect hypothesis, which states that the valence of social information affects viewers' video evaluations. It also contradicts the processing effect hypothesis, which states that the valence of social information alters viewers' enjoyment while watching a video.

As discussed before, the processing effect hypothesis implies that an effect of the valence of social information on viewers' enjoyment while watching can only emerge if viewers are exposed to social information before they watch a video. The effect cannot emerge if viewers are exposed to social information after they have watched a video because, in this case, it is impossible for the valence of social information to alter their

enjoyment while watching a video. Hence, we aimed to assess whether the effect of the valence of social information on viewers' enjoyment while watching a video emerged for those viewers who saw the social information before they watched the video but not for those viewers who saw the social information after they had watched the video. Therefore, we inspected the effects of the valence of social information separately for viewers' who were exposed to social information prior to watching the video and for viewers' who were exposed to social information after having watched the video.

For participants who were exposed to the social information before watching the video, the results showed no direct effect of the valence of social information on viewers' video evaluations,  $\beta = -0.01, B = -0.05, SE = 0.19, p = .785$ . However, the valence of social information did affect viewers' enjoyment while watching the video: Positive social information led to more enjoyment while watching the video, while negative social information led to less enjoyment while

watching the video,  $\beta = 0.18$ ,  $B = 0.81$ ,  $SE = 0.39$ ,  $p = .039$ . In addition, there was an indirect effect of the valence of social information on viewers' video evaluations, mediated by their enjoyment while watching the video,  $\beta = 0.13$ ,  $B = 0.39$ ,  $SE = 0.19$ ,  $p = .041$ . Finally, the results showed no significant total effect (i.e., the sum of the direct and the indirect effect) of the valence of social information on viewers' video evaluations,  $\beta = 0.12$ ,  $B = 0.34$ ,  $SE = 0.27$ ,  $p = .206$ .

For participants who were exposed to the social information after having watched the video, the results showed no direct effect of the valence of social information on viewers' video evaluations,  $\beta = 0.08$ ,  $B = 0.23$ ,  $SE = 0.19$ ,  $p = .218$ . As expected, the valence of social information did not influence viewers' enjoyment while watching the video,  $\beta = 0.04$ ,  $B = 0.17$ ,  $SE = 0.39$ ,  $p = .673$ . Moreover, no indirect effect of the valence of social information on video evaluations mediated by viewers' enjoyment while watching the video was found,  $\beta = 0.03$ ,  $B = 0.08$ ,  $SE = 0.19$ ,  $p = .673$ . Finally, no significant total effect of the valence of social information on viewers' video evaluations was found,  $\beta = 0.11$ ,  $B = 0.31$ ,  $SE = 0.27$ ,  $p = .242$ .

In sum, the two analyses showed no direct effect of the valence of social information on viewers' video evaluations. This runs counter to the judgement effect hypothesis. However, the results do support the processing effect hypothesis by showing that for viewers who were exposed to the social information before watching the video, the valence of social information affected their enjoyment while watching the video: Viewers who were exposed to positive social information before watching the video experienced more enjoyment while watching than viewers who were exposed to negative social information

before watching the video.

### POST HOC ANALYSES ON RETROSPECTIVE VIDEO ENJOYMENT

We found no effect of the valence of social information on viewers' video evaluations, which seems to be at odds with previous studies that did find an effect of the valence of social information on viewers' retrospective video enjoyment. To address this potential contradiction, we ran two post-hoc analyses (not pre-registered). The goal of these analyses was twofold: First, we aimed to replicate the results of previous studies, namely that the valence of social information has a direct effect on viewers' retrospective video enjoyment. Second, we aimed to learn more about the extent to which this effect can be explained by the judgement effect hypothesis or the processing effect hypothesis.

To replicate the findings of previous research, we ran an ANOVA that included participants' retrospective video enjoyment as the dependent variable, and the valence of social information as well as the timing of exposure to social information as the independent variables. The results showed that the valence of social information affected participants' retrospective video enjoyment: Participants who saw positive social information reported that they had enjoyed the video more ( $M = 4.72$ ,  $SD = 1.34$ ) than participants who were exposed to negative social information ( $M = 4.27$ ,  $SD = 1.40$ ),  $F(1, 210) = 5.77$ ,  $p = .017$ ,  $\eta_p^2 = .03$ . The results showed no difference between the retrospective video enjoyment of participants who were exposed to the social information before watching the video ( $M = 4.48$ ,  $SD = 1.42$ ) and participants who saw the social information after having watched the video ( $M = 4.53$ ,  $SD = 1.36$ ),  $F(1, 210) = 0.05$ ,  $p = .830$ ,  $\eta_p^2 < .001$ . There was

also no interaction effect of the valence of social information and the timing of exposure to social information on retrospective video enjoyment,  $F(1, 210) = 0.17$ ,  $p = .677$ ,  $\eta_p^2 = .001$ . This finding replicates the results of previous studies that found that the valence of social information affects viewers' retrospective video enjoyment.

To learn more about how the effect of the valence of social information on viewers' retrospective video enjoyment emerges, we tested the mediating role of viewers' enjoyment while watching the video. To this end, we ran a path model (see Figure 5.5.) that included viewers' retrospective video enjoyment as the dependent variable. The valence of social information, the timing of exposure to social information, and their interaction term were included as the independent variables. Furthermore, the model included viewers' enjoyment while watching the video as the mediator. Because the model was saturated, it had perfect fit. The results showed no interaction effects

of the valence of social information and the timing of exposure to social information on viewers' retrospective video enjoyment,  $\beta = -0.15$ ,  $B = -0.48$ ,  $SE = 0.25$ ,  $p = .056$ , or their enjoyment while watching the video,  $\beta = 0.14$ ,  $B = 0.65$ ,  $SE = 0.56$ ,  $p = .244$ . To learn more about how social information affects viewers' retrospective video evaluations, we examined the results separately for participants who saw the social information before watching the video and for those who saw it afterwards.

For participants who saw the social information before they watched the video, the results showed no direct effect of the valence of social information on viewers' retrospective video enjoyment,  $\beta = 0.01$ ,  $B = -0.03$ ,  $SE = 0.18$ ,  $p = .852$ . However, as discussed before, the valence of social information did affect viewers' enjoyment while watching the video: Positive social information led to more enjoyment while watching the video than negative social information,  $\beta = 0.18$ ,  $B = 0.81$ ,  $SE = 0.39$ ,  $p = .039$ . Furthermore, the results showed an indirect effect of the

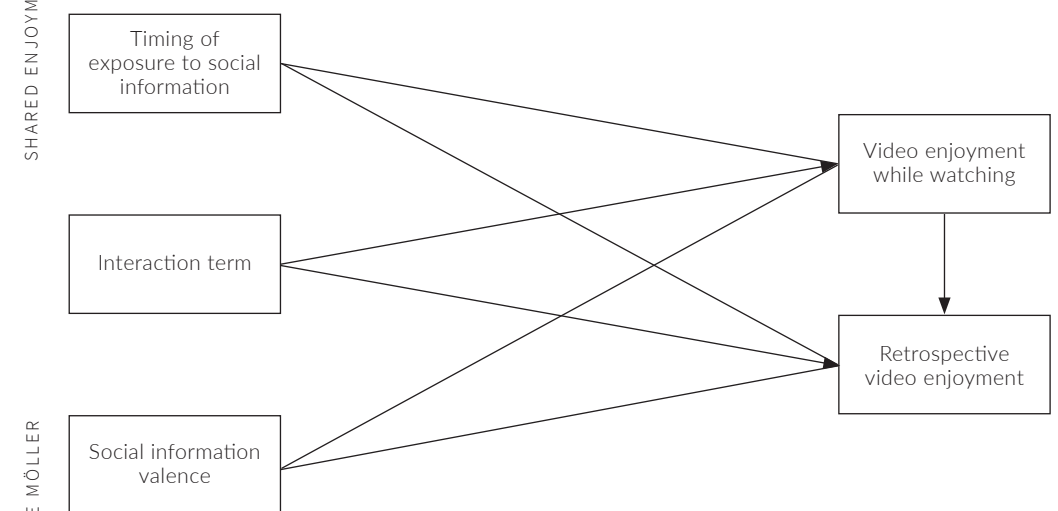


Figure 5.5. Path model run to test for the post hoc analyses examining the effect of the valence of social information on viewers' retrospective video enjoyment

valence of social information on viewers' retrospective video enjoyment, mediated by their enjoyment while watching the video,  $\beta = 0.13$ ,  $B = 0.41$ ,  $SE = 0.20$ ,  $p = .041$ . Finally, no significant total effect of the valence of social information on viewers' retrospective video enjoyment emerged,  $\beta = 0.14$ ,  $B = 0.37$ ,  $SE = 0.27$ ,  $p = .160$ .

For participants who saw the social information after they had watched the video, the results showed a direct effect of the valence of social information on their retrospective video enjoyment,  $\beta = 0.16$ ,  $B = 0.45$ ,  $SE = 0.18$ ,  $p = .011$ . However, as discussed above, there was no effect of the valence of social information on viewers' enjoyment while watching the video,  $\beta = 0.04$ ,  $B = 0.17$ ,  $SE = 0.39$ ,  $p = .673$ . There was also no indirect effect of the valence of social information on viewers' retrospective video enjoyment mediated by their enjoyment while watching the video,  $\beta = 0.03$ ,  $B = 0.08$ ,  $SE = 0.20$ ,  $p = .673$ . Finally, the results showed a significant total effect of the valence of social information on viewers' retrospective video enjoyment,  $\beta = 0.19$ ,  $B = 0.53$ ,  $SE = 0.26$ ,  $p = .044$ .

In sum, these findings show that for individuals who first see social information and then watch a video, social information impacts how much enjoyment they experience while watching the video. Exposure to positive social information leads viewers to experience more enjoyment while they watch the video than exposure to negative social information. However, when individuals see social information after having watched the video, a judgement effect emerges on their retrospective video enjoyment: Positive social information increases viewers' retrospective video enjoyment but negative social information decreases it.

## DISCUSSION

By studying how enjoyment arises when individuals watch videos and their accompanying social information on online platforms, scholars have situated their work at the intersection of research investigating mass and interpersonal communication processes. Building on this research and following Walther's (2017) suggestion to study the role of metaconstructs, which apply to both mass and interpersonal communication, the present study investigated how a characteristic of social information, namely its valence, affects viewers' video enjoyment. Specifically, we tested two hypotheses about the mechanisms underlying the effect of the valence of social information on video enjoyment, namely the judgement effect hypothesis and the processing effect hypothesis. While the judgement effect hypothesis poses that the valence of social information alters viewers' video evaluations (Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018), the processing effect hypothesis suggests that the valence of social information affects viewers' enjoyment of a video while they are watching it (Shedlosky-Shoemaker et al., 2011; Tiede & Appel, 2020). By investigating the role of the metaconstruct of message characteristics (i.e., the valence of social information), the current study investigated which of the two hypotheses best explains the effect of social information.

Our study offers two new insights into how interpersonal and mass communication processes together shape viewers' video enjoyment. First, our results showed that when viewers were exposed to positive social information, viewers retrospectively reported to have enjoyed the video more than when they were exposed to negative social information. However, for viewers who saw

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the social information before watching the video, this effect was fully mediated by their enjoyment during watching the video. Positive social information leads to more enjoyment *while watching* the video than negative social information. Thus, these findings provide support for the processing effects hypothesis: When exposed to social information before watching a video, people process the video differently than when they are exposed to it after having watched a video. This also has an effect on how positively or negatively they estimate their enjoyment retrospectively.

The second finding of this paper relates to the judgement effect hypothesis. The judgement effect hypothesis states that social information can alter viewers' video evaluations (Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). However, our results do not support this notion as none of our analyses showed an effect of the valence of social information on viewers' video evaluations. Yet, the results of the post hoc analyses indicated that when viewers are exposed to social information after they watched the video, a judgement effect may still emerge on viewers' retrospective video enjoyment: Viewers who saw positive social information after having watched the video reported more retrospective enjoyment than viewers who saw negative social information after having watched the video. This stresses the role of the order in which viewers are presented to social information and videos. If viewers are exposed to social information before they watch a video, a processing effect on their enjoyment while watching the video emerges. If they see social information after having watched a video, a judgement effect on their retrospective video enjoyment emerges.

The findings of this study tentatively advance our knowledge about how the merger of

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interpersonal and mass communication processes (Walther, 2017) in social information on online video platforms shapes viewers' video enjoyment. On online video platforms, social information results from interpersonal communication between users and is then mass communicated alongside the videos that platforms present. Our findings show that social information, and its valence in particular, forms a central element of the content that is mass communicated by online video platforms. Social information can influence how video viewers process videos or how they retrospectively assess their enjoyment (depending on whether they first see the social information or the video). This goes beyond showing that online video viewers are affected by elements of both mass and interpersonal communication as they also show what mechanisms are at play when this influence emerges.

In addition to providing new insights into how enjoyment arises when individuals use online video platforms, the findings of this study help us contextualize findings of extant research. Previous studies typically exposed participants to social information either before they watched the video (i.e., Möller & Kühne, 2019), or while they were watching a video (i.e., Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018). After watching the video, participants rated their video enjoyment. These studies found that viewers' retrospective video enjoyment was affected by the valence of social information. Based on our results, the most likely explanation for this finding of previous studies is that a processing effect of the valence of social information on viewers' enjoyment as they were watching emerged because viewers were exposed to social information before or while they watched the video. Viewers' enjoyment while watching

the video, subsequently, also impacted their retrospective video enjoyment.

Our study showed that a judgement effect of social information on viewers' retrospective enjoyment emerged for those viewers who were exposed to social information after having watched the video only. For viewers who were exposed to social information before watching a video, no judgement effect emerged. An explanation for this finding may be that the judgement effect of social information on viewers' retrospective video enjoyment is a recency effect. When video viewers are exposed to social information after having watched a video, the most recent information that they have about the video is provided by that social information rather than by their own experiences. In this case, they would base their retrospective video enjoyment on the social information that they saw as this is the most recent information about the video that they have. However, when video viewers watch a video after being exposed to its social information, their own experiences are the most recent information about the video at their disposal and they would base their retrospective video enjoyment on them. This would explain why we found no direct effect of the valence of social information on the retrospective video enjoyment of those video viewers who saw the social information before watching the video.

While our results show that a judgement effect of social information on viewers' retrospective video enjoyment can emerge, no such effect was found on viewers' video evaluations. This may be because while video viewers' retrospective video enjoyment refers to the experiences of the viewer, their video evaluations refer to characteristics of the media content itself (Raney & Ji,

2017; Vorderer, 2001). Our findings seem to indicate that social information elicits a change in viewers' interpretations of their own affective responses to a video, but not on their evaluations of the video itself. This is similar to cognitive reappraisal, a process whereby individuals alter their thoughts about the emotions that a stimulus elicits in order to change the affective impact that a stimulus has on them (Buhle et al., 2014; McRae, Ciesielski, & Gross, 2012). Similar to this notion, our findings indicate that individuals alter their thoughts about their affective responses to a video (i.e., their retrospective thoughts about their video enjoyment) when they are exposed to social information about that video after having watched it. However, an alternative explanation for our finding that a judgement effect emerged on viewers' retrospective enjoyment but not on their video evaluations is that it is a methodological issue: While viewers' retrospective video enjoyment was measured using a scale that consisted of multiple items, viewers' video evaluations were measured using a single-item scale. The single-item measure used to assess viewers' video evaluations may have been less reliable than the multi-item scale used to measure viewers' retrospective video enjoyment, leading to different results for viewers' video evaluations and viewers' retrospective video enjoyment. Yet, more research is needed to fully disentangle the psychological mechanisms through which viewers' video evaluations emerge.

The current study has at least three limitations. First, to investigate how social information affects viewers' video enjoyment, all participants were asked to watch the same video that was selected for them. This may have limited the external validity of this study. When using social media platforms, viewers watch online videos that they select

themselves based on their own preferences. The present study does not indicate how social information impacts viewers' video enjoyment of videos that they selected because they expect to enjoy them. In addition, participants in this study watched a specific type of online video, namely an animated short film. However, social media platforms offer viewers a choice between numerous different types of entertainment videos, ranging from unboxing videos to music videos. Although the effect of social information on viewers' video enjoyment has been found in several studies using different types of entertainment videos (e.g., Waddell & Bailey, 2019; Winter et al., 2018), it is unclear whether the findings of this study also apply to other types of videos.

Second, participants in this study were exposed to social information consisting of either many likes *and* positive user comments, or few likes *and* negative comments. While this stimulus material allowed us to focus on the effects of valence as a message characteristic of social information, outside of experimental settings, social information typically consists of both positive and negative user comments as well as both likes and dislikes (see chapter 2). This raises the question of how social information with a mixed valence affects video viewers. From previous research showing that comments are more likely to affect video viewers than the number of likes, we can assume that if there is a discrepancy between the valence of user comments and the number of likes that a video receives, comments are likely to affect video enjoyment more (Winter et al., 2015; see also chapter 3). However, extant research also found that viewers' video enjoyment is unaffected when they are exposed to a mixture of positive and negative comments (see chapter 3). This suggests that social information's effect on viewers' enjoyment of videos depends on

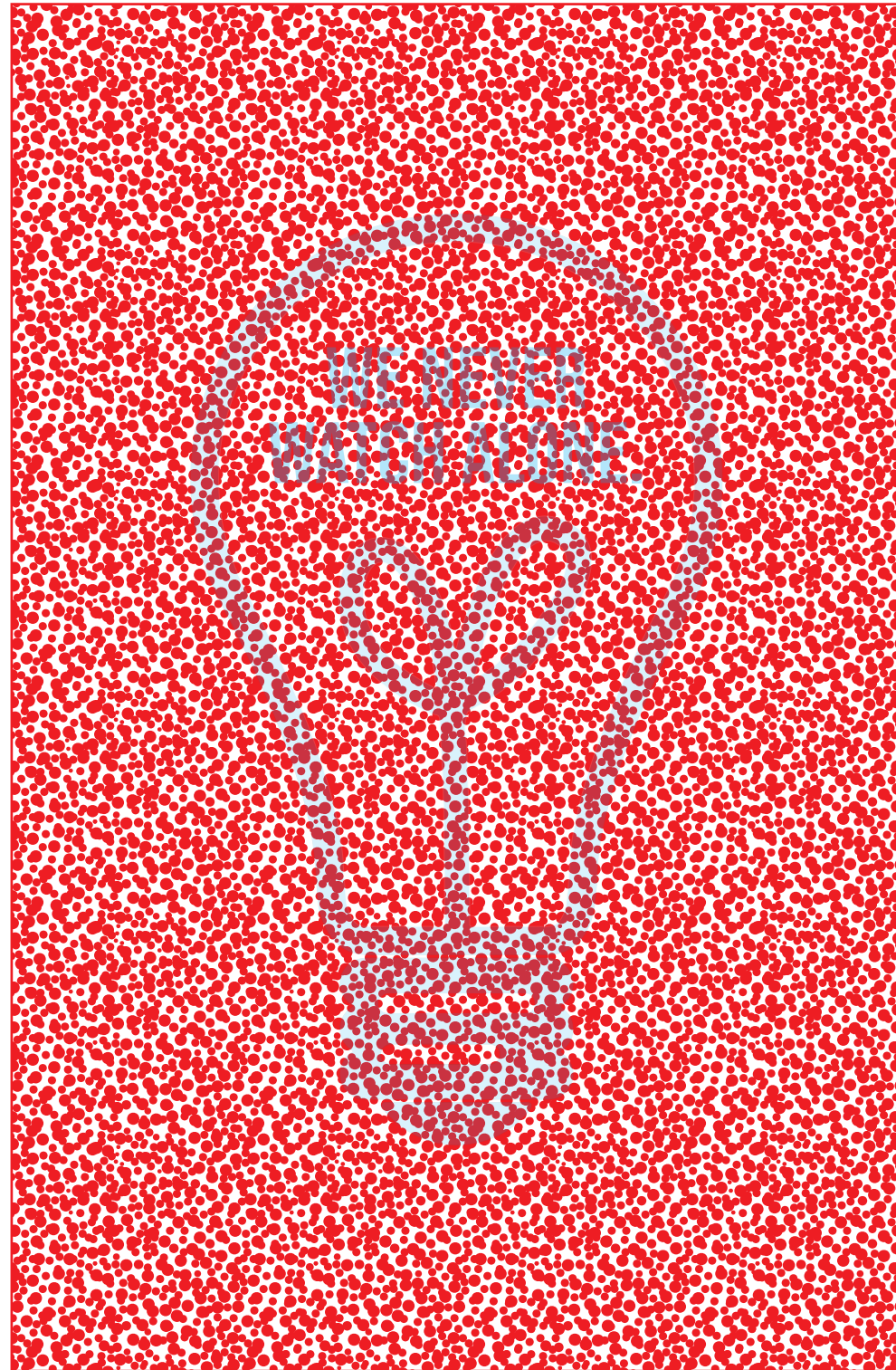
an additional message characteristic, namely the consistency of its valence. Moreover, extant research showed that a negativity bias emerges whereby viewers' video enjoyment is affected more by social information that consists of predominantly negative comments than by social information that consists of predominantly positive comments (Waddell & Bailey, 2019; Waddell & Sundar, 2017). Thus, user comments that are either exclusively positive or negative are most likely to influence viewers' video enjoyment, whereby exclusively negative user comments seem to have the strongest effect on video enjoyment.

Third, this study relied on a convenience sample consisting of mostly female college students. Although social media are popular among this specific demographic group, a sample consisting of exclusively college students limits the generalizability of this study's findings. While it seems unlikely that viewers' characteristics alter the mechanisms through which the effect of social information on video enjoyment emerges, it is possible that the overall effect of social information as found in this study differs for other demographic groups. By investigating this, future research could further advance our knowledge and indicate whose video enjoyment is most likely to change due to social information.

The current study investigated how videos and their accompanying social information collectively shape video enjoyment. It did so by manipulating a metaconstruct that applies to both mass and interpersonal communication, namely the message characteristic of valence (Walther, 2017). The results replicate those of previous studies and broaden our understanding of the effect of social information on video viewers, but they also raise new questions. For example, what

is the role of other metaconstructs that were held constant in the current study, such as viewers' relationships with the creators of the social information? Answering these questions may further our understanding of the effects of social information, the importance of which is emphasized by the theoretical insights provided here.

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## CHAPTER 6 HOW HEDONIC ENTERTAINMENT EXPERIENCES ARISE IN RESPONSE TO ONLINE VIDEOS AND THEIR ACCOMPANYING SOCIAL INFORMATION (DISCUSSION)

To date, video material is often accessed through social media where it is accompanied by social information. This development has sparked research on how this social information influences viewers (Hsueh et al., 2015; Möller & Kühne, 2019; Shi et al., 2014; Waddell & Bailey, 2019; Waddell & Sundar, 2017; Walther, DeAndrea, et al., 2010; Winter et al., 2018). Against this background, the present dissertation set out to investigate how social information in the form of user comments and (dis)likes presented alongside online entertainment videos alters viewers' enjoyment of those videos. While previous research on this topic indicates that the valence of social information can alter video viewers' hedonic entertainment experiences (Waddell & Bailey, 2019; Waddell & Sundar, 2017; Winter et al., 2018), our current knowledge about the effect of social information hardly extends beyond this particular finding.

This dissertation aimed to advance our understanding of how social information shapes the enjoyment that people experience when they watch online videos. It did so by studying multiple aspects that are relevant to this effect. First, it studied the characteristics of social information that accompanies online videos. Specifically, it focused on the amount of social information by analyzing how often viewers assign (dis)likes to videos and how many comments they write in response to them. In addition, by comparing the number of likes and the number of dislikes that videos receive, and by analyzing how positive or

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negative the comments about videos are, this dissertation studied the valence of social information. The amount and valence of social information provided insights into how much positive and negative social information viewers see when they watch videos online. In addition, this dissertation investigated how much attention viewers pay to social information when they watch videos on YouTube and, hence, how likely they are to be affected by it. Moreover, it studied when the effect of social information on video enjoyment is most likely to occur, specifically how the source of social information strengthens or weakens this effect. Finally, this dissertation researched which mechanisms underlie the effect of social information on video enjoyment, thus advancing our knowledge about how the effect of social information on viewers' video enjoyment emerges.

Overall, three broader findings about how social information affects online video viewers emerged. Together, these findings map out the complex process through which entertainment experiences emerge in response to online videos and their accompanying social information. Moreover, they have practical implications for entertainment communication scholars and online video viewers.

### FINDING 1: ONLINE VIDEO VIEWERS ARE ACTIVE IN TERMS OF CREATING AND ATTENDING TO SOCIAL INFORMATION, BUT THIS BEHAVIOR IS INFLUENCED BY SOCIAL INFORMATION ITSELF

This dissertation aimed to expand our knowledge on the characteristics of social information that is created in response to online entertainment videos. Chapter 2 did so through a systematic analysis of social information presented alongside the most

viewed videos on YouTube. Among others, the chapter indicated how much social information popular videos receive: On average, frequently watched videos received over 60.000 comments, more than 530.000 likes and over 46.000 dislikes. Thus, when individuals watch videos online, they are often exposed to large amounts of social information. This is particularly true for entertainment videos as these videos were found to receive more comments than political videos. The numbers reported in this dissertation are based on a sample of popular videos in particular, that is, of videos that are among the most watched videos on the most watched video channels of YouTube. The large amount of social information that accompanies these videos shows that once viewers select a video to watch, they are active when it comes to creating social information. This is indicative of a larger process that may be at play. Once viewers have selected a video and add to its social information by assigning a (dis)like to it, this may affect how many more viewers will watch the same video as they might use social information such as the number of (dis)likes that a video receives to select videos.

While chapter 2 showed that video viewers are active creators of social information, chapter 3 indicated that video viewers also pay attention to the social information that others created. More than 70% of the participants in the experiment in chapter 3 paid attention to the (dis)likes and/or to the user comments accompanying the video that they were exposed to. This finding indicates that most video viewers pay at least some attention to the social information that accompanies the videos that they watch. Overall, the findings presented in chapters 2 and 3 demonstrate that social information accompanying online videos is a common phenomenon and they emphasize the relevance of studying how

video are affected by social information.

With regard to the effects of social information, the findings of chapter 2 and chapter 3 indicate that the valence of social information influences viewers' behavior towards that social information in multiple ways. First, the valence of social information influences how much attention viewers pay to social information: The experiment described in chapter 3 showed that viewers pay more attention to negative user comments than to positive user comments. In addition, the results of the content analysis described in chapter 2 showed that the valence of user comments written in response to entertainment videos affects viewers' tendency to respond to these comments: The more extremely positive or negative a comment is, the more likely it is that viewers reply to it or assign a like to it. Hence, the valence of social information affects how much social information viewers create themselves as well as how much attention they pay to the social information created by others. Together, these findings show that the valence of social information affects how viewers attend and respond to the social information itself.

#### **FINDING 2: THE SOURCE OF SOCIAL INFORMATION DETERMINES THE STRENGTH OF ITS EFFECTS ON VIDEO ENJOYMENT**

In addition to its finding that the valence of social information affects video viewers' attention and responses to social information, this dissertation also produced compelling evidence for a valence effect of social information on viewers' video enjoyment. The results of chapters 3, 4, and 5 consistently showed that viewers' enjoyment of an online video is influenced by the social information accompanying that video. This is in line with

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previous research showing that, for example, verbal comments made by other viewers or the sound of other people's laughter can influence viewers' enjoyment of offline television content (Banjo et al., 2015; Raghunathan & Corfman, 2006; Salomon, 1977; Tal-Or, 2016; Wilson & Weiss, 1993; Zillmann et al., 1986). Thus, viewers' enjoyment of online videos does not only emerge due to the video that they are watching, but also due to a process of social influence.

The notion that social information alters viewers' video enjoyment through a process of social influence is further explored in chapter 4. This chapter indicates that the valence of social information affects viewers' video enjoyment more if the source of that social information belongs to viewers' in-groups than when it belongs to their out-groups. This is in line with research on Social Categorization Theory, which indicates that the source of information determines individuals' susceptibility to the influence of that information (Tajfel, 1974; Terry & Hogg, 1996; Turner, 1982; Turner et al., 1987; Turner et al., 1994). Chapter 4 shows that this tenet of Social Categorization Theory also applies to online social information and entertainment experiences. Overall, the findings discussed here suggest that video viewers regard social information about how much others enjoyed a video as meaningful information. This seems to be especially the case if this information is provided by in-group members.

#### **FINDING 3: THE MECHANISM THROUGH WHICH THE EFFECT OF SOCIAL INFORMATION EMERGES DEPENDS ON THE TIMING OF EXPOSURE TO SOCIAL INFORMATION**

Chapter 5 set out to learn more about the mechanism underlying the effect of social

information on viewers' video enjoyment. It did so by testing two potential explanations for how the effect of social information on video enjoyment emerges. Specifically, it assessed two alternative effect hypotheses: the judgement effect hypothesis stating that the effect of social information emerges because viewers adjust their own video evaluations so that they are in line with the opinion of others, and the processing effect hypothesis suggesting that social information alters viewers' experiences while watching videos.

Chapter 5 showed that the timing of exposure to social information (i.e., before or after watching a video) plays a crucial role for the effect of social information. Specifically, if video viewers are exposed to social information *before* they watch a video, a processing effect on their enjoyment while watching a video seems to emerge. An explanation for this may be that the valence of social information elicits expectations about a video. These expectations, in turn, steer video viewers' attention to those elements of the video that correspond to their expectations and away from elements in the video that contradict their expectations. Through this mechanism, the valence of social information can change the hedonic entertainment that viewers experience while they are watching a video. The enjoyment that viewers experience while watching a video subsequently affects their retrospective assessment of their video enjoyment as well as of their video evaluations.

Finally, chapter 5 demonstrated that if video viewers are exposed to social information *after* having watched a video, a judgement effect on their retrospective assessment of their video enjoyment emerges. In this case, viewers adjust their retrospective assessment of their

video enjoyment such that it is in line with the social information that they were exposed to. This shows that if social information is presented to viewers after having watched a video, it can elicit a conformity effect whereby people adjust their retrospective assessment of their video enjoyment while their actual experiences remain unaffected by the social information.

Taken together, chapter 5 shows that the valence of social information can affect video viewers through different mechanisms depending on whether viewers examine social information before or after having watched a video. Which mechanism emerges, thus, depends on when viewers see the social information.

#### DIRECTIONS FOR FUTURE RESEARCH

The findings of this dissertation shed light on how specific characteristics of social information (i.e., its valence and its source) alter viewers' video enjoyment and on the mechanisms through which this effect emerges. This leads to three directions for future research on the role that social information takes in shaping viewers' entertainment experiences.

First, chapter 4 showed that the effect of the source of social information depends on viewers' awareness of whether this source belongs to their in-group. This raises questions about when viewers' awareness of a common group membership with the creators of social information may increase. Studies on group interaction in online communication suggest that this may happen if other users are presented in a way that emphasizes their group membership, for example, by representing all members of the same group using the same avatar (Lee, 2004; Ren et al., 2012). However,

it is unclear which factors of social media platforms affect the extent to which viewers regard the creators of social information as in-group members. Possibly, viewers regard other users of a platform as in-group members if some connection between their user profiles exists (e.g., Facebook friends). Learning more about this would advance our theoretical understanding of when viewers regard others as in-group members. This, in turn, would indicate when viewers are most susceptible to the influence of the social information created by others. This information could be used in the development of campaigns aimed at increasing media literacy by informing social media users about the potential effects of social information.

A second direction for future research relates to the mechanisms through which social information affects video viewers. As discussed above, when viewers are exposed to social information before they watch a video, the valence of that social information alters their enjoyment while watching the video. Previous research suggests, as outlined in chapter 5, that social information can alter individuals' experiences of media content by eliciting expectations about that content (Shedlosky-Shoemaker et al., 2011; Tiede & Appel, 2020). Negative social information may thus lead video viewers to focus on those video elements that they do not like, while positive social information may lead them to focus on those elements that they do like. Yet, it remains unclear whether social information can draw viewers' attention to more specific elements of videos rather than general elements that viewers like or dislike. Some evidence that this is the case is provided by the work of Shedlosky-Shoemaker et al. (2011), who found that when individuals were asked to read negative reviews that discussed the plot of a story, they were more inclined to

also discuss the plot of the story in their own reviews. Accordingly, scholars can further investigate the processing effect by studying social information's ability to steer viewers' focus to specific video elements and how this alters their entertainment experiences.

Third and finally, this dissertation investigated how social information alters video viewers' *hedonic entertainment experiences* because enjoyment is usually seen as the core of entertainment (Vorderer et al., 2004). But literature on entertainment experiences has also increasingly discussed another type of entertainment experience, namely *eudaimonic entertainment experiences*. Eudaimonic entertainment refers to experiences of appreciation elicited by meaningful media content that is moving or thought-provoking (Oliver & Bartsch, 2010; Oliver & Raney, 2011; Rieger et al., 2014; Wirth et al., 2012). Recently, scholars have started to study the effects of social information on eudaimonic entertainment experiences (Krämer et al., 2019; Möller & Kühne, 2019). While the findings of the current work only concern video viewers' hedonic entertainment experiences, they may still be relevant to video viewers' eudaimonic entertainment experiences. Lewis, Tamborini, and Weber (2014), for example, propose a dual-process model of entertainment experiences whereby eudaimonic entertainment experiences result from a relatively thorough reflection on the topics presented in media content while hedonic entertainment experiences result from automatic processing of media content. This dissertation indicates that social information can alter viewers' hedonic entertainment experiences through a processing effect. However, as scholars suggest that hedonic and eudaimonic entertainment experiences are the consequence of two different ways of processing media content (Lewis

et al., 2014), it is possible that the two are affected by social information differently. Eudaimonic entertainment experiences may be less susceptible to the influence of social information because they are the result of deliberative, thorough processing of media content by a viewer who is motivated to carefully reflect on it. Hedonic entertainment experiences, however, result from a less extensive processing of media content and may be more easily altered by cues provided through social information (Möller & Kühne, 2019). While this dissertation does not provide empirical evidence for this notion, its findings can serve as a starting point for scholars to investigate this further.

#### PRACTICAL IMPLICATIONS OF THE FINDINGS

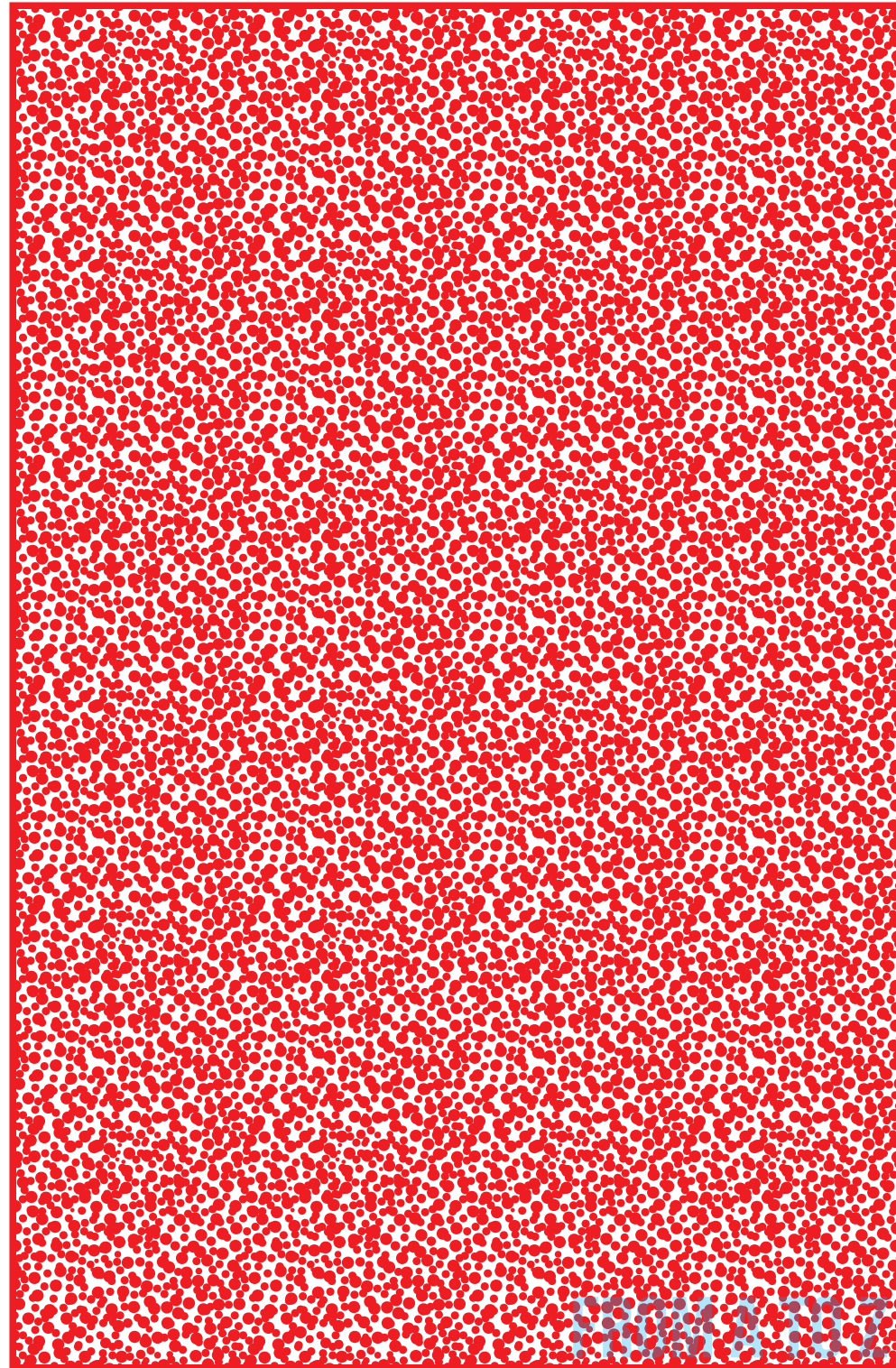
The finding that social information presented alongside online videos can alter how viewers experience those videos underlines that writing comments in response to online videos has several implications. By writing comments, video viewers can draw the attention of their peers to elements of a video that they like or dislike. Thus, video viewers need to realize that by writing comments, they can affect the entertainment experiences of other viewers. However, it is also important that video viewers are aware of the potential influence that social information has on their own experiences. When video viewers decide whether or not to examine the social information that accompanies videos, they should consider that social information can affect them and that the moment at which they examine social information will determine how they are affected by it.

The findings that video viewers pay attention to social information and are affected by it emphasize the importance for platforms to monitor the social information that their

users create and to take measures when users post comments that are harmful or contain misinformation. At the same time, the findings of this dissertation show that platforms can influence viewers' conversations about online videos. This influence can be exerted by removing specific user comments or by determining the order in which comments are presented, thereby increasing the visibility of some comments while reducing the visibility of other comments. When social media users engage in conversation about media content by creating and examining social information, it is important that they are aware of these dynamics – and the potential influence of platforms – as the conversations that they are having may be influenced by the specific platform that they are using.

### CONCLUDING REMARKS

With the rise of social media, the way in which we consume media content has become increasingly social. This in itself is nothing new: Research has investigated how viewers' experiences of television content are influenced by the people whom they watch this content with (Banjo et al., 2015; Raghunathan & Corfman, 2006; Salomon, 1977; Tal-Or, 2016; Wilson & Weiss, 1993; Zillmann et al., 1986). What is new, however, is the continuous and prominent presence of other viewers' video evaluations and comments that accompany videos presented on social media. This dissertation showed that such social information is an essential part of the media content that online video viewers are exposed to as it shapes their entertainment experiences in response to it. Thus, if we are to understand how entertainment experiences emerge in today's rapidly developing and constantly changing digital media landscape, we do well to remember that when it comes to social media and online videos, viewers never watch alone.



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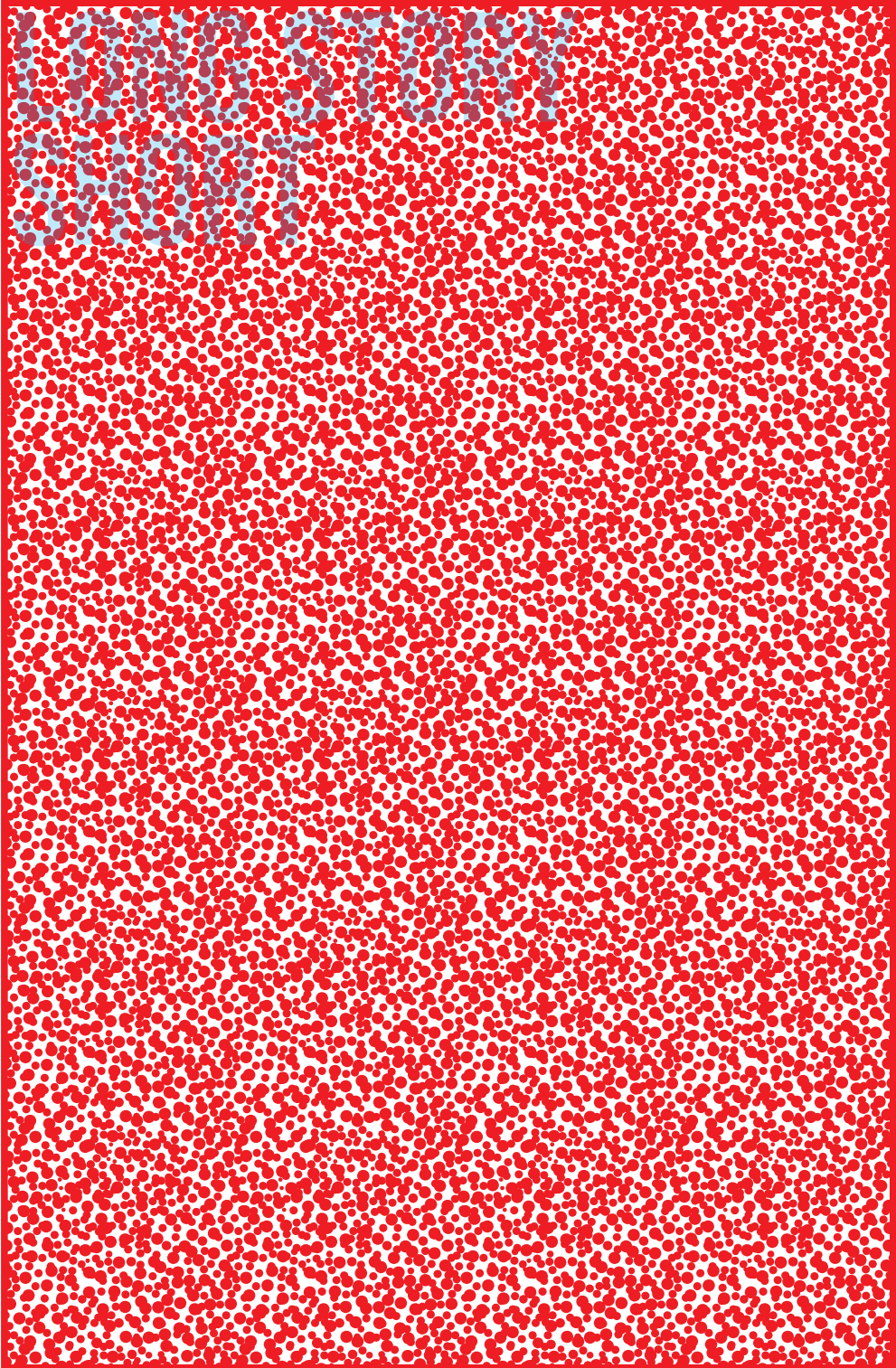
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SHARED ENJOYMENT: ONLINE VIDEOS, SOCIAL INFORMATION, AND HEDONIC ENTERTAINMENT EXPERIENCES

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## SUMMARY

**SHARED ENJOYMENT: ONLINE VIDEOS, SOCIAL INFORMATION, AND HEDONIC ENTERTAINMENT EXPERIENCES**

When people use online platforms to watch videos, they are often exposed to social information accompanying those videos. Typically presented in the form of user comments and (dis)likes, social information refers to evaluative information about media content that is provided by its users. By examining the social information presented alongside videos, viewers can get a sense of how other people experienced and evaluated videos. The present dissertation investigated how viewers' video enjoyment is affected by the social information that they see when watching videos.

**THREE FINDINGS ABOUT THE EFFECTS OF SOCIAL INFORMATION ON VIDEO ENJOYMENT**

By investigating the characteristics of social information accompanying online videos, the first empirical study of this dissertation showed that popular YouTube videos are accompanied by large amounts of social information. This indicates that when individuals use online platforms to watch videos, they are often exposed to many user comments and (dis)likes. Moreover, the study found that the valence of user comments written in response to entertainment videos influences viewers' tendency to respond to them by writing a reply or by assigning a like to it: Viewers were more inclined to write a reply in response to or assign a like to extremely positive or negative comments compared to neutral comments.

The second study investigated how much attention people pay to the social information

that they are exposed to. Its results indicated that most video viewers pay attention to social information and that the valence of social information affects how much attention viewers pay to it. Video viewers tend to spend more time observing negative social information than positive social information. Thus, the first conclusion of this dissertation is that video viewers are active when it comes to creating social information and examining social information created by others. But at the same time, this behavior depends on the valence of the social information itself.

In line with extant research, the studies consistently showed that the valence of social information can alter how much enjoyment viewers experience when they watch online videos. While positive social information increases viewers' video enjoyment, negative social information leads to less video enjoyment. Moreover, one of the studies showed that the source of social information plays an important role in this process. Namely, it found that the effect of social information on video enjoyment is strengthened when viewers realize that they have something in common with the people who created the social information. Thus, the second conclusion of this dissertation is that the source of social information determines the strength of its effects on video enjoyment.

Finally, this dissertation investigated how the effect of social information on video enjoyment emerges. It showed that there are two potential mechanisms through which the effect of social information on video enjoyment can emerge. If video viewers see social information *before* they watch a video, a processing effect emerges so that positive social information increases their enjoyment while watching a video, while negative social information decreases it. However, if

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viewers see social information *after* having watched a video, a judgement effect emerges whereby social information leads viewers to adjust their retrospective assessment of their enjoyment while their experiences during the video remain unaffected. Thus, the third conclusion of this dissertation is that the mechanism through which social information affects video viewers depends on the timing of exposure to social information (i.e., before or after watching a video).

**IMPLICATIONS AND CONCLUSIONS**

Taken together, the findings of this dissertation show that when individuals watch videos presented on social media, the social information that accompanies those videos can alter viewers' enjoyment of those videos. Moreover, this dissertation showed that most people pay attention to social information when they watch online videos. Thus, it is not only possible that social information affects viewers' video enjoyment, it is also likely that viewers' video enjoyment is affected by the social information to which they are exposed. This implies that entertainment experiences in response to online videos are partly the result of a process of social influence.

The studies of this dissertation are relevant to entertainment communication scholars and to social media users. This dissertation provides insights into how social information may alter viewers' experiences when watching online videos and when this effect is most likely to emerge. For scholars, the findings of this dissertation imply that a thorough understanding of how entertainment experiences arise in response to media content requires researchers to carefully consider the social context in which that content is embedded. This dissertation showed that when viewers watch a video and examine its

social information, their experiences can be affected by that social information. However, the reverse can also happen: By writing comments, video viewers can affect the video enjoyment of other viewers. When social media users choose to examine or create social information in response to videos, it is important that they are aware of these processes and their potential consequences.

This dissertation systematically investigated how social information affects online video viewers. Thereby, it provides new insights into the emergence of entertainment experiences in online contexts and it provides a basis on which scholars can build future research. Overall, this dissertation shows that social information is an important determinant of how video enjoyment arises. In the light of social information's constant presence on social media, the findings of this dissertation are thus important for researchers, video viewers, and video producers.

## NEDERLANDSE SAMENVATTING (DUTCH SUMMARY)

### GEDEELD PLEZIER: ONLINE VIDEO'S, SOCIALE INFORMATIE EN HEDONISTISCHE ENTERTAINMENT ERVARINGEN

Als mensen naar online video's op sociale media kijken, zien ze niet alleen de video's, maar vaak ook bepaalde *sociale informatie* daaromheen. Sociale informatie is informatie die gecreëerd wordt door de ontvangers van mediaboodschappen en die reflecteert hoe zij die boodschappen evalueren. Op sociale media manifesteert sociale informatie zich vaak in de vorm van commentaren en (dis)likes. Het bekijken van de commentaren en (dis)likes van online video's kan een indruk geven van hoe anderen de video's hebben ervaren en beoordeeld. Door middel van vier empirische studies onderzocht dit proefschrift hoe het plezier dat mensen ervaren als ze naar online video's kijken beïnvloed wordt door de sociale informatie die ze daarbij zien.

### DRIE BEVINDINGEN OVER DE EFFECTEN VAN SOCIALE INFORMATIE OP KIJKPLEZIER

De eerste studie die in dit proefschrift beschreven wordt onderzocht de sociale informatie van populaire video's op YouTube. Hieruit kwam naar voren dat bij de meest bekeken video's een grote hoeveelheid sociale informatie aanwezig is. Dit impliceert dat mensen die online platformen gebruiken om video's te bekijken blootgesteld worden aan veel commentaren en (dis)likes. De resultaten van deze studie laten ook zien dat de mate waarin commentaren over entertainment video's negatief of positief zijn, invloed heeft op de mate waarin kijkers op deze commentaren reageren door een eigen commentaar als reactie te schrijven of door een like aan de commentaren toe

te kennen. Dat wil zeggen dat commentaren over entertainment video's die heel positief of heel negatief zijn vaker een reactie krijgen in de vorm van een commentaar of een like dan neutrale commentaren.

In de tweede studie is onderzocht hoeveel aandacht mensen besteden aan sociale informatie als ze online video's bekijken. Deze studie toonde aan dat de meeste mensen de sociale informatie van video's bekijken en dat de mate waarin sociale informatie negatief of positief is, beïnvloedt hoe lang mensen naar sociale informatie kijken. Mensen besteedden meer tijd aan het bekijken van negatieve sociale informatie dan van positieve informatie. Op basis van deze resultaten is de eerste conclusie van dit proefschrift dat kijkers actief zijn in het creëren van sociale informatie en het bekijken van sociale informatie die door anderen gemaakt is. Tegelijkertijd hangt dit gedrag af van de mate waarin sociale informatie positief of negatief is.

De studies laten consequent zien dat de mate waarin sociale informatie positief of negatief is, beïnvloedt hoeveel plezier mensen ervaren als ze online video's kijken. Positieve sociale informatie zorgt ervoor dat mensen meer plezier ervaren tijdens het kijken, terwijl negatieve sociale informatie ervoor zorgt dat mensen minder kijkplezier hebben. Bovendien laat dit proefschrift zien dat de bron van sociale informatie een belangrijke rol speelt voor het effect van sociale informatie op het plezier van kijkers. Het effect blijkt sterker te zijn als kijkers menen dat zij iets gemeen hebben met de mensen die de sociale informatie hebben gecreëerd. De tweede conclusie van dit proefschrift is dan ook dat de bron van sociale informatie bepaalt hoe sterk het effect van sociale informatie op het plezier van kijkers is.

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De studies van dit proefschrift zijn relevant voor wetenschappers die zich richten op entertainment communicatie en voor gebruikers van sociale media. Dit proefschrift biedt inzichten in de manier waarop sociale informatie de ervaringen van kijkers kan beïnvloeden en wanneer het waarschijnlijk is dat zo'n effect ontstaat. Voor wetenschappers betekenen de bevindingen van dit proefschrift dat om goed te begrijpen hoe entertainmentervaringen tot stand komen als mensen media gebruiken, het belangrijk is dat onderzoekers rekening houden met de sociale context waarin mediaboodschappen vaak gepresenteerd worden. Dit proefschrift laat zien dat als mensen kijken naar een video en de sociale informatie die daarbij gepresenteerd wordt, hun ervaringen van die video beïnvloed kunnen worden door de sociale informatie. Het tegenovergestelde kan echter ook gebeuren. Door commentaren te schrijven, kunnen kijkers het plezier dat anderen ervaren beïnvloeden. Het is belangrijk dat gebruikers van sociale media zich bewust zijn van deze processen en de mogelijke gevolgen van het bekijken of creëren van sociale informatie.

Dit proefschrift beschrijft vier empirische studies die onderzochten hoe sociale informatie mensen beïnvloedt als ze online video's bekijken. Dit biedt nieuwe inzichten in hoe entertainmentervaringen ontstaan als mensen online videoplatformen gebruiken en het vormt een basis waarop toekomstig onderzoek kan voortbouwen. Dit proefschrift laat zien dat sociale informatie een belangrijke factor is die beïnvloedt hoeveel plezier mensen ervaren als ze online video's bekijken. Het feit dat sociale informatie constant aanwezig is op sociale media maakt dat de bevindingen van dit proefschrift belangrijk zijn voor onderzoekers, kijkers en voor de makers van video's.

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De laatste studie van dit proefschrift onderzocht hoe het effect van sociale informatie op het plezier van kijkers ontstaat. De studie toonde aan dat er twee mogelijke mechanismen zijn die het effect verklaren. Als mensen sociale informatie over een video zien *voordat* ze de video bekijken, ontstaat er een proces waarbij de sociale informatie beïnvloedt hoe mensen de video verwerken tijdens het kijken. In dit geval zorgt positieve sociale informatie ervoor dat mensen meer plezier ervaren tijdens het kijken naar de video, terwijl negatieve sociale informatie ervoor zorgt dat mensen minder plezier ervaren tijdens het kijken. Als mensen sociale informatie zien over een video *nadat* ze de video hebben bekeken, ontstaat er een proces waarbij sociale informatie beïnvloedt hoe mensen hun eigen plezier beoordelen als ze achteraf gevraagd worden om aan te geven hoe veel plezier ze hadden tijdens het kijken, terwijl hun daadwerkelijke plezier tijdens het kijken niet beïnvloed wordt. Op basis hiervan is de derde conclusie van dit proefschrift dat het onderliggende mechanisme van het effect van sociale informatie afhangt van het moment waarop mensen worden blootgesteld aan sociale informatie (voor of na het bekijken van een video).

### IMPLICATIES EN CONCLUSIES

De bevindingen van dit proefschrift geven aan dat als mensen video's bekijken op sociale media, de sociale informatie van die video's het kijkplezier van mensen kan beïnvloeden. Uit dit proefschrift blijkt ook dat de meeste mensen aandacht besteden aan de sociale informatie die bij die video's gepresenteerd wordt. Het is dus niet alleen mogelijk dat het kijkplezier van mensen beïnvloed wordt door sociale informatie, het is ook waarschijnlijk dat dit gebeurt. Dit impliceert dat het plezier dat mensen ervaren als ze online video's bekijken gedeeltelijk het resultaat is van een sociaal proces.

**AUTHOR CONTRIBUTIONS  
(CHAPTERS 2 – 5)**

**Exploring User Responses to Entertainment and Political Videos: An Automated Content Analysis of YouTube**

**(A. M. Möller, R. Kühne, S. E. Baumgartner, & J. Peter)**

Conceptualization: A. M. Möller, R. Kühne, S. E. Baumgartner, & J. Peter

Methodology (study design and operationalization): A. M. Möller, R. Kühne,

S. E. Baumgartner, & J. Peter

Data collection: A. M. Möller

Data analysis: A. M. Möller & R. Kühne

Original draft preparation: A. M. Möller

Reviewing and editing manuscript: A. M. Möller, R. Kühne, S. E. Baumgartner, & J. Peter

**The Effects of Social Information on the Enjoyment of Online Videos: An Eye Tracking Study on the Role of Attention**

**(A. M. Möller, S. E. Baumgartner, R. Kühne, & J. Peter)**

Conceptualization: A. M. Möller, S. E. Baumgartner, R. Kühne, & J. Peter

Methodology (study design and operationalization): A. M. Möller, S. E. Baumgartner,

R. Kühne, & J. Peter

Data collection: A. M. Möller

Data analysis: A. M. Möller & S. E. Baumgartner

Original draft preparation: A. M. Möller

Reviewing and editing manuscript: A. M. Möller, S. E. Baumgartner, R. Kühne, & J. Peter

**A Social Identity Perspective on the Effect of Social Information on Online Video Enjoyment**

**(A. M. Möller, R. Kühne, S. E. Baumgartner, & J. Peter)**

Conceptualization: A. M. Möller, R. Kühne, S. E. Baumgartner, & J. Peter

Methodology (study design and operationalization): A. M. Möller, R. Kühne,

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Data collection: A. M. Möller

Data analysis: A. M. Möller & R. Kühne

Original draft preparation: A. M. Möller

Reviewing and editing manuscript: A. M. Möller, R. Kühne, S. E. Baumgartner, & J. Peter

**Sharing the Fun? Sharing the fun? How Social Information Affects Viewers' Video Enjoyment and Video Evaluations**

**(A. M. Möller, S. E. Baumgartner, R. Kühne, & J. Peter)**

Conceptualization: A. M. Möller, S. E. Baumgartner, R. Kühne, & J. Peter

Methodology (study design and operationalization): A. M. Möller, S. E. Baumgartner,

R. Kühne, & J. Peter

Data collection: A. M. Möller

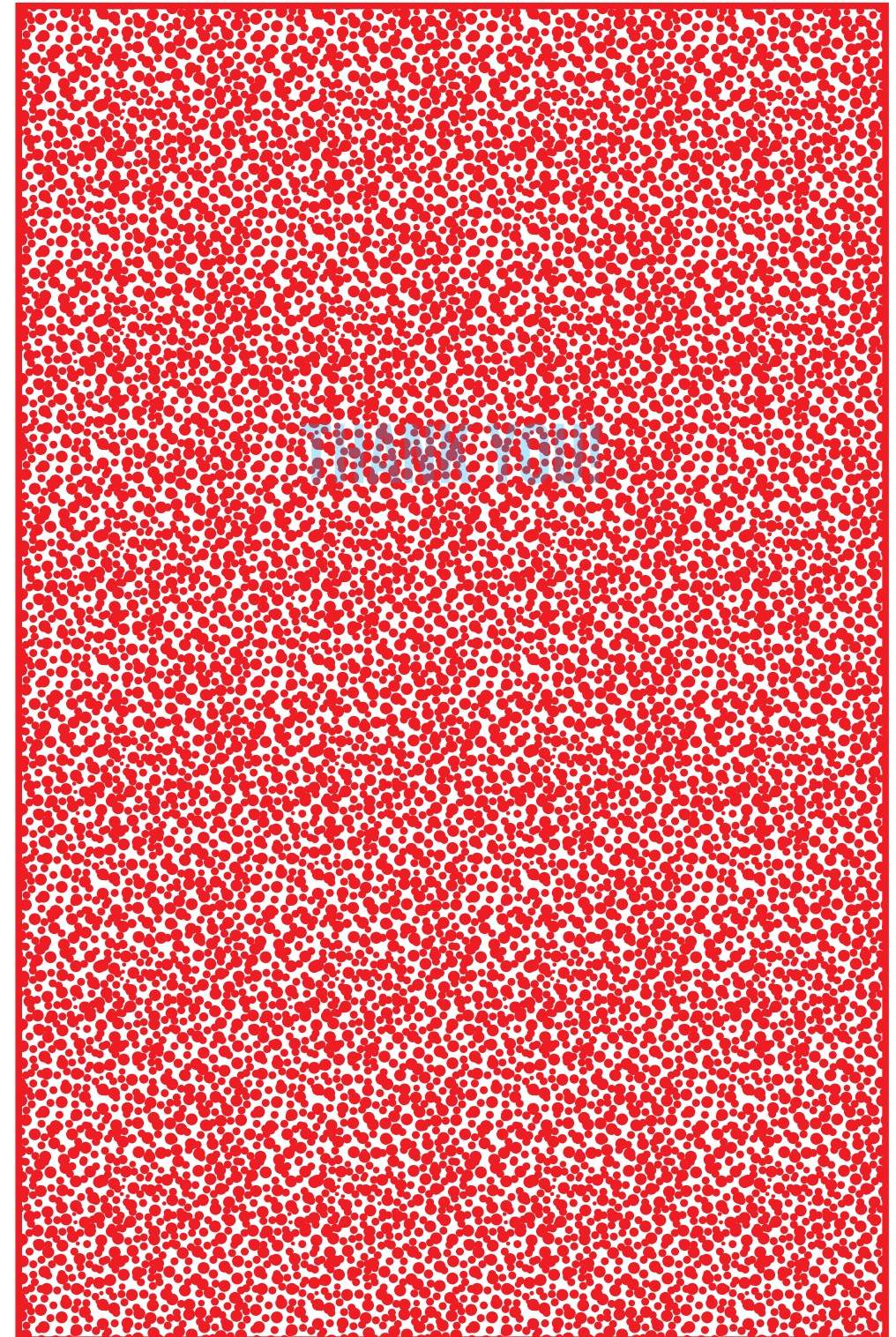
Data analysis: A. M. Möller & R. Kühne

Original draft preparation: A. M. Möller

Reviewing and editing manuscript: A. M. Möller, S. E. Baumgartner, R. Kühne, & J. Peter

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## ACKNOWLEDGEMENTS

During my years as a PhD candidate, I have adopted three guidelines<sup>8</sup> that have proven to be useful when writing texts, conveying arguments, and living life. These are:

1. Rules, lessons, and statements are remembered best if they are presented in threes.
2. The answer to life, the universe, and everything, is 42.
3. The last sentence has the biggest impact. Save it to tell the most important thing.

I will try and follow these guidelines as I acknowledge the people who taught me lessons far more important than any guidelines or rules that I could ever learn on my own.

First of all, my gratitude goes to my promotor Jochen Peter, and my copromotores Rinaldo Kühne and Susanne Baumgartner. I consider myself extremely lucky to have had the opportunity to work on my doctoral dissertation under your supervision. Your guidance, advice, and trust in me have been tremendously valuable to me and without it, this dissertation would not be a fact. Apart from never being too busy to give me advice on my project, your doors were always open for mutual updates on life in general, accompanied by a daily dose of humor. You taught me the skills to be a good researcher, but your comments also had a strong positive effect on the enjoyment that I experienced every day that I worked on this dissertation.

8. While I learned about these guidelines, I am by no means their author. The first guideline can be traced back to the Latin phrase *omne trium perfectum* which translates to “every set of three is perfect” and has been widely adopted as a writing rule. The second guideline was taught to me by *The Hitchhiker’s Guide to the Galaxy*, written by Douglas Adams and first published in 1979. The last guideline is based on the recency effect hypothesis which proposes that people best remember the information that was presented to them most recently. I was given the idea to apply this notion when writing texts. Where, when, and from whom I was given this idea, however, I forgot.

Throughout my Master’s studies and my PhD trajectory, I have been lucky to receive additional help and advice from five mentors. I thank Dian de Vries, Tina Askanius, Winneke van der Schuur, Karin Fikkers, and Jessica Piotrowski for teaching me lessons on (academic) life, on how to deal with imposter syndrome, and on what it means to be a good teacher. Thank you for gently pushing me towards where I am now.

I have been lucky to work at a department that solely consists of kind, smart, and supportive colleagues. Three people who played a major part in creating an inspiring work environment are my office mates Amber, Caroline, and Chiara. One skill that we were continuously trying to master was the - not so subtle - art of celebrating even the tiniest of our successes with prosecco. Looking back at our joined learning trajectory, I would say that we mastered this skill particularly well.

The past six years have made it clear to me that no PhD candidate can complete their dissertation without supportive friends. I am very thankful that Anna and Zeph stand beside me at the end of the road as I defend my dissertation. With two talented doctors and friends as my paranymphs, I feel confident that I too, may be able to pull this off. I hope to see you soon in those lofty heights.

For teaching me many lessons about friendship, I am grateful to my dear friend for the past 10 years, Magali. Thank you for always being there for me, whether I need support to face challenges as a researcher or

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as a part of life. I am looking forward to our next decades of friendship.

Looking back on it, trying to obtain a PhD is crazy: It requires a lot of effort to get a PhD position, it will lead to stressful moments once you do, and it is not unlikely that, despite overcoming these hurdles, you will fail. I suspected this, but I decided to try anyway, because I knew I have one big advantage: a supportive family. For this, I am thankful, especially to my parents Frea and Otto, and to Maurits and Monalize. A special thank you goes to my talented sister, Elisabeth, for making this dissertation look absolutely beautiful.

I have now used the last pages of this dissertation to thank the people who helped me achieve my goal of becoming a doctor of philosophy. But this book is incomplete without the name of the person whose infinite support has helped me the most. The last sentence of the last paragraph is for the person who himself is a goal that is far more important to me than any other goal I might ever achieve. For the most important of all is you, Jelmer.

SHARED ENJOYMENT: ONLINE VIDEOS, SOCIAL INFORMATION, AND HEDONIC ENTERTAINMENT EXPERIENCES

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Social media are extremely popular platforms that people often use to watch online video material. These platforms typically present videos together with user comments and video (dis)likes. This social information gives viewers an idea of how others evaluated and experienced videos. Extant research indicates that social information can influence the enjoyment that people experience when they watch online videos. Yet, our understanding of when and how the effect of social information on video enjoyment emerges is limited. This dissertation reports four empirical studies that investigate the role of social information by studying its characteristics, viewers' attention to social information, the role of the source of social information, and the mechanisms underlying its effects. The findings indicate that social information plays an important role in shaping viewers' hedonic entertainment experiences. Thus, it seems that entertainment is – at least partly – a social experience.

**About the Author**

A. Marthe Möller received her master's degree (cum laude) in Communication Science at the University of Amsterdam in 2016. From 2016 to 2020, Marthe was a doctoral candidate at the University of Amsterdam (Amsterdam School of Communication Research), where she currently works as a postdoctoral researcher and lecturer. Her work has been published in peer-reviewed academic journals such as *Human Communication Research*, *Media Psychology*, and *Social Science Computer Review*.

