

Lonneke van Leeuwen

*I was totally  
there!*



*Understanding engagement in  
entertainment-education  
narratives*

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entertainment-education narratives

Lonneke van Leeuwen

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## **Thesis**

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# Chapter 1

## **Introduction**



## 1.1 Prologue

Once upon a time, my parents bought me the animated video of the movie *Watership Down*. *Watership Down* is a story about the difficult and dangerous journey of a colony of rabbits. This colony attempts to find a safe place to live, far away from humans who are going to build on the field where the rabbit colony is located (IMDb, 2015). During this journey, the colony is confronted with many dangers such as predators, driving cars, and other, violent rabbits. I had a little rabbit, *Dotje*, so, in this respect, the story of *Watership Down* connected to my own life. While sitting on my couch and seeing these events on the television screen, I felt the tension and fear that I imagined the rabbits must have been feeling. I was also highly focused on the story and not even aware of my brother entering the room. Sometimes, I felt as if I too were part of the colony, travelling together with the other rabbits to find a new, safe home. Finally, I and the other rabbits find this safe home and our colony's leader, Hazel, peacefully passes away. Of course, I felt really sad about Hazel's death. My sadness became even more intense because of Art Garfunkel's song *Bright Eyes*. It made me cry. After the movie ended and when I had come back to my senses, I strongly believed that wild rabbits deserve a place to live safely and that humans should leave enough space for them to do so. One could say that my engagement in *Watership Down* influenced my beliefs about the rights of wild rabbits.

## 1.2 Introduction

This personal example of the influence of *Watership Down* on my beliefs about the rights of wild rabbits illustrates what has also been shown by empirical studies. Narratives have the power to change beliefs and other behavioral determinants (Green & Brock, 2000). With the entertainment-education (E-E) strategy, health promoting organizations turn this narrative power to good account by employing narratives in their health-promoting campaigns. For example, episodes of the televised medical drama series *Grey's Anatomy* and *ER* focused on the risk of breast cancer in women with a specific gene mutation (BRCA1). Facilitated by the health promoting organization, Hollywood Health & Society, the purpose of the breast cancer storylines was to increase viewers' knowledge about BRCA1 and to encourage breast cancer screening. A study showed that these storylines indeed influenced viewers' knowledge, attitudes, intentions, and behaviors as intended (Hether, Huang, Beck, Murphy, & Valente, 2008). Consistent with these findings, E-E programs, mostly in the form of televised narratives, have been shown to effectively encourage a variety of health-related behaviors (Shen & Han, 2014). Because

of these positive results, the E-E strategy is considered a promising communication strategy to encourage healthy behaviors (e.g., Green, 2006; Hinyard & Kreuter, 2007).

One quality of E-E narratives that has been shown to be crucial for narrative impact is their ability to engage the target recipients (e.g., Dunlop, Wakefield, & Kashima, 2010; Green & Brock, 2000; McKinley, 2012; Miller-Day & Hecht, 2013). Indeed, *Watership Down* may have impacted my rabbit-related beliefs, because I felt as if I was part of the colony and was emotionally engaged in the story. However, some questions relating to narrative engagement remain to be answered. First, little is known about how narrative engagement leads to impact (Green, 2004). Second, little is known about how narrative engagement emerges in recipients of narratives (Green, 2004; Moyer-Gusé, 2010). Elucidating these processes relating to narrative engagement will increase the likelihood that engaging and health promoting E-E narratives will be developed. The objective of this dissertation is therefore to provide a better understanding of narrative engagement in E-E narratives, by investigating how narrative engagement is associated with the positive impact of E-E narratives (hereafter: E-E impact), and by investigating processes that contribute to experiencing narrative engagement. The next sections further outline the dissertation's context, after which the research questions are stated.

### 1.3 Entertainment-education narratives and impact

Traditionally, mass media campaigns aim to encourage healthy behaviors by communicating explicit health messages. Explicit health messages focus on logic and argument, and provide empirical 'truths' about behavioral consequences (Miller-Day & Hecht, 2013). An example of an explicit health message is 'Alcohol binge drinking is risky behavior. It leads to hangovers and brain damage.' In some domains, such as youth drug use (Hornik, Jacobsohn, Orwin, Piesse, & Kalton, 2008) and alcohol use (Wakefield, Loken, & Hornik, 2010), explicit messages have been shown to be ineffective in encouraging healthy behaviors. In some campaigns, these explicit messages have even resulted in encouraging the risky behavior, because of triggering reactance in target recipients (Grandpre, Alvaro, Burgoon, Miller, & Hall, 2003).

As a result, health organizations are increasingly turning to communication strategies that communicate pro-health messages in a more implicit manner. The E-E strategy is such a strategy. E-E is defined as 'the process of purposely designing and implementing a media message to both entertain and educate, in order to increase knowledge about an issue, create favorable attitudes, and change overt behavior' (Singhal & Rogers, 1999, p. 229). Mostly, such media messages are implemented in narratives, wherein the characters function as role models (Bandura,

2004; Singhal & Rogers, 2004). The characters' attitudes, behaviors, experiences, and conversations, as well as the narrative events relating to an E-E narrative's target behavior, transmit information about this behavior to E-E narratives' recipients. In many health-related E-E narratives, characters experience positive consequences of enacting the healthy behavior, and negative consequences of unhealthy behavior. Consequently, E-E programs do not prescribe that recipients should live healthy; rather, pro-health information lies embedded in the characters' experiences and in the narrative events. Thus, to summarize, health-related E-E narratives are narratives that may potentially encourage healthy behaviors. This potential lies in communicating an implicit pro-health message. Most often, this message is brought across by narratives that portray characters enacting healthy behaviors followed by positive events and/or characters enacting unhealthy behaviors followed by negative events.

In 2000, a study by Green and Brock (2000) showed that a narrative's impact is associated with the degree to which recipients experience narrative engagement in this narrative. Readers who were engaged in the presented narrative had more beliefs consistent with the narrative than those who reported lower narrative engagement. Thereafter, multiple studies on the role of narrative engagement followed and confirmed that narrative engagement is a mechanism whereby narratives exert their effect on recipients (e.g., Dunlop et al., 2010; McKinley, 2012). This indicates that narrative engagement may be crucial for E-E impact. The concept of narrative engagement is therefore further introduced in the next section.

## 1.4 Narrative engagement

Although many people may be unfamiliar with the concept of narrative engagement (NE), they most likely are familiar with experiencing it. Many people know NE as the feeling of being 'lost' in a narrative (Nell, 1988). Research has shown that NE involves four unique processes (Busselle & Bilandzic, 2009): narrative understanding, attentional focus, emotional engagement, and narrative presence. First, narrative understanding implies that recipients understand the narrative and can easily make sense of it. Second, when recipients have attentional focus, they focus their attention solely on the events in the narrative, with their attention not distracted by noise for example. Third, emotional engagement is the process by which recipients develop an emotional connection with characters. This connection includes feeling emotions for, and sharing emotions with, characters and having feelings of arousal. Consequently, emotional engagement is closely related to recipients' identification with characters (Busselle & Bilandzic, 2009; Cohen, 2001). Fourth, narrative presence refers to recipients' loss of self-awareness, to the sense that they are leaving the real world behind, and to feeling present in the story world.

Because of the central role of NE in E-E impact, it has been argued that more insight is needed into how NE leads to E-E impact (Green, 2004). This NE-related research domain is discussed in the next section.

### **From narrative engagement to E-E impact**

After Green and Brock's (2000) study showing that NE is important for narrative impact, researchers focused on the research domain of understanding *how* NE is involved in narrative impact. One of the most referred to theories in the domain of E-E is the extended elaboration likelihood model (E-ELM: Slater & Rouner, 2002). The E-ELM posits that NE may be involved in E-E impact via bypassing a key obstacle in persuasion: counterarguing. Counterarguing describes the process whereby target recipients generate thoughts that dispute, or are inconsistent with, a persuasive message. For example, in response to a message discouraging smoking, a smoker may generate the thought 'my grandfather smoked a packet a day and lived to be 96.' NE is suggested to bypass counterarguing by reducing both the ability and the motivation to produce unfavorable thoughts in response to E-E narratives (Busselle & Bilandzic, 2009; Green & Brock, 2000; Kreuter et al., 2007; Slater & Rouner, 2002). The ability to generate unfavorable thoughts will be reduced because engaged recipients lose their self-awareness. Consequently, they may be less aware that certain information falls within their normal latitude of rejection (Dal Cin, Zanna, Fong, Knowles, & Linn, 2004). Furthermore, engaged recipients will lack the mental resources necessary to produce unfavorable thoughts during narrative reception. The motivation to generate unfavorable thoughts will be reduced, because NE is an enjoyable experience for most people, which will be disrupted by such thoughts. Thus, as suggested by E-ELM, recipients are less likely to produce unfavorable thoughts that reject narrative information while they experience NE. Consequently, this decrease in unfavorable thoughts should predict E-E impact.

The hypothesis that NE leads to E-E impact via reducing unfavorable thoughts has been tested in several empirical studies. An overview of these studies' results reveals that NE has not been consistently shown to reduce the production of unfavorable thoughts. Some studies indeed have shown that NE reduced unfavorable thoughts (e.g., Banerjee & Greene, 2012; Dunlop et al., 2010), but other studies found no relation (e.g., Busselle, Bilandzic, & Zhou, 2009). In some studies, surprisingly, NE was shown to even increase counterarguing (McKinley, 2012; Moyer-Gusé & Nabi, 2010). In addition, some studies found that a reduction in unfavorable thoughts was related to impact (e.g., Banerjee & Greene, 2012; Hoeken & Fikkers, 2014), but others found no association (e.g., Dunlop et al., 2010; Moyer-Gusé & Nabi, 2010). In summary, empirical studies so far do not consistently show relations between NE, unfavorable thoughts, and impact. It has therefore been argued that a closer look is needed at how NE, thoughts, and narrative impact

are associated (Hoeken & Fikkers, 2014). For example, it is as yet unknown whether and how each of the four NE dimensions relate to unfavorable and favorable thoughts and, in turn, E-E impact. This dissertation therefore focuses on elucidating how NE dimensions and recipients' thoughts about an E-E narrative's target behavior relate to E-E impact.

If NE is important to E-E impact, then insight is needed into how NE in E-E narratives can be created or maximized. Little is known, however, about the psychological processes that contribute to E-E narrative recipients' experience of NE (Moyer-Gusé, 2010), and even less about the NE dimensions to which such processes contribute. This second NE-related research domain is the focus of the next section.

### **Psychological processes that contribute to narrative engagement**

NE thus describes the phenomenon whereby recipients experience narrative understanding, attentional focus, emotional engagement, and narrative presence during the reception of narratives. However, in addition to experiencing these NE dimensions, recipients may experience multiple other psychological processes during narrative reception (hereafter: processes). In turn, these processes may contribute to, or hinder, experiencing NE. The model of narrative comprehension and engagement (MNCE), for example, posits that a mismatch between narrative events and recipients' real world knowledge related to these events will hinder NE (Busselle & Bilandzic, 2008). Such a mismatch will trigger negative thoughts about this so-called external realism, and such thoughts will disrupt NE. Attention is shifted from following the narrative to the violations of realism. Furthermore, while producing such thoughts, recipients cease to be present in the narrative world and become aware of their physical surroundings. Thus, to experience NE in an E-E narrative, recipients should not perceive the narrative as unrealistic while viewing it. Indeed, recent research suggests that perceived realism contributes to experiencing NE (Cho, Shen, & Wilson, 2014; Green, 2004; Krakowiak & Oliver, 2012).

In addition to perceived external realism, studies have shown that experiencing enjoyment while processing a narrative is associated with NE in that narrative (e.g., Krakowiak & Oliver, 2012; Oh, Chung, & Han, 2014; Tsay-Vogel & Oliver, 2014). Also, character involvement may contribute to NE (e.g., Busselle & Bilandzic, 2009; Kreuter et al., 2008; Moyer-Gusé & Nabi, 2010). These results suggest that recipients are more likely to experience NE in E-E narratives when they also experience external realism, enjoyment, and character involvement. However, it has been argued that researchers are only starting to have a better understanding of the processes that contribute to NE (Moyer-Gusé, 2010). Furthermore, hardly any studies investigated how such processes are associated with NE dimensions (for an exception, see Busselle & Bilandzic, 2009). Therefore, in addition to elucidating

how NE associates with E-E impact, this dissertation aims to provide insight into which processes experienced during narrative reception contribute to NE dimensions.

## 1.5 Dissertation context: Impact on alcohol (binge) drinking

This dissertation studies NE in the context of E-E impact on alcohol (binge) drinking by adolescents and young adults. Binge drinking is defined as consuming at least four or five alcoholic drinks at one sitting, for females and males, respectively (NIAAA, 2004). This context was chosen for two reasons. The first reason is that the use of alcohol by young people in the Netherlands is a cause of concern. Sixty-six percent of the 16-year-olds in De Looze et al.'s (2014) study had been drinking alcohol recently. Those who drank alcohol, drank heavily. Twenty-five percent had been drunk at least once recently, and 72% had recently engaged in binge drinking. This is a concern, as it has been suggested that alcohol may have damaging effects on adolescent brain development (e.g., Squeglia, Spadoni, Infante, Myers, & Tapert, 2009) with negative effects on learning and memory (e.g., Tapert, Granholm, Leedy, & Brown, 2002) and may have other adverse effects on physical and mental health (Van Laar, Cruts, Verdurmen, Van Ooyen-Houben, & Meijer, 2008). To prevent the risks of excessive alcohol use, young people are encouraged to postpone, reduce, or stop drinking alcohol in the Netherlands. The E-E strategy may be an effective approach to persuade this group not to drink (excessively). Insight into how E-E narratives can discourage alcohol (binge) drinking among young people may therefore contribute to maintaining and improving young people's health.

The second reason is that, at the start of this PhD research, the Dutch Trimbos Institute adopted the E-E strategy to discourage alcohol (binge) drinking by young people. The Trimbos Institute is the National Institute of Mental Health and Addiction in the Netherlands, and it develops, implements, and investigates interventions for the prevention of substance use by young people ([www.trimbos.nl](http://www.trimbos.nl)). The Trimbos Institute adopted the E-E strategy by developing a professionally produced series of televised E-E narratives called *Roes* (*High* in English) in collaboration with a public broadcasting company (VPRO) and a television producing company (IDTV). The Dutch Ministry of Health, Welfare, and Sport and the VPRO commissioned the development of this E-E project. The E-E project included a series of 11 case stories (25 minutes each) portraying negative experiences and outcomes of a young protagonist using alcohol and/or other drugs. These E-E narratives were broadcast on national television. Thereby, this E-E project provided high quality and contemporary stimulus material for studies to provide a better understanding of the role of NE in E-E impact on alcohol (binge) drinking.

The research questions that this dissertation aims to answer are presented in the next section.

## 1.6 Research questions

The role of NE in E-E impact can only be empirically studied by employing E-E narratives that are able to impact (determinants of) behavior. In this dissertation, we therefore investigate whether *Roes* episodes are effective in discouraging alcohol (binge) drinking in young people. Thus, the first research question is:

*RQ1: Does Roes discourage alcohol (binge) drinking in E-E narrative recipients?*

Next, because more insight is needed into how NE relates to recipients' thoughts and, in turn, to E-E impact, this dissertation focuses on understanding whether NE dimensions, thoughts, and E-E impact are associated. Therefore, the second research question, in the context of E-E narratives and alcohol (binge) drinking, is:

*RQ2a: Are NE dimensions associated with E-E impact on alcohol (binge) drinking?*

And, if so:

*RQ2b: Do negative and positive thoughts about alcohol (binge) drinking mediate associations between NE dimensions and E-E impact on alcohol (binge) drinking?*

Finally, if NE is important for E-E impact, then insight is needed into how NE can be created or maximized. Therefore, the third research question is:

*RQ3: Which psychological processes experienced during narrative reception contribute to experiencing NE dimensions?*

## 1.7 Overview of studies

To answer the research questions, chapters 2 to 5 of this dissertation present three empirical studies conducted in the context of alcohol (binge) drinking, and one theoretical exploration. Figure 1.1 shows which chapters contribute to which research questions.

This dissertation applies mixed methods to answer the research questions. The studies employ experiments that are mostly associated with a quantitative research approach (Creswell, 2003). However, both open-ended and closed-ended questions are posed during the experiments. For example, to collect data on which thoughts participants produced in response to *Roes* (RQ2b) and which processes contributed to experiencing NE (RQ3), open-ended data collection methods were

used (thought-listing tasks and focus group discussions). To collect data on whether *Roës* discouraged alcohol (binge) drinking (RQ1), for example, closed-ended questions were used (self-report scales). Consequently, data analyses involved text analyses as well as statistical analyses. Details about the methods employed in the studies are provided in the individual chapters.

In chapter 2, the Trimbos Institute's E-E project *Roës*, which aims to discourage alcohol drinking, is outlined in more detail. In addition, a quantitative field study on the impact of these E-E narratives on discouraging alcohol drinking (RQ1) is described. This study showed that viewing the *Roës* episodes discouraged alcohol drinking. From a health promotion perspective, this was a satisfying result. However, the study did not succeed in identifying mechanisms responsible for this E-E impact. This knowledge is crucial for developing impactful E-E narratives in the future. Because NE may be responsible for E-E impact but was not assessed in this study, the next chapters focus on exploring the potential role of NE in *Roës*' impact on alcohol drinking.

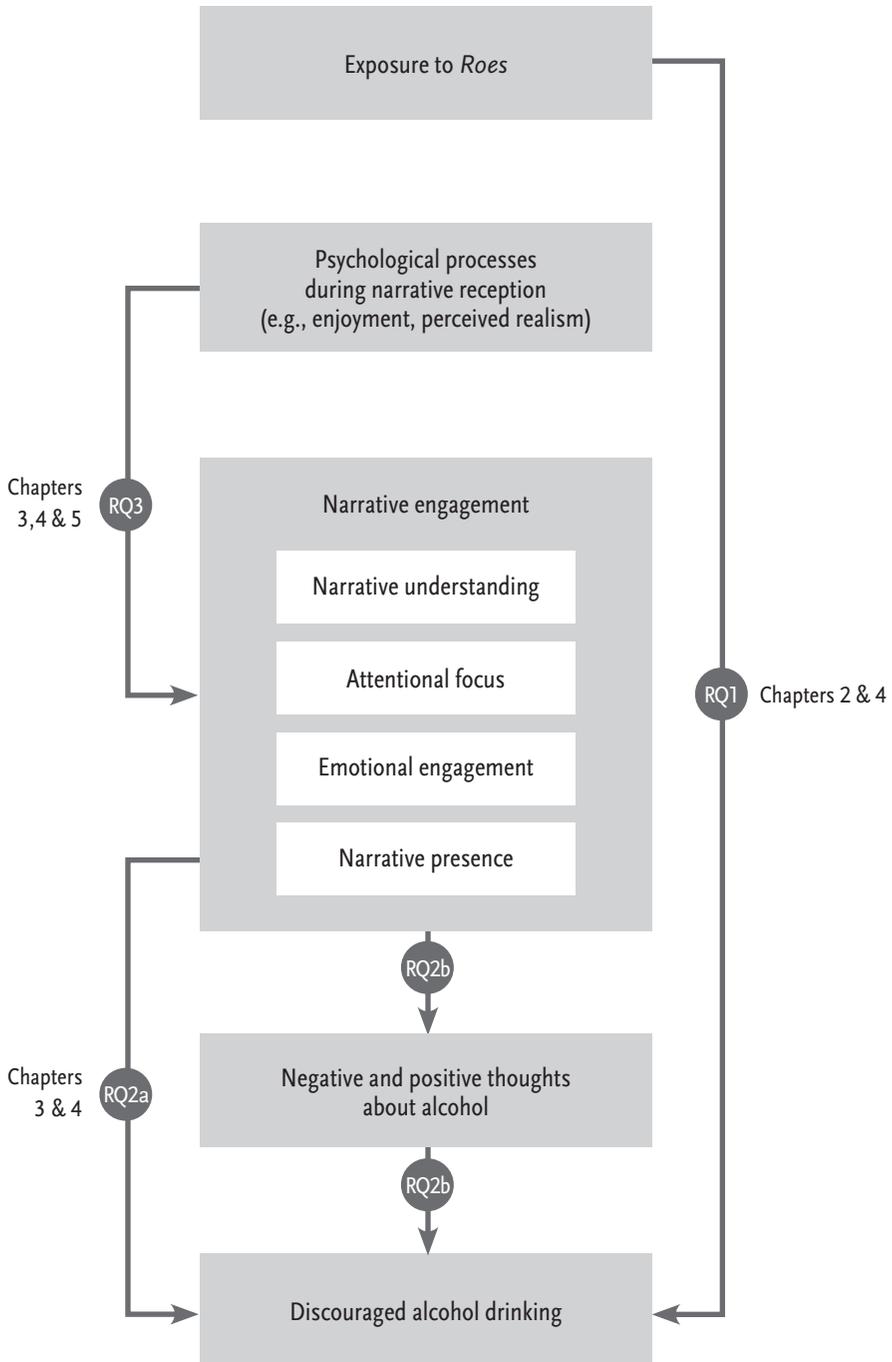
The theoretical exploration described in chapter 3 is inspired by the inconsistent results of earlier studies on associations between NE, counterarguing, and narrative impact. The chapter presents a theoretical exploration, after which it is argued that different thought types may be involved in impact, both resulting from NE (RQ2b) and predicting NE (RQ3).

Chapter 4 reports on an empirical test of hypotheses generated by the theoretical exploration described in chapter 3. In this empirical study, one of the *Roës* episodes was selected (*Verliefd*, *In love* in English). Then, it was experimentally investigated whether this episode alone was also able to discourage alcohol binge drinking (RQ1). After this was established to be the case, it was investigated whether NE and (un)favorable thoughts about alcohol (binge) drinking were a mechanism behind this impact (RQ2a and RQ2b) and whether thoughts about the form of the E-E narrative predicted NE (RQ3).

Chapter 5 focuses on investigating which psychological processes contribute most to NE (RQ3). This chapter reports on a qualitative study involving four focus group discussions after participants viewed *Verliefd*. To identify psychological processes that contribute to NE, recipients were invited to describe in retrospect what influenced their NE in the E-E narrative.

Finally, in chapter 6, the findings of the four chapters are integrated to answer the research questions. Furthermore, it is discussed how the main findings contribute to the literature and how they provide directions for future research. The chapter closes with practical recommendations for organizations that aim to employ E-E narratives to discourage unhealthy behaviors.

Figure 1.1 | Graphical representation of how this dissertation’s chapters contribute to answering the research questions.





# Chapter 2

## **Televised entertainment-education to prevent adolescent alcohol use: Perceived realism, enjoyment, and impact**

Lonneke van Leeuwen, Reint Jan Renes, and Cees Leeuwis

# Abstract

Alcohol use among adolescents is a concern in the Netherlands because of its high prevalence and risks. To discourage adolescents from drinking alcohol, a televised entertainment-education (E-E) intervention was developed. This study investigated responses of adolescents on perceived realism and enjoyment of the E-E intervention, as well as its impact on alcohol drinking behavior. Viewers perceived the E-E narratives to be credible and enjoyable but did not relate to the characters in the narratives. However, exposure to the E-E intervention predicted desired changes in alcohol drinking behavior, intentions to decrease alcohol use, and perceived normative pressure, especially in less educated viewers. These findings demonstrate that E-E is a promising strategy to target adolescent alcohol use. Future research will focus on the individual processes and story elements that account for the positive results.

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In 2014, this publication received the award for most promising Wageningen School of Social Sciences (WASS) publication.

## 2.1 Background

The use of alcohol by adolescents is a growing concern in the Netherlands. Compared with other European adolescents, Dutch adolescents are heavy drinkers (Hibell et al., 2004). Furthermore, Dutch adolescents start drinking at a young age (Monshouwer et al., 2008). This is a concern as it has been suggested that alcohol may have damaging effects on adolescent brain development (e.g., Squeglia, Spadoni, Infante, Myers, & Tapert, 2009) with negative effects on learning and memory (e.g., Tapert, Granholm, Leedy, & Brown, 2002) and may have other adverse effects on physical and mental health (Van Laar, Cruts, Verdurmen, Van Ooyen-Houben, & Meijer, 2008).

To prevent the risks of excessive alcohol use, Dutch adolescents are encouraged to postpone, reduce, or stop drinking alcohol. Because the mass media play an important role in shaping the public perception of health issues (LaVail, Anker, Reinhart, & Feeley, 2010), public service announcements (PSAs) are regularly broadcast as (a component of) health promoting campaigns from the Netherlands Government Information Service. These PSAs employ merely logic, reason, and arguments to persuade and motivate people to adopt behavioral changes—an approach that is, according to Hinyard and Kreuter (2007), the dominant paradigm in health communication to date. Recently, the Dutch Government Information Service found that Dutch adolescents perceive PSAs as less personally relevant than adults (Van Den Berg et al., 2010), and therefore, PSAs may not be the most effective strategy for this priority group. Because adolescents have a desire for independence and individuality along with a rejection of authority (Grandpre, Alvaro, Burgoon, Miller, & Hall, 2003), overtly persuasive campaigns targeted at adolescents run the risk of being ineffective (Wakefield, Loken, & Hornik, 2010), or even of having unfavorable or opposite ‘boomerang’ effects due to resistance against explicit messages (Grandpre et al., 2003; Hornik, Jacobsohn, Orwin, Piesse, & Kalton, 2008).

An implicit, nonovertly persuasive communication strategy such as entertainment-education (E-E) is a more effective approach to persuade adolescents not to drink excessively because of the resistance-reducing potential of this strategy (Slater & Rouner, 2002). E-E is considered a promising and innovative strategy (Guttman, Gesser-Edelsburg, & Israelashvili, 2008) for incorporating health and other educational messages into entertainment media with the goal of positively influencing awareness, knowledge, attitudes, and/or behaviors (Kaiser Family Foundation, 2004). Studies have found that messages embedded in entertainment television programs can influence viewers’ awareness and attitudes about the issues they cover (Moyer-Gusé, 2008). E-E almost necessarily involves the use of narratives (Singhal & Rogers, 2004). Narratives are ‘representations of connected events and

characters that have an identifiable structure, are bounded in space and time, and contain implicit or explicit messages about the topics being addressed' (Kreuter et al., 2007, p. 222). Narratives are believed to influence recipients' beliefs and attitudes about the real world (Dal Cin, Zanna, Fong, Knowles, & Linn, 2004; De Graaf, 2010). Indeed, E-E narratives have shown effects on determinants (e.g., social norms, attitudes) and behaviors in health-related domains such as teen pregnancy (Moyer-Gusé & Nabi, 2010), domestic violence (Singhal & Rogers, 2004), and breast cancer (Hether, Huang, Beck, Murphy, & Valente, 2008).

In the scientific literature, results of televised E-E interventions aimed at adolescents (and the prevention of alcohol use) and their impact are scarcely described. Lalonde and colleagues have reported about their process and impact evaluation of *La Esperanza del Valle* (Hope of the Valley) (Lalonde & Rabinowitz, 1997). This U.S. project that included a radio novela, storybook novela, and a six-episode television novela had a positive impact on attitudes and intentions to decrease alcohol use and corroborated the utility of the E-E intervention.

Although the broadcast was not specifically intended as an E-E intervention, Collins, Elliott, Berry, Kanouse, and Hunter (2003) investigated the effects on adolescents of a storyline in *Friends* containing condom-efficacy messages. Of the viewers, 65% recalled the depiction of condom failure resulting in pregnancy and 10% talked to an adult about condom efficacy as a result of the show.

In *Clueless*, a comedy show about and for high school students, one episode called *Model Smoker* was designed to deliver an antismoking message. This episode strengthened adolescents' injunctive norm about smoking being objectionable, and it lowered nonsmokers' intent to smoke (Pechmann, 2006).

These examples illustrate that, internationally, E-E is adopted regularly as a communication strategy to target adolescents or young adults and has shown its potential to change behavior and behavioral determinants. In the Netherlands also, a number of televised E-E efforts aimed specifically at adolescents have aired in the last decade. However, effects of these efforts have not been found, mainly because of limitations in study designs. In 2002, a storyline about safe sex and the use of condoms was incorporated in a popular series for adolescents called *Costa!* (Bouman, 2004). A pretest/posttest study with control group showed that this storyline had no impact on the intended outcomes, such as self-efficacy, knowledge, or intentions to use condoms (Van Empelen & Kok, 2002). The absence of significant effects may be explained by the relatively few dialogues about safe sex in *Costa!* (M. P. A. Bouman, personal communication, March 8, 2012).

*Find Out*, a documentary-like 24-episode television program made by and for adolescents was broadcast in 2006 on music channel The Box. *Find Out* aimed to provide insight into the personal and societal consequences of adolescents' choices regarding sexual behavior, drugs, and alcohol use (Bouman & Draaisma,

2006). A posttest study found that viewers of *Find Out* had more knowledge on the covered subjects, but no differences were found in behaviors, information seeking, and communication concerning sex, drugs, and alcohol as compared with a control group (Eijling, Goebbels, & Vries, 2006). Whether *Find Out* changed these outcomes could not be detected, because no pretest measurement was included.

*SOUND*, a nine-episode web-based soap series was part of the campaign Sound Effects developed by the Dutch Center for Media & Health in 2008 aiming to prevent hearing damage among adolescents and adults who regularly attend musical events such as concerts, festivals, and discotheques (Bouman & Hollemans, 2009). The campaign aimed to stimulate using earplugs and standing at a safe distance from speakers (Bouman & Jurg, 2006). All campaign components together showed a desired change in cognitions and behavior regarding wearing earplugs (Van Empelen, 2009). Because of the study design, it could not be determined conclusively whether these effects were attributable to the E-E soap series.

In this study, we are interested in whether a newly developed Dutch E-E intervention is an effective communication strategy for adolescents in the context of alcohol use. More specifically, we want to study the underlying processes and impact of the E-E intervention on outcome expectancies, intentions to decrease alcohol use, norms, and alcohol drinking behavior.

Besides having impact, E-E narratives should be entertaining by definition. Viewers who enjoy watching the E-E narratives will be more inclined to recommend peers to watch the E-E narratives as well. Furthermore, entertained viewers will be more motivated to watch more episodes of E-E narratives (Green, Brock, & Kaufman, 2004). Therefore, enjoyable narratives increase the chances of future exposure of viewers and their peers to these (or similar) E-E narratives. Therefore, in this study, we want to investigate whether viewers enjoyed watching the E-E intervention and to study processes that are associated with enjoyment. Although enjoyment is suggested to be a mechanism in the persuasiveness of E-E narratives as well, enjoyment has not yet been well integrated in theories on mass media effects (Nabi & Krcmar, 2004). It is beyond the scope of this study to investigate the role of enjoyment in the persuasiveness of narratives.

Whether a narrative has impact and is enjoyable may depend on whether the narratives are considered realistic (Busselle & Bilandzic, 2008). Viewers may judge the narrative's realism on different criteria: external realism and internal realism (Busselle & Bilandzic, 2008). In evaluating external realism, viewers compare a narrative with their own lives on several dimensions. Two of the dimensions of external realism are identity and utility. The first dimension (identity) relates to the extent to which one can integrate characters or events into one's own life or how much one is involved with characters or portrayals (Busselle & Greenberg, 2000). The second dimension (utility) relates to the extent to which information or events within the

narratives are useful to the viewer in real life (Busselle & Greenberg, 2000). A viewer may, for example, have learned from how characters struggle and deal with tough issues and may use these lessons in real life. The second type of perceived realism, internal or narrative realism, shows an overlap with Hall's concept of narrative consistency (Hall, 2003) and Fisher's concept of narrative probability (Fisher, 1987) and refers to the internal consistency and plausibility of the narrative (Busselle & Bilandzic, 2008) with the narrative leaving nothing unexplained (Hall, 2003).

Negative thoughts about, for example, realism inhibit a viewer from becoming involved in the narrative (e.g., Busselle & Bilandzic, 2008; Green & Brock, 2000; Slater & Rouner, 2002). When negative thoughts about the realism of E-E narratives are absent, viewers can be swept up in the narrative. They focus all their cognitive resources on following the narrative and emotionally engage with the narrative's characters, resulting in their enjoying this experience and its persuasive effects.

To summarize, alcohol use among adolescents is a concern in the Netherlands. E-E is hypothesized to be an effective and low resistance-inducing health communication strategy. Impact and enjoyment of E-E narratives may be achieved when viewers have few negative cognitions about perceived realism. Therefore, the E-E narrative should be perceived as realistic, that is, external realism (i.e., identity and utility) and narrative (internal) realism should be perceived as high.

Following the E-E strategy, the Dutch Trimbos Institute<sup>1</sup> initiated the development of an intervention in 2007 to prevent adolescent substance use. The E-E intervention was designed in collaboration with a public broadcasting company (VPRO) and a television producing company (IDTV). The Dutch Ministry of Health, Welfare, and Sport commissioned the development of the E-E intervention. The E-E intervention *Roes* (*High* in English) consisted of 11 case stories (25 minutes each) portraying the ultimately negative experiences and outcomes of adolescent protagonist(s) using alcohol and/or other drugs. The stories are summarized in Table 2.1. The E-E intervention was designed to favorably influence outcome expectancies (i.e., beliefs about the consequences of substance use, e.g., as being damaging to health), intentions, and behavior concerning the use of substances. Less educated adolescents (high school students receiving preparatory middle-level applied education) were the priority group for this intervention because heavy alcohol use is more prevalent in this group (Monshouwer et al., 2008).

The purpose of this study is to determine whether E-E is a successful strategy for high school students and what processes may be involved. We aim to test three hypotheses (Figure 2.1).

<sup>1</sup> The Trimbos Institute is the National Institute of Mental Health and Addiction in the Netherlands, and it develops, implements, and investigates interventions for the prevention of adolescent substance use ([www.trimbos.nl](http://www.trimbos.nl)).

Hypothesis 1: Viewing *Roës* will be associated with the following short- and long-term changes in (determinants of) alcohol drinking behavior:

- Hypothesis 1a: Decreased alcohol drinking behavior
- Hypothesis 1b: Increased intentions to decrease alcohol use
- Hypothesis 1c: Decreased positive outcome expectancies regarding alcohol use
- Hypothesis 1d: Increased negative outcome expectancies regarding alcohol use
- Hypothesis 1e: Increased norms that do not favor alcohol drinking

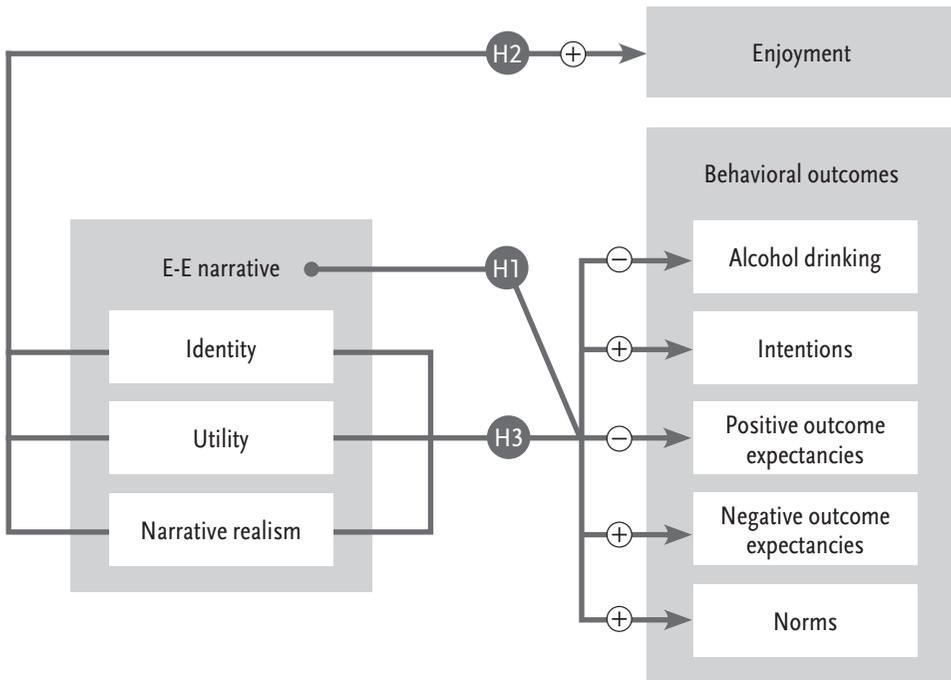
Hypothesis 2: Enjoyment of *Roës* will be positively associated with the following:

- Hypothesis 2a: Viewers' evaluations of identity
- Hypothesis 2b: Viewers' evaluations of utility
- Hypothesis 2c: Viewers' evaluations of narrative realism

Hypothesis 3: Changes in (determinants of) alcohol drinking behavior among *Roës* viewers (as described in H1a to H1e) will be positively associated with the following:

- Hypothesis 3a: Viewers' evaluations of identity
- Hypothesis 3b: Viewers' evaluations of utility
- Hypothesis 3c: Viewers' evaluations of narrative realism

Figure 2.1 | Graphical representation of the hypotheses under study.



Additionally, as the *Roes* narratives were especially developed to influence less educated adolescents, we had two research questions:

- *Research Question 1: Will education level affect the short- and long-term impact of the Roes narratives?*
- *Research Question 2: Will the education level of viewers affect evaluations of perceived realism and enjoyment?*

## 2.2 Method

### Overview of the study and procedure

A nonexperimental pretest posttest follow-up design with comparison group was used for this study. Adolescents were recruited for this study by Qrius, an organization investigating Dutch children and young adults ([www.qrius.nl](http://www.qrius.nl)). The adolescents who were invited to participate were on this organization's existing research panels. Qrius was responsible for the survey administration and data collection. To increase survey responses, participants received gift points for completing each survey, with extra points for completing all surveys.

After adolescents signed up to participate in the study, they were asked to complete an online survey before *Roes* was broadcast (pretest, February 2008) to collect demographic information (e.g., age, gender, educational level) and to assess baseline measures on alcohol-related outcome expectancies, intentions, norms, and behaviors. After the broadcasting of nine episodes of *Roes*, the alcohol-related measures were assessed again with an online survey (posttest, May 2008) and again 1 year later (follow-up, April 2009). Five online surveys were administered between pre- and posttest to assess the perceived realism and enjoyment of five episodes. Participants received these surveys per email directly after each episode was broadcast, with a link to the episode on the Internet for postponed viewing. The intervention and comparison group were formed by self-selection. Participants who reported posttest that they had seen five or more episodes and completed the surveys after the five episodes were considered the intervention group (*viewers*). Participants who reported that they had seen one episode or less and did not complete any of the five surveys between pre- and posttest were considered the comparison group (*nonviewers*).

The surveys were developed by Wageningen University in collaboration with the Trimbos Institute.

### The intervention

*Roes* can be characterized as an *E-E coproduction* of single-story episodes. The Trimbos Institute and public broadcasting organization VPRO jointly designed, pro-

Table 2.1 | Episode Name (Substance), Educational Concepts, and Storyline in Keywords.

Episode Name	Educational Concept	Storyline in Keywords
Destructed (alcohol)	Adolescents like you may experience positive effects by drinking alcohol, but it can make one cross one's own borders and put one in dangerous situations.	Love, insecurity, jealousy, party, drinking games, alcohol drinking, peer pressure, drunkenness, sexual harassment, drink driving.
Grand dessert (alcohol)	Adolescents like you may do things they regret later under the influence of alcohol. Parents should give the right example to their children.	Party, parental alcohol drinking, embarrassment, family arguments, disappointment, peer support.
Who is to blame? (alcohol)	Adolescents like you that are drunk may undergo serious physical damage.	Friendship, drinking games, going out, drink driving, responsibility, aggression, nausea, accident, paralysis, fight among friends.
Nightshade (alcohol)	Adolescents like you may drink alcohol to solve their problems. But problems have to be solved by them or you.	Parental alcohol drinking, drink driving, dysfunctional family, family arguments, refuge, binge drinking, insecurity, nausea, confrontation with problems.
Ernesto (cannabis)	There are other (less risky and healthier) ways for adolescents like you to cope with problems than smoking cannabis.	Sports, work, ill mother, relaxation, smoking cannabis, indifference, family arguments, failure, dismissal, drug dealing, medicinal cannabis use, hospitalization, quitting cannabis, resume sports.
Simon says (alcohol)	Adolescents like you may experience positive effects and feel tough by drinking alcohol, but it may cause them and you to miss out on great opportunities.	Love, going out, alcohol drinking, showing off, insecurity, lower thresholds, making out, nausea, kicked out, being ridiculed.
Rotten (alcohol, cocaine and cannabis)	Concurrent use of substances can have serious (health and legal) risks for adolescents like you.	Going out, flirting, multisubstance use, loss of consciousness, responsibility, emergency aid.
Floating (alcohol and XTC)	Concurrent and long-term use of alcohol and XTC can cause health and social problems for adolescents like you.	Friendship, love, peer pressure, alcohol and XTC use, nausea, depression, peer support.
Thijs and Karlijn (alcohol)	Adolescents like you may experience positive effects and feel more secure when drinking alcohol, but it may cause them or you to be aggressive and to miss out on great opportunities.	Love, insecurity, fear of failure, alcohol drinking, aggression, drunkenness, missing out on love.
A major deal (cannabis)	Using and dealing cannabis can get adolescents like you or friends into serious trouble.	Friendship, smoking cannabis, relaxation, drug dealing, greed, murder.
In love (alcohol)	Adolescents like you may experience positive effects by drinking alcohol, but it can make them or you cross borders and put them or you in dangerous situations.	Friendship, love, insecurity, peer pressure, rape, regret, peer support, informing police.

duced, and broadcast the series to positively influence adolescent substance use. This partnership between a health organization and a broadcasting organization is the typical partnership arrangement for an E-E coproduction as compared to, for example, *E-E inscript participation*, in which a health organization pays for a social issue to be incorporated in the script of an existing entertainment program (Bouman, 2002). *Roes* consisted of 11 single-story episodes. Each episode was a small movie in itself with its own storyline, characters, settings, themes, and 'look and feel.' The episodes shared the same introduction portraying *Roes* and a theme song (played at the beginning and end) to inform viewers that the different episodes were part of the series.

Of the 11 episodes, 7 were about alcohol and focused on the risks of nausea, crossing personal borders, black-outs, traffic accidents, unsafe situations, and sexual harassment. Cannabis use and the risks of having social, motivational, or vocational problems; the suppression of worries; and legal problems were dealt with in two episodes. The use of XTC combined with cocaine with risks of nausea and social problems was covered in one episode, and another episode was about multisubstance use (alcohol, cocaine, cannabis). Central narrative themes throughout the episodes were friendship, love, insecurity, peer pressure to use substances, and drinking games. One episode (*Simon Says*) can be described as more light-hearted and humorous. The other episodes can be labeled as serious drama or compelling stories.

*Roes* was broadcast on national television from February to June 2008 at intervals varying from 1 to 3 weeks, always on Tuesdays at prime time (from 9:00 to 9:25 p.m.).

In the study period, nine episodes of *Roes* were broadcast. Perceived realism and enjoyment were assessed for five episodes. Three of these episodes were about alcohol (*Destructed*, *Who is to blame?*, *Simon Says*), one about cannabis (*Ernesto*), and one about alcohol, cocaine, and cannabis (*Rotten*).

### **Alcohol behavior measures**

#### *Frequency of alcohol use*

We asked participants how frequently they had drunk alcohol in the previous month. Response options were as follows: 1 = *never used it*, 2 = *have used it (once) but not this month*, 3 = *1 to 2 times*, 4 = *3 to 10 times*, 5 = *more than 10 times*.

#### *Quantity of alcohol consumed*

To measure the quantity of alcohol that participants drink per drinking occasion, they were asked, 'On the days that you do drink, how many standard glasses (beer from a beer glass, wine from a wine glass, etc.) do you drink on average?'

*Intention to decrease alcohol use*

The following two items were used to assess intentions to decrease alcohol use: 'During the last weeks I have thought about drinking less alcohol' and 'Sometimes I think about drinking less alcohol in the coming year' (Cronbach's  $\alpha$  before broadcasting = .81, after broadcasting = .86). Viewers responded to these statements (as well as to all other statements in this study) on a 7-point scale ranging from *I strongly disagree* to *I strongly agree*.

*Positive outcome expectancies*

The following three items were used to assess positive outcome expectancies concerning alcohol drinking: 'By drinking I feel like I can accomplish more,' 'Thinking about alcohol gives me a positive feeling,' and 'Drinking a lot is cool' (Cronbach's  $\alpha$  before broadcasting = .81, after broadcasting = .79).

*Negative outcome expectancies*

The two items used to assess negative outcome expectancies concerning alcohol drinking were: 'Drinking a lot is not safe' and 'Drinking a lot is unhealthy' (Cronbach's  $\alpha$  before broadcasting = .69, after broadcasting = .70).

*Norms*

We measured perceived normative pressure by asking participants to respond to the statement, 'Most of my friends think drinking a lot is not typical.' Furthermore, we asked participants to estimate the percentage of the adolescents in their social environment who they thought had been drunk the month before. These items served as measures for injunctive and descriptive norms concerning alcohol drinking.

**Realism and enjoyment measures***Identity*

We presented a scale with the following three statements (items): 'I can recognize myself in (one of the) characters,' 'I recognize the situations that (one of) the character(s) is/are in,' and 'I feel connected with (one of the) characters.' Over all five episodes, a composite evaluation score was constructed and included each of the five evaluations of realism. Cronbach's  $\alpha$ s on identity at episode level were between .70 and .84, at overall level, .86.

*Utility*

On a four-item scale, utility was assessed by the following statements: 'I will communicate (or have been communicating) with others about this episode,' 'This episode made me elaborate on alcohol/substance use,' 'I will search (or have been searching) for information about effects and risks of alcohol/substance use,' and

'I have picked up some insights that I can use in my everyday life' (Cronbach's  $\alpha$ s at episode level were between .71 and .80, at overall level, .92).

### *Narrative realism*

Narrative realism was assessed on a three-item scale with the items 'I find the behavior of the character(s) credible' and 'I find this episode credible' and 'realistic' (Cronbach's  $\alpha$ s at episode level between .79 and .88, at overall level, .91).

### *Enjoyment*

Enjoyment was assessed on a four-item scale with the items 'I found this episode 'annoying' (reversely coded), 'fun,' and 'captivating.' Additionally, viewers gave a general evaluation of the episode expressed on a scale between 1 and 10 (responses were transformed to fit a 7-point scale; Cronbach's  $\alpha$ s at episode level between .77 and .84, at overall level, .83).

## **Statistical analyses**

The analyses consisted first of descriptive and comparative statistics to describe the sample and to determine whether viewers and nonviewers were comparable on demographic and alcohol-related variables (chi-square and *t* tests). Then we determined perceived realism and enjoyment per episode and over all episodes. Differences in mean scores on perceived realism and enjoyment per episode were investigated with repeated ANOVA measures.

To test Hypothesis 1, gain scores were calculated on the alcohol behavior measures. This means that, for each participant, each score on the measures at pretest was subtracted from the corresponding posttest score (gain score representing change between pre- and posttest) and from the score at the follow-up measurement (gain score representing change between pretest and follow-up measurement). To examine the extent to which viewing status (being a viewer or nonviewer) predicted changes in alcohol drinking behavior, we regressed each gain score on viewing status. To investigate whether changes are affected by education level (Research Question 1), education level and the interaction education level and viewing status were added as predictor variables.

To test Hypothesis 2, a linear forced entry regression analysis with overall enjoyment as dependent variable and the three overall realism measures as predictors was conducted. To investigate whether enjoyment is affected by education level (Research Question 2), education level was added to the model as a predictor. Similar regression analyses were performed with overall realism measures as dependent variables.

To test Hypothesis 3, multiple linear forced entry regression analyses were conducted with the gain scores per alcohol behavior measure as dependent variable and the overall perceived realism and enjoyment variables as predictors.

## 2.3 Results

### Study sample characteristics

A total of 451 adolescents completed the surveys at both pre- and posttest. Participants who (a) were statistically identified as outliers, (b) reported posttest and/or on the follow-up measurement that they never had a drink but reported on a previous measurement that they had, (c) completed some but not all the viewer panel surveys, or (d) did not participate on the viewers' panel but reported posttest that they had seen more than one episode were excluded from the analyses ( $N = 169$ ). Thus, 282 participants were included in the analyses to detect changes in the alcohol behavior measures from pre- to posttest, of whom 196 were considered viewers and 86 nonviewers. Of the 282 participants who completed the pre- and posttest, 219 adolescents also completed the follow-up survey. Of those, 87 were considered viewers and 37 nonviewers ( $N = 124$ ).

Viewers and nonviewers participating at pre-/posttest measurements (PP group,  $N = 282$ ) and at pre-/posttest/follow-up measurements (PPF group,  $N = 124$ ) did not differ significantly from one another at pretest on the demographic and alcohol behavior measures. This indicates that, at pre-test, viewers and nonviewers from within the PP group and the PPF group were comparable on these variables. Characteristics at pretest of the PP group and PPF group are provided in Table 2.2.

Males represented 47% of the PP group and 41% of the PPF group. Adolescents who indicated at pretest that they were following (preparatory) middle-level applied education were categorized as less educated, whereas adolescents following higher general secondary or preuniversity education were considered more highly educated. Education level was low for 43% of the PP group and 36% of the PPF group. The mean age of participants in both the PP group and the PPF group was 16. Ninety-seven percent of PP group participants and 94% of PPF group participants were born in the Netherlands. As can be seen in Table 2.2, at pretest, most participants of both the PP group and the PPF group reported drinking once or twice per month (27% and 28%, respectively). PP and PPF group participants reported drinking about four alcoholic consumptions per occasion.

### Impact on behavior

In Hypothesis 1, we predicted that E-E narratives have positive short- and long-term impacts on alcohol drinking behavior and determinants. With Research Question 1, we wanted to investigate whether the short- and long-term impacts of the *Roës* narratives were affected by the education level of the viewers.

Table 2.2 | Pretest Data on Alcohol Behavior Measures of the Study Sample Participating at Pre- and Posttest and at Pretest, Posttest, and Follow-up. Changes in Alcohol Behavior Measures from Pre- to Posttest and from Pretest to the Follow-Up Measurement in Viewers and Nonviewers.

	PP	PPF	Changes from		Changes from	
	group	group	pretest to posttest		pretest to follow-up	
	( <i>n</i> = 282)	( <i>n</i> = 124)	Viewers ( <i>n</i> = 196)	Non viewers ( <i>n</i> = 86)	Viewers ( <i>n</i> = 87)	Non viewers ( <i>n</i> = 37)
Current frequency of alcohol use (%):						
Never used it	14.2	17.7	-6.6	-8.1	-2.3	-2.7
Used it (once) but not this month	17.4	18.5	2.1	9.3	-2.3	-5.4
1-2 times in the last month	27.0	28.2	0.0	-9.3	0.0	8.1
3-10 times in the last month	25.2	23.4	1.6	7.0	2.3	8.1
More than 10 times in the last month	16.3	12.1	3.1	1.2	2.3	-8.1
Number of alcoholic consumptions per occasion (mean) <sup>a</sup>	3.98	3.70	-0.01 <sup>b</sup>	0.31 <sup>b</sup>	0.39	0.61
Intentions to decrease alcohol use (mean) <sup>a, c</sup>	2.82	2.73	0.17 <sup>b</sup>	-0.53 <sup>b</sup>	0.21 <sup>b</sup>	-0.31 <sup>b</sup>
Positive outcome expectancies (mean) <sup>c</sup>	3.18	2.98	-0.26	-0.15	-0.48	-0.35
Negative outcome expectancies (mean) <sup>c</sup>	5.71	5.88	0.17	0.13	-0.07	-0.20
Perceived normative pressure (mean) <sup>c</sup>	3.51	3.47	0.11 <sup>b</sup>	-0.29 <sup>b</sup>	-0.05	0.00
Descriptive norms (%): perceived prevalence of drunkenness by peers	37.4	35.3	-0.22	0.50	-0.57	0.43

Note | PP group = Pre-/posttest measurements; PPF group = pre-/posttest/follow-up measurements.

<sup>a</sup> Sample sizes deviate from sample sizes reported in columns. Participants who reported not drinking alcohol at pretest are excluded. Sample size of the PP group *N* = 242, *n* viewers = 167, *n* nonviewers = 75. Sample size of the PPF group *N* = 102, *n* viewers = 71, *n* nonviewers = 31.

<sup>b</sup> Change in this variable is significantly predicted by viewing status.

<sup>c</sup> A 7-point scale was used.

Table 2.3 | Regression Analyses of Changes in Quantity of Alcohol Consumed on Viewing Status and Education Level.

	Quantity of alcohol consumed			
	Change pre- to posttest <sup>a</sup>		Change pretest to follow-up <sup>b</sup>	
	Model 1	Model 2	Model 1	Model 2
Viewing status (A)	-.06	-.27*	-.04	-.29
Education level (B)		-.40**		-.27
A x B		.31*		.40 <sup>+</sup>
Model F	0.81	4.35**	0.15	1.04
df	1, 240	3, 238	1, 100	3, 98
R <sup>2</sup>	.00	.05	.00	.03
R <sup>2</sup> change		.05**		.03

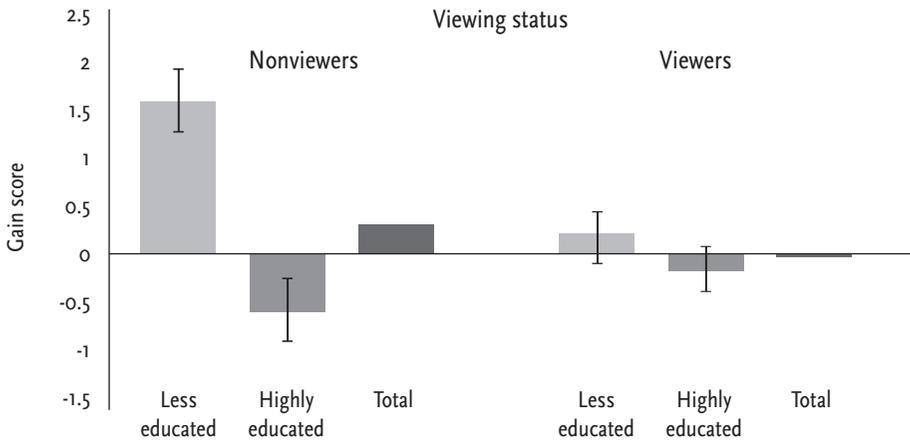
Note | Coefficients are standardized beta values.

<sup>a</sup> Only alcohol drinking participants are included (N = 242)

<sup>b</sup> Only alcohol drinking participants are included (N = 102)

\*p < .05, \*\*p < .01, \*\*\*p < .001, <sup>+</sup>.05 < p < .1

Figure 2.2 | Changes from pre- to posttest in the number of alcoholic consumptions per occasion by viewing status and education level.



*Alcohol drinking behavior (Hypothesis 1a)*

Table 2.3 presents the results of the regression analyses in which the first model tests whether viewing status explains changes in the quantity of alcohol consumed from pre- to posttest and from pretest to the follow-up measurement. In the second model, education level and the interaction term viewing status and education level are added to answer Research Question 1. Model 1 including viewing status as predictor was not able to predict changes in the quantity of alcohol consumed from pre- to posttest, Model 1,  $F(1, 240) = .81, p = .37$ . Model 2 was significant,  $F(3, 238) = 4.35, p < .01$ , and shows that viewing status is a significant predictor of changes from pre- to posttest in the quantity of alcohol consumed ( $\beta = -.27, p < .05$ ) as well as education level ( $\beta = -.40, p < .01$ ) and the interaction term viewing status by education level ( $\beta = .31, p < .05$ ). As shown in Table 2.2 and Figure 2.2, non-viewers increased, whereas viewers slightly decreased, their number of alcoholic consumptions per occasion from pre- to posttest. Furthermore, as shown in Figure 2.2, all less educated participants increased their consumption, but less educated viewers increased their alcohol consumption less (increase of 0.21 consumptions) than nonviewers (increase of 1.6 consumptions). The independent variables did not predict changes from the pretest to the follow-up measurement or changes concerning the frequency of alcohol consumption.

*Intentions to decrease alcohol use (Hypothesis 1b)*

As shown in Table 2.4, viewing status significantly predicts changes in intentions to decrease alcohol use from pre- to posttest (Model 1,  $\beta = .19, p < .01$ ). As illustrated in Figure 2.3, viewers increased their intentions whereas nonviewers decreased their intentions to decrease alcohol use. In Model 2, changes in intentions to decrease alcohol use are significantly predicted by viewing status ( $\beta = .40, p < .001$ ) and the interaction term viewing status and education ( $\beta = -.37, p < .01$ ). Less educated viewers showed an increase of 0.47 in intentions whereas their nonviewing peers showed a decrease in intentions of 1.1 from pre- to posttest (Figure 2.3). Change in intentions to decrease alcohol use between pretest and follow-up is significantly predicted by viewing status ( $\beta = .52, p < .01$ ), education level ( $\beta = .38, p < .05$ ), and the interaction term viewing status and education ( $\beta = -.61, p < .01$ ).

*Positive outcome expectancies (Hypothesis 1c)*

The models with viewing status, education level, or an interaction of these variables as predictors were not able to predict changes in positive outcome expectancies from pre- to posttest or from pretest to the follow-up measurement.

Table 2.4 | Regression Analyses of Changes in Intentions on Viewing Status and Education Level.

	Intentions to decrease alcohol use			
	Change pre- to posttest <sup>a</sup>		Change pretest to follow-up <sup>b</sup>	
	Model 1	Model 2	Model 1	Model 2
Viewing status (A)	.19**	.40***	.14	.52**
Education level (B)		.22 <sup>+</sup>		.38*
A x B		-.37**		-.61**
Model F	8.50**	5.52**	1.97	3.22*
df	1, 240	3, 238	1, 100	3, 98
R <sup>2</sup>	.03	.07	.02	.09
R <sup>2</sup> change		.03*		.07*

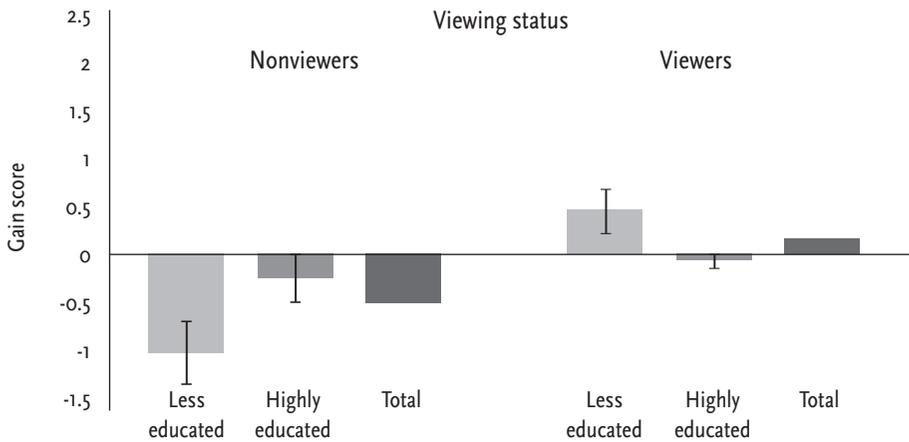
Note | Coefficients are standardized beta values.

<sup>a</sup> Only alcohol drinking participants are included (N = 242)

<sup>b</sup> Only alcohol drinking participants are included (N = 102)

\*p < .05, \*\*p < .01, \*\*\*p < .001, <sup>+</sup>.05 < p < .1

Figure 2.3 | Changes from pre- to posttest in intentions to decrease alcohol use by viewing status and education level.



*Negative outcome expectancies (Hypothesis 1d)*

The models with viewing status, education level, or an interaction of these variables as predictors were not able to predict changes in negative outcome expectancies from pre- to posttest or from pretest to the follow-up measurement.

*Norms (Hypothesis 1e)*

Change in perceived normative pressure between pre- and posttest (Model 2), as shown in Table 2.5, is significantly predicted by viewing status ( $\beta = .27, p < .01$ ) and the interaction term viewing status and education level ( $\beta = -.33, p < .05$ ). The results indicate an increase in normative pressure among viewers and a decrease among non-viewers. As can be seen in Figure 2.4, less educated viewers show an increase of .49 whereas normative pressure has decreased by .81 among less educated nonviewers. The predictor variables do not predict changes in perceived normative pressure from pretest to the follow-up measurement.

None of the models with viewing status, education level, or an interaction of these variables as predictors was able to predict changes in descriptive norms from pre- to posttest. The model with viewing status, education level, and the interaction term viewing status and education level as predictor variables (Model 2) reached significance at changes in descriptive norms from pretest to the follow-up measurement,  $F(3, 120) = 2.90, p < .05$ . However, none of the predictors' beta coefficients was significant.

**Perceived realism and enjoyment**

Hypothesis 2 predicted that higher evaluations of identity (Hypothesis 2a), utility (Hypothesis 2b), and narrative realism (Hypothesis 2c) would be associated with greater enjoyment of viewing the *Roës* narratives. Table 2.6 displays viewers' evaluations of realism and enjoyment of the individual episodes (on a 7-point scale) and of the five episodes together (thus with a composite evaluation score per variable ranging from 5 to 35). The mean composite evaluation score on identity was 14.7 ( $SD = 4.6$ ), on utility 16.2 ( $SD = 4.9$ ), on narrative realism 25.0 ( $SD = 4.2$ ), and on enjoyment 25.3 ( $SD = 3.9$ ).

The results of the entry regression analyses with overall enjoyment as dependent variable and the three realism concepts as predictors are displayed in Table 2.7. Identity, utility, and narrative realism explained 54% of variance within the enjoyment variable. More specifically, utility and narrative realism were significant predictors of enjoyment, with narrative realism as the strongest predictor.

With Research Question 2, we wanted to investigate whether the education level of viewers affected evaluations of perceived realism and enjoyment. A lower education level significantly predicted higher enjoyment of the narratives (Model 2, Table 2.7). Regression analyses showed that education level did not affect identity, utility, and narrative realism evaluations.

Table 2.5 | Regression Analyses of Changes in Perceived Normative Pressure on Viewing Status and Education Level.

	Perceived normative pressure			
	Change pre- to posttest		Change pretest to follow-up	
	Model 1	Model 2	Model 1	Model 2
Viewing status (A)	.08	.27**	-.01	.10
Education level (B)		.18		.08
A x B		-.33*		-.19
Model F	1.98	3.22*	0.01	0.37
df	1, 280	3, 278	1, 122	3, 120
R <sup>2</sup>	.01	.03	.00	.01
R <sup>2</sup> change		.03*		.01

Note | Coefficients are standardized beta values.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , \* $.05 < p < .1$

Figure 2.4 | Changes from pre- to posttest in perceived normative pressure by viewing status and education level.

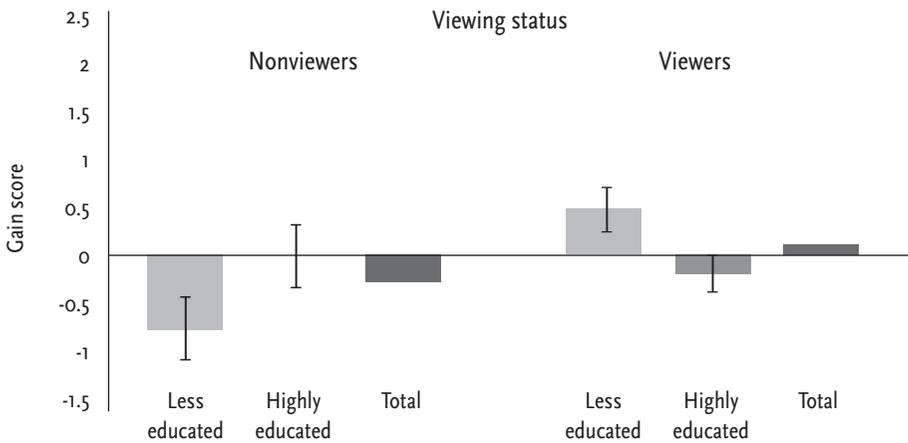


Table 2.6 | Viewers' Evaluations of the Five E-E Episodes.

	Mean scores per episode					Composite evaluation scores (scale range 5-35)			
	Destructed	Who's to blame	Ernesto	Simon says	Rotten	Mean	SD	Min.	Max.
Identity	3.2 <sup>ab</sup>	2.9 <sup>b</sup>	2.8 <sup>bc</sup>	3.3 <sup>a</sup>	2.6 <sup>c</sup>	14.7	4.6	5.0	27.0
Utility	3.1 <sup>b</sup>	3.4 <sup>a</sup>	3.2 <sup>ab</sup>	3.2 <sup>ab</sup>	3.4 <sup>a</sup>	16.2	4.9	5.0	28.8
Narrative realism	4.8	5.0	5.0	5.0	5.0	25.0	4.2	6.7	35.0
Enjoyment	5.1 <sup>ab</sup>	5.0 <sup>bc</sup>	4.9 <sup>c</sup>	5.2 <sup>a</sup>	5.1 <sup>ab</sup>	25.3	3.9	9.7	33.4

Note | Mean results showing viewers' evaluations of the individual episodes on a 7-point scale. Values that do not share a common superscript letter are significantly different ( $p < 0.05$ ; post hoc pair-wise comparisons with Bonferroni adjustment when Mauchly's test indicated that the assumption of sphericity had been violated).

Table 2.7 | Regression Analyses of Enjoyment on Identity, Utility, Narrative Realism, and Education Level.

	Enjoyment	
	Model 1	Model 2
Identity	-.02	-.02
Utility	.15 <sup>*</sup>	.16 <sup>**</sup>
Narrative realism	.68 <sup>***</sup>	.68 <sup>***</sup>
Education level		-.11 <sup>**</sup>
Model <i>F</i>	75.15 <sup>***</sup>	58.81 <sup>***</sup>
<i>df</i>	3, 192	4, 191
<i>R</i> <sup>2</sup>	.54	.55
<i>R</i> <sup>2</sup> change		.01 <sup>*</sup>

Note | Coefficients are standardized beta values.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , <sup>\*</sup>.05 <  $p < .1$

### **Influence of perceived realism on behavioral impact**

Hypothesis 3 predicted that *Roës* has larger positive short- and long-term impacts on the alcohol drinking behavior, intentions, outcome expectancies, and norms of viewers who evaluate identity, utility, and narrative realism more highly. Perceived identity, utility, and narrative realism were entered into a regression model as possible predictors of changes in the alcohol behavior measures. The results indicated that none of these variables predicted changes from pretest to posttest ( $N = 196$ ) and from pretest to the follow-up measurement ( $N = 87$ ) in alcohol behavior measures.

## **2.4 Discussion**

With this study, we investigated whether an 11-episode televised drama series was a successful E-E intervention to target adolescents' alcohol use. We assessed whether the narratives had an impact on alcohol drinking behavior and whether viewers perceived the narratives as realistic and enjoyable.

In Hypothesis 1, we predicted that the E-E narratives should have positive short- and long-term impacts on alcohol drinking behavior and determinants. Hypotheses 1a and partly 1e were confirmed with regard to the short-term impact and Hypothesis 1b was confirmed. Viewing the E-E narratives significantly predicted desired short-term changes in the number of alcoholic drinks consumed per occasion, intentions to decrease alcohol use, and perceived normative pressure. Although positive and negative outcome expectancies and descriptive norms proved to have changed in the desired direction as predicted by Hypotheses 1c, 1d, and 1e, viewing the E-E narratives did not predict these changes. One year after the broadcasting period, we detected a significant impact of the E-E narratives on intentions and not on the other alcohol behavior measures. We also investigated whether the education level of viewers affected the impact of the E-E narratives. The results showed that especially among less educated viewers the E-E narratives had a significant short-term impact on alcohol drinking behavior (number of drinks per occasion), intentions to decrease alcohol use, and perceived normative pressure.

On the basis of these results, we can conclude that the E-E narratives had a significant, positive short-term impact on (determinants of) alcohol drinking behavior, especially among less educated adolescents. These results support earlier statements and findings that E-E can have an impact on health-related determinants and behaviors (Hether et al., 2008; Moyer-Gusé & Nabi, 2010; Singhal & Rogers, 2004).

Viewers thought narrative realism was high, indicating that they perceived the stories and characters as plausible and credible. However, viewers did not consciously use, or intend to use, elements of the story in their own lives (low utility) and did not perceive many similarities between themselves and the characters or

their situations; neither did they perceive any involvement with the characters (low identity). Hypotheses 2b and 2c were confirmed; utility and narrative realism predicted whether viewers enjoyed watching the E-E narratives. Hypothesis 2a was not confirmed; identity did not predict enjoyment. We also investigated whether the E-E narratives were perceived as more realistic and enjoyable by less educated viewers, as they were a priority group for the E-E narratives. The results showed that a lower education predicted higher enjoyment of the E-E narratives but did not predict higher perceived realism.

With these results, we add knowledge about how different types and dimensions of perceived realism of narratives relate to enjoyment of (E-E) narratives. The results imply that, for an E-E narrative to be enjoyable, narrative realism and utility should be high. This is in line with the recommendations in narrative persuasion that, within its fictional context, a narrative should be coherent and logical (Busselle & Bilandzic, 2008), and the events should be considered useful to the receiver (Busselle & Greenberg, 2000). Our results suggest that identity has no impact on the enjoyment of the narrative. Indeed, for enjoyment purposes, people may be motivated to accept, at least temporarily, a fictional world (Green & Brock, 2000) and enjoy not being focused on the self (Green, Brock, & Kaufman, 2004). Additionally, the results of a study conducted by Green and Brock (2000) show that fictional stories indeed are capable of affecting receivers' real-world beliefs. Therefore, fictional E-E stories that are relatively unrelated to receivers' own experiences may be enjoyable and effective as long as the story itself is logical, coherent, and plausible and the story elements are considered as useful. Enjoyment of the E-E narratives could thus have been higher if utility had been higher.

Unfortunately, our results do not provide insights into what story elements or characteristics were perceived by the adolescents as useful/not useful and why these elements were perceived in that manner. These insights would have been useful for the development of future enjoyable E-E narratives. Thus, future research should focus on the individual processes and story elements that account for positive or negative evaluations of dimensions of perceived realism.

In contrast to our expectations, the impact on behavior of the E-E intervention was not predicted by the extent to which viewers perceived the narratives as realistic (Hypothesis 3). We present two possible explanations. First, nine episodes were broadcast between pre- and posttest, but evaluations on realism were assessed for five episodes. The four episodes that were not included may have been responsible for the impact on behavior. Second, other reception processes not measured in this study could be responsible for the impact of this E-E intervention. Although we assessed involvement with characters and enjoyment of the story, we did not assess emotional involvement in the storyline. As mentioned in the introduction, the feeling of being swept up in a narrative (transportation), for example, is con-

sidered an underlying mechanism in narrative persuasion (Appel & Richter, 2010; Dal Cin et al., 2004; Moyer-Gusé, 2008; Murphy, Frank, Moran, & Patnoe-Woodley, 2011; Slater & Rouner, 2002). According to the Extended Elaboration Likelihood Model, transportation in a narrative should reduce counterarguing, because, while being transported, viewers are not motivated to produce counterarguments (Slater & Rouner, 2002); this would increase persuasion. Because the psychological mechanisms behind E-E or narrative persuasion are not yet well understood (Dal Cin et al., 2004; De Graaf, 2010; Green & Brock, 2002; Murphy et al., 2011), it would be interesting to investigate in futures studies whether transportation in an E-E narrative explains adolescent behavioral change by reducing resistance processes (such as counterarguing).

This study has some limitations. Participants were not randomly assigned to the viewers or nonviewers group so we should be cautious about extrapolating the results to the general population of adolescents. Although viewers and nonviewers at pretest did not differ significantly in gender, age, education level, and alcohol drinking behavior and determinants, participants were nonviewers and viewers by self-selection (they chose to watch or not to watch the E-E narratives). Because the strength of the cognitions, such as outcome expectancies and intentions to decrease alcohol drinking, was not assessed, viewers may have watched *Roës* because of stronger negative outcome expectancies or stronger intentions to change their alcohol drinking behavior than nonviewers. These expectancies and intentions among viewers may have led *Roës* to have a larger impact on intentions and alcohol drinking behavior than it would have had on adolescents with weaker expectancies or intentions because of a higher readiness to change. Viewers may be more accepting of E-E narratives, and this could have influenced the impact of the narratives. We suggest that future studies with a similar research design include measures on, and control for, the strength of expectancies and intentions to further evidence that an observed impact can be ascribed to the intervention. Nonetheless, this study still shows that, once viewers are motivated to watch the E-E narratives and are stimulated to elaborate on them, there is an impact on health-related determinants and behavior.

Were the effects of the E-E narratives worth the investment? Although we found that viewing the E-E narratives predicted short-term changes in the number of alcoholic drinks consumed per occasion, in intentions to decrease alcohol use, and in perceived normative pressure, the amount of variance that was explained by our models was not large (3% to 7%). On the basis of these percentages, one might conclude that the effect size of the E-E narratives was modest. However, the E-E narratives reached thousands of viewers. As Noar (2006) suggests, a mass media intervention like these E-E narratives with a moderate effect size could have a substantial impact on public health, because of the large audience that is reached.

Additionally, the E-E narratives are still available and sold on DVD, mostly to addiction care centers or organizations working with adolescents (e.g., youth care) to be shown in schools or in groups. The reactions of these organizations suggest that they consider the E-E narratives to be a valuable complement to their traditional prevention programs. Unfortunately, there are no studies investigating how many groups of adolescents have been exposed to the E-E narratives via the DVD and whether this exposure has had an impact on intentions or behavior. We do know that adolescents nowadays continue to be exposed to the E-E narratives, and on the basis of this study, this exposure might be expected to have a positive impact on intentions and behavior. We thus conclude that, although the effect size in the study sample may be small, the effects of these E-E narratives (may) have been worth the investment.

## 2.5 Implications for practice

With our study, we add knowledge about the possible effects of E-E on adolescent alcohol use that may be of use to health organizations that develop and implement interventions aimed at adolescents' substance use. In the literature, televised E-E interventions aimed at adolescents (and the prevention of alcohol use) and their results are rarely described. To our knowledge, only Lalonde and colleagues have reported their impact evaluation of an E-E intervention aimed at adolescent alcohol use (Lalonde & Rabinowitz, 1997). Their results and our study show that the E-E strategy may be worth considering when health organizations are in the process of identifying an effective preventive strategy targeted at less educated adolescents and substance use. Although the study showed a positive impact of the E-E intervention on alcohol drinking behavior, most of the impact (except on intentions to decrease alcohol use) was no longer present after 1 year. This is a common problem of health campaigns. Pervasive marketing for competing products or with opposing messages, the power of social norms, and the drive of addiction frequently mean that positive campaign outcomes are not sustained (Wakefield et al., 2010). Adolescents probably are exposed to other media portraying (mostly positively) alcohol drinking behavior in movies, soaps, and music videos. This exposure to alcohol depictions has been shown to increase alcohol drinking (for an overview, see Dal Cin et al., 2009). One broadcasting period of the E-E intervention may not have been sufficient to result in sustained effects within a media environment that stimulates alcohol drinking behavior. It may therefore be necessary to expose adolescents more frequently to an E-E intervention that targets adolescents' alcohol use, for example, by implementing the intervention in school-based projects.

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# Chapter 3

## **Understanding the impact of entertainment-education narratives**

*A theoretical exploration of the interplay between  
recipients' narrative engagement and their  
thoughts*

Lonneke van Leeuwen, Bas van den Putte, Reint Jan Renes, and Cees Leeuwis

# Abstract

This article aims to elucidate how engagement in entertainment-education (E-E) narratives relates to recipients' thoughts in response to such narratives, as well as E-E impact on target behaviors. Integrating insights from the extended elaboration likelihood model, the model of narrative comprehension and engagement, and earlier empirical research on these models, we propose distinct relations between narrative engagement and distinct types of thoughts. Thoughts about the narrative form (e.g., realism or quality) may predict narrative engagement. Consequently, narrative engagement may reduce recipients' ability to produce thoughts consistent with their current attitude towards the target behavior. Also, narrative engagement may trigger vicarious and self-referencing thoughts which may predict E-E impact. Empirical and practical implications of the proposed model are discussed.

### 3.1 Background

Entertainment-education (E-E) has been shown to be a promising way to communicate health messages to recipients. E-E narratives are narratives that are intentionally designed to communicate messages that positively influence determinants of health or prosocial behavior, such as beliefs, attitudes, and intentions (Kaiser Family Foundation, 2004; Singhal & Rogers, 2004). In this article, this positive impact of E-E narratives on determinants of a healthy target behavior is referred to as E-E impact. Televised E-E narratives have been shown to yield E-E impact. For example, *ER* and *Grey's Anatomy* showed storylines relating to breast cancer, and these storylines created favorable attitudes towards breast cancer screening in recipients (Hether, Huang, Beck, Murphy, & Valente, 2008). This is one of the many examples showing that televised E-E narratives can be an effective (health) communication strategy (Moyer-Gusé & Nabi, 2010; Singhal & Rogers, 2004; for an extensive overview: Sood, Menard, & Witte, 2004).

To be able to create effective televised E-E narratives, insight is needed into which psychological processes are responsible for E-E impact (Dal Cin, Zanna, Fong, Knowles, & Linn, 2004; Moyer-Gusé, 2008). Narrative engagement is often mentioned as an important process for E-E impact, and refers to the degree to which recipients are cognitively and affectively invested in the characters and storyline of narratives (Slater & Rouner, 2002). Research has shown that narrative engagement is associated with, for example, changed beliefs about the topics addressed in narratives (Green & Brock, 2000) and changed behavioral intentions (Dunlop, Wakefield, & Kashima, 2010). Unfortunately, less is known about how narrative engagement leads to E-E impact. One of the most cited explanations is that, while engaged in an E-E narrative, recipients may not have the motivation or the ability to generate unfavorable thoughts about the narrative and its embedded messages (Busselle & Bilandzic, 2009; Green & Brock, 2000; Kreuter et al., 2007; Slater & Rouner, 2002). This reduction of unfavorable thoughts while viewing an E-E narrative may thus lead to E-E impact.

It seems, however, that more relations may exist among narrative engagement, thoughts, and E-E impact. Recipients may generate different types of thoughts in response to E-E narratives, such as thoughts relating to the narrative form or thoughts relating to the target behavior of the narrative (Moyer-Gusé, Chung, & Jain, 2011). It is still unclear whether different thoughts relate differently to narrative engagement and, if so, which thoughts are most relevant for E-E impact (Moyer-Gusé et al., 2011). Moreover, thoughts in response to E-E narratives may be unfavorable or favorable (Dal Cin et al., 2004). Previous theorizing has primarily discussed the role of unfavorable thoughts. Although it can be expected that favorable thoughts also play a role in E-E impact, the ways in which narrative engage-

ment may relate to such thoughts have not received much theoretical attention.

Therefore, the focus of our article is on understanding relations among narrative engagement, recipients' thoughts in response to E-E narratives (in short: thoughts), and E-E impact. After describing narrative engagement in more detail, we discuss two theories often applied in understanding relations among narrative engagement, thoughts, and E-E impact: the model of narrative comprehension and engagement (Busselle & Bilandzic, 2008) and the extended elaboration likelihood model (Slater & Rouner, 2002). We briefly discuss some empirical studies that have applied (one of) these theories and then elaborate on how current theory can be refined or may be extended to better understand and predict E-E impact.

We argue that the favorability of thoughts about the narrative form may influence the level of narrative engagement. Consequently, narrative engagement may influence thoughts about the target behavior. Narrative engagement may reduce attitude-consistent thoughts because it reduces recipients' access to their current beliefs and to real-world knowledge relating to the target behavior. At the same time, narrative engagement may trigger favorable thoughts relating to the target behavior, when recipients vicariously experience the narrative events related to the target behavior. We argue that the latter thoughts will predict E-E impact. Thus, we claim that thoughts about both the narrative form and the target behavior are relevant for understanding E-E impact, and that these thoughts play a specific role in this impact. Moreover, we claim that, depending on the type of thoughts, narrative engagement may both reduce and trigger thoughts relating to the target behavior. Finally, we discuss how our article's insights can be applied in future research and in the development of more engaging and impactful E-E narratives.

### **Narrative engagement**

Narrative engagement feels like being lost in the narrative (Green, Brock, & Kaufman, 2004). Narrative engagement also resembles *flow*, describing recipients' experience of effortlessly and fluently following the narrative (Busselle & Bilandzic, 2008, 2009; Csikszentmihalyi, 1990). While engaged, recipients feel closer to the world of the narrative than to their physical surroundings, vicariously experiencing the events and situations through their connection with characters (Green & Brock, 2002; Green, Garst, & Brock, 2004). More specifically, recipients may experience four unique engagement processes (Busselle & Bilandzic, 2009): narrative understanding, emotional engagement, narrative presence, and attentional focus. First, narrative understanding implies that recipients easily make sense of a narrative and interpret narrative events and consequences of events via the psychological perspective of characters. Second, emotional engagement refers to the process in which recipients develop an emotional connection with characters. This connection includes feeling emotions for, and sharing emotions with, characters, and

having feelings of arousal. Third, narrative presence refers to recipients' feelings of being present in the story world and losing self-awareness. Fourth, attentional focus implies that recipients focus their attention solely on the events in the narrative and perceive no difficulty in maintaining this focus. Engaged recipients' attention is not distracted by, for example, noises within the room.

Theory suggests that narrative engagement may influence, and may be influenced by, recipients' thoughts. To better understand how the interplay of narrative engagement and thoughts affects E-E impact, below we discuss the model of narrative comprehension and engagement (Busselle & Bilandzic, 2008) and the extended elaboration likelihood model (Slater & Rouner, 2002). We focus on how these theories suggest narrative engagement should relate to thoughts, what triggers such thoughts, and how these thoughts may relate to E-E impact.

## 3.2 Models on narrative engagement, thoughts, and impact

### Model of narrative comprehension and engagement

The model of narrative comprehension and engagement (MNCE) ascribes important roles to unfavorable thoughts and narrative engagement in the impact of (E-E) narratives. The MNCE focuses on the role of unfavorable thoughts relating to the degree of realism of narratives. Two types of realism are distinguished. The first realism type, external realism, is based on recipients' real-world knowledge about a specific topic (e.g., birds can fly and humans cannot fly) and is violated when events or behaviors in a narrative do not match with this real-world knowledge (e.g., 'This is impossible! How can that character suddenly fly away?'). The second realism type, narrative realism, is based on the information provided by a narrative itself (e.g., Superman can fly when he wears his cape) and is violated when recipients perceive a narrative as incoherent or implausible (e.g., 'This is impossible! How can Superman fly away without his cape?') (Busselle & Bilandzic, 2008, 2010). When such deviations from reality remain unexplained by the narrative, recipients will be motivated to produce unfavorable thoughts about the degree of realism.

According to MNCE, unfavorable thoughts about realism will not directly decrease E-E impact, but may indirectly do so via lowering narrative engagement. When recipients smoothly process the narrative, they may become deeply engaged in it. However, when recipients observe violations of realism and start producing unfavorable thoughts in relation to realism, their attention shifts from following the narrative to the violations of realism, lowering narrative engagement. Furthermore, while producing such thoughts, recipients cease to be present in the narrative world and become aware of their physical surroundings. The model suggests that, as a result of lowered narrative engagement, E-E impact will be negatively affected.

As opposed to unfavorable realism thoughts, MNCE suggests that favorable realism thoughts are unrelated to narrative engagement. This follows from the assumption that accepting the narrative is recipients' default position. Recipients may not be concerned about evaluating whether a narrative is realistic, except when something unexpectedly happens in the narrative (Busselle & Bilandzic, 2008). Thus, the model suggests that only deviations from reality will be noted by recipients, triggering unfavorable thoughts.

Whereas MNCE focuses mainly on how thoughts affect narrative engagement, the extended elaboration likelihood model (Slater & Rouner, 2002) focuses on how narrative engagement affects thoughts and, in turn, E-E impact.

### **Extended elaboration likelihood model**

The extended elaboration likelihood model (E-ELM) focuses on understanding how persuasive content within E-E narratives is processed. The E-ELM suggests that unfavorable thoughts (in the model referred to as counterarguments) are produced when the narrative's message is incompatible with recipients' existing attitudes and knowledge. The production of thoughts incongruent with the narrative's message can be perceived as a defense mechanism aimed at attacking persuasive messages.

The E-ELM suggests that narrative engagement is important for E-E impact because when counterattitudinal recipients experience narrative engagement they will produce fewer unfavorable thoughts about the topic of the E-E narrative. This stems from the assumption that, while engaged, recipients lack the motivation and the ability to generate unfavorable thoughts inconsistent with the persuasive argument of the narrative. For example, in response to a persuasive anti-alcohol message, a recipient with a positive attitude towards alcohol drinking will likely defend his current attitude with favorable thoughts about drinking or unfavorable thoughts about limiting drinking. In response to an E-E narrative communicating an anti-alcohol message, narrative engagement will bypass this defense mechanism, resulting in fewer unfavorable thoughts about limiting alcohol use.

In addition to unfavorable thoughts, E-ELM assumes that favorable thoughts about the message are also involved in E-E impact. The net polarity of both unfavorable and favorable thoughts will predict E-E impact. This means that, if recipients produce more favorable than unfavorable thoughts, the net favorability of thoughts will be positive, and E-E impact can be expected. Nevertheless, E-ELM focuses mainly on explaining how narrative engagement reduces unfavorable thoughts produced by counterattitudinal recipients, and how this reduction leads to a higher favorability of thoughts about the message. E-ELM does not describe in further detail what are considered favorable thoughts, how narrative engagement may trigger such thoughts, and why such thoughts may lead to E-E impact.

In summary, both MNCE and E-ELM describe how narrative engagement may

be related to thoughts in response to E-E narratives. According to MNCE, unfavorable realism thoughts should reduce narrative engagement. According to E-ELM, strong narrative engagement should reduce unfavorable thoughts aimed at the E-E narrative's message, resulting in E-E impact. The theories seemingly focus on different thoughts and propose different relations among thoughts, narrative engagement, and E-E impact (Figure 3.1). Below, we discuss whether empirical studies have taken into account these different thought types while investigating how the interplay of narrative engagement and thoughts affects E-E impact.

### 3.3 Empirical research on narrative engagement, thoughts, and impact

Empirical studies show varying results regarding whether narrative engagement is associated with recipients' favorability of thoughts. Some studies found that narrative engagement indeed reduced unfavorable thoughts (e.g., Dunlop et al., 2010; Green & Brock, 2000), others found no relationship (Busselle, Bilandzic, & Zhou, 2009), and sometimes an opposite relation was found: higher narrative engagement was associated with increased generation of unfavorable thoughts (Moyer-Gusé & Nabi, 2010). Also, varying results were found on whether thoughts were related to E-E impact. In some studies, the favorability of thoughts in response to narratives was indeed positively associated with E-E impact (Banerjee & Greene, 2012; McQueen, Kreuter, Kalesan, & Alcaraz, 2011), whereas in other studies no relationship was found (e.g., Moyer-Gusé & Nabi, 2010; Slater, Rouner, & Long, 2006). So, empirical studies have not found a consistent relation between narrative engagement and favorability of thoughts, and favorability of thoughts did not always explain E-E impact.

A closer look at the study characteristics shows that most studies differed on at least two variables, and this may explain why study results also varied. First, the studies differed in the type of thoughts considered as relevant in this interplay. For example, some studies hypothesized that not only unfavorable thoughts about realism would reduce narrative engagement, but that unfavorable thoughts about any aspect of the story would reduce narrative engagement (e.g., Busselle et al., 2009). Also, studies differed in which thoughts were considered relevant for mediating the effect of narrative engagement on E-E impact: thoughts about the implicit persuasive theme (e.g., Slater et al., 2006), sometimes combined with thoughts about the stimulus material (e.g., Dunlop et al., 2010), or critical thoughts in response to the narrative (e.g., Green & Brock, 2000). Second, the studies differed in whether only unfavorable thoughts were considered relevant (e.g., Green & Brock, 2000; Moyer-Gusé & Nabi, 2010), or whether only favorable thoughts (e.g., Baner-

jee & Greene, 2012) or both unfavorable and favorable thoughts (e.g., Dunlop et al., 2010) were relevant. These variations show that there is no consensus yet on what types of thoughts are relevant to consider, in relation both to narrative engagement and to E-E impact.

To increase our understanding of the interplay of narrative engagement and thoughts and to advance empirical testing, types of thoughts should be distinguished and defined more clearly. Furthermore, the specific role of these thought types in E-E impact should be considered in more detail. Therefore, below we distinguish and define two different categories of thoughts and elaborate on the role of these thoughts in E-E impact. The proposed relationships are graphically summarized in Figure 3.2.

### **3.4 Narrative engagement and thoughts relating to the form of E-E narratives**

The first category of thoughts that can be distinguished from theory and empirical studies is thoughts about the narrative form. The MNCE focuses on one aspect of the narrative form, namely, how a lack of realism may trigger unfavorable thoughts during viewing and reduce narrative engagement. Other aspects of the narrative form, however, may also trigger unfavorable thoughts, such as perceptual persuasiveness (Hall, 2003). Perceptual persuasiveness refers to the degree to which a narrative creates a compelling story world, focusing on the means by which a narrative is brought across rather than on the content of the narrative. Factors such as the craftsmanship (Kinnebrock & Bilandzic, 2006), the quality of plot designs, casting and performance, visual effects, and music (Hall, 2003; Lu & Lo, 2007) may all influence the perceptual persuasiveness of E-E narratives. We refer to thoughts about realism and perceptual persuasiveness as thoughts about the narrative form, being thoughts expressing the degree to which a narrative is able to bring across a realistic and appealing story.

In contrast to the MNCE, which suggests that recipients are not likely to produce favorable thoughts about a narrative's form, recipients have been shown to also produce favorable thoughts while viewing. Hall (2003) describes that recipients reported that they had been thinking while viewing 'the way someone played ... that dying scene, was so realistic...' (Hall, 2003, p. 637). Thus, when an E-E narrative is able to bring across an appealing and realistic story, recipients may produce favorable thoughts about the narrative form. As unfavorable thoughts divert attention to the weak points of the narrative, favorable thoughts may in a similar vein direct attention to the strong points of the narrative. Indeed, favorable thoughts about the narrative form have been taken into account in investigations

Figure 3.1 | Simplified representation of the roles of narrative engagement and thoughts adapted from the model of narrative comprehension and engagement (MNCE: Busselle & Bilandzic, 2008) and the extended elaboration likelihood model (E-ELM: Slater & Rouner, 2002).

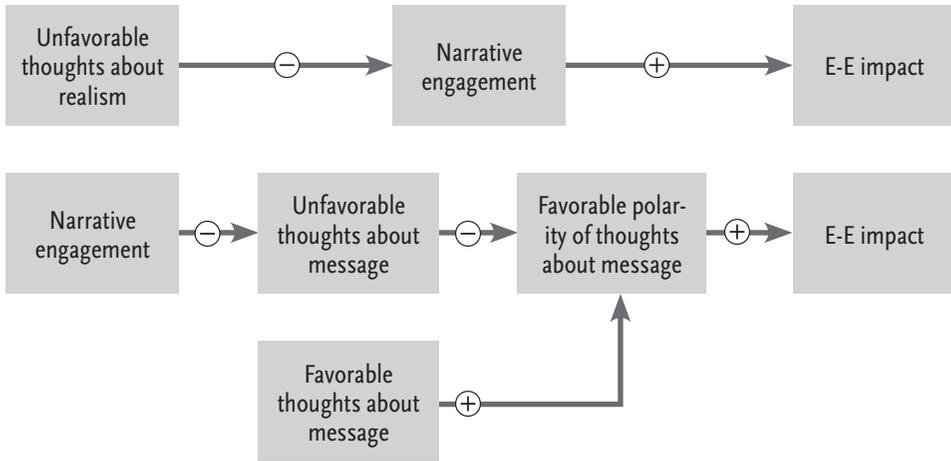
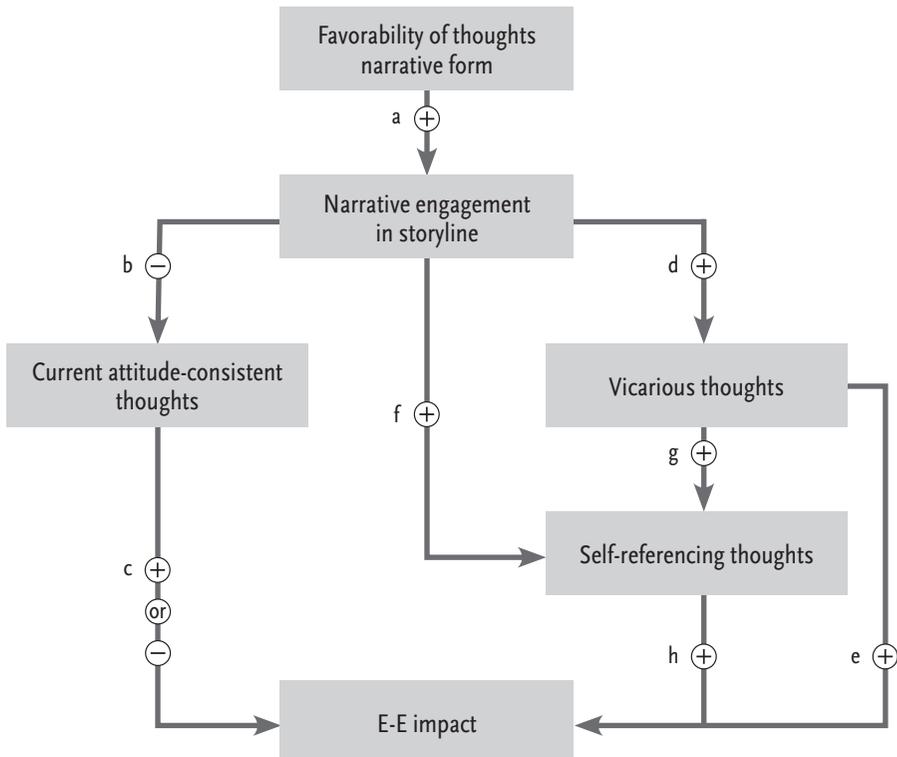


Figure 3.2 | Proposed relations between narrative engagement, thoughts, and entertainment-education (E-E) impact.



of their association with narrative engagement or effects of narratives (Busselle, Ryabovolova, & Wilson, 2004; Dunlop et al., 2010). However, these thoughts were combined into one measure with other types of favorable thoughts (Dunlop et al., 2010) or with neutral thoughts (Busselle et al., 2004). Because of this combination, it is difficult to delineate how favorable thoughts about the narrative form relate to narrative engagement and to E-E impact.

In addition to reducing or increasing narrative engagement via distracting or attracting attention, thoughts about the narrative form may also affect narrative engagement by influencing the attitude towards processing the E-E narrative (Nabi & Krcmar, 2004). If recipients produce unfavorable thoughts about the narrative form, the attitude towards processing the narrative may become more negative. In turn, recipients with an unfavorable attitude towards processing the narrative may become distracted by their physical surroundings, may start producing thoughts unrelated to the narrative, or may stop watching the E-E narrative. These processes are incompatible with experiencing narrative engagement and with E-E impact. Similarly, favorable thoughts about the narrative form may create a favorable attitude towards processing the narrative, resulting in an increased effort to process the narrative (Nabi & Krcmar, 2004).

If unfavorable thoughts about realism will disrupt narrative engagement because thoughts divert attention from the narrative then all thoughts will disrupt the flow of narrative engagement. For example, thoughts unrelated to the narrative, such as 'I am hungry', will also reduce narrative engagement. We here suggest that thoughts about the narrative form may have an additional effect on narrative engagement as compared to unrelated thoughts. Thoughts about the narrative form reflect the degree to which an E-E narrative is able to create a realistic and compelling story world, which is the basis for experiencing narrative engagement. Also, thoughts about the narrative form may influence the attitude towards processing the E-E narrative. We thus argue that the net favorability of thoughts about the narrative form predict narrative engagement, where a positive (negative) net favorability positively (negatively) predicts narrative engagement (Figure 3.2, path a).

So far, we have discussed one category of thoughts relevant for understanding how the interplay of narrative engagement and thoughts may affect E-E impact: thoughts about the narrative form. Next, we identify a second category of thoughts that may be involved: thoughts relating to the target behavior of the E-E narrative.

### 3.5 Narrative engagement, thoughts relating to the target behavior, and E-E impact

As suggested by E-ELM (Slater & Rouner, 2002), narrative engagement may influence recipients' thoughts in relation to the E-E narrative's message. In E-E narratives generally, the implicit message is that it is preferable to perform some target behavior (e.g., limit alcohol use) and to refrain from the detrimental alternative (e.g., binge drinking). In E-E narratives, this message is brought across by showing positive role models who experience beneficial events relating to the target behavior (e.g., winning an important match after a non-alcoholic night out) and negative role models who suffer from harmful events because they are involved in the detrimental alternative (e.g., having an accident after drink driving) (Bandura, 2004). When recipients are exposed to these role models and their experiences, they may generate favorable thoughts about the target behavior (e.g., 'limiting alcohol is healthy' or 'how smart of the character to limit alcohol use') or unfavorable thoughts about the target behavior thoughts (e.g., 'but drinking increases the fun').

E-ELM suggests that narrative engagement will reduce the production of unfavorable thoughts about the target behavior, increasing the net favorability of thoughts about this behavior, which then should lead to positive attitude change (Slater & Rouner, 2002). Consistent with this notion, Green and Brock (2000) and Busselle and Bilandzic (2008) have suggested that narrative engagement will block elaboration on the target behavior. While recipients experience narrative engagement, following the narrative will occupy all their cognitive energy, reducing their self-consciousness (Busselle & Bilandzic, 2008). Recipients will have less access to their own real-world knowledge, their current beliefs, and their own experiences with the target behavior. Given that recipients' existing knowledge of, beliefs about, and experiences with, the target behavior are the basis for elaboration, a lack of access to the self should diminish or even exclude elaboration (Green & Brock, 2000). For example, while engaged in an E-E narrative aiming to reduce alcohol binge drinking, recipients will not be able to carefully consider and weigh current cons or pros relating to reducing binge drinking. In recipients with a current favorable attitude towards binge drinking, thoughts such as 'but binge drinking increases the fun' will be reduced. However, in recipients with an unfavorable attitude towards binge drinking, desired thoughts such as 'binge drinking is unhealthy' may also be less accessible. Thus, under high narrative engagement, we may find fewer attitude-consistent thoughts about the target behavior. Indeed, Petty, Wells, and Brock (1976) showed that interfering with thinking about a message can both enhance persuasion when counterarguing is likely and reduce persuasion when favorable thoughts are likely to be produced. Similarly, if narrative engagement interferes with thinking about the target behavior, narrative engagement may lead to a reduction of unfa-

avorable as well as favorable thoughts. When recipients experience low narrative engagement, they do have the time and ability to elaborate on the target behavior. Pre-existing negative or positive beliefs may then become activated, resulting in a more negative or positive attitude (Fishbein & Yzer, 2003). In sum, we suggest that, depending on the level of narrative engagement, more or fewer attitude-consistent thoughts will be formed (Figure 3.2, path b) and that these thoughts may have a desired or adverse effect on the target behavior, depending on whether the current attitude towards the target behavior is favorable or unfavorable (Figure 3.2, path c).

In addition to reducing the ability to elaborate on the target behavior and to reducing the activation of pre-existing beliefs, narrative engagement may trigger thoughts in favor of the target behavior. We here suggest that these favorable thoughts may take the form of vicarious thoughts and self-referencing thoughts. Firstly, vicarious thoughts are thoughts imagined to be those of the character (Cohen, 2001). For example, in a narrative where a character experiences a terrible hangover from binge drinking, recipients may vicariously think ‘Binge drinking was a bad idea.’ As mentioned earlier, narrative engagement is suggested to be involved in creating vicarious experiences, which may include such vicarious thoughts. In turn, these vicarious thoughts may shift the recipients’ attitude (Green & Brock, 2002; Green, Garst, & Brock, 2004). Indeed, thoughts produced while viewing may be stored in memory and relate to impact (e.g., Busselle & Bilandzic, 2008; Hastie & Park, 1986). In the case of E-E narratives, characters’ experiences and narrative events favor the target behavior and thus vicarious thoughts will also favor the target behavior. Therefore, narrative engagement may trigger vicarious thoughts that favor the target behavior (Figure 3.2, path d). In turn, vicarious thoughts may be stored in memory and may positively influence E-E impact (Figure 3.2, path e).

Secondly, narrative engagement has been shown to trigger self-referencing thoughts relating to the target behavior (Dunlop et al., 2010). Self-referencing thoughts are thoughts about how the narrative events relate to recipients’ own behavior, situation, and past experiences (Burnkrant & Unnava, 1995). For example, narrative engagement in an E-E narrative showing characters experiencing negative consequences of binge drinking may lead to self-referencing thoughts about one’s own experiences with binge drinking. Given that self-referencing involves associating narrative information with recipients’ personal memories (Dunlop et al., 2010) and that narrative engagement may reduce access to this personal knowledge while viewing, self-referencing thoughts are likely to be produced after experiencing narrative engagement (Figure 3.2, path f). Such self-referencing thoughts may be influenced by vicarious thoughts during viewing (Figure 3.2, path g), because such thoughts may trigger recipients to think about what they would do in if they experienced the events portrayed in the narrative (e.g., ‘I would not drink that much’). Consistent with earlier research showing that self-referencing is associated with

persuasive effects (for an overview, see Dunlop et al., 2010), and assuming that the narrative events favor the target behavior, we propose that self-referencing in response to E-E narratives will also lead to E-E impact (Figure 3.2, path h).

In sum, from the discussion of relevant theories and empirical research, we argue that different thoughts in response to E-E narratives may play different roles in E-E impact. Thoughts about the narrative form may influence narrative engagement and thus, indirectly, E-E impact. In turn, narrative engagement reduces current attitude-consistent thoughts. On the other hand, narrative engagement may trigger vicarious thoughts during viewing and self-referencing thoughts after viewing, both of which may predict E-E impact.

### 3.6 Discussion

In this article, we have examined possible relations between recipients' thoughts, narrative engagement, and E-E impact. Using E-ELM and MNCE as a starting point, we propose a conceptual model that distinguishes and defines two relevant categories of thoughts and considers their relation with narrative engagement and their roles in E-E impact. This model makes five contributions to E-ELM and MNCE. First, we assume that it is not only thoughts about realism that may influence narrative engagement but that, more broadly, all thoughts about the narrative form influence narrative engagement. Second, we suggest that it is not only unfavorable thoughts about the narrative form that affect narrative engagement: favorable thoughts may positively influence narrative engagement. Third, we posit that thoughts about the narrative form may influence the viewers' attitude towards processing the narrative, which in turn influences narrative engagement. Fourth, we propose that narrative engagement blocks elaboration on the target behavior, thus both unfavorable and favorable thoughts about the target behavior. Fifth, we suggest that vicarious thoughts and self-referencing thoughts mediate the effect of narrative engagement on E-E impact. Consequently, the proposed model explains not only why narrative engagement can reduce unfavorable thoughts relating to the target behavior in recipients who have a pre-existing counter attitude, but also how narrative engagement may trigger favorable thoughts relating to the target behavior in all recipients, independent of whether their pre-existing attitude towards the target behavior is absent, negative, neutral, or positive.

The current article may help to elucidate why earlier empirical studies on narrative engagement, narrative-related thoughts, and E-E impact found different results. Studies differed in whether thoughts about the target behavior, thoughts about the narrative form, or a combination of both, were analyzed in relation to narrative engagement and E-E impact. Also, vicarious thoughts, self-referencing

thoughts, and attitude-consistent thoughts about the target behavior were not yet distinguished. With the introduced conceptual model, we suggest that thoughts both about the narrative form and about the target behavior are relevant, but that these thoughts are differently related to narrative engagement and E-E impact. Consequently, when studies focus on different types of thoughts, the model suggests that different results may be found. Unfortunately, we cannot test whether results from earlier empirical studies support or falsify our proposed relations, because most studies measure different types of narrative-related thoughts simultaneously, with one measure. For example, in Dunlop et al.'s study (2010), the measure of participants' thoughts is a combination of thoughts about the target behavior as well as about the narrative form. Also, unfavorable and favorable thoughts are combined into one measure. Because of these combined measures, relations between different thought types, narrative engagement, and E-E impact cannot be delineated.

The proposed model may advance future research on understanding E-E impact in two ways. First, because different relevant narrative-related thoughts are distinguished, future empirical studies can test specific hypotheses about how recipients' thoughts relate to narrative engagement and to E-E impact. One way to investigate these relationships is by experimentally exposing recipients to an E-E narrative and providing some of them, for example, with instructions to critically watch how the E-E narrative is made. This may trigger unfavorable thoughts about the narrative form. Whether such thoughts are indeed triggered in recipients can be confirmed with a thought-listing task. Then, the influence of these thoughts on narrative engagement can be investigated, as well as the role of narrative engagement in E-E impact. Another way to test the model is to experimentally manipulate recipients' narrative engagement in an E-E narrative, and to investigate whether narrative engagement blocks current attitude-consistent thoughts and triggers vicarious and self-referencing thoughts. Narrative engagement may be manipulated by instructing participants to actively imagine themselves in the shoes of the character (Green, 2004). Again, a thought-listing task may capture thoughts about the target behavior. Analyses may reveal whether narrative engagement triggers vicarious thoughts and self-referencing thoughts, and whether these thoughts predict E-E impact.

Second, the model makes clear that it is important that researchers report in more detail how and why specific thought types were assessed in their studies. An example of a study in which thought types are distinguished is a study by Niederdeppe, Kim, Lundell, Fazili, & Frazier (2012). This study found, for example, that a story about an individual dealing with obesity triggered more thoughts focusing on societal causes and solutions for obesity than did a story about a community dealing with obesity. In this case, thoughts focusing on societal causes and solutions

explained the narrative impact found in the study. Other seemingly relevant thought types were assessed but did not explain the found impact. Although Niederdeppe et al.'s study does not explore how participants' narrative engagement affects, or is affected by, narrative-related thoughts, the results show that it is important to specify and consider different roles for different thought types in response to narratives. Niederdeppe et al.'s study and the current article may encourage scholars to provide more descriptive data on the nature of the thoughts reported by participants. Such data add to a more complete understanding of the nature of recipients' thoughts in response to E-E narratives, and may in the future add to understanding how thought types relate to narrative engagement and to E-E impact.

Of course, the proposed model has its limitations. The first limitation is that the model may explain short-term impact better than long-term impact. For example, the influence of self-referencing thoughts on the target behavior may be stronger directly after narrative exposure than after a period of time, because these thoughts may fade into the background. The question thus is whether the short-term effects on the target behavior induced by narrative engagement will last. Research has shown that persuasive effects of a single exposure to narratives increase over time (Appel & Richter, 2007). This may suggest that the impact of self-referencing thoughts may also be persistent. Future studies may thus focus on whether narrative engagement and thoughts relating to the target behavior are indeed related to long-term E-E impact.

The second limitation of the model is that relationships between narrative engagement and thought types may also be reversed or circular. For example, fewer unfavorable thoughts about the form may lead to more narrative engagement, but narrative engagement may also lead to fewer unfavorable thoughts about the form. Although we provide valid arguments for the proposed directionality of these relations, this does not mean that a reversed directionality is impossible. Future experiments may provide more insight into the exact directionality of relations among narrative engagement, narrative-related thoughts, and E-E impact.

The third limitation of the model is that it focuses on how narrative engagement relates to a cognitive route from exposure to E-E impact. This does not mean that we suggest that this is the only route that may explain E-E impact. Numerous other mechanisms may also play a role. For example, there is evidence of an affective route from narrative engagement to narrative impact (Dunlop et al., 2010). Self-referencing has been shown to trigger affective responses, and these affective responses increased felt risk and influenced intentions. Also, reception processes other than narrative engagement may play a role in E-E impact, such as identification with characters (e.g., Cohen, 2001; De Graaf, Hoeken, Sanders, & Beentjes, 2012; Moyer-Gusé, 2008). The reason for not including affective pathways or other reception processes stems from our interest in better understanding how different

thoughts relate to narrative engagement and E-E impact, and why results of empirical studies on this mechanism are puzzling.

### **Practical implications for E-E development**

This article aims to increase understanding of the role of recipients' narrative-related thoughts and narrative engagement in E-E impact. As such, the proposed conceptual model may help understanding why narratives in general may affect recipients' behaviors. The reason for building this model was to understand how E-E narratives can yield impact, thereby contributing to the development of more impactful E-E narratives. Generally, it is recommended that, in the development phase of E-E narratives, formative research should be performed to collect feedback from the target recipients on narrative concepts to increase their impact (Bouman, 2002; Sood et al., 2004). On the basis of this article, we encourage E-E developers to collect data on several relevant types of thoughts. Thoughts about the narrative form are relevant because they influence narrative engagement and, consequently, E-E impact. Thus, when recipients produce unfavorable thoughts about, for example, the degree of internal realism of the E-E narrative, E-E developers might want to consider changing the storyline. Vicarious and self-referencing thoughts about the target behavior are relevant because these thoughts predict E-E impact. If recipients produce few vicarious thoughts, the E-E developers may want to create more engaging role models and more engaging narrative events. Knowledge about how the interplay of narrative engagement and narrative-related thoughts affects E-E impact may thus contribute both to a theoretical understanding of the impact of E-E narratives and to the development of more impactful E-E narratives.

# Chapter 4

**Do narrative engagement and recipients' thoughts explain the impact of an entertainment-education narrative on discouraging binge drinking?**

Lonneke van Leeuwen, Bas van den Putte, Reint Jan Renes, and Cees Leeuwis

# Abstract

Previous research suggests that narrative engagement (NE) in entertainment-education (E-E) narratives reduces counterarguing, thereby leading to E-E impact on behavior. It is, however, unclear how different NE processes (narrative understanding, attentional focus, emotional engagement, narrative presence) relate to different thought types (negative or positive; about the narrative form or about the target behavior) and to E-E impact. This study explores these relations in the context of alcohol binge drinking (BD). Participants ( $N = 172$ ) watched an E-E narrative showing negative BD consequences, thereby aiming to discourage BD. Main findings were that the E-E narrative had a positive impact on discouraging BD on almost all assessed BD variables such as beliefs and attitude. It was shown that attentional focus, emotional engagement, and narrative presence were associated with BD-discouraging impact, albeit on different BD-related variables. No evidence was found that negative thoughts about BD mediated any of these associations. From this we conclude that attentional focus, emotional engagement, and narrative presence were important for E-E impact, and that negative thoughts about BD did not play a role therein. Surprisingly, higher narrative understanding was associated with more willingness to engage in BD. The study's empirical and practical implications are discussed.

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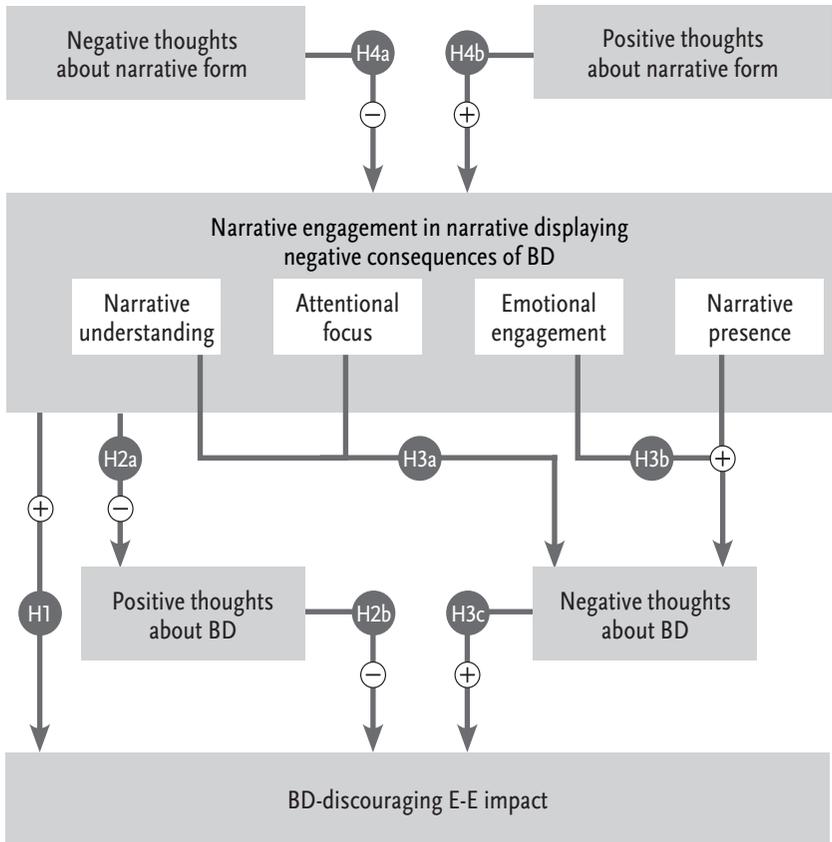
## 4.1 Background

Research has shown that campaigns applying the entertainment-education (E-E) strategy have been effective in encouraging healthy behaviors (for an extensive overview: Sood, Menard, & Witte, 2004). In the E-E strategy, pro-health messages are purposely incorporated into narratives with the aim of positively influencing determinants of behavior, such as beliefs and attitudes (Kaiser Family Foundation, 2004; Singhal & Rogers, 2004). For example, episodes of *Grey's Anatomy* and *ER* focused on the risk of breast cancer in women with a specific gene mutation (BRCA1). The purpose of the breast cancer storylines was to increase knowledge about the mutations and to encourage breast cancer screening. A study showed that these storylines indeed influenced recipients' knowledge, attitudes, intentions, and behaviors as intended (Hether, Huang, Beck, Murphy, & Valente, 2008).

To be able to develop impactful E-E narratives in the future, insight is needed into the mechanisms underlying the impact of E-E narratives on behavioral determinants (hereafter: E-E impact) (Moyer-Gusé, 2008). Multiple researchers argue that recipients' engagement in E-E narratives plays an important role in E-E impact (Busselle & Bilandzic, 2009; Green & Brock, 2000; Kreuter et al., 2007; Slater & Rouner, 2002). Narrative engagement is characterized by engagement in the storyline of narratives and in the characters. Simply put, narrative engagement feels like being 'lost' in a narrative (Green, Brock, & Kaufman, 2004). While engaged, recipients would be less able and less motivated to produce negative thoughts (also referred to as counterarguments, unfavorable cognitions, counter thoughts, critical thoughts) about the narrative's content while they are viewing it. This reduced generation of negative thoughts should lead to E-E impact. However, recipients produce different types of negative thoughts in response to E-E narratives. Thoughts may be aimed towards the health issue addressed in the E-E narrative or towards the storyline and its realism (Moyer-Gusé, Chung, & Jain, 2011). In addition, recipients may also produce positive thoughts in response to narratives (Dal Cin, Zanna, Fong, Knowles, & Linn, 2004). It is as yet unclear how narrative engagement interacts with these different thought types to produce E-E impact (Moyer-Gusé et al., 2011). Therefore, the present study takes narrative engagement as the central construct and explores relations between narrative engagement, different thought types that recipients may produce while viewing, and immediate E-E impact.

These relations are explored in the context of alcohol binge drinking (BD). BD is defined as consuming at least four or five alcoholic drinks at one sitting, for females and males, respectively (NIAAA, 2004). The study employs an audiovisual E-E narrative portraying negative consequences of BD to discourage BD (Van Leeuwen, Renes, & Leeuwis, 2013).

Figure 4.1 | Proposed relations among narrative engagement dimensions, thoughts, and E-E impact on discouraging binge drinking (BD).



### Narrative engagement, thoughts relating to alcohol (binge) drinking, and E-E impact

Engagement in E-E narratives may result in changed beliefs (Green, 2004), attitudes, and intentions in relation to the behavior targeted by the narrative (e.g., Dunlop, Wakefield, & Kashima, 2010). Narrative engagement involves four dimensions (Busselle & Bilandzic, 2009): narrative understanding, attentional focus, emotional engagement, and narrative presence. First, narrative understanding implies that recipients understand the narrative and can easily make sense of it. Second, when recipients have attentional focus, they focus their attention solely on the events in the narrative with their attention not distracted by noise, for example. Third, emotional engagement is the process by which recipients develop an emotional connection with characters. This connection includes feeling emotions for, and sharing emotions with, characters and having feelings of arousal. Consequently, emotional

engagement is closely related to recipients' identification with characters (Busselle & Bilandzic, 2009; Cohen, 2001). Fourth, narrative presence refers to recipients' loss of self-awareness, to the sense that they are leaving the real world behind, and to feeling present in the story world.

Narrative engagement may lead to E-E impact via a cognitive pathway (e.g., Dunlop et al., 2010; Slater & Rouner, 2002). Recipients holding opposing beliefs or attitudes are likely to attack traditional persuasive messages in order to defend their current attitude (Slater & Rouner, 2002; Wegener, Petty, Smoak, & Fabrigar, 2004). Thus, in response to a negative message about BD, recipients with a positive attitude towards BD will defend their attitude with positive thoughts about BD. The extended elaboration likelihood model (E-ELM) (Slater & Rouner, 2002) suggests that engagement in E-E narratives blocks this defense mechanism because engaged recipients lack the cognitive ability and motivation to produce such defensive thoughts. By bypassing this defense mechanism, narrative engagement will lead to E-E impact. On the basis of this theory, we firstly hypothesize that, in the case of an E-E narrative displaying negative consequences of BD, narrative engagement will be associated with a BD-discouraging impact (Figure 4.1, H1). Furthermore, we hypothesize that all four narrative engagement dimensions will occupy cognitive resources that are necessary to produce defensive thoughts relating to the target behavior. Thus, in the case of an E-E narrative displaying negative consequences of BD and pro-BD recipients, all four narrative engagement dimensions will lower the generation of positive thoughts about BD (Figure 4.1, H2a), which are negatively related to BD-discouraging impact (Figure 4.1, H2b).

In addition to bypassing defensive thoughts, narrative engagement may also trigger thoughts consistent with the experiences of characters with the target behavior and the narrative events (Cohen, 2001; Slater, Rouner, & Long, 2006; Van Leeuwen, Van den Putte, Renes, & Leeuwis, 2014). E-E narratives typically portray how characters experience beneficial events relating to the target behavior or how the detrimental alternative relates to harmful events (Bandura, 2004). When recipients are engaged in the narrative and imagine themselves in the characters' shoes, this should trigger thoughts congruent with these events (Cohen, 2001; Slater et al., 2006). Thus, in the case of an E-E displaying negative consequences of BD, negative thoughts about BD may be triggered.

Whereas we expect with H2a that all narrative engagement dimensions lower positive thoughts about BD, we do not expect that all processes are involved in triggering negative thoughts about BD. Because emotional engagement and narrative presence create a strong attachment to the narrative's characters and facilitate vicariously experiencing the events relating to the target behavior, these processes may be especially powerful in triggering thoughts consistent with the narrative events. In contrast, attentional focus and narrative understanding may be

more associated with the degree to which a recipient fluently processes the narrative, but this does not necessarily include vicariously experiencing narrative events relating to the target behavior. Indeed, it has been suggested that attentional focus and narrative understanding may be the preconditions under which recipients may experience emotional engagement and narrative presence (Sukalla, Bilandzic, Schnell, & Busselle, 2014). On the basis of these ideas, we hypothesize that narrative understanding and attentional focus are unrelated to negative thoughts about BD (Figure 4.1, H3a), thus that the null hypothesis that no relation exists between these processes is true. Additionally, we hypothesize that emotional engagement and narrative presence will trigger negative thoughts about BD (Figure 4.1, H3b), which are positively related to BD-discouraging impact (Figure 4.1, H3c).

### **Narrative engagement and thoughts about the narrative form**

Recipients may respond to E-E narratives with thoughts not only about the target behavior, but also about the narrative form (Van Leeuwen et al., 2014). Thoughts about the narrative form may include thoughts about realism (Busselle & Bilandzic, 2008) and about perceptual persuasiveness (Hall, 2003). Realism thoughts are, for example, thoughts about a narrative's coherency or plausibility. Thoughts about perceptual persuasiveness are thoughts about the degree to which a narrative creates a compelling story world, focusing on the means by which a narrative is brought across instead of focusing on the content of the narrative. In short, thoughts about the narrative form reflect the degree to which a narrative brings across a realistic and appealing story.

Negative thoughts about the narrative form may lower narrative engagement, because such thoughts interfere with fluently processing the narrative and connecting to the narrative world. These thoughts draw recipients' attention away from following the narrative events and towards the narrative's weak point and interfere with making sense of the narrative, thereby disrupting narrative engagement (Busselle & Bilandzic, 2008). One study showed that recipients who negatively evaluated a program in some way were less engaged in the narrative than recipients who did not produce such thoughts (Busselle, Ryabovolova, & Wilson, 2004). In line with this, we hypothesize that negative thoughts about the narrative form will negatively affect narrative engagement dimensions (Figure 4.1, H4a).

Compared to the role of negative thoughts, the role of positive thoughts about narrative form in E-E impact is less clear. Some suggest that positive thoughts in response to narratives are less likely to be generated than negative thoughts. Recipients' default position is to accept narratives (Gilbert, 1991), implicating that only negative thoughts will be generated at moments when recipients come across something that does not meet their expectations (Busselle & Bilandzic, 2010). A study by Hall (2003) suggests that recipients may also produce positive thoughts

about the narrative form in response to E-E narratives. To our knowledge, one study investigated whether positive thoughts about the narrative form are associated with narrative engagement (Busselle et al., 2004). This study found that recipients who produced positive and neutral thoughts were not more engaged in a story than recipients who did not produce evaluative thoughts. However, because recipients with positive and neutral thoughts were considered as one group, the relation between positive thoughts and narrative engagement was not entirely clear. We think that positive thoughts about the narrative form may relate positively to narrative engagement, because these thoughts increase recipients' motivation to continue viewing the E-E narrative (Nabi & Krcmar, 2004) and may directly increase interest in the narrative. We thus hypothesize that such positive thoughts relate positively to narrative engagement dimensions (Figure 4.1, H4b).

## 4.2 Method

### Participants and procedure

This online study employed a pre- ( $T_0$ ) and posttest ( $T_1$ ) design, with exposure to the audiovisual contra-BD E-E narrative as test. Participants viewed the E-E narrative at home in one of three exposure conditions. These conditions were created to ensure sufficient variation in the number of negative thoughts about the narrative form to perform our analyses.

The sample consisted of students from three institutions for higher education. Initially, 176 participants completed the  $T_0$  and  $T_1$  questionnaires. Four participants provided an incorrect answer to a simple factual question about the stimulus material. Therefore, we were not certain that they had watched the E-E narrative. These four participants were excluded from further analyses, and thus the final sample consisted of 172 participants. Of the final sample, 97% had drunk alcohol at least once in their lifetime. Of the drinkers, 95% had been drinking the prior month, and 74% had been involved in BD the prior month. Ages ranged between 17 and 26 ( $M = 20.46$ ,  $SD = 1.72$ ), and 85% of the participants were female.

After students expressed their interest in participating in the study, they received an email with a link to the informed consent and the  $T_0$  questionnaire. After providing the informed consent, participants completed the  $T_0$  questionnaire with demographic questions and questions measuring past BD behavior and BD-related beliefs, attitude, BD intention, and willingness to engage in BD. Then, after on average 12 days (range 3–30 days,  $SD = 6.28$ ), the participants viewed the E-E narrative online and completed the  $T_1$  questionnaire directly afterwards. The  $T_1$  questionnaire assessed narrative engagement, thoughts, and BD-related beliefs, attitude, intention, and willingness. The definition of BD was provided throughout both questionnaires.

Participants from one educational institute received course credits ( $n = 76$ ). The other participants received cinema vouchers worth € 5 ( $n = 96$ ). Regression analyses showed that reward type did not affect E-E impact or narrative engagement dimensions.

### Stimulus material

This study employed a shortened version (12 min.) of an episode of *Roes* (*High* in English), a televised 11-episode E-E drama series broadcast in 2008 on Dutch national television. The drama series was part of an annual campaign to discourage substance and alcohol use among adolescents (Van Leeuwen, Renes, & Leeuwis, 2013). The episode *Verliefd* (*In love* in English) tells the story of a shy girl Sacha, who visits a party where large amounts of alcoholic beverages are freely available. When she got drunk, a boy, Thijs, with whom she was in love, sexually harassed her. The day after, she has a hangover and does not remember anything from the night before. She learns about the assault from a movie clip uploaded on the Internet. She is devastated. The episode ends with her visiting a police station, implying that she is going to file a complaint against Thijs.

The online  $T_0$  and  $T_1$  questionnaires were created with Qualtrics software (<http://www.qualtrics.com>). Qualtrics also randomly assigned participants to one of the three exposure conditions: audiovisual disturbances condition ( $n = 53$ ), critical instruction condition ( $n = 57$ ), and standard version condition ( $n = 62$ ). In the audiovisual disturbances condition, participants were exposed to the E-E narrative with beeps and stills added, aiming to suggest that the episode had been badly edited. In the critical instruction condition, participants were instructed to critically evaluate how the stimulus material was made (adapted from Escalas, 2007). These manipulations were intended to create variation between participants in the generation of negative thoughts about the narrative form. In the standard version condition, the E-E narrative was not manipulated, and participants received only the instruction to watch the embedded video.

### Measures

#### *BD behavior*

Past BD behavior was assessed at  $T_0$ . Participants indicated how often they had been involved in BD during the prior month (1 = *no recent drinking*, 2 = *have been drinking, but not BD*, 3 = *1–2 times*, 4 = *3–5 times*, 5 = *6–20 times*).

#### *BD beliefs*

A pre-test study showed that the selected narrative implies that BD may lead to loss of control, blackouts, regret, getting hurt, and sexual harassment, that these five outcomes are severe, and that viewers themselves may also experience these

five negative outcomes after BD (Van Leeuwen, 2012). Therefore, at  $T_0$  and  $T_1$ , we assessed three types of BD beliefs relating to these five negative outcomes. First, participants were presented statements, each stating that BD leads to one of these five negative outcomes. On 100-point rating scales, participants were asked to indicate the degree to which they agreed with these statements (1 = *strongly disagree* to 100 = *strongly agree*, Cronbach's  $\alpha$  is .82 [ $T_0$ ] and .89 [ $T_1$ ]). A high value indicated a high subjective probability that BD leads to these negative outcomes. Second, we assessed beliefs about perceived vulnerability to the five negative outcomes of BD. Participants were asked to indicate the likelihood that they would personally experience each of the negative outcomes after BD (1 = *that would definitely not happen* to 100 = *that would definitely happen*,  $\alpha$  = .87 [ $T_0$  and  $T_1$ ]). A high value indicated strong beliefs about being vulnerable to these negative outcomes of BD. Third, we assessed perceived severity by asking participants to indicate how they would feel after experiencing the five negative outcomes (1 = *very unhappy* to 100 = *very happy*,  $\alpha$  = .69 [ $T_0$ ] and  $\alpha$  = .87 [ $T_1$ ]). We recoded the given scores so that a high value indicated a high perceived severity of the negative outcomes of BD.

#### *Attitude towards BD*

Four items measured the attitude towards BD at  $T_0$  and  $T_1$  by stating that BD is *very dangerous* (1)/*hardly dangerous* (100), *no fun* (1)/*fun* (100), *stupid* (1)/*smart* (100), and *negative* (1)/*positive* (100), ( $\alpha$  = .77 [ $T_0$ ] and  $\alpha$  = .81 [ $T_1$ ]). A high value indicated a positive attitude towards BD.

#### *BD intention*

Intention to engage in BD was assessed at  $T_0$  and  $T_1$  with two questions asking participants to indicate the degree to which they intended to engage in BD the coming month (1 = *not at all intend to* to 100 = *very much intend to*) and expected to engage in BD the coming month (1 = *will definitely not happen* to 100 = *will definitely happen*,  $\alpha$  = .94 [ $T_0$ ] and  $\alpha$  = .93 [ $T_1$ ]). A high value indicated a high intention to engage in BD in the coming month.

#### *BD willingness*

Willingness to engage in BD was assessed at  $T_0$  and  $T_1$  via a 100-point rating scale with three items, preceded by the following statement about a risk-conducive situation for BD: 'Suppose you were at a party where all alcoholic drinks were available for free. How likely is it that you would' followed by three items: 'drink no alcohol', 'drink 1 to 4 (females)/5 (males) alcoholic drinks', 'drink at least 4 (females)/5 (males) alcoholic drinks.' Each item was accompanied by a scale ranging from 1 = *would definitely not do so* to 100 = *would definitely do so*. The first item was reversed, so a high value reflected more willingness to engage in BD. Because the scale with

all three items had low reliabilities ( $\alpha = .42$  [ $T_0$ ] and  $\alpha = .39$  [ $T_1$ ]), the second item was omitted, resulting in a more reliable two-item willingness scale ( $\alpha = .63$  [ $T_0$ ] and  $\alpha = .61$  [ $T_1$ ]). A high value indicated a high willingness to engage in BD.

### *Narrative engagement dimensions*

Narrative engagement dimensions were measured at  $T_1$  with the narrative engagement scale (Busselle & Bilandzic, 2009). This scale consists of 12 statements each accompanied by a 100-point rating scale from 1 = *strongly disagree* to 100 = *strongly agree*. We performed a factor analysis to investigate whether the scale consisted of four subscales measuring the four narrative engagement dimensions, as found by Busselle and Bilandzic (2009). In contrast to their findings, but consistent with another study (Woolley, 2012), our factor analysis showed that the items did not form four factors but three factors. The three items of the attentional focus subscale loaded on the first factor. The items tapped into the participants' attention to the narrative with items such as 'My mind wandered while the movie was on' (reversed) ( $\alpha = .84$ ). The three items of the narrative understanding subscale loaded on the second factor. The items measured participants' understanding of the narrative with items such as 'I found it easy to follow the thread of the story' ( $\alpha = .74$ ). The original 3-item emotional engagement and 3-item narrative presence subscales both had low reliabilities (Cronbach's  $\alpha = .59$  and  $.55$ , respectively). Five of the six items on the emotional engagement and narrative presence subscales loaded on the third factor. Therefore, we combined these subscales into one emotions and presence scale ( $\alpha = .73$ ). Sample items are 'During the movie, I felt sorry for (one of the) characters' and 'During the movie, the story world seemed closer to me than the real world.' The fourth factor consisted of one presence item, and this item was dropped from further analysis.

### *Thoughts*

Thoughts were assessed at  $T_1$  by a thought-listing task (Cacioppo, von Hippel, & Ernst, 1997). Participants were given five minutes to list a maximum of 10 thoughts they remembered having while viewing the E-E narrative. Two undergraduate coders coded the reported thoughts. The coders attended two 2-hour training sessions organized by the first author. In the first session, they received coding instructions. Then, they independently coded the reported thoughts of the same 10% of participants. Their assigned codes were discussed in the second training session. Then, they both independently coded all remaining thoughts.

The following reported thoughts were excluded from further analyses: questions (e.g., 'why is there an increase in alcohol use among young people?'); narrative-unrelated statements (e.g., 'I have to take the cake out of the oven'); statements perceived as unclear by one of the coders (e.g., 'sex'). Because of our interest in the

role of recipients' thoughts about the narrative form or about BD, affective reactions towards the character or the events (e.g., 'I feel sorry for her!') were also excluded.

The reported thoughts that were included were assigned two codes. The first code was assigned to identify the thought category, and the second code indicated the valence. Regarding the first code, we distinguished four categories: realism, perceptual persuasiveness, narrative-related BD thoughts, and non-narrative-related BD thoughts (Cohen's kappa = .71). The realism category consisted of thoughts evaluating, for example, whether or not events could have happened in the real world, or whether or not the narrative was logical and coherent (Busselle & Bilandzic, 2008; Cho, Shen, & Wilson, 2014). The perceptual persuasiveness category consisted of thoughts evaluating, for example, the acting qualities, music, or originality of the story. These two categories thus focused on thoughts about the narrative form. The category narrative-related BD thoughts consisted of thoughts relating to the alcohol use of the character(s). The category non-narrative-related BD thoughts consisted of thoughts about alcohol use in general or about participants' own experiences with alcohol. These two categories thus focused on the narrative's target behavior, that is, to discourage BD.

The second code was given to identify the valence of each thought, thus negative, positive, or neutral with respect to the narrative form or BD (Cohen's kappa = .94). The first code (category) and the second code (valence) were combined and used in the analyses. Thoughts coded as neutral were not included in the analyses. Disagreements were resolved by discussion among the coders and the first author, until consensus was achieved.

### **Control variables**

The number of days between  $T_0$  and  $T_1$  was significantly associated with changes in some of the BD-related variables. So, to rule out any influence of the number of days between  $T_0$  and  $T_1$  on changes in BD determinants, we controlled for the number of days in those hypotheses where changes in these determinants are the dependent variables (H1, H2b, and H3c). We also tested whether we should control for the influence of personal characteristics on the dependent variables. Narrative engagement was affected by gender and age. E-E impact was affected by gender, frequency of recent BD, and BD attitude at  $T_0$ . Whether or not non-narrative BD thoughts were produced was influenced by BD attitude at  $T_0$ . These variables were entered as covariates in the applicable analyses.

### **Effect of condition**

We created three conditions to ensure sufficient variance in thoughts about the narrative form. As expected, logistic regression showed that participants in both the

audiovisual disturbances condition and the critical instruction condition were more likely to report one or more negative thoughts about perceptual persuasiveness than participants in the control condition (odds ratio<sub>disturbances vs. control</sub> = 3.86, 95% CI = 1.23 – 12.10,  $p = 0.021$ , odds ratio<sub>instruction vs. control</sub> = 3.77, 95% CI = 1.22 – 11.67,  $p = 0.022$ ). Also, participants in the audiovisual disturbances condition were more likely to report one or more negative thoughts about realism than participants in the control condition (odds ratio<sub>disturbances vs. control</sub> = 2.71, 95% CI = 1.25 – 5.85,  $p = 0.011$ ). There was a significant effect of condition on attentional focus, such that participants' attentional focus in the audiovisual disturbances condition was lower than that of participants in the control condition ( $\beta = -.17$ ,  $p = .046$ ). To control for a direct influence of condition on narrative engagement dimensions, we included condition as a covariate in the analyses with narrative engagement dimensions as dependent variables (H4a and H4b). Condition had no significant effect on whether positive thoughts about perceptual persuasiveness or realism were produced, on positive or negative thoughts about alcohol, or on changes in BD determinants.

### Statistical analyses plan

To investigate whether the E-E narrative had a BD-discouraging impact, differences between  $T_0$  and  $T_1$  in scores on BD variables were examined using a set of Wilcoxon signed-rank tests. For the main analyses, we computed the change scores on BD variables between  $T_0$  and  $T_1$ , such that a negative change score could be interpreted as a BD-discouraging impact. Then, we applied multiple regression analyses to examine whether narrative engagement dimensions predicted BD-discouraging impact (H1). We regressed the change scores of the BD variables on the three narrative engagement dimensions simultaneously (Model 1), while controlling for gender, number of days between  $T_0$  and  $T_1$ , past BD behavior,  $T_0$  BD attitude, and the  $T_0$  values of the corresponding BD determinant.

The majority of the participants reported either one or no thoughts within the categories narrative- and non-narrative-related BD thoughts. Therefore, before testing whether or not narrative engagement dimensions were related to negative or positive thoughts about BD (H2a, H3a, and H3b), we dichotomized the number of thoughts. This resulted in four dichotomous variables, each describing whether or not participants reported at least one positive (1) or negative (2) thought about narrative-related BD, or one positive (3) or negative (4) thought about non-narrative-related BD. To examine whether these thought categories explained associations between narrative engagement dimensions and BD-discouraging impact (H2 and H3), we added these categories as predictors to Model 1, resulting in Model 2.

As with thoughts about BD, the majority of participants reported either one or no thoughts relating to perceptual persuasiveness or realism. Therefore, before testing H4a and H4b, we created four dichotomous variables, each describing

whether or not participants reported at least one: negative (1) and/or positive (2) thought relating to perceptual persuasiveness, and negative (3) and/or positive (4) thought relating to realism. Then, we regressed each narrative engagement dimension on each of these dichotomous variables. In these analyses, we controlled for condition, gender, and age.

## 4.3 Results

### Pre-analyses

Prior to conducting the main analyses, we investigated whether the E-E narrative was able to discourage BD. The results showed that negative outcome beliefs, vulnerability beliefs, and severity beliefs were more contra-BD at  $T_1$  than at  $T_0$  (see Table 4.1). The attitude towards BD and willingness to engage in BD were also significantly more contra-BD at  $T_1$  than at  $T_0$ . The intention to engage in BD was not significantly different at  $T_1$  compared to  $T_0$ . The findings indicated that the E-E narrative had a BD-discouraging impact on all assessed variables, except for the intention to engage in BD.

On average, participants reported that they were fairly engaged in the narrative ( $M_{\text{attentional focus}} = 69.80$ ,  $SD = 20.83$ ;  $M_{\text{narrative understanding}} = 83.53$ ,  $SD = 14.99$ ,  $M_{\text{emotions and presence}} = 60.60$ ,  $SD = 16.59$ ).

The median of the total number of thoughts that participants reported was 7. Regression analyses showed that attentional focus, emotional engagement, and narrative presence did not associate with how many thoughts were reported in total. Descriptive information about the nature and frequency of thoughts relevant for this study is displayed in Figure 4.2.

### Main analyses

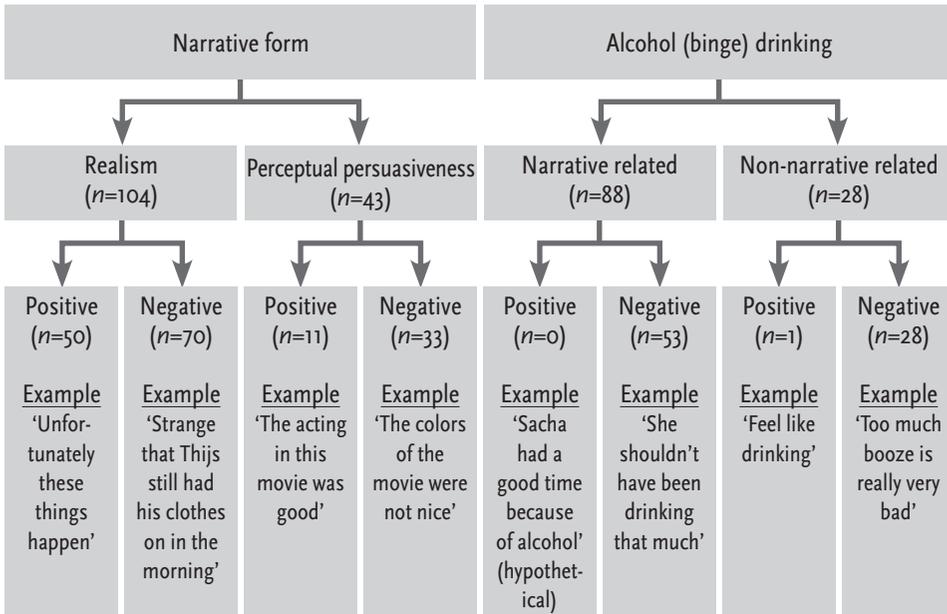
In H1, we predicted that narrative engagement will be associated with a BD-discouraging impact. The results are displayed in Tables 4.2 and Table 4.3, under Model 1. In relation to H1, emotions and presence significantly predicted a BD-discouraging impact on negative outcome beliefs ( $\beta = -.20$ ,  $p = .013$ ) and vulnerability beliefs ( $\beta = -.30$ ,  $p = .000$ ). Attentional focus was associated with impact on severity beliefs ( $\beta = -.26$ ,  $p = .004$ ) and intention to engage in BD ( $\beta = -.21$ ,  $p = .021$ ). Finally, we found an unexpected negative effect of narrative understanding on discouraging willingness to engage in BD, such that higher narrative understanding predicted more willingness to engage in BD ( $\beta = .18$ ,  $p = .022$ ). Thus, the results showed that attentional focus as well as emotional engagement and presence were associated with BD-discouraging impact, albeit on different BD-related variables. In addition, narrative understanding was associated with an adverse E-E impact on BD.

Table 4.1 | Pre- and Post-Test Median Values of BD Variables, Significance of Effects, and Effect Sizes

	Median		Wilcoxon signed-rank test		
	T <sub>0</sub>	T <sub>1</sub>	z	p*	r
Negative outcome beliefs	37.10	51.60	-8.11	< .001	-.44
Vulnerability beliefs	33.60	36.30	-2.83	.005	-.15
Severity beliefs	83.70	84.90	-3.17	.002	-.17
Attitude towards BD	51.63	50.00	-4.60	< .001	-.25
BD intention	63.00	65.25	.30	.38	-.02
BD willingness	76.25	68.50	-2.60	.009	-.14

\* One-tailed significance.

Figure 4.2 | Number of participants who reported one or more thoughts relevant for this study.



Note | The numbers per category (e.g., realism) and valence (e.g., positive) do not add up to the total per category, because participants reporting neutral thoughts are not depicted here. Also, participants may have reported a positive as well as a negative thought from the same thought category.

Table 4.2 | Regression Analyses of Changes in Negative Outcome Beliefs, Vulnerability Beliefs, and Severity Beliefs on Narrative Engagement Dimensions and Negative Thoughts about Alcohol.

	Change in negative outcome beliefs		Change in vulnerability beliefs		Change in severity beliefs	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Attentional focus	.07	.07	.17 <sup>+</sup>	.16 <sup>+</sup>	-.26 <sup>**</sup>	-.25 <sup>**</sup>
Narrative understanding	-.02	-.03	-.03	-.04	-.00	-.02
Emotions and presence	-.20 <sup>*</sup>	-.19 <sup>*</sup>	-.30 <sup>***</sup>	-.29 <sup>**</sup>	.06	.07
Negative narrative-related BD thoughts		.01		.07		-.06
Negative non-narrative-related BD thoughts		-.05		-.07		-.08
<i>df</i>	8, 163	10, 161	8, 163	10, 161	8, 163	10, 161
<i>R</i> <sup>2</sup>	.32	.32	.27	.27	.23	.24
<i>R</i> <sup>2</sup> change		.00		.01		.01

Note | BD = binge drinking. Coefficients are standardized beta values. Negative coefficients reflect a BD-discouraging impact. \**p* < .05, \*\**p* < .01, \*\*\**p* < .001, +.05 < *p* < .1.

H2 focused on testing whether positive thoughts about BD mediated associations between narrative engagement and BD-discouraging impact. As can be seen in Figure 4.2, only one participant reported an alcohol-related thought that was coded as positive. Therefore, H2 could not be tested.

H3 focused on testing whether negative thoughts about BD mediated associations between narrative engagement dimensions and BD-discouraging impact. The results are displayed in Tables 4.2 and Table 4.3, under Model 2. Negative narrative-related thoughts about BD predicted lowered BD intention ( $\beta = -.16, p = .033$ ). When these thoughts were added to Model 1, attentional focus remained a significant predictor of lowered BD intention ( $\beta = -.19, p = 0.36$ ). In addition, adding these thoughts to Model 1 significantly increased the percentage of variance explained by Model 2 in changed BD intention (*R*<sup>2</sup> change). This indicates that negative narrative-related thoughts about BD predicted lowered BD intention, independent of the association between attentional focus and lowered BD intention. Negative thoughts about BD did not significantly predict changes in the other BD-related variables.

With H4a, we predicted that negative thoughts about the narrative form would negatively affect narrative engagement. As can be seen in Table 4.4, negative thoughts about perceptual persuasiveness negatively affected emotion and pres-

Table 4.3 | Regression Analyses of Changes in Attitude towards Binge Drinking, Intention to Engage in Binge Drinking, and Willingness to Engage in Binge Drinking on Narrative Engagement Dimensions and Negative Thoughts about Alcohol.

	Change in attitude towards BD		Change in BD intention		Change in BD willingness	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Attentional focus	-.00	.01	-.21*	-.19*	-.06	-.07
Narrative understanding	-.06	-.06	.09	.09	.18*	.18*
Emotions and presence	.05	.05	.06	.06	-.02	-.02
Negative narrative-related BD thoughts		.01		-.16*		.08
Negative non-narrative-related BD thoughts		-.05		-.06		-.00
<i>df</i>	7, 164	9, 162	8, 163	10, 161	8, 163	10, 161
<i>R</i> <sup>2</sup>	.18	.19	.20	.23	.22	.23
<i>R</i> <sup>2</sup> change		.02		.03*		.01

Note | BD = binge drinking. Coefficients are standardized beta values. Negative coefficients reflect a BD-discouraging impact.

\**p* < .05.

Table 4.4 | Regression Analyses of Narrative Engagement Dimensions on Thoughts about Perceptual Persuasiveness and Realism.

	Attentional focus	Narrative understanding	Emotion and presence
Negative thoughts perceptual persuasiveness	-.06	.03	-.26**
Positive thoughts perceptual persuasiveness	.01	.08	.11
Negative thoughts realism	.01	.05	-.03
Positive thoughts realism	-.08	-.06	.02
<i>df</i>	8, 162	8, 162	8, 162
<i>R</i> <sup>2</sup>	.05	.03	.14

Note | Coefficients are standardized beta values.

\*\**p* < .01.

ence ( $\beta = -.26, p = .001$ ). Whether or not participants reported negative realism thoughts was not associated with the degree to which they experienced narrative engagement dimensions. With H4b, we predicted that positive thoughts about the narrative form would positively influence narrative engagement dimensions. Regression analyses showed that whether or not participants produced positive thoughts about realism or perceptual persuasiveness did not affect narrative engagement dimensions.

## 4.4 Discussion

Given that narrative engagement has been shown to play a role in narrative impact (Dunlop et al., 2010; McKinley, 2012), there is a strong need for insight into the mechanisms whereby narrative engagement leads to narrative impact. Therefore, the present study investigated how dimensions of narrative engagement related to different thought types that recipients produced in response to an E-E narrative, to produce E-E impact. The study was conducted within the context of an E-E narrative developed to discourage BD.

From the results, four main conclusions can be drawn. First, the E-E narrative employed has a BD-discouraging impact on almost all the BD-related variables assessed in this study. Second, the narrative engagement dimensions attentional focus, emotional engagement, and narrative presence are associated with this impact. There is no evidence indicating that negative thoughts about BD mediate these associations between narrative engagement dimensions and E-E impact. Third, and surprisingly, higher narrative understanding is associated with more willingness to engage in BD. Fourth, negative thoughts about perceptual persuasiveness are associated with lower emotional engagement and narrative presence.

The first main conclusion concerns the impact of the E-E narrative on BD. The results showed that after the participants had viewed the E-E narrative, most of the BD-related variables were more contra-BD than prior to the viewing. Although many studies have shown that narratives can yield behavioral impact (e.g., Green & Brock, 2000), results of E-E narratives aimed at discouraging BD among young people are scarcely described (Shen & Han, 2014). This study shows that E-E narratives can be an effective health communication strategy to target binge drinking in young people.

The second main conclusion relates to the role of narrative engagement in E-E impact. The results showed that higher attentional focus was associated with a lowered intention to engage in BD and stronger severity beliefs. In addition, emotional engagement and narrative presence were associated with stronger negative outcome beliefs, as well as with stronger vulnerability beliefs. These findings are

consistent with earlier studies (e.g., Green & Brock, 2000) showing that narrative engagement is associated with narrative impact. In contrast to our expectation, we found no evidence that negative thoughts about BD mediated associations between the narrative engagement dimensions and E-E impact. This finding indicates that other processes may have been involved in how narrative engagement associated with E-E impact. The NE dimensions emotional engagement and narrative presence may have impacted beliefs via an experiential pathway, rather than via a cognitive pathway. Perhaps emotional engagement and narrative presence induced recipients themselves to feel that they were also at risk of these negative consequences (Dunlop et al., 2010; Moyer-Gusé, 2008). This would indicate that it is not thoughts but rather feelings relating to negative consequences of unhealthy behavior that are important for E-E impact. The narrative engagement dimension attentional focus may have impacted severity beliefs and intentions by increasing the likelihood that recipients would extract the implicit health-related message from the E-E narrative. This makes sense, given that, in E-E narratives, implicit health messages lie embedded in the events and experiences of the characters (De Graaf, 2010). Logically, recipients have to pay attention to these events and experiences in order to be influenced by them. Together, these findings indicate that, in the case of the impact of this E-E narrative on discouraging BD, processes other than producing negative thoughts about BD may have mediated associations between attentional focus, emotional engagement, and narrative presence on the one hand, and E-E impact on the other.

With regard to the third main conclusion, we found that narrative understanding was associated with an increase in willingness to engage in BD, rather than with a decrease in willingness, as was expected. This result is difficult to interpret, because overall exposure to the E-E narrative was associated with lowered BD willingness. Perhaps narrative understanding facilitated an appreciation of the initial benefits of BD for the character to overcome her shyness and to have fun. Understanding these benefits may have resulted in increased BD willingness in these recipients, whereas recipients who had less understanding of the narrative showed a decreased BD willingness. This result warrants further investigation of the role of narrative understanding in (adverse) E-E impact.

The fourth main conclusion concerns the association between thoughts about the narrative form and narrative engagement dimensions. We found that negative thoughts about perceptual persuasiveness were negatively associated with emotional engagement and narrative presence. This result confirms the results of a recent study, in which it is shown that perceptual persuasiveness positively associates with emotional engagement (Cho et al., 2014). Possibly, low perceptual persuasiveness raises a barricade against recipients entering the story world and experiencing a sense of closeness to the narrative world and characters. In con-

trast to the results of other studies (Bilandzic & Busselle, 2011; Cho et al., 2014), our study found no associations between thoughts about realism and the narrative engagement dimensions. An explanation for this contrast in findings may be that the present study assessed whether thoughts about realism were produced while viewing, whereas the other studies assessed overall experienced realism (Bilandzic & Busselle, 2011; Cho et al., 2014). Possibly, perceived realism influences narrative engagement directly, independent of whether recipients produce spontaneous positive or negative thoughts about realism. Future research may explore whether thoughts about realism mediate the association between perceived realism and narrative engagement.

### Limitations

Our study has some limitations. First, its focus was to elucidate the complex interplay of how recipients think in response to, and engage with, E-E narratives while being exposed to such narratives. The post-test measurement directly followed exposure to the E-E narrative. Therefore, we do not know how long the found impact lasted, whether the E-E narrative changed actual BD behavior, and whether narrative engagement and thoughts that arose while the recipients were viewing also played a role in possible long-term E-E impact. Also, we do not know to what extent recipients continued to think about the E-E narrative after exposure and whether such thoughts are involved in long-term E-E impact. Which processes are involved in long-term E-E impact is an important follow-up question that could be answered in future studies employing a follow-up measurement.

Second, to investigate the thoughts produced in response to the E-E narrative, we asked participants to list the thoughts they remembered having while viewing the E-E narrative. Research has shown that, with retrospective thought-listing, valid data can be obtained of an individual's thoughts during an effortful activity (Petty, Wells, & Brock, 1976, cited in Cacioppo et al., 1997), such as narrative engagement. However, we cannot be certain that the participants reported all the thoughts they had while viewing. Only thoughts produced at the end of the E-E narrative or the most prominent thoughts may have been reported, because these thoughts may have been remembered better. Thus, a disadvantage of retrospective thought-listing is that it may not capture all the thoughts produced during the viewing session. This suggests that thought-listing by participants *while* they are viewing may be a more reliable measure. However, such thought-listing may interfere with narrative engagement, because listing thoughts requires effort and may distract participants from following the E-E narrative. Although establishing what measure is most valid seems to be difficult, future research may want to compare how thoughts reported after viewing relate to narrative engagement and E-E impact as compared to thoughts reported while viewing.

Third, the selected E-E narrative triggered a positive thought about BD in only one participant. This implies that the E-E narrative convincingly showed the negative consequences of BD, even to participants who were positive about BD before exposure to the E-E narrative. Although this is a desired effect from the perspective of health promotion, this result made it impossible to test the hypotheses that narrative engagement dimensions are associated with reduced positive thoughts about BD, and that these thoughts negatively associate with E-E impact on discouraging BD.

### **Practical implications for E-E development**

The study results demonstrated that the selected 12-minute audiovisual E-E narrative was able to yield an immediate BD-discouraging impact. This implies that relatively short audiovisual E-E narratives may be a powerful tool for health organizations to encourage healthy behaviors.

The results of this study have practical implications for the development of impactful E-E narratives. Because emotional engagement, narrative presence, and attentional focus are shown to be associated with E-E impact, these dimensions of narrative engagement should be maximized. To maximize emotional engagement, E-E developers may incorporate highly emotional content in their E-E narratives. In the case of a negative role model, E-E narratives should portray life-changing consequences of the character's involvement in the unhealthy behavior and show that these consequences strongly impact the character's emotions (Appel & Richter, 2010). Second, E-E developers should aim to maximize the perceptual persuasiveness of E-E narratives, because negative thoughts about perceptual persuasiveness interfere with emotional engagement and narrative presence. To maximize perceptual persuasiveness, E-E developers should collaborate with a professional producing company, to produce a narrative format that connects to target recipients' media preferences (e.g., genre, look, and feel). In addition, as pre-test, E-E developers may want to collect the target recipients' thoughts about perceptual persuasiveness in an early phase of E-E development to gain insight into, and resolve issues relating to, perceptual persuasiveness. Another way to ensure perceptual persuasiveness may be to implement a health message in an existing media format that is already perceived as perceptually persuasive by target recipients (*E-E inscript participation*: Bouman, 2002).

### **Conclusion**

To our knowledge, this is the first study to investigate how different types of thoughts in response to E-E narratives – such as about the narrative form and about the target behavior – relate to narrative engagement dimensions and to E-E impact. We expected that thoughts about the risky behavior, in this case binge drinking, would

play an important role in how narrative engagement associates with E-E impact. We conclude from this study that the narrative engagement dimensions attentional focus, emotional engagement, and narrative presence were important for E-E impact on BD, and that negative thoughts about BD did not play a role therein. This study, however, is the first step towards understanding the role of narrative engagement and thoughts in E-E impact by taking into account different relations between narrative engagement dimensions and different thought types. Therefore, this study should be replicated to gain confidence in the presence or absence of relations among narrative engagement dimensions, thought types, and E-E impact.



# Chapter 5

## **Exploring the psychological processes that contribute to narrative engagement**

Lonneke van Leeuwen, Reint Jan Renes, Bas van den Putte, and Cees Leeuwis

# Abstract

Research shows that narrative engagement (NE) is important for narrative impact. NE involves an intense processing of narratives, encompassing the dimensions of narrative understanding, attentional focus, emotional engagement, and narrative presence. Little is known, however, about which psychological processes experienced during narrative reception contribute to experiencing these NE dimensions. In this study, four focus group discussions were conducted to address this issue. The results revealed that narrative realism and enjoyment were mentioned by the majority of participants as having contributed to NE. Personal relevance, perceptual persuasiveness, character involvement, and perceived severity of the narrative events also contributed to NE, but these contributions were less frequently mentioned. Plausibility and factuality of the narrative were only rarely mentioned as contributors. The study extends previous studies in this field by investigating the relative importance of psychological processes in their contribution to NE. Additionally, the study provides further insight into how these psychological processes influence NE by considering their relation with the NE dimensions. Based on these results, the article provides suggestions for developing engaging and persuasive narratives.

## 5.1 Background

Narratives have been shown to be able to impact the behaviors of their recipients (Shen & Han, 2014). With the entertainment-education (E-E) strategy, health organizations use this narrative power to encourage healthy behaviors in their target recipients by employing narratives in their health-promoting campaigns. For example, episodes of the televised medical drama series *Grey's Anatomy* and *ER* focused on the risk of breast cancer in women. These storylines influenced viewers' knowledge, attitudes, intentions, and behaviors relating to breast cancer screening (Hether, Huang, Beck, Murphy, & Valente, 2008).

To achieve a positive impact on behavior, E-E narratives should induce narrative engagement (NE) in their target recipients, i.e., a cognitive and affective engagement in narratives (e.g., Green & Brock, 2000; Slater & Rouner, 2002). Many people know NE as the feeling of being 'lost' in a narrative (Nell, 1988). Research has shown that NE involves four dimensions (Busselle & Bilandzic, 2009): narrative understanding, attentional focus, emotional engagement, and narrative presence. First, narrative understanding implies that recipients understand the narrative and can easily make sense of it. Second, when recipients have attentional focus, they focus their attention solely on the events in the narrative, with their attention not distracted by noise for example. Third, emotional engagement is the process by which recipients develop an emotional connection with characters. This connection includes feeling emotions for, and sharing emotions with, characters and having feelings of arousal. Consequently, emotional engagement is closely related to recipients' identification with characters (Busselle & Bilandzic, 2009; Cohen, 2001). Fourth, narrative presence refers to recipients' loss of self-awareness, to the sense that they are leaving the real world behind, and to feeling present in the story world.

Thus, to increase the likelihood of a positive impact of E-E narratives on health behaviors (hereafter: E-E impact), E-E narratives should engage their target recipients. Unfortunately, for health organizations, little is known about the psychological processes (hereafter: processes) that contribute to E-E narrative recipients' experience of NE (Moyer-Gusé, 2010). Although processes such as enjoyment and perceived realism have been shown to associate with NE when investigated separately (e.g., Hall & Bracken, 2011; Krakowiak & Oliver, 2012), research has not yet investigated which psychological processes are the most important contributors to NE. Furthermore, hardly any study investigated the NE dimensions to which such processes contribute (for an exception, see Busselle & Bilandzic, 2009).

The current study fills this void by conducting a series of focus group discussions to answer the research question:

*RQ: Which psychological processes are the most important contributors to experiencing narrative engagement dimensions?*

Since NE has been found to be associated with narrative impact on behavioral determinants (e.g., Green & Brock, 2000), empirical studies have focused on gaining insight into how NE can be created and maximized. These studies have suggested that dimensions of perceived realism, enjoyment, and character involvement may contribute to NE, which is discussed in more detail in the next section.

### **Perceived realism and narrative engagement**

Recipients may evaluate the degree of realism of an E-E narrative. They may do so along different realism dimensions: narrative realism, plausibility, personal relevance, perceptual persuasiveness, and factuality (Hall, 2003). Below it is discussed whether and how these realism dimensions may contribute to NE.

#### *Narrative realism*

Narrative realism refers to the degree to which a narrative is perceived as (in)coherent and (in)consistent (Busselle & Bilandzic, 2008; Hall, 2003). Perceived inconsistencies may relate, for example, to inconsistent character behavior. Perceived inconsistencies disrupt the flow of narrative processing, draw attention from the narrative to these violations, and may thus lower NE (Bilandzic & Busselle, 2011). Two empirical studies that investigated this hypothesis confirmed that narrative realism is associated with NE (Bilandzic & Busselle, 2011; Cho, Shen, & Wilson, 2014).

#### *Plausibility*

Plausibility refers to recipients' perceptions of whether narrative events are likely to occur, whether behaviors are likely to be observed, and whether the characters are likely to exist in the real world (Hall, 2003). Plausibility may increase NE because when recipients perceive the narrative as plausible, they may be more interested in the events and characters (Krakowiak & Oliver, 2012). Additionally, recipients may find it easier to imagine themselves in the narrative events if these events are likely to also happen in the real world (Green, 2004). An association between plausibility and NE has been found in three out of four studies (Cho et al., 2014; Green, 2004; Krakowiak & Oliver, 2012). In a fourth study, the association was found in response to one out of three experimental narratives (Bilandzic & Busselle, 2011).

*Personal relevance*

Personal relevance refers to the degree to which recipients perceive the narrative events as connected to their past and present experiences or as likely to happen in their everyday lives (Green, 2004; Hall, 2003). Like plausibility and factuality, personal relevance may increase interest in and ease of imagining oneself in the narrative events. Some studies found an association between personal relevance and NE (Caputo & Rouner, 2011; Green, 2004; So & Nabi, 2013; Tal-Or & Cohen, 2010) while others did not find this association (Quintero Johnson, Harrison, & Quick, 2012).

*Perceptual persuasiveness*

Perceptual persuasiveness refers to the degree to which recipients perceive that the narrative creates a compelling story world. Perceptual persuasiveness focuses more on the means by which a narrative is brought across, for example on the applied audiovisual techniques, rather than on the specific content of the narrative (Hall, 2003). Perceptual persuasiveness may facilitate NE because recipients may be more able to connect to the story world and engage with inhabiting characters when the narrative convincingly portrays another reality (Cho et al., 2014). The two studies that investigated this association indeed showed that perceptual persuasiveness was positively associated with NE (Cho et al., 2014; Van Leeuwen, Van den Putte, Renes, & Leeuwis, 2014).

*Factuality*

Factuality refers to recipients' perceptions of whether the narrative portrays a specific real-world event or person or whether the events or characters are fictional. Hence, like plausibility and personal relevance, factuality also focuses on the degree to which a narrative approaches real life (Hall, 2003). The difference between factuality and plausibility lies in the perceptions of whether the events actually happened and characters actually existed in the real world (factuality) or of whether they may exist in the real world (plausibility). Factuality may influence NE in a similar vein as plausibility and personal relevance, namely by increasing interest for and ease of imagining oneself in the narrative events. One study showed that factuality was positively associated with emotional engagement (Cho et al., 2014).

To conclude, most empirical studies have suggested that the dimensions of perceived realism contribute to NE by facilitating a fluent processing of the narrative, by convincingly portraying another reality, by triggering an interest in the narrative, and by facilitating imagining oneself in the narrative events.

### **Enjoyment and narrative engagement**

Enjoyment and NE are suggested to be highly correlated processes (Green, Brock, & Kaufman, 2004). This relation can be well understood by approaching enjoyment as an attitude towards the narrative (Nabi & Krcmar, 2004). An attitude towards a narrative is characterized by positive or negative evaluations of that narrative. In response to narratives, the attitude may relate to both the content of the narrative as well as to the experience of processing the narrative. A positive (negative) attitude towards a narrative largely indicates having (not) enjoyed the narrative.

The attitude towards the narrative is likely to influence NE. A positive attitude towards a narrative will motivate recipients to put a greater effort into attending to the narrative, whereas a negative attitude will lead to other behaviors, such as looking at the clock or switching to another channel (Nabi & Krcmar, 2004). As such, a positive (negative) attitude will contribute to (not) experiencing NE. Studies have consistently shown an association between enjoyment and NE (e.g., Krakowiak & Oliver, 2012; Oh, Chung, & Han, 2014; Tsay-Vogel & Oliver, 2014).

### **Character involvement and narrative engagement**

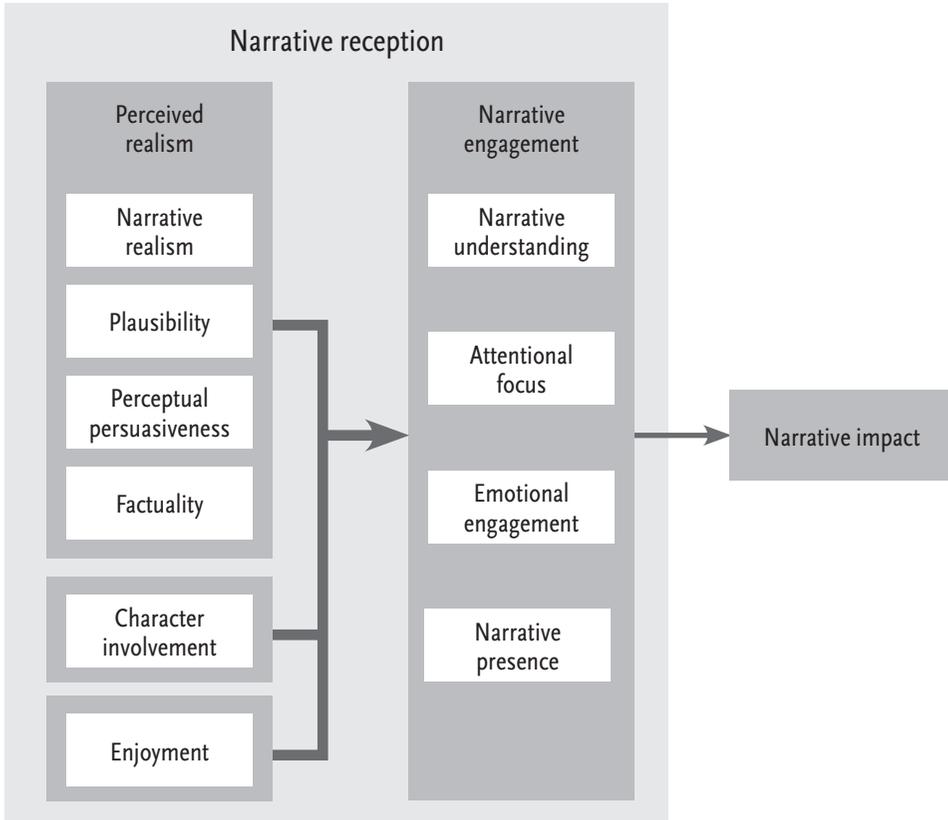
The degree to which recipients are involved with a narrative's character(s) has been suggested to contribute to NE (e.g., Kreuter et al., 2008). Involvement with characters may take five forms (Moyer-Gusé, 2008). First, identification, which is the perception of being one of the characters, taking over their perspective on the narrative events and sharing emotions. Second, wishful identification, which is the perception of wanting to be like the character. Third, perceived similarity, which is the perception of being similar to the character. Fourth, parasocial interaction, which is the perception of being friends with the character. Fifth, liking, which is positively evaluating the character.

Given the central role of characters in narratives, recipients' NE may be dependent on their involvement with those characters. For example, the NE dimension emotional engagement involves the degree to which recipients emotionally connect with characters. This emotional connection may be established more easily when the recipient is involved with this character. Indeed, with a few exceptions (e.g., Tal-Or & Cohen, 2010), most empirical studies that measured one or more forms of character involvement showed that character involvement is positively related to NE (e.g., Busselle & Bilandzic, 2009; Kreuter et al., 2008; Moyer-Gusé & Nabi, 2010).

### **Purpose and overview**

Perceived realism dimensions, enjoyment, and character involvement have been shown to be related to NE. However, previous studies examined these processes separately and investigated their association with NE in general. Our study extends

Figure 5.1 | Conceptual framework of the present study.



Note | The bold lines indicate this study's focus.

this line of research by identifying the processes that are most important for experiencing each of the four NE dimensions: narrative understanding, attentional focus, emotional engagement, and narrative presence (see Figure 5.1). The study employs a qualitative open-ended research method instead of a quantitative approach as adopted by most previous studies. This approach has several advantages. First, an open-ended method of inquiry allows contributing processes to surface spontaneously in recipients' responses, without suggesting that (specific) processes are of interest to the researcher. This approach also allows processes, which are as yet not known to contribute to NE, to surface. Second, a qualitative method enables recipients to reflect on their viewing experience in more detail. In this way, the viewing experience can be reconstructed more specifically, and processes may be identified that have contributed to a temporarily lower or higher NE.

## 5.2 Method

### Participants and procedure

Twenty-nine first year students (17 female, 12 male) from a Dutch university were recruited. The mean age of the participants was 18.2 years (ranged 17-19 years). The participants were divided into four groups of 6 to 8 persons per group. One group consisted of males, one consisted of females, and two groups contained both male and female participants. Participants received a cinema voucher (€10) as an incentive for their participation.

Each group was invited to come to the lab for a viewing session. Prior to this session, participants completed an informed consent describing the procedure of the session and their right to withdraw at any time. After providing their consent, participants were seated in a theatre-like environment before a television and the room was darkened.

The employed narrative was a 23-minute single story episode of *Roos* (*High* in English), a televised E-E drama series broadcasted in 2008 on Dutch national television. The drama series was part of an annual campaign to discourage substance use among youngsters (Van Leeuwen, Renes, & Leeuwis, 2013). The episode *Verliefd* (*In love* in English) was developed to discourage binge drinking. Binge drinking is defined as consuming at least four or five alcoholic drinks at one sitting, for females and males, respectively (NIAAA, 2004). The episode tells the story of a shy girl Sacha, who visits a party where large amounts of alcoholic beverages are freely available. When she got drunk, a boy, Thijs, with whom she was in love, sexually harassed her. The day after, she has a hangover and does not remember anything from the night before. She learns about the assault from a movie clip uploaded on the Internet. She is devastated. The episode ends with her visiting a police station, implying that she is going to file a complaint against Thijs.

After the viewing, the NE dimensions were assessed with a questionnaire comprising items of two scales frequently used to assess recipients' engagement in narratives (Busselle & Bilandzic, 2009; Green & Brock, 2000). Immediately after the completion, the researchers calculated participants' mean score per NE dimension. This score gave the researchers an indication about who experienced high and low NE on these dimensions. These scores then served as entry points for the focus group discussion.

### Focus group discussion

Participants were informed about their score on each of the NE dimensions, and were asked to describe what influenced these scores. An example of a question: 'Participant 1, on a scale of 1 to 7, your mean score on emotional engagement was X. Can you please explain how you got this score?'. If not spontaneously men-

tioned, the researchers probed whether participants experienced variations in NE and if they did, how they explained that these variations occurred.

### Data analysis

A codebook (see Appendix) was developed to identify the processes that have been previously shown to associate with NE: dimensions of perceived realism, enjoyment, and character involvement. The codes were based on the key words in the available questionnaires to assess these processes. Two types of character involvement were not included in the codebook. First, parasocial interaction was not included because recipients are likely to experience parasocial interaction only after having multiple encounters with a media character and via multiple media channels (Giles, 2002). Thus, our participants were unlikely to experience parasocial interaction with characters during a single exposure. Second, identification was not included because of the large conceptual overlap with NE, which makes it difficult to differentiate identification from NE (Murphy, Frank, Moran, & Patnoe-Woodley, 2011).

The focus group discussions were audio- and video-taped and transcribed verbatim. Following Charmaz (2003), the first author examined the transcripts line by line and coded the comments that referred to processes that had influenced NE. Moreover, the valence of the association, thus whether the process contributed or hindered the experience of the NE dimension, was indicated per comment. The qualitative data analysis software Atlas.ti (version 6.2.16) was used for this coding process.

For each NE dimension, we counted how many participants had stated that a specific process contributed to experiencing this NE dimension. Moreover, the total number of participants who referred to this process in relation to NE was determined. These numbers served as indicators of the importance of the process in contributing to NE. Following Hall (2003), a process mentioned in the discussion that was greeted enthusiastically by other participants or that triggered agreeing comments, was seen as being supported by these other participants.

## 5.3 Results

The main findings are that narrative realism was mentioned by most of the participants (25 out of 29) as having contributed to NE. Furthermore, most participants also commented that enjoyment ( $n = 21$ ), character involvement ( $n = 20$ ), and personal relevance ( $n = 18$ ) contributed to NE. Perceptual persuasiveness also contributed to NE ( $n = 10$ ). Only few participants mentioned plausibility and factuality as processes contributing to NE ( $n = 3$  and  $n = 2$ , respectively). In addition, one pro-

Table 5.1 | Numbers of Participants Expressing Associations between Psychological Processes and Narrative Engagement Dimensions.

Psychological processes	Narrative engagement dimensions			
	Narrative understanding	Attentional focus	Emotional engagement	Narrative presence
Perceived realism:				
Narrative realism ( $n = 25^a$ )	25	1 (1-) <sup>b</sup>	0	2 (1-)
Plausibility ( $n = 3$ )	1	0	1	1
Personal relevance ( $n = 18$ )	1	5 (2-) <sup>b</sup>	14	8
Perceptual persuasiveness ( $n = 11$ )	2	8	2	3
Factuality ( $n = 2$ )	0	1	2	0
Enjoyment ( $n = 21$ )	0	20	7	9
Character involvement ( $n = 18$ )	2	2	14	7
Perceived severity ( $n = 15$ )	0	2	11	3

<sup>a</sup> These numbers ( $n =$ ) refer to the total number of participants in whose comments the process was mentioned at least once as having contributed to any of the NE dimensions. In total, 29 persons participated in the study.

<sup>b</sup> Numbers with minus signs in brackets refer to the number of participants expressing a negative association between the process and the narrative engagement dimension.

cess, which has not been suggested in literature to contribute to NE, emerged. The comments of about half of the participants ( $n = 15$ ) indicated that perceived severity of the narrative events contributed to NE. The results are summarized in Table 5.1.

## Perceived realism

### *Narrative realism*

Comments of 25 participants indicated that narrative realism contributed to NE. The majority of comments indicated that participants perceived narrative realism as high. Participants described that the narrative was logical, in line with what could be expected, highly understandable, and that the narrative later clarified any inconsistencies. Some participants experienced a lack of narrative realism. They found the timeline of the narrative unclear, or they indicated that they expected a different course of events. With two exceptions, all participants indicated a positive relation between narrative realism and NE, such that narrative realism contributed to NE or a lack of it hindered NE.

Of the NE dimensions, most participants indicated that narrative realism contributed to the narrative understanding dimension. All comments indicated that narrative understanding was present (or absent) because the narrative was perceived as logic and coherent (or illogical). Narrative realism did not influence the emotional engagement dimension of NE. Concerning the attentional focus dimension, the comment of one participant indicated that narrative realism negatively influenced his score. This participant believed that all events happened as he expected; thus, he started paying less attention to the narrative. Lastly, in relation to the narrative presence dimension, one participant indicated that a lack of narrative realism contributed to experiencing narrative presence. This participant perceived the setting of a scene at the end of the narrative as unclear. As a result, he continued to think about this scene after the narrative ended. Consequently, he experienced greater difficulties returning his thoughts back to the real world, which positively influenced his narrative presence score.

#### *Plausibility*

Comments of only a few participants suggested that plausibility contributed to their level of NE ( $n = 3$ ). These participants' comments indicated that (a lack of) plausibility of the narrative events contributed to (a lack of) narrative understanding, emotional engagement, and narrative presence.

#### *Personal relevance*

Eighteen participants commented on how personal (ir)relevance influenced their NE. Having perceived the narrative as personally relevant in some aspect was mentioned roughly as frequently as having perceived it as personally irrelevant. Participants explained that they either did (not) recognize the narrative situations from their own lives, or that these narrative situations could (not) easily happen to themselves. Participants mostly referred to the degree to which they recognized the alcohol-related situations, such as being on a party with many binge-drinking persons. Additionally, they referred to the degree to which they thought that they themselves would experience the sexual harassment that the protagonist experienced. All participants, except two, indicated that personal relevance positively contributed to NE or that personal irrelevance hindered NE.

Of the NE dimensions, most participants' comments indicated that personal relevance contributed to the emotional engagement dimension. Recognizing the narrative situations triggered this emotional engagement. For example, some participants described that they re-experienced the feelings they had felt when they went through a similar event. Other described that they were able to recognize how the character felt in these situations. In relation to the narrative presence dimension, participants expressed that they recognized the narrative situations and

places from their personal lives. This recognition facilitated their sense of presence. In some participants, personal relevance contributed to the attentional focus dimension. Participants explained, for example, that the narrative caught their attention because the narrative portrayed situations in which they could also end up or situations they had already experienced. Two participants, however, described that while watching the highly personal relevant events, they thought about their own experiences, and they re-experienced their emotions. As a result, they reported paying less attention to the narrative itself. In relation to the narrative understanding dimension, one participant indicated that personal relevance contributed to his score.

#### *Perceptual persuasiveness*

Comments of 11 participants indicated that perceptual persuasiveness contributed to NE. Most participants' comments expressed a lack of perceptual persuasiveness. They found the acting qualities low, the narrative too short, the characters superficial, and the narrative pace too slow. Those who were positive about the perceptual persuasiveness indicated that they were positive about the quality of acting and the narrative pace. In all comments related to perceptual persuasiveness, participants expressed that perceptual persuasiveness positively contributed to NE or that a lack of perceptual persuasiveness hindered NE.

Of the NE dimensions, most participants expressed that perceptual persuasiveness contributed to the attentional focus dimension. Participants described that they paid less attention to the narrative because they perceived the narrative quality as low. Moreover, the narrative was perceived as too short to be able to connect to the participant, which resulted in a lack of attention. A few participants mentioned that perceptual persuasiveness contributed to their narrative understanding, emotional engagement, or narrative presence. These participants did express a positive relation between perceptual persuasiveness and these NE dimensions.

#### *Factuality*

The comments of only a few participants ( $n = 2$ ) suggested that plausibility contributed to their attentional focus and emotional engagement.

### **Enjoyment**

Many participants ( $n = 21$ ) referred in their comments that enjoyment contributed to their experience of NE. Having enjoyed watching the narrative was mentioned roughly as frequently as not having enjoyed it. In relation to having experienced enjoyment, participants described that they evaluated the narrative and its themes as interesting and exciting and that they were eager to find out how the narrative would unfold. Participants also appreciated the message the E-E narrative brought

across. Some referred to having liked specific scenes or liking the genre. Others lacked the experience of enjoyment. They indicated that they found the narrative highly predictable, unchallenging, without depth, and not matching their media preferences. Some described that if they came across this narrative in real life on television, they would switch to another channel. All comments indicated a positive association between enjoyment and NE such that enjoyment contributed to NE or the lack of it hindered NE.

Of the NE dimensions, the comments of most participants indicated that enjoyment contributed to the attentional focus dimension. A lack of enjoyment resulted in recipients focusing their attention on, for example, their surroundings. For instance, the rape scene was mentioned as highly unpleasant to watch. At these points, participants lowered their attentional focus on the narrative. Other participants explained that their attentional focus was high because they found the narrative interesting. Enjoyment also influenced the emotional engagement dimension. A disinterest in the narrative resulted in a disinterest in the characters' emotional experiences. Finally, enjoyment contributed to the narrative presence dimension. Participants who enjoyed the narrative elaborated on the narrative after it was finished. Consequently, this elaboration made it more difficult to return to the physical world, which positively influenced their narrative presence score.

### **Character involvement**

Comments of 18 participants indicated that character involvement contributed to NE. Of these participants, 12 made comments about perceived (dis)similarity with the character(s) and 9 about (dis)liking the characters. A (lack of) wishful identification did not appear to contribute to (a lack of) NE. Almost all participants expressed that they were not involved with the character. Participants experienced a lack of similarity because of how the character behaved. Participants, for example, described that they would not drink as much as the protagonist did and would not leave a friend alone at a party, as another character did. Others commented that they could not imagine that they would dance on the couch as the protagonist did. Additionally, participants disliked the character because they found the protagonist naïve, dumb, and her behavior out of line. These evaluations referred mostly to her drinking behavior and behavior around Thijs and his friends. All participants indicated a positive relation between character involvement and NE, indicating that character involvement contributed to NE or a lack thereof hindered NE.

Most participants indicated that of the NE dimensions, a lack of character involvement hindered emotional engagement. Participants who lacked a sense of perceived similarity with the character explained that they were not able to project themselves into the character and consequently, they did not share the character's emotions. Many participants who disliked the character found that she

shared the responsibility for experiencing the negative events and, as a result, they did not feel much pity for her. In relation to the narrative presence dimension, participants described that they were not able to project themselves into the situations that the character created because of a perceived dissimilarity with the character. In turn, this hindered their feelings of presence in these narrative situations. A few participants expressed that (lack of) character involvement contributed to (a lack of) the NE dimensions narrative understanding and attentional focus.

### **Perceived severity**

Comments of 15 participants indicated that perceived severity of the narrative events contributed to NE. Except for one comment, all comments conveyed that the narrative events were perceived as severe. Many participants expressed that they found the narrative (events) fierce and shocking. In addition, participants expressed that they sensed that something would go terribly wrong with the character. All participants indicated a positive relation between perceived severity and NE, such that perceived severity contributed to NE or a lack thereof hindered NE.

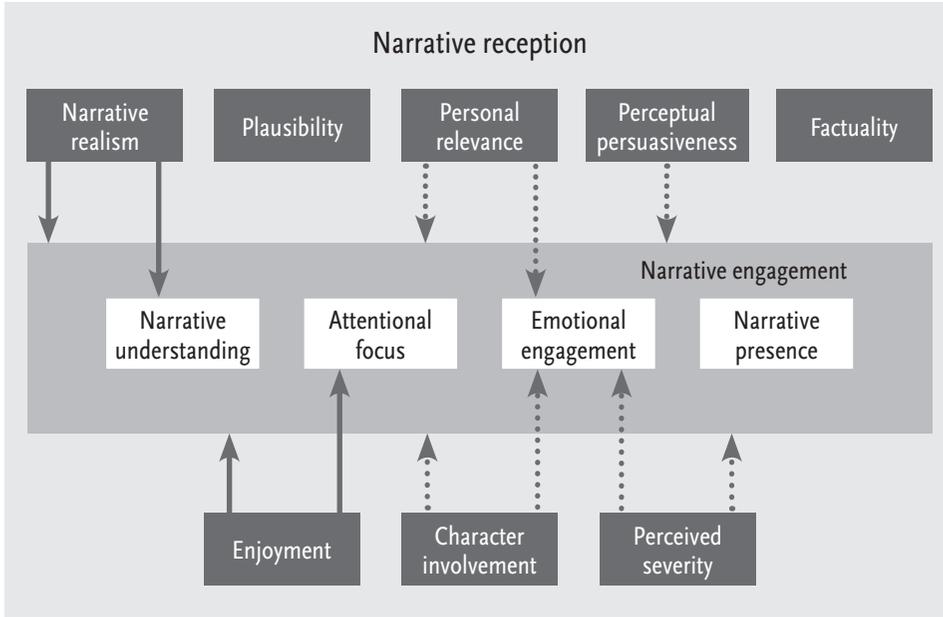
Of the NE dimensions, most participants referred to perceived severity when explaining their score on the emotional engagement dimension. The rape shocked most participants, and they very much empathized with the protagonist when she experienced sadness and hurt after this event. Only a few participants expressed that perceived severity influenced their attentional focus, narrative understanding, or narrative presence.

## **5.4 Discussion**

The degree to which recipients experience narrative engagement in a given narrative is associated with the narrative's impact (e.g., Green & Brock, 2000). Previous studies have focused mainly on how separate psychological processes contribute to NE. Hardly any study has investigated which processes contribute most to NE (for an exception, see Cho et al., 2014). Also, it has not been investigated through which dimensions of narrative engagement (narrative understanding, attentional focus, emotional engagement, and narrative presence) psychological processes exert their contribution. This study aimed to fill this void. The results revealed that the most important processes are narrative realism, enjoyment, personal relevance, perceptual persuasiveness, character involvement, and perceived severity. The main findings are depicted in Figure 5.2.

Whereas most of these psychological process have been shown to contribute to NE when investigated separately (e.g., Bilandzic & Busselle, 2011; Green, 2004), the present study shows that some processes contribute more to NE as compared

Figure 5.2 | Graphical representation of this study's main findings.



Note | Bolt arrows indicate that the relation was present in the comments of  $\geq 20$  participants. Dotted arrows indicate that the relation was present in the comments of  $\geq 10$  and  $< 20$  participants.

to others. Our results suggest that narrative realism and enjoyment contribute more strongly to NE than, for example, plausibility. In addition, the present study shows how these processes contribute to NE, by elucidating their relation with NE dimensions. For example, the result that narrative realism is associated with NE is consistent with earlier studies (Bilandzic & Busselle, 2011; Cho et al., 2014), and our study suggests that this may be mainly because of its contribution to narrative understanding. These findings help researchers better understand the mechanisms through which psychological processes lead to experiencing NE.

We also found that perceived severity of the narrative events contributed to NE. To our knowledge, perceived severity has been approached only as an outcome of NE (Dunlop, Wakefield, & Kashima, 2010). In Dunlop's study (2010), NE and emotions in response to an ad about skin cancer predicted perceptions related to how severe it would be if this cancer were experienced personally. Our study suggests that general perceptions about the severity of the narrative events contribute to NE. Experiencing rape in general was perceived as severe, and this contributed to the experience of emotional engagement. The finding that general perceived severity contributes to NE is in line with the notion that portrayals of critical life events are preconditions for emotional engagement (Appel & Richter, 2010). Together, these

findings suggest that different forms of perceived severity relate to NE: perceiving the events in general as severe may contribute to emotional engagement, and this emotional engagement may in turn increase perceptions related to the severity of experiencing these events personally.

The results of our study showed that plausibility and factuality contributed to NE in only a few participants. This is in contrast to results of earlier studies that showed an association between these processes and NE (e.g., Cho et al., 2014; Green, 2004). It should be noted, however, that personal relevance, plausibility, and factuality may not be mutually exclusive (Busselle & Greenberg, 2000). If narrative events are perceived as relevant to a recipient's personal life, then these events are also likely to be perceived as factual and plausible. So, high factuality and plausibility can be assumed when recipients perceive the narrative events as personally relevant. Future studies may provide more insight into this interplay of factuality, plausibility, and personal relevance in relation to NE.

Noteworthy in this study is the finding that some processes also hindered NE, where based on earlier research a contributing effect of these processes on NE may be expected. Two participants indicated that they perceived the narrative events as personally relevant and that this decreased their attention for the narrative. In addition, high narrative realism hindered attentional focus and narrative presence in two participants. This suggests that higher narrative realism and personal relevance do not always lead to higher NE. In fact, narrative realism and personal relevance may even hinder NE.

### **Limitations**

Although the present study provided valuable insights, the study also has limitations.

The first limitation is that this study relied on participants' self-reports on what influenced their NE. The processes to which participants referred are thus processes they consciously acknowledged and remembered as having contributed to NE. However, while experiencing NE, participants are likely to be less aware of themselves and therefore also less aware of processes that contribute to NE. Therefore, participants' reports will not include processes that unconsciously contributed to NE. Moreover, the results may be biased because participants may have had a better recollection of what contributed to their NE at the end of the narrative compared to the beginning.

Second, with the current study design, the causal direction of associations between NE and processes cannot be established. For example, our study found an association between enjoyment and NE. This could also mean that NE predicts enjoyment rather than vice versa. Indeed, NE may also contribute to enjoyment by providing enjoyable experiences, such as 'visiting' places they would normally not

visit, escaping from the self, and connecting with characters, among others (Green et al., 2004). In our study, however, participants were asked to explain their NE score, providing initial evidence about what predicted NE.

Third, the processes that were found in this study may be correlated. For example, participants may have enjoyed watching a narrative because they perceived it as personally relevant or perceptually persuasive. However, only a small number of participants reported such associations, making it difficult to discover patterns therein. Additionally, the focus of the present study was to examine processes that contribute to NE rather than processes that contribute, for example, to enjoyment.

Fourth, only one narrative was employed, which may have influenced the occurrence of certain processes. For example, a lack of perceptual persuasiveness may have been reported more often in response to an E-E narrative of lower audiovisual quality than in response to the presented narrative. Character liking may have been reported more frequently if a more positive role model was portrayed in the E-E narrative. Parasocial interaction may have been reported if the employed narrative was part of a series known by the participants. Thus, to gain confidence in this study's results, our study should be repeated with different types of narratives.

Last, the experimental setting in which the participants watched the E-E narrative influenced NE. According to the participants, the darkened room, the bright television screen, and the researchers' request not to interact with the other participants resulted in increased attention for the narrative. Additionally, multiple participants indicated that they stayed focused on the narrative because watching the narrative was part of a study in which they agreed to participate, including answering questions after viewing the narrative. Because the questions were unknown to them during the viewing, they paid attention to the narrative to be able to answer any questions that may be asked. As such, the reception process in experimental settings does not exactly mirror the reception process in real life settings.

Despite these limitations, the results can inform E-E developers who aim to design engaging and health promoting narratives.

### **Practical implications for E-E development**

The results of the present study suggest that multiple processes contribute to NE. To increase their health-promoting potential, E-E narratives should induce these processes in target recipients. To illustrate, the results suggest that E-E developers should strive to create narratives, which induce enjoyment in their target recipients. This means that E-E developers should have insight into media preferences and media processing abilities of the target group and should create a narrative matching these preferences and abilities. Possible storylines should be pre-tested to investigate which storylines elicit the most positive evaluations. Furthermore, our results indicated that target recipients should perceive E-E narratives as per-

sonally relevant. Thus, E-E developers may want to include narrative events and situations that (or individuals close to) target recipients have already experienced or those that they perceive are likely to happen in the future. Our study, however, also suggested that the narrative should not be too personally relevant or too high in narrative realism because this could backfire by lowering the NE dimensions.

Another implication for E-E development relates to the use of role models that enact risky behaviors and, as consequence, suffer negative consequences. Absorption in the experiences of role models is important for E-E impact (Bandura, 2004). In our study, recipients experienced a lack of character involvement because of the character's unrestrained behavior. In turn, a lack of character involvement lowered NE. Therefore, to effectively bring across negative consequences of risky behaviors, E-E developers are advised to incorporate likeable role models whose behavior should stay within the boundaries of what is still perceived as acceptable behavior. Otherwise, recipients may distance themselves from the character. Accordingly, the negative consequences experienced by that character may not exert any influence on recipients.

Our results suggest that of the NE dimensions, emotional engagement may be most difficult to trigger and to maintain because it is under the influence of personal relevance, character involvement, and perceived severity. In contrast, for example, narrative understanding was associated mainly with narrative realism. This indicates that narrative understanding can be achieved relatively easy by creating a logic and coherent narrative.

## 5.4 Conclusion

To conclude, the current study provides a detailed insight into which psychological processes contribute to NE and into the NE dimensions to which such processes contribute. Based on the study results, the conclusion can be drawn that narrative realism, enjoyment, personal relevance, perceptual persuasiveness, character involvement, and perceived severity are the most important contributors to NE. E-E developers should thus strive to develop E-E narratives that activate these processes to increase the likelihood that their E-E narratives will be engaging and impactful.

## Appendix | Overview of Codes, Keywords, and Source Questionnaires

Code	Keywords	Source questionnaires
Enjoyment	Referring to: excitement, suspense, curiosity, interest, entertainment, stereotypical (reversed), predictability (reversed), boredom (reversed) challenge, depth, general positive (or negative) evaluations relating to the narrative content or to the viewing experience, being impressed by the narrative, being appealed, mentions of whether one would watch the narrative if coming across in real life, mentions of having done other things than watching the narrative (reversed).	Bilandzic & Busselle, 2011; Raney & Bryant, 2002; Tal-Or & Cohen, 2010, adapted to a dramatic story and negative role models.
Narrative realism	Referring to: logic of the story, coherency, contradictions (reversed), clearness of why the events unfolded as they did, actions and reactions of the characters in tune with their personalities, expectations raised by the narrative are met, being able to follow the narrative, clear relationships between characters.	Bilandzic & Busselle, 2011; Cho et al., 2014.
Perceptual persuasiveness	Referring to: visual or audio elements being realistic, positive (or negative) evaluations relating acting qualities, production quality, length and pace of the story or scenes.	Cho et al., 2014
Plausibility	Referring to: whether narrative elements (e.g., events, dialogues, scenes, characters, situations, way of living) could be observed or encountered at some point in real life.	Cho et al., 2014; Krakowiak & Oliver, 2012; Green, 2004
Factuality	Referring to: whether narrative elements (e.g., events, dialogues, scenes, characters, situations, way of living) are based on real life occurrences.	Cho et al., 2014
Personal relevance	Referring to: whether narrative elements (e.g., events, dialogues, scenes, characters, situations, way of living) have been experienced in one's own life or the lives of close others, whether these elements are perceived as personally close, related to oneself.	Tal-Or & Cohen, 2010
Involvement with characters	Referring to: sharing values, background(variables), thoughts, or attitude with characters, acting similar (perceived similarity), positive comments about characters, evaluations of good-bad, pleasant-unpleasant, attractive-unattractive, and responsible-irresponsible (liking), a desire to be like, or a desire to behave in similar way as characters, or looking up to the character (wishful identification), perceptions of knowing characters, curiosity to characters' actions.	Green & Brock, 2000; Kreuter et al., 2008; Moyer-Gusé & Nabi, 2010; Sood, 2002



# Chapter 6

## **General discussion**



This dissertation revolves around understanding the role of narrative engagement in the impact of entertainment-education (E-E) narratives. The studies are conducted in the context of *Roes*, a series of audiovisual E-E narratives developed to discourage alcohol (binge) drinking in young people.

In this chapter, the findings of the previous chapters are integrated to answer the research questions. Then, it is discussed how this dissertation's main findings contribute to the literature and how they provide directions for future research. After that, the interpretation of these findings is reflected upon. The chapter closes with practical recommendations for organizations that aim to develop E-E narratives to discourage unhealthy behaviors.

## 6.1 Summary of the main findings

To increase the understanding of the role of narrative engagement (NE) in the impact of entertainment-education narratives (E-E impact), the following three research questions are posed:

*RQ1: Does Roes discourage alcohol (binge) drinking in E-E narrative recipients?*

*RQ2a: Are NE dimensions associated with E-E impact on alcohol (binge) drinking?*

And, if so:

*RQ2b: Do negative and positive thoughts about alcohol (binge) drinking mediate associations between NE dimensions and E-E impact on alcohol (binge) drinking?*

*RQ3: Which psychological processes experienced during narrative reception contribute to experiencing NE dimensions?*

This dissertation has shown that *Roes* discouraged alcohol (binge) drinking (chapter 2). Viewing multiple episodes of *Roes* positively predicted a decrease in alcoholic drinks consumed per occasion, an increase in the intention to decrease alcohol use, and an increase in perceived normative pressure. One year after exposure, the impact on the intention to decrease alcohol use was still present. One of the *Roes* episodes, *Verliefd* (*In love* in English), was further examined (chapter 4). After the participants had viewed this episode, their beliefs relating to the negative outcomes of alcohol binge drinking (BD) were more contra-BD as compared to their beliefs prior to viewing the episode. Attitudes towards BD and willingness to engage in BD also became more contra-BD.

Then, the roles of the NE dimensions attentional focus, narrative understanding, emotional engagement, and narrative presence in E-E impact were investigated (chapter 4). It was shown that the NE dimensions attentional focus, emotional engagement, and narrative presence were positively associated with E-E impact. Attentional focus was associated both with stronger beliefs about the severity of the negative outcomes of BD and with a lowered intention to engage in BD. Emotional engagement and narrative presence were associated with stronger beliefs that BD leads to negative outcomes (negative outcome beliefs), and with stronger beliefs about being vulnerable to these negative outcomes (vulnerability beliefs). Surprisingly, the NE dimension narrative understanding was associated with increased willingness to engage in BD.

No evidence was found that negative thoughts about BD mediated associations between NE dimensions and E-E impact. Relations between NE dimensions, positive thoughts about BD, and E-E impact could not be investigated: only one participant reported a positive thought about BD in response to *Verliefd*. Based on these findings we conclude that attentional focus, emotional engagement, and narrative presence are important for E-E impact, and that thoughts about BD do not play a role therein.

Because NE dimensions were found to be associated with E-E impact, it was investigated which psychological processes contribute to NE dimensions. Negative thoughts about the perceptual persuasiveness of *Verliefd* negatively associated with emotional engagement and narrative presence (chapter 4). Furthermore, it was shown (chapter 5) that enjoyment of *Verliefd* was a strong contributor to NE, mainly through contributing to attentional focus. Another strong contributor to NE was narrative realism, mainly through contributing to narrative understanding. Finally, personal relevance, character involvement, and perceived severity contributed to emotional engagement.

## 6.2 Discussion of main findings and directions for future research

In this section, this dissertation's main findings are discussed in more detail. First, the potential of E-E narratives to discourage alcohol (binge) drinking in young people is described. Second, the relevance of thoughts in explaining how NE associates with E-E impact is discussed. Third, the importance of NE dimensions for E-E impact is elaborated on. Fourth, the contributing influence of processes on NE is discussed. Each of these findings is discussed in relation to previous and future research.

### **E-E narratives discourage alcohol (binge) drinking in young people**

Although research on the impact of E-E narratives is growing (Moyer-Gusé, 2008), results of E-E narratives aimed at discouraging alcohol use in young people are scarcely described in the scientific literature (Shen & Han, 2014). Therefore, this dissertation adds to the literature that E-E narratives may be an effective health communication strategy to discourage alcohol (binge) drinking in young people, including drinkers. It is shown that E-E narratives are able to discourage drinking on multiple drinking-related variables (e.g., beliefs, attitudes) as well as on actual drinking behavior.

Despite the fact that this dissertation did not investigate which content accounted for *Roes'* impact, it is likely that the negative role models involved in BD and experiencing negative outcomes may have served as a disincentive for recipients to engage in unhealthy behavior (Bandura, 2004). Whereas *Roes* portrays mainly negative role models, many E-E narratives incorporate (also) positive role models and transitional role models (Singhal, Cody, Rogers, & Sabido, 2004). If the objective is to discourage BD, a positive role model will refrain from BD and experience positive outcomes of refrainment. A transitional role model will change from engagement in BD accompanied by negative outcomes, to refrainment from BD accompanied by positive outcomes. It is as yet unknown which role models, or combinations thereof, have the largest impact on discouraging BD in young people. Therefore, future research should further investigate the effectiveness of positive, negative, or transitional role models for discouraging alcohol (binge) drinking. For example, various E-E narratives may be created, differing in whether the main character is a positive, negative, and/or transitional role model in relation to BD. Subsequently, the E-E impact of these narratives on BD could be compared, providing a more detailed insight into the most impactful strategy to discourage BD by E-E narratives.

### **The relevance of thoughts for explaining how NE associates with E-E impact**

Given the importance of NE for E-E impact (e.g., Dunlop, Wakefield, & Kashima, 2010; Green & Brock, 2000; McKinley, 2012), this dissertation explores how the NE dimensions associate with E-E impact. This dissertation shows that the NE dimensions attentional focus, emotional engagement, and narrative presence are associated with E-E impact. That NE leads to E-E impact via reducing counterarguing has been widely assumed (Green & Brock, 2000; Slater & Rouner, 2002), but not consistently proven. Therefore, it is explored in this dissertation whether NE dimensions associate with positive and negative thoughts about alcohol (binge) drinking, and whether these thoughts associate with E-E impact.

#### *The relevance of positive thoughts about alcohol (binge) drinking*

In contrast to the expectation, only one defensive, i.e. positive, thought about BD

was reported in response to *Verliefd*. Therefore, relations between NE dimensions, positive thoughts about BD, and E-E impact could not be investigated. Consequently, this dissertation could not confirm, nor reject the hypothesis that NE dimensions reduce defensive thoughts and that, in turn, these thoughts are negatively associated with E-E impact.

Although this can be seen as a limitation, the absence of defensive thoughts in itself is an interesting finding. It suggests that our expectation that *Verliefd*, which communicates a contra-alcohol message, would trigger defensive thoughts in pro-drinking recipients may have been incorrect. Thereby, this dissertation raises the question of when recipients will produce defensive thoughts in response to E-E narratives. Potentially, E-E narrative recipients only defend their behavior when they perceive that the narrative is aiming to change it (Moyer-Gusé, Jain, & Chung, 2012). This aim may not have been noticed in *Roës*. Therefore, there may have been no need for recipients to defend their current drinking behavior. This would accord with the theory that the narrative structure of E-E narratives hides the persuasive intent, thereby bypassing the danger of recipients becoming negatively aroused by this intent (reactance) (Moyer-Gusé, 2008). This, however, would suggest that E-E narratives are a magical wrapping paper in which health messages can be packaged and conveyed to recipients without inducing reactance. Perhaps not surprisingly, this is not the case. Even in narratives, an intent to persuade can be noticed and may lead to reactance (Moyer-Gusé & Nabi, 2010). Future research may provide insight into identifying the narrative content that gives away the persuasive intent of E-E narratives. Recipients may, for example, be exposed to different E-E narratives, followed by an assessment of perceived persuasive intent of these E-E narratives. Then, an in-depth interview may inquire about which narrative content induced the perceived persuasive intent in the recipients.

#### *The relevance of negative thoughts about alcohol (binge) drinking*

It is shown in this dissertation that negative thoughts about alcohol (binge) drinking did not mediate associations between NE dimensions and E-E impact. In combination with the inconsistent results of previous studies (e.g., Dunlop et al., 2010; Moyer-Gusé & Nabi, 2010), these findings support the view that the complexity of associations between NE, thoughts, and E-E impact has not yet been scrutinized (Hoeken & Fikkers, 2014).

One of the complicating factors is that thoughts about the target behavior of E-E narratives may take many different forms. To illustrate this in the case of drinking, thoughts may result from issue-relevant thinking ('Binge drinking can lead to dangerous situations') (Hoeken & Fikkers, 2014), from a vicarious experience ('How unpleasant to experience such a bad hangover') (Green & Brock, 2002), and from self-referencing ('This negative outcome could happen to me too') (Dunlop et al.,

2010). When such thoughts are interpreted as being either favorably or unfavorably related to the target behavior, this does not sufficiently differentiate between different underlying processes. A suggestion for future research is therefore to look beyond whether the favorability of thoughts about the target behavior mediates the association between NE and E-E impact. Rather, further elucidation is required on how NE associates with these different underlying processes, and how these underlying processes may play a role in E-E impact. In addition to elucidating the processes whereby NE leads to E-E impact, such a line of research may provide further insight into why relations between NE, favorability of thoughts, and impact have not been consistently found. Possibly, previous studies captured different processes underlying the reported thoughts. Or, the narratives employed in these studies triggered different underlying processes. As a consequence, studies may differ on whether or not they find associations between NE, thoughts, and impact.

### **The importance of NE dimensions for E-E impact**

Because the discovery of NE dimensions is relatively recent (Busselle & Bilandzic, 2009), this dissertation adds to the limited knowledge about the role of NE dimensions in E-E impact. This dissertation shows that the NE dimensions attentional focus, emotional engagement, and narrative presence are associated with E-E impact. It is also shown that associations between NE dimensions and E-E impact on BD are not mediated by negative thoughts about BD. Below, previous research is discussed to generate alternative hypotheses about how these NE dimensions may associate with E-E impact.

#### *Attentional focus*

In this dissertation, it is shown that attentional focus is associated with stronger beliefs about the severity of the negative outcomes of BD, as well as with lowered intentions to engage in BD. Together with earlier research (Busselle & Bilandzic, 2009), these findings indicate that the NE dimension attentional focus is associated with E-E impact. Negative thoughts about BD are shown not to mediate associations between attentional focus and E-E impact. Therefore, the question regarding the processes through which attentional focus associates with the E-E impact of *Verliefd* remains unanswered.

Perhaps high attentional focus reflects that recipients (choose to) allocate mental resources to processing the E-E narrative, including the implicit message about BD embedded in the narrative events and the experiences of characters. Logically, recipients have to pay attention to these events and experiences in order to extract the message embedded in them (Lang, 2000). Future research may provide further insight into whether attentional focus on E-E narratives enhances health-message extraction. Studies may, for example, use a manipulation to lower attentional focus

on an E-E narrative, e.g., by distracting recipients, specifically on the moments when the character experiences negative consequences of unhealthy behavior. Thereby, the extraction of the implicit health-message may be inhibited. If this manipulation is successful, and lowered attentional focus is associated with less E-E impact, this would indicate that attention focus is associated with E-E impact via facilitating message extraction.

### *Emotional engagement*

In this dissertation, it is shown that the NE dimension emotional engagement associates with vulnerability beliefs and negative outcome beliefs. Together with previous research in this field (Busselle & Bilandzic, 2009; De Graaf, 2010), these findings indicate that the NE dimension emotional engagement is important for E-E impact. It is shown that negative thoughts about BD do not mediate associations between emotional engagement and E-E impact. Therefore, the question regarding the processes through which emotional engagement associates with the E-E impact of *Verliefd* also remains unanswered. There are two plausible alternative ways by which emotional engagement may lead to E-E impact. First, emotional engagement with characters experiencing negative outcomes of unhealthy behavior may create a vicarious and emotional experience of these outcomes (Cohen, 2001). This experience may induce feelings among recipients that they themselves are also at risk of these negative consequences (Dunlop et al., 2010; Moyer-Gusé, 2008). Second, via emotional engagement with a character who experiences negative outcomes of unhealthy behavior, negative outcomes may be accentuated and may have a stronger impact on changing beliefs relating to these outcomes (Green, 2006). This dissertation's finding of emotional engagement associating with stronger vulnerability beliefs and with stronger negative outcome beliefs indicates that both the aforementioned processes may explain how emotional engagement leads to E-E impact.

These processes, however, may only explain how negative emotional engagement leads to stronger risk-related beliefs. The role of positive emotional engagement in E-E impact is as yet unknown, because hardly any studies have focused on the role of positive emotions in E-E impact. The one study performed in this field showed that humor in an E-E narrative dealing with a serious topic – the negative consequences of an unintended pregnancy – downplayed perceptions about the perceived severity of the negative consequences. In turn, this increased the intention to engage in unprotected sex (Moyer-Gusé, Mahood, & Brookes, 2011). It has, however, not yet been investigated whether positive emotions associate with E-E impact when positive outcomes of healthy behavior are portrayed. Potentially, sharing positive emotions with characters who experience positive outcomes of healthy behavior, such as happiness and fun, may influence beliefs related to ben-

efits of healthy behaviors (Bandura, 2004). Future research may further investigate this issue by creating E-E narratives inducing positive emotions, but differing in whether positive outcomes of healthy behavior are portrayed or negative outcomes of unhealthy behavior. This line of research may elucidate whether, and under which conditions, positive emotional engagement is associated with E-E impact.

### *Narrative presence*

Similar to emotional engagement, the NE dimension narrative presence is also shown to associate with stronger vulnerability beliefs as well as with stronger negative outcome beliefs. Together with earlier research (Busselle & Bilandzic, 2009), these findings indicate that narrative presence is important for E-E impact. It is shown in this dissertation that thoughts about BD do not mediate associations between narrative presence and E-E impact.

Potentially, narrative presence enhances recipients' observation of the negative consequences of unhealthy behavior as if they were in close proximity to it. Under high narrative presence, recipients may even feel as if they are experiencing these negative consequences themselves (Kim & Biocca, 1997). Based on this sensation of direct experience with the negative consequences of BD, recipients may change their beliefs about the negative consequences of BD (Green & Brock, 2000). Thus, via facilitating the sensation of direct experience of negative consequences, narrative presence may discourage unhealthy behavior. Future studies may further investigate whether narrative presence associates with E-E impact via increasing the sensation in recipients of being close to the negative events or experience these events him/herself.

### *Narrative understanding*

Although it has been assumed that NE and its dimensions positively associate with E-E impact (Busselle & Bilandzic, 2008), it is shown in this dissertation that the NE dimension narrative understanding associates negatively with E-E impact. Given that relations between narrative understanding and impact have not always been found (Busselle & Bilandzic, 2009), this dissertation raises the question of whether narrative understanding is important for E-E impact. And, if so, may the importance of narrative understanding lie in the fact that high narrative understanding can undermine E-E impact?

In the case of *Roes*, an explanation of the undermining effect of narrative understanding may be that narrative understanding facilitated an understanding of the initial benefits of BD rather than of disadvantages experienced later on, and that this may have resulted in an opposite E-E impact.

Another explanation for the undermining effect of narrative understanding may be that the flipside of high narrative understanding is a lack of narrative challenge

which, in turn, may lead to boredom (Busselle & Bilandzic, 2006; Sherry, 2004). Despite this boredom, participants may have felt that they should finish viewing the E-E narrative because they had agreed to participate in the study. Consequently, viewing this bothersome E-E narrative may have curtailed their freedom to spend their time on more pleasurable activities (Dillard & Shen, 2005). To restore a sense of freedom, they may have derogated the source of the threat, i.e., the E-E narrative, adopting a view opposite to the view that the E-E narrative aimed to bring across (Abelson & Miller, 1967; Wegener, Petty, Smoak, & Fabrigar, 2004). Future research may further investigate this issue by exploring whether narrative understanding leads to an opposite E-E impact by promoting the benefits of risky behavior or by inducing reactance because of experimentally forced exposure to a bothersome E-E narrative.

### **The processes that contribute to NE**

Little is known about the psychological processes that contribute to E-E narrative recipients' experience of NE (Moyer-Gusé, 2010), and even less about the NE dimensions to which such processes contribute. Because creating and maximizing NE is important for E-E impact, this dissertation fills this gap by exploring processes that contribute to NE dimensions. It is shown that enjoyment, narrative realism, personal relevance, perceptual persuasiveness, character involvement, and perceived severity contribute to at least one NE dimension (chapter 5). Below, two of the contributing processes found are discussed in more detail: enjoyment and perceived external realism.

#### *Enjoyment*

Many studies have found an association between NE and enjoyment (e.g., Krakowiak & Oliver, 2012; Oh, Chung, & Han, 2014; Tsay-Vogel & Oliver, 2014). Therefore, it may not seem surprising that this dissertation shows that enjoyment contributes to NE, especially to attentional focus. However, in previous studies, enjoyment is assumed to be an outcome of NE. NE may lead to enjoyment, because experiencing NE is a sensation that many recipients desire while processing narratives (Green, Brock, & Kaufman, 2004). Combining these insights with this dissertation's insight suggests that NE and enjoyment may enhance each other: potentially, enjoyment contributes to NE and NE contributes to enjoyment (Tan & Fasting, 1996). Given the importance of NE for E-E impact, this self-enhancing process may be crucial for yielding E-E impact. Unfortunately, such associations between NE and enjoyment have not yet been explored in the context of understanding E-E impact. A suggestion for future research is therefore to further explore this self-enhancing process involving NE and enjoyment, and how this process influences E-E impact.

*Perceived external realism*

Although previous studies have investigated whether perceived external realism – i.e., recipients' perceptions about whether the narrative matches the real world – influences NE (e.g., Hall & Bracken, 2011), few studies have investigated which type of external realism has most influence on NE (for an exception, see Cho, Shen, & Wilson, 2014). This dissertation fills this void and shows that the personal relevance of narrative events – i.e., perceptions about whether narrative events connect to E-E narrative recipients' personal lives – is an important contributor to NE. In contrast, perceptions relating to whether narrative events really happened (factuality) or could happen (plausibility) to others in real life are shown to hardly contribute to NE. This dissertation is therefore one of the first to reveal that, of the external realism types, personal relevance may be the most important contributor to NE. An explanation of this finding may be that, through personal experiences with narrative events, E-E narrative recipients have acquired vivid and detailed knowledge of what it must be like for others to experience such an event, including the emotions that may be experienced. This is likely to contribute to their experiencing emotional engagement while watching a character experiencing a similar event (Green, 2004). In contrast, knowing that others in the world could overcome these events may provide less vivid knowledge, and may contribute less to recipients imagining themselves in the character and his/her emotions.

At first sight, the finding that personal relevance contributes to NE may seem inconsistent with this dissertation's finding that (un)favorable thoughts about realism are unrelated to NE (chapter 4). An explanation for this apparent contradiction may lie in the fact that experienced realism, as assessed in chapter 5, and thoughts about realism, as assessed in chapter 4 follow different paths to NE. Personal relevance may contribute to NE directly, through facilitating recipients' ability to project themselves into the narrative, as shown in this dissertation (chapter 5). In contrast, given that unfavorable thoughts about realism are more likely to be produced than favorable ones (Busselle & Bilandzic, 2008), unfavorable thoughts about low personal relevance may disrupt the flow of narrative processing. Future research may want to explore whether personal relevance predicts NE directly, or whether this influence is mediated by unfavorable thoughts about personal relevance during viewing. Studies may include a manipulation of personal relevance by varying the degree to which narrative events match recipients' personal experiences, for example. Then, NE may be assessed, as well as the degree to which recipients produce unfavorable thoughts about personal relevance while processing the narrative. If the manipulation is successful, it can be investigated which of these two pathways best explains how personal relevance contributes to NE.

### 6.3 Reflections on the interpretation of the main findings

This dissertation's main findings contribute to a better understanding of the role of NE in E-E impact and how NE can be created and maximized. Below, two issues that influence the interpretation of these main findings are discussed: causality and generalization.

#### Causality

This dissertation focuses on exploring processes that contribute to NE or result from NE. It should be noted, however, that this dissertation's findings are based on correlational and qualitative methods of analyses. Therefore, the direction of causality between NE and other processes remains open for discussion. For example, personal relevance may contribute to NE, but it is also plausible that NE results in perceiving narrative events as personally more relevant (Green, 2004). A suggestion for future research is therefore to manipulate a hypothesized independent variable and to investigate the effect of this manipulation on the hypothesized dependent variables. To test whether, for example, personal relevance contributes to NE instead of vice versa, personal relevance may be manipulated as described in section 6.2. If this manipulation is successful in increasing personal relevance, and if this increase is associated with NE, this would support the hypothesis that personal relevance contributes to NE and not the other way around.

#### Generalization

This dissertation's findings result from studies conducted in the context of adolescents/young adults as E-E narrative recipients, alcohol (binge) drinking, and *Roes* as stimulus material. Employing this context in all the studies provided an opportunity to build an in-depth understanding of NE within this context. However, to investigate whether the findings can be generalized, this research should be replicated in varying contexts. First, the dissertation's findings may be tested among different recipient groups. From the perspective of health promotion and alcohol consumption, younger recipients than included in this dissertation's studies may be of special interest. Whether E-E narratives may also postpone alcohol drinking in a non-drinking population and whether age difference influences how NE emerges may be the focus of future investigations.

Second, this research may be replicated employing different types of E-E narratives, such as written E-E narratives. In written narratives, recipients have to create their own mental images of the characters, events, and story world. In audiovisual narratives, these images are provided. It remains an open question whether and how this difference in narrative processing influences NE and other processes underlying E-E impact (Green et al., 2008). In addition, as already touched upon in

section 6.2, this research may be replicated with E-E narratives varying in their portrayal of role models, i.e., positive, negative, and transitional.

## 6.4 Practical recommendations for E-E development

The studies described in this dissertation were conducted to elucidate how E-E narratives can yield positive impact, in order to inform the development of impactful E-E narratives in the future. This dissertation takes a step forward therein by providing insights into how E-E narratives may induce NE in E-E narrative recipients, and into how NE associates with E-E impact. Consequently, this dissertation can provide practical recommendations for organizations that aim to employ E-E narratives to discourage unhealthy behaviors.

### **E-E narratives as part of a long-term strategy**

In this dissertation, it is shown that *Roës* was able to discourage alcohol (binge) drinking. Therefore, health organizations aiming to develop health-promoting mass media campaigns may also consider applying the E-E strategy. However, this dissertation and also many studies on the long-term impact of mass media campaigns (Potter, 2011; Wakefield, Loken, & Hornik, 2010) show that a long-term impact on health is hard to establish. Especially in relation to alcohol, individuals are continuously exposed to many mediated pro-alcohol messages by the alcohol industry (Wakefield et al., 2010), television programs (McKinley, 2012), and movies (Dal Cin et al., 2009). These mediated pro-alcohol messages will ultimately overshadow the impact of any attempt to discourage drinking. Therefore, if the E-E strategy is chosen, it should be part of a long-term effort.

### **Maximize enjoyment**

Because enjoyment contributes to recipients' NE in E-E narratives, organizations should aim to maximize the likelihood that recipients will enjoy the E-E narratives. This dissertation shows that E-E narratives should interest, excite, attract, and challenge target recipients. To maximize these processes, the target recipients' current media use may yield relevant information on what narratives, e.g., genre and media format, attract them. Also, collaborating with a producing company that has been shown to be able to attract an audience that is similar to the E-E narratives' target audience may increase the likelihood that target recipients will experience enjoyment. In that sense, incorporating a health-related storyline into an existing media format (*inscript participation*: Bouman, 2002) that is already enjoyed by the target recipients, e.g., a soap opera, may be the most effective way to ensure enjoyment.

### **Maximize personal relevance**

Personal relevance is shown to contribute to NE, mostly through the NE dimension emotional engagement. Therefore, E-E developing organizations should aim to create narratives that portray situations and events that are personally relevant for their target recipients. To maximize the personal relevance of narrative events, these organizations may collect target recipients' personal narratives about experienced positive and negative events relating to the (un)healthy behavior (Miller-Day & Hecht, 2013). Within and across these personal narratives, recurring events (e.g., having a blackout after binge drinking) and recurring conditions under which these events occurred (e.g., after a party with friends) could be identified. These events and conditions may then form the basis of storylines. Such personally relevant storylines will contribute to NE and to E-E impact.

### **Maximize character involvement**

Although not discussed in detail in the current chapter, it is shown in chapter 5 of this dissertation that character involvement (i.e., perceived similarity, liking) contributes to NE, mostly through the NE dimension emotional engagement. Character involvement in *Roës* was low. This suggests that the E-E impact of *Roës* may have been greater if more character involvement had been triggered. Based on this finding, a recommendation is that E-E developers should maximize character involvement. Creating character involvement in E-E narratives with negative role models, however, is a difficult assignment. This dissertation shows that recipients will reject a character who engages in irresponsible behavior. As a result, recipients experience little character involvement and attribute the negative consequences of this behavior to the character's own wrong-doing. This rejection of negative role models in response to E-E programs has been previously demonstrated (Bouman, 2004; Renes, Mutsaers, & van Woerkum, 2012). Therefore, if a negative role model is chosen to portray negative consequences of unhealthy behavior, this negative role model should be carefully developed. The character's unhealthy behavior should not deviate too much from the target recipients' norms of what is considered normal and responsible behavior. Collecting target recipients' personal narratives about their experiences with the unhealthy behavior, as already mentioned, may provide useful information about which norms are held by the target recipients, as well as the specific conditions under which they themselves sometimes violate these norms. This will ensure character involvement and NE in the negative consequences experienced by the character.

Another way to create involvement with a negative role model is first to establish high character involvement by an initial positive portrayal of the character (Renes et al., 2012), e.g., responsible, friendly, and attractive. Here, again, inserting an E-E storyline into an existing media format may be most effective: target recipients

may already be highly involved with likeable characters. Then, if a likable character engages in irresponsible or unhealthy behavior, recipients may not immediately disengage from this character. This increases the likelihood that recipients will continue to experience character involvement, will experience NE, which may result in E-E impact.

### **Maximize emotional engagement**

This dissertation reveals that, together with narrative presence, emotional engagement is important for E-E impact. Thus, E-E developers should strive to ensure that their target recipients engage emotionally in E-E narratives. In addition to maximizing personal relevance and character involvement, emotional engagement can be maximized by incorporating emotional content. Indeed, this dissertation (chapter 5) shows that the perceived severity of the narrative events contributes to emotional engagement (not discussed in detail in the current chapter). In the case of a negative role model, E-E narratives should therefore portray life-changing consequences of the character's involvement in the unhealthy behavior and show that these consequences strongly impact the character's emotions (Appel & Richter, 2010).

### **Conduct formative research**

It is generally recommended that, in the development phase of E-E narratives, formative research should be performed to collect feedback from intended target recipients on narrative concepts, i.e., planned storyline, characters, and media format (Bouman, 2002; Sood, Menard, & Witte, 2004). This dissertation shows that formative research should focus on collecting target recipients' feedback on, e.g., enjoyment, personal relevance, character involvement, and NE experienced while they were processing these narrative concepts. Of course, organizations should then adapt their plans accordingly if the narrative concepts trigger these processes insufficiently.

In sum, this dissertation shows that E-E narratives can be an effective health communication strategy to discourage alcohol (binge) drinking in young people. It is shown that the NE dimensions attentional focus, emotional engagement, and narrative presence are positively associated with E-E impact. E-E narrative recipients' enjoyment, narrative realism, personal relevance, perceptual persuasiveness, character involvement, and perceived severity contribute to NE. Consequently, this dissertation provides health communication researchers and media psychologists with insights into the role of NE in E-E impact, and offers E-E developers practical recommendations about how to create engaging and impactful E-E narratives.



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# Summary



## Chapter 1: Introduction

Narratives have the power to influence their recipients' health behaviors. With the entertainment-education (E-E) strategy, health organizations turn this narrative power to good account by employing narratives in their health promoting campaigns. E-E programs, mostly in the form of televised narratives, have been shown to effectively encourage a variety of health-related behaviors. Because of these positive results, the E-E strategy is considered a promising communication strategy to encourage healthy behaviors.

One quality of E-E narratives that has been shown to be crucial for narrative impact is the ability of E-E narratives to engage target recipients. Engaged recipients may experience four dimensions of narrative engagement: narrative understanding, attentional focus, emotional engagement, and narrative presence. Evidence is growing that narrative engagement (NE) plays a role in E-E narratives' impact (hereafter: E-E impact). However, little is known about how NE leads to E-E impact and about how NE emerges in recipients of narratives. The objective of this dissertation is therefore to provide a better understanding of NE in E-E narratives, by investigating how NE is associated with E-E impact, and by investigating the processes that contribute to experiencing NE.

The studies are conducted within the context of NE in E-E narratives aiming to discourage alcohol (binge) drinking among adolescents and young adults. This context is chosen for two reasons. First, alcohol drinking is prevalent in this group, and this behavior is associated with health risks. The E-E strategy may be an effective approach to persuade this group not to drink (excessively). Insight into how E-E narratives can discourage alcohol (binge) drinking among young people may therefore contribute to maintaining and improving their health. Second, in 2008, the televised E-E drama series *Roes* (*High in English*) was broadcast on national television. *Roes* consists of 11 case stories (25 minutes each) portraying negative experiences and outcomes of adolescent protagonist(s) drinking alcohol and/or using other drugs. This E-E drama series provided a unique opportunity to study the impact of E-E narratives on discouraging alcohol (binge) drinking and the role of NE therein. Three research questions are addressed in this dissertation. The first research question is posed to establish whether the *Roes* E-E narratives have impact:

*RQ1: Does Roes discourage alcohol (binge) drinking in E-E narrative recipients?*

Second, this dissertation addresses the role of NE in E-E impact. NE has been suggested to lead to impact by reducing counterarguing. Counterarguing describes the process whereby target recipients generate thoughts that dispute, or are inconsistent with, a persuasive message. NE would reduce both the ability and the

motivation to produce such unfavorable thoughts in response to E-E narratives. However, empirical studies do not consistently confirm this hypothesis. A more detailed insight into this potential mechanism of E-E impact is therefore needed. Considering the role of NE dimensions as well as the role of favorable thoughts may provide a more detailed insight. Therefore, the second research question, in the context of alcohol (binge) drinking, is:

*RQ2a: Are NE dimensions associated with E-E impact on alcohol (binge) drinking?*

And, if so:

*RQ2b: Do negative and positive thoughts about alcohol (binge) drinking mediate associations between NE dimensions and E-E impact on alcohol (binge) drinking?*

If NE is important for E-E impact, then insight is needed into how NE can be created or maximized. Therefore, the third research question is:

*RQ3: Which psychological processes experienced during narrative reception contribute to experiencing NE dimensions?*

## **Chapter 2: Televised entertainment-education to prevent adolescent alcohol use: Perceived realism, enjoyment, and impact**

This chapter describes a quantitative field study on the Trimbos Institute's E-E project, *Roes*, (*High in English*). The study investigated responses of adolescent viewers to the E-E narratives relating to perceived realism and enjoyment, as well the E-E impact on alcohol drinking behavior. Before the E-E narratives were broadcast, baseline information on alcohol-related outcome expectancies, intentions to decrease alcohol use, norms, and alcohol drinking behavior was collected (pretest). After the broadcasting of nine episodes of *Roes*, these alcohol-related variables were assessed again (posttest) and again 1 year later (follow-up). As a measure of impact, it was investigated whether changes in the alcohol-related variables were predicted by whether or not participants viewed the E-E narratives. Five surveys were administered between pre- and posttest to assess perceived realism and enjoyment of these five episodes.

The results showed that viewing the E-E narratives significantly predicted desired short-term changes in the number of alcoholic drinks consumed per occasion, intentions to decrease alcohol use, and perceived normative pressure. At the follow-up measurement, the impact on intentions to decrease alcohol use was still present.

Viewers reported high narrative realism, indicating that they perceived the stories and characters as plausible and credible. However, viewers did not consciously use, or intend to use, elements of the story in their own lives (low utility) and did not perceive many similarities between themselves and the characters or their situations; neither did they perceive any involvement with the characters (low identity). Utility and narrative realism predicted whether viewers enjoyed watching the E-E narratives. Identity did not predict enjoyment.

From the perspective of discouraging alcohol drinking, the found E-E impact was a satisfying result. However, the study did not succeed in identifying mechanisms responsible for this impact. This knowledge is crucial for developing impactful E-E narratives in the future. Because NE may have been responsible for E-E impact but was not assessed in this study, Chapters 3 and 4 focus on exploring the potential role of NE in these E-E narratives' impact.

### **Chapter 3: Understanding the impact of entertainment-education narratives: A theoretical exploration of the interplay between recipients' narrative engagement and their thoughts**

This chapter presents a theoretical exploration motivated by the inconsistent results of earlier studies on associations between NE, counterarguing, and E-E impact. This chapter aims to elucidate how NE in E-E narratives relates to recipients' thoughts in response to such narratives, as well as to E-E impact. The exploration is based on two theoretical models involving NE, thoughts, and E-E impact as well as on empirical research on these models. The first model is the model of narrative comprehension and engagement (MNCE), which focuses on the role of unfavorable thoughts relating to narratives' degree of realism. According to the MNCE, unfavorable thoughts about realism will lower NE.

The second model is the extended elaboration likelihood model (E-ELM). The E-ELM suggests that, when counterattitudinal target recipients are engaged in an E-E narrative, they will produce fewer unfavorable thoughts about the topic of the E-E narrative. Thus, both the MNCE and the E-ELM describe how NE may be negatively related to unfavorable thoughts. The theories, however, seemingly focus on different thought types and propose different relations between thoughts, NE, and impact.

A closer look at empirical studies in this field reveals that there is no consensus among studies on which thought types are relevant in relation to NE and to impact: unfavorable or favorable thoughts or both, and relating to the narrative form/target behavior or both. Based on a critical discussion of the E-ELM and the MNCE and empirical results, a conceptual model is proposed which suggests that different thought types may be involved in impact, both resulting from NE and predicting NE. This model makes several contributions to the E-ELM and to the MNCE. First,

the model assumes that it is not only thoughts about realism that influence NE but, more broadly, all thoughts about the narrative form. Second, not only unfavorable thoughts, but also favorable thoughts about the narrative form may influence NE. Third, we posit that thoughts about the narrative form may influence viewers' attitude towards processing the narrative; this in turn influences NE. Fourth, because NE reduces recipients' access to their own real-world knowledge, their current beliefs, and their own experiences, NE may block not only unfavorable thoughts about the target behavior, but also favorable thoughts. Fifth, favorable thoughts about the target behavior produced while vicariously experiencing narrative events may mediate the effect of NE on the target behavior. Chapter 4 describes an empirical test of some of the hypotheses generated by this conceptual model.

#### **Chapter 4: Do narrative engagement and recipients' thoughts explain the impact of an entertainment-education narrative on discouraging alcohol binge drinking?**

This chapter describes an online study on the role of NE and recipients' thoughts in E-E impact on alcohol binge drinking (BD). The study employed a shortened 12-minute version of one of the *Roes* episodes (*Verliefd, In love* in English). The aim was to investigate how the NE dimensions (narrative understanding, attentional focus, emotional engagement, and narrative presence) are associated with E-E impact on BD, and whether positive/negative thoughts about alcohol (binge) drinking play a role in this mechanism. Also, the study aimed to investigate how positive/negative thoughts about the narrative form are associated with the NE dimensions. With an online questionnaire, baseline information was collected in relation to BD behavior, beliefs, attitude, BD intention, and willingness to engage in BD (pretest measurement). On average 12 days later, participants viewed the E-E narrative online and completed a questionnaire directly afterwards (posttest measurement). This questionnaire included questions about NE, a thought-listing task, and the same questions about BD determinants as employed during the pretest measurement.

Before the role of NE and thoughts in this E-E narrative's impact could be investigated, it had to be established that the *Roes* episode had an impact. The findings indicated that this episode had a BD-discouraging impact on all assessed BD-related determinants, except for the intention to engage in BD. Attentional focus, emotional engagement and narrative presence were associated with BD-discouraging impact, albeit on different BD-related determinants. Attentional focus was associated with stronger perceptions about the severity of the negative outcomes of BD, as well as with lowered intentions to engage in BD. Emotional engagement and narrative presence were associated with stronger beliefs that BD leads to negative outcomes, and with stronger beliefs relating to people's own vulnerability to

these negative outcomes. In response to *Verliefd*, only one participant reported an alcohol-related thought that was coded as positive in relation to alcohol (binge) drinking. Because of this absence of positive thoughts, only associations between NE dimensions, negative thoughts about alcohol (binge) drinking, and BD-discouraging impact could be investigated. No evidence was found that negative thoughts about alcohol (binge) drinking mediated any associations between NE dimensions and impact. From this we conclude that attentional focus, emotional engagement and narrative presence are important for E-E impact, and that thoughts about alcohol (binge) drinking do not play a role therein. Surprisingly, higher narrative understanding was associated with an increase in the willingness to engage in BD. Analyses of relations between thoughts about the narrative form and NE dimensions showed that negative thoughts about the perceptual persuasiveness of the E-E narrative negatively affected emotional engagement and narrative presence. Other psychological processes that may have contributed to NE, in addition to perceptual persuasiveness, are explored in Chapter 5.

### **Chapter 5: Exploring the psychological processes that contribute to narrative engagement**

Empirical studies have shown that psychological processes during narrative reception (hereafter: processes) are associated with NE. Studies have found that perceived realism, enjoyment, and character involvement are associated with NE. Although these processes have been shown to be associated with NE when investigated separately, it has not yet been investigated which of these processes are the most important contributors to NE. Additionally, NE encompasses four dimensions that have not yet been considered by most previous studies. Therefore, this chapter describes a qualitative study with focus group discussions to explore which processes are the most important contributors to experiencing NE dimensions.

This study employed the same, but full-length, *Roes* episode *Verliefd*, as in the study described in Chapter 4. Participants were divided into four groups, and each group was invited to come to the lab to watch the episode. After the viewing, the NE dimensions were assessed with a questionnaire. Immediately after completion, the researchers calculated participants' mean score per NE dimension. These scores then served as entry points for the focus group discussion. Participants were informed about their score on each of the NE dimensions and were then asked to describe what influenced these scores. In the transcribed discussions, the occurrence of known as well as unknown processes that had reportedly influenced NE were coded per NE dimension.

The results showed that narrative realism and enjoyment were mentioned by the majority of participants as having contributed to NE. Personal relevance, perceptual persuasiveness, character involvement, and perceived severity of the nar-

rative events also contributed to NE, but these contributions were less frequently mentioned. The plausibility and factuality of the narrative were only rarely mentioned as contributors.

E-E developing organizations may thus strive to ensure that their E-E narratives activate the processes identified as contributing to NE in order to increase the likelihood of their E-E narratives being engaging and impactful.

## **Chapter 6: General discussion**

This dissertation revolves around understanding the role of NE in E-E impact. In this chapter, the findings of the previous chapters are integrated to answer the research questions posed.

Viewing *Roes* discourages alcohol (binge) drinking. It is shown that the NE dimensions attentional focus, emotional engagement, and narrative presence are positively associated with this E-E impact. Surprisingly, narrative understanding is associated with increased willingness to engage in BD. No evidence is found that negative thoughts about BD mediate associations between NE dimensions and E-E impact. From this we conclude that attentional focus, emotional engagement, and narrative presence are important for E-E impact, and that thoughts about alcohol (binge) drinking do not play a role therein.

This dissertation shows which psychological processes contributed in the experiencing the NE dimensions in *Roes*. Negative thoughts about the perceptual persuasiveness of *Roes* are negatively associated with emotional engagement and narrative presence. Furthermore, enjoyment is a strong contributor to NE, mainly through contributing to attentional focus. Another strong contributor to NE is narrative realism, mainly through contributing to narrative understanding. Finally, personal relevance, character involvement, and perceived severity contribute to emotional engagement.

Drawing on these results, the following main findings are discussed in more detail in Chapter 6: 1) the potential of E-E narratives to discourage alcohol (binge) drinking in young people; 2) the relevance of thoughts in explaining how NE associates with E-E impact; 3) the importance of NE dimensions for E-E impact; 4) the processes that contribute to NE. Each of these findings is discussed in relation to previous and future research.

The chapter closes with practical recommendations for organizations that aim to employ E-E narratives to discourage unhealthy behaviors. E-E developing organizations should aim to maximize the likelihood that their target recipients will experience NE. This can be done by: maximizing enjoyment; maximizing personal relevance; maximizing character involvement; incorporating emotional content in E-E narratives. Lastly, E-E developing organizations should conduct formative research to ensure that these processes are triggered in order to increase the likelihood that an engaging and impactful E-E narrative will be developed.

In sum, this dissertation shows that E-E narratives can be an effective health communication strategy to discourage alcohol (binge) drinking in young people. It is shown that the NE dimensions attentional focus, emotional engagement, and narrative presence are positively associated with E-E impact. E-E narrative recipients' enjoyment, narrative realism, personal relevance, perceptual persuasiveness, character involvement, and perceived severity contribute to NE. Consequently, this dissertation provides health communication researchers and media psychologists with insights into the role of NE in E-E impact, and offers E-E developers practical recommendations about how to create engaging and impactful E-E narratives.



# Samenvatting



## Hoofdstuk 1: Introductie

Verhalen hebben het vermogen om het gedrag van hun ontvangers te beïnvloeden. Met de *entertainment-education* (E-E) strategie maken gezondheidsorganisaties gebruik van dit vermogen, door verhalen een onderdeel te maken van hun gezondheidsbevorderende campagnes. Het is aangetoond dat E-E programma's, meestal in de vorm van verhalen op televisie, verschillende gezondheidsgedragingen bevorderen. Vanwege deze positieve resultaten wordt de E-E strategie beschouwd als een veelbelovende communicatiestrategie om gezond gedrag te bevorderen.

Een eigenschap van E-E verhalen die cruciaal is gebleken voor impact is dat E-E verhalen narratieve betrokkenheid (*narrative engagement*: hierna NE genoemd) creëren bij ontvangers binnen de doelgroep. Ontvangers die betrokken zijn bij een verhaal kunnen vier dimensies van NE ervaren: begrip van het verhaal (*narrative understanding*), de aandacht volledig gericht op het verhaal (*attentional focus*), emotionele betrokkenheid (*emotional engagement*), en aanwezigheid in de wereld van het verhaal (*narrative presence*). Er is steeds meer bewijs dat NE een rol speelt in de impact van E-E verhalen (hierna: E-E impact). Er is echter weinig bekend over hoe NE leidt tot E-E impact en over hoe NE ontstaat in ontvangers. Het doel van dit proefschrift is dan ook om NE in E-E verhalen beter te begrijpen. Dit wordt gedaan door te onderzoeken hoe NE gerelateerd is aan E-E impact en door te onderzoeken welke processen bijdragen aan het ervaren van NE.

De studies zijn uitgevoerd in de context van NE in E-E verhalen die als doel hebben alcohol (binge) drinken door adolescenten en jongvolwassenen te ontmoedigen. Deze context is om twee redenen gekozen. Ten eerste, alcohol drinken komt vaak voor in deze groep en dit gedrag is gerelateerd aan gezondheidsrisico's. De E-E strategie kan een effectieve manier zijn om deze groep ervan te overtuigen niet (excessief) te drinken. Inzicht in hoe E-E verhalen het (binge) drinken van alcohol door jonge mensen kunnen ontmoedigen kan daardoor bijdragen aan het behouden en bevorderen van hun gezondheid. Ten tweede werd in 2008 de dramaserie *Roës* uitgezonden op nationale televisie. *Roës* bestaat uit 11 praktijk verhalen, elk 25 minuten lang, waarin negatieve ervaringen en consequenties getoond worden van adolescenten personages die alcohol drinken en/of andere drugs gebruiken. Deze E-E dramaserie bood een unieke mogelijkheid om de impact van E-E verhalen op het (binge) drinken van alcohol te bestuderen, evenals de rol van NE hierin. Dit proefschrift richt zich op drie onderzoeksvragen. De eerste onderzoeksvraag wordt gesteld om te bepalen of de E-E verhalen van *Roës* impact hebben:

*RQ1: Ontmoedigt Roës het (binge) drinken van alcohol in de ontvangers?*

Dit proefschrift richt zich ten tweede op de rol van NE in E-E impact. Het wordt in de literatuur gesuggereerd dat NE leidt tot impact door *counterarguing* te reduce-

ren. *Counterarguing* is het proces dat leden van de doelgroep gedachten produceren die tegen een persuasieve boodschap ingaan of die daar inconsistent mee zijn. NE zou zowel het vermogen als de motivatie verminderen om dergelijke ongunstige gedachten te produceren. Echter, deze hypothese wordt niet consistent bevestigd in empirische studies. Een meer gedetailleerd inzicht in dit potentiële mechanisme van E-E impact is daarom nodig. Met het in acht nemen van de NE dimensies evenals de rol van gunstige gedachten kan een meer gedetailleerd inzicht geboden worden. Daarom is de tweede onderzoeksvraag, in de context van het (binge) drinken van alcohol:

*RQ2a: Zijn NE dimensies gerelateerd aan E-E impact op het (binge) drinken van alcohol? Zo ja,*

*RQ2b: Mediëren negatieve en positieve gedachten over het (binge) drinken van alcohol associaties tussen NE dimensies en E-E impact op het (binge) drinken van alcohol?*

Als NE belangrijk is voor E-E impact, dan is inzicht nodig in hoe NE gecreëerd en gemaximaliseerd kan worden. Daarom is de derde onderzoeksvraag:

*RQ3: Welke psychologische processen die ervaren worden tijdens het ontvangen van een verhaal dragen bij aan het ervaren van NE dimensies?*

## **Hoofdstuk 2: Geteleviseerde entertainment-education om alcoholgebruik door adolescenten te voorkomen: Ervaren realisme, kijkplezier, en impact.**

Dit hoofdstuk beschrijft een kwantitatief veldonderzoek naar het E-E project *Roës* van het Trimbos-instituut. De studie onderzocht de responsen op de E-E verhalen van adolescente kijkers op het gebied van ervaren realisme en kijkplezier, evenals de E-E impact op het drinken van alcohol. Voordat de E-E verhalen werden uitgezonden, werden door middel van een voormeting bestaande alcohol gerelateerde uitkomstverwachtingen, intenties om alcoholgebruik te minderen, normen, en het huidige alcoholgebruik nagegaan. Nadat negen afleveringen van *Roës* waren uitgezonden, werden deze alcohol gerelateerde variabelen weer gemeten (nameting) en weer na 1 jaar (vervolgmeting). Om de impact te bepalen werd onderzocht of veranderingen in de alcohol gerelateerde variabelen werden voorspeld door het al dan niet kijken naar de E-E verhalen. Tussen de voor- en nameting werden vijf vragenlijsten afgenomen om ervaren realisme van en kijkplezier tijdens deze vijf afleveringen te bepalen.

De resultaten lieten zien dat het kijken naar de E-E verhalen significante en gewenste korte-termijn veranderingen voorspelde in het aantal alcoholische drankjes dat werd genuttigd per gelegenheid, in intenties om alcoholgebruik te minderen, en

in ervaren normatieve druk. Tijdens de vervolgmeting was de impact op intenties om alcoholgebruik te minderen nog steeds zichtbaar.

Kijkers rapporteerden een hoge mate van realisme, wat erop duidde dat zij de verhalen en de karakters plausibel en geloofwaardig vonden. Echter, kijkers pasten elementen uit de verhalen niet toe op hun eigen leven en hadden ook geen intenties daartoe (lage *utility*). Ook vonden zij dat er niet veel overeenkomsten waren tussen henzelf en de karakters of de situaties en voelden zij zich niet betrokken bij de personages (lage *identity*). Bruikbaarheid en realisme voorspelden de mate waarin kijkers kijkplezier ervoeren. *Identity* voorspelde kijkplezier niet.

Vanuit het perspectief van alcoholontmoediging was de gevonden E-E impact een bevredigend resultaat. Echter, de studie was niet in staat om mechanismen te identificeren die verantwoordelijk waren voor deze impact. Deze kennis is cruciaal om impactvolle E-E verhalen te kunnen ontwikkelen in de toekomst. NE zou verantwoordelijk kunnen zijn voor de E-E impact, maar NE was niet gemeten in deze studie. Daarom richten Hoofdstukken 3 en 4 zich op het exploreren van de potentiële rol van NE in de impact van E-E verhalen.

### **Hoofdstuk 3: De impact van entertainment-education verhalen begrijpen: Een theoretische verkenning van de interactie tussen narrative engagement en gedachten van ontvangers.**

Gemotiveerd door de inconsistente resultaten van eerdere studies presenteert dit hoofdstuk een theoretische verkenning naar associaties tussen NE, *counterarguing*, en E-E impact. Dit hoofdstuk wil verhelderen hoe NE in E-E verhalen relateert aan gedachten van ontvangers in reactie op dergelijke verhalen, evenals aan E-E impact. De verkenning is gebaseerd op twee theoretische modellen waarin NE, gedachten, en E-E impact een rol spelen, evenals op empirisch onderzoek naar deze modellen. Het eerste model is het *model of narrative comprehension and engagement* (MNCE) dat zich richt op de rol van ongunstige gedachten over het realisme gehalte van verhalen. Volgens MNCE verlagen dergelijke ongunstige gedachten NE.

Het tweede model is het *extended elaboration likelihood model* (E-ELM). Het E-ELM stelt voor dat wanneer ontvangers met een tegengestelde attitude NE voelen bij een E-E verhaal, dat zij minder ongunstige gedachten zullen produceren over het onderwerp van het E-E verhaal. Dus, zowel MNCE als E-ELM beschrijft hoe NE negatief gerelateerd kan zijn aan ongunstige gedachten. De theorieën lijken zich echter te richten op verschillende typen van gedachten en veronderstellen andere relaties tussen gedachten, NE, en impact.

Een gedetailleerdere blik op de empirische studies in dit veld laat zien dat er onder de studies geen consensus is over welke typen van gedachten relevant zijn in relatie tot NE en tot impact: ongunstige of gunstige gedachten of beide, en gedachten gerelateerd aan de vorm van de verhalen of aan het doelgedrag of aan

allebei. Gebaseerd op een kritische discussie van E-ELM en MNCE en empirische studies wordt een conceptueel model voorgesteld, dat voorstelt dat verschillende typen gedachten betrokken zijn, zowel voortkomend uit NE als leidend tot NE. Dit model draagt op meerdere manieren bij tot E-ELM en MNCE. Ten eerste veronderstelt het model dat het niet alleen gedachten over realisme zijn die NE beïnvloeden, maar, breder gezien, alle gedachten over de vorm van het verhaal. Ten tweede, niet alleen ongunstige gedachten maar ook gunstige gedachten over de vorm van het verhaal zouden NE kunnen beïnvloeden. Ten derde stellen we voor dat gedachten over de vorm van het verhaal de attitude ten opzichte van het verwerken het verhaal beïnvloedt. Vervolgens beïnvloedt deze attitude NE. Ten vierde, vanwege het feit dat NE de toegang tot kennis over de echte wereld vermindert, zou NE niet alleen ongunstige gedachten over het doelgedrag kunnen blokkeren, maar ook gunstige gedachten. Ten vijfde, gunstige gedachten over het doelgedrag, geproduceerd terwijl ontvangers de gebeurtenissen in het verhaal plaatsvervangend ervaren, zouden het effect van NE op het doelgedrag kunnen mediëren. Hoofdstuk 4 beschrijft een empirische toets van een aantal van de hypothesen gegenereerd op basis van dit conceptueel model.

#### **Hoofdstuk 4: Verklaren *narrative engagement* en gedachten van ontvangers de impact van een entertainment-education verhaal op het ontmoedigen van alcohol binge drinken?**

Dit hoofdstuk beschrijft een online studie naar de rol van NE en gedachten van ontvangers in E-E impact op alcohol binge drinken (BD). De studie gebruikte een ingekorte, 12-minuten durende versie van één van de Roes afleveringen (*Verliefd*). Het doel was te onderzoeken hoe de NE dimensies (*narrative understanding*, *attentional focus*, *emotional engagement*, en *narrative presence*) gerelateerd zijn aan E-E impact op BD, en of positieve/negatieve gedachten over alcohol (binge) drinken een rol spelen in dit mechanisme. De studie was ook gericht op het onderzoeken hoe positieve/negatieve gedachten over de vorm van het verhaal relateren aan de NE dimensies.

Referentie informatie over BD gedrag, *beliefs*, attitude, intentie, en de bereidheid tot BD was verzameld met een online vragenlijst (voormeting). Deelnemers bekeken gemiddeld 12 dagen daarna het E-E verhaal online en vulden direct daarna een vragenlijst in (nameting). Deze vragenlijst bevatte vragen over NE, een opdracht om de gedachten op te schrijven, en dezelfde vragen over determinanten van BD als tijdens de voormeting.

Voordat de rol van NE en gedachten in de impact van dit E-E verhaal onderzocht konden worden, moest bepaald worden of het gebruikte E-E verhaal impact had. De resultaten gaven aan dat dit E-E verhaal een BD ontmoedigende impact had op alle BD-gerelateerde determinanten, behalve op BD intentie. *Attentional focus*, *emotio-*

*nal engagement* en *narrative presence* waren gerelateerd aan deze BD ontmoedigende impact, echter wel aan de impact op verschillende BD-gerelateerde variabelen. *Attentional focus* was gerelateerd aan sterkere percepties over de ernst van de negatieve gevolgen van BD en ook aan lagere BD intenties. *Emotional engagement* en *narrative presence* waren gerelateerd aan sterkere *beliefs* dat BD leidt tot negatieve gevolgen, en aan sterkere *beliefs* over de eigen kwetsbaarheid voor deze negatieve gevolgen. Slechts één persoon rapporteerde een gedachte die gecodeerd was als zijnde positief over alcohol (binge) drinken. Vanwege deze afwezigheid van positieve gedachten konden alleen relaties tussen NE dimensies, negatieve gedachten over alcohol (binge) drinken, en BD ontmoedigende impact worden onderzocht. Geen bewijs werd gevonden dat negatieve gedachten over alcohol (binge) drinken relaties tussen NE dimensies en impact medieerden. Op basis hiervan concluderen we dat *attentional focus*, *emotional engagement* en *narrative presence* van belang zijn voor E-E impact, maar dat gedachten over alcohol (binge) drinken hier geen rol in spelen. Tot onze verrassing was *narrative understanding* geassocieerd met een toename in de bereidheid tot BD.

Analyses van de relaties tussen gedachten over de vorm van het verhaal en NE dimensies lieten zien dat negatieve gedachten over *perceptual persuasiveness* (de mate waarin de productie er in slaagt een meeslepende verhalenwereld te creëren) *emotional engagement* en *narrative presence* negatief beïnvloedde. Andere psychologische processen die mogelijk hebben bijgedragen aan NE zijn onderzocht in Hoofdstuk 5.

### **Hoofdstuk 5: De psychologische processen die bijdragen aan *narrative engagement* verkennen**

Empirische studies hebben laten zien dat psychologische processen tijdens de ontvangst van verhalen (hierna: processen) gerelateerd zijn aan NE. Studies hebben gevonden dat ervaren realisme, kijkplezier, en betrokkenheid bij personages gerelateerd zijn aan NE. Hoewel is gebleken dat deze processen relateren aan NE wanneer ze afzonderlijk onderzocht zijn, is nog niet onderzocht welke van deze processen het meest bijdragen aan NE. Daarnaast omvat NE vier dimensies die nog niet in acht zijn genomen door de meeste eerdere studies. Daarom beschrijft dit hoofdstuk een kwalitatieve studie met focusgroep-discussies, om te onderzoeken welke processen het meest bijdragen aan het ervaren van de NE dimensies. Deze studie gebruikte dezelfde, maar volledige, *Roes* aflevering *Verliefd* als in de studie beschreven in Hoofdstuk 4. Deelnemers werden verdeeld in vier groepen, en iedere groep werd uitgenodigd om naar het lab te komen om de aflevering te bekijken. Na het kijken werden de NE dimensies gemeten met een vragenlijst. Direct na het invullen, berekenden de onderzoekers de gemiddelde scores op de NE dimensies. Deze scores dienden als startpunt voor de focusgroep-discussies.

Deelnemers werden geïnformeerd over hun score op iedere NE dimensie en werden dan gevraagd te beschrijven wat deze scores beïnvloedde. In de uitgeschreven discussies werd het vóórkomen van zowel bekende als onbekende processen die volgens deelnemers NE hadden beïnvloed gecodeerd per NE dimensie.

De resultaten lieten zien dat *narrative realism* (ervaren logica van het verhaal) en kijkplezier genoemd werden door de meerderheid van deelnemers als te hebben bijgedragen aan NE. Persoonlijke relevantie, *perceptual persuasiveness*, betrokkenheid bij personages, en ervaren ernst van de gebeurtenissen van het verhaal droegen ook bij aan NE, maar dit werd minder vaak genoemd. Over plausibiliteit en *factuality* (of het verhaal waar gebeurd is of is verzonnen) werd slechts sporadisch gesproken dat het had bijgedragen aan NE.

Organisaties die E-E verhalen willen ontwikkelen zouden er dus naar moeten streven dat hun E-E verhalen de processen activeren die blijken bij te dragen aan NE, om hiermee de kans te vergroten dat hun E-E verhalen betrokkenheid creëren en impact hebben.

## Hoofdstuk 6: Algemene discussie

Deze dissertatie draait om het begrijpen van de rol van NE in E-E impact. In dit hoofdstuk worden de bevindingen van de vorige hoofdstukken geïntegreerd om de gestelde onderzoeksvragen te beantwoorden.

Het kijken van *Roes* ontmoedigt alcohol (binge) drinken. De NE dimensies *attentional focus*, *emotional engagement*, en *narrative presence* zijn positief gerelateerd aan deze E-E impact. Tot onze verrassing is *narrative understanding* geassocieerd met een toename in de bereidheid tot BD. Er is geen bewijs gevonden dat negatieve gedachten over alcohol (binge) drinken associaties tussen NE dimensies en impact mediëren. Op basis hiervan concluderen we dat *attentional focus*, *emotional engagement* en *narrative presence* van belang zijn voor E-E impact, en dat gedachten over alcohol (binge) drinken hier geen rol in spelen.

Deze dissertatie laat zien welke psychologische processen bijdroegen aan het ervaren van NE dimensies in *Roes*. Negatieve gedachten over de *perceptual persuasiveness* blijken negatief gerelateerd te zijn aan *emotional engagement* en *narrative presence*. Daarnaast levert kijkplezier een belangrijke bijdrage aan NE, vooral door bij te dragen aan *attentional focus*. Een andere belangrijke bijdrager aan NE is *narrative realism*, vooral door bij te dragen aan *narrative understanding*. Ten slotte dragen persoonlijke relevantie, betrokkenheid bij personages, en ervaren ernst bij aan *emotional engagement*.

Op basis van deze resultaten worden de volgende belangrijkste bevindingen besproken in Hoofdstuk 6: 1) het potentieel van E-E verhalen om alcohol (binge) drinken te ontmoedigen in jonge mensen; 2) de relevantie van gedachten in het verklaren van hoe NE relateert aan E-E impact; 3) het belang van NE dimensies

voor E-E impact; 4) de processen die bijdragen aan NE. Elk van deze bevindingen is bediscussieerd in relatie tot eerder en toekomstig onderzoek.

Het hoofdstuk sluit af met praktische aanbevelingen voor organisaties die E-E verhalen willen gebruiken om ongezond gedrag te ontmoedigen. Organisaties die E-E verhalen ontwikkelen zouden moeten streven om de kans te maximaliseren dat hun doelontvangers NE zullen ervaren. Dit kan gedaan worden door: kijkplezier te maximaliseren; persoonlijke relevantie te maximaliseren; betrokkenheid bij karakters te maximaliseren; en emotionele inhoud in te voegen in E-E verhalen. Ten slotte kunnen deze organisaties formatief onderzoek uitvoeren om er zeker van te zijn dat deze processen geactiveerd worden, om de kans te vergroten dat een engagerend en impactvol E-E verhaal ontwikkeld wordt.

Samenvattend laat deze dissertatie zien dat E-E verhalen een effectieve gezondheidscommunicatie-strategie kunnen zijn om alcohol (binge) drinken in jonge mensen te ontmoedigen. Het is gebleken dat de NE dimensies *attentional focus*, *emotional engagement*, en *narrative presence* positief gerelateerd zijn aan E-E impact. Kijkplezier, *narrative realism*, persoonlijke relevantie, *perceptual persuasiveness*, betrokkenheid bij karakters, en ervaren ernst dragen bij aan NE. Hiermee verschaft deze dissertatie onderzoekers naar gezondheidscommunicatie en media psychologie inzichten in de rol van NE in E-E impact, en biedt het E-E ontwikkelaars praktische aanbevelingen over hoe engagerende en impactvolle E-E verhalen ontwikkeld kunnen worden.



# Dankwoord

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*Sander* (mijn liefste), hoi leifje, ik ben er! x.

Lonneke



## Completed training and supervision plan

Lonneke van Leeuwen

Wageningen School of Social Sciences (WASS)

Name of the learning activity	Dept./institute	Year	ECTS*
<b>Project related competences</b>			
Project proposal		2009	6
Project presentation during CPT research meeting	CPT, WUR	2009	1
Attending symposium The Entertainization of Society: Persuasive effects of entertainment elements in mass media	ASCoR, University of Amsterdam	2011	
Participating in the Friends of Transportation discussion group with researchers of Utrecht University and University of Amsterdam	University Utrecht/University of Amsterdam	2010-2013	1
Attending symposium Narrative Impact	NeFCA/Radboud University Nijmegen	2013	
Participating in and presenting during meeting 'Narratives' with PhD students from various Dutch universities	Radboud University Nijmegen	2014	1
<b>General research related competences</b>			
Introduction course	WASS	2011	1,5
Cognitive issues in survey response	WASS	2010	3
Doing interpretative analysis	WASS	2010	3
Quantitative data analysis: Multivariate techniques	RME, Wageningen University	2011	6
<b>Career related competences/personal development</b>			
Scientific writing	WGS	2012	1.8
1st International master class public health interventions in real-life settings: the AGORA experience.	WASS/VLAG	2010	0.7
Co-supervisor of BSc and MSc students (maximum credits for educational activities)	CPT, WUR	2009, 2014	4
Guest lecturer in various courses at Wageningen, Stenden and Free University Amsterdam		2010, 2011	
Member of the Organizing Committee of 24 hours of Communication Science (het Etnaal van de Communicatiewetenschap)	CPT, WUR	2013-2014	2
<b>Presentations at conferences</b>			
Poster presentations			
Communicating health messages through Entertainment Education. The persuasive effects of a Dutch youth drama series	23rd Conference of the European Health Psychology Society (Pisa, Italy)	2009	1

Name of the learning activity	Dept./institute	Year	ECTS*
Entertainment-education Narratives to Discourage Binge Drinking in Youngsters: Effects, Narrative Engagement and Cognitive Responses	Lost in Storyworlds Symposium (Utrecht, the Netherlands)	2013	1
Oral presentations			
Communicating health messages through entertainment-education: Testing the persuasive effects of a Dutch youth drama series	The Kettil Bruun Society for Social and Epidemiological Research on Alcohol (Nijmegen, the Netherlands)	2009	1
A qualitative study to the role of transportation in an entertainment-education intervention: Preliminary results of why Roes works	24 Hours of Communication Science (Gent, Belgium)	2010	1
Exploring the dimensions and antecedents of transportation: A presentation of preliminary results	IGEL 2010 (Utrecht, the Netherlands)	2010	1
Communicating health messages through entertainment-education: Testing and exploring the persuasive effects of a Dutch youth drama series	ECREA 2010, 3rd European Communication Conference (Hamburg, Germany)	2010	1
Perceived realism and enjoyment of a Dutch entertainment-education drama series for adolescents	24 Hours of Communication Science (Twente, the Netherlands)	2011	1
Review of literature: Individual factors associated with narrative engageability, narrative engagement and persuasiveness of narratives	The 7th Conference of the Media Psychology Division/StoryNet, (Bremen, Germany)	2011	1
Een theoretische exploratie van de rol (rollen?) van counterarguing in de effecten van verhalen	24 Hours of Communication Science (Leuven, Belgium)	2012	1
One narrative, one message?	StoryNet Symposium (Amsterdam, the Netherlands)	2012	1
Engaging entertainment-education: How engagement in entertainment-education narratives relates to unfavorable thoughts and effects	24 Hours of Communication Science (Rotterdam, the Netherlands)	2013	1
Wat maakt entertainment-education programma's effectief? De rol van narratieve betrokkenheid	Nederlands Congres Volksgezondheid (Ede, the Netherlands)	2013	1
Do narrative engagement and audience members' thoughts explain the effects of a contra-binge drinking entertainment-education narrative?	PhD Day, WASS	2014	1
Do narrative engagement and audience members' thoughts explain the effects of an entertainment-education narrative on discouraging binge drinking?	StoryNet Symposium (Budapest, Hungary)	2014	1
<b>Total</b>			<b>45</b>

\* One credit according to ECTS is on average equivalent to 28 hours of study load.

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