ORIGINAL ARTICLE

The Persuasive Influence of a Fictional Character's Trustworthiness

Markus Appel & Martina Mara

Education and Psychology Dept, Johannes Kepler University of Linz, Linz, Austria

The present research examined the role of a fictional character's trustworthiness on narrative persuasion. The authors suggest that trustworthiness indicators within the story, rather than paratextual cues (fact–fiction labeling) affect persuasive outcomes. An experiment on fuel-efficient driving behavior (green driving) was conducted, with behavioral intentions and self-reported behavior (3 weeks postexposure) as dependent variables. A story with a trustworthy character who introduced green driving behavior led to stronger intentions to engage in fuel-efficient driving among car owners than a story with a less trustworthy character who provided the same information or a control story. Low character trustworthiness was particularly detrimental to story-consistent intentions and behavior for recipients who were not deeply immersed into the story world (low narrative presence).

Authors of fictional stories are free to diverge from real-world facts, and the events told may or may not have taken place. In contrast, norms that apply to authors of nonfiction (e.g., journalists, social scientists) include the goal to provide information that accurately reflects real-world facts and incidents. Reading fictional stories can be valuable for several important reasons (e.g., perspective taking, personal insight, cf. Mar & Oatley, 2008; Oatley, 1999), but when it comes to real-world knowledge and related behavior, nonfiction is largely perceived as a more trustworthy source. Recipients expect information provided in a fictional story to be less trustworthy and useful for everyday life than information provided in a nonfictional story (Appel & Malečkar, 2012). Interestingly, a story introduced to be fictional turned out to be no less persuasive than a story introduced to be nonfictional in previous studies (Appel & Malečkar, 2012; Green & Brock, 2000; Strange & Leung, 1999; Wheeler, Green, & Brock, 1999). This has been attributed to a general tendency of disregarding information that accompanies a story (paratexts, such as fact or fiction labels; cf. Genette, 1987) even if these paratexts provide information about the trustworthiness of the source (Appel & Malečkar, 2012). The present work tests the assumption that the

Corresponding author: Markus Appel; e-mail: markus.appel@jku.at

trustworthiness of a character who provides potentially persuasive information—a more proximate reliability indicator within a fictional story—determines persuasive outcomes. Moreover, two competing lines of argumentation are presented that predict recipients' experience of being part of the story world (narrative engagement presence) to increase or decrease the influence of character trustworthiness.

Green driving to reduce climate change
In addition to examining the theory-guided assumptions briefly introduced above (a more comprehensive presentation follows in the subsequent sections), this work was guided by the objective to investigate a relevant field of knowledge and action. This article provides insight to the influence of fictional stories on recipients' behavioral intentions and recipients' behavior with key importance to climate change. Global climate change is arguably one of the most crucial challenges for humankind in the 21st century. Part of the greenhouse gases (which increased prevalence is widely considered a dominant cause of climate change) are emitted by citizens, with vehicles being the largest source of CO_2-emissions for a typical household in the United States (US Department of Energy, 2012). Our focus is on fuel-efficient driving (green driving, eco-driving)—a pertinent behavioral option to reduce the greenhouse gas emissions of automobiles by 10–20% on average (e.g., Andrieu & Saint Pierre, 2012; Barkenbus, 2010).

Information about climate change, including controversial viewpoints as well as information on its causes and potential remedies, is typically found in nonfictional media such as government websites, newspaper articles, or TV documentaries. However, global climate change and related issues are also a topic in fictional media. Climate change is the background of the events unfolding in several feature films (e.g., *The Day After Tomorrow*, Emmerich, 2004)[1] and novels (e.g., *Solar*, McEwan, 2010). There are also explicit attempts at providing information on climate change and behavioral options in the fictional format (e.g., TV series *Captain Planet*, Turner & Pyle, 1990–1996; see also Donner, 2008).

Fictional stories and persuasion
The power of fictional stories to change recipients' real-world beliefs and to initiate behavior has been supported by anecdotes for a long time (see for example accounts on the impact of the novel *Uncle Tom's Cabin* on the outcome of the U.S. Civil War; cf. Strange, 2002). In recent years, case studies and humanistic accounts on the influence of fiction have been complemented by empirical, experimental research: Fictional stories were found to affect knowledge and memory (e.g., Marsh, Meade, & Roediger, 2003; Dahlstrom, 2010, 2012; see Marsh, Butler, & Umanath, 2012, for an overview), and to change recipients' attitudes and beliefs about real-world issues (narrative persuasion, e.g., Appel & Richter, 2010; Gerrig & Prentice, 1991; Green & Brock, 2000; Igartua & Barrios, 2012; Prentice, Gerrig, & Bailis, 1997; Strange & Leung, 1999). Some of these studies indicate that the persuasive influence of fictional narratives can be quite durable, being strong even after a 2-week delay (Appel &

Richter, 2007; see also Appel, 2008; Jensen, Bernat, Wilson, & Goonwardene, 2011). In one subset of studies, story-consistent beliefs were observed in response to the main message of the story, for example beliefs about psychiatric patients following a story about a violent psychiatric patient attacking a young girl (Green & Brock, 2000, see also Appel & Malečkar, 2012; Appel & Richter, 2010, Experiment 1). In a second subset of studies, story-consistent beliefs were observed in response to assertions by story characters. For example, characters in a story about a pretended kidnapping discussed information about the health effects of sunlight and the benefits of a low cholesterol diet (and other topics) and beliefs about these issues served as the dependent variable (Gerrig & Prentice, 1991; see also Appel & Richter, 2007; Prentice et al., 1997; Wheeler et al., 1999).

The persuasive impact of narratives has been attributed to their potency to engage recipients (Busselle & Bilandzic, 2009) and to transport them into the story world (Gerrig, 1993; Green & Brock, 2002). The concept of *transportation* is based on the metaphor that readers undertake a mental journey into the world of a narrative (Gerrig, 1993), with the result that "all mental systems and capacities become focused on the events occurring in the narrative" (Green & Brock, 2000, p. 701). Unlike other approaches, transportation has been described as a concept that applies to the experience of narratives only (Green & Brock, 2002) and most often it has been examined with written texts. Its defining features are the experience of "being in a narrative world" (Gerrig, 1993) and of having strong mental images of the unfolding events (Green & Brock, 2002) with a mental image defined as "a representation of a particular stimulus that is formed by activation of a sensory system and, thus, is experienced by the organism as having similar qualities to the actual perception of the stimulus" (Dadds, Bovbjerg, Reed, & Cutmore, 1997, p. 90 in Green and Brock, 2002, p. 321). These key features overlap substantially with the alternative concept of *presence* (or subcomponents thereof, cf., Kim & Biocca, 1997).

Broadening the scope of the concept, the state of transportation has been conceived as a coactivation of attention, imagery, and emotions (e.g., Green, 2004; Green & Brock, 2000), that is, as a rather far-reaching experiential state incorporating several aspects of being lost (Nell, 1988) or absorbed (Graesser, 1981) into a story. The experiential state of transportation is typically assessed with the help of the Transportation Scale (Green & Brock, 2000). This self-report measure incorporates the facets listed above; however, in the great majority of studies one aggregate score for transportation was calculated. Individual differences in state transportation have been attributed to textual differences (e.g., craftsmanship of the author, narrativity) and situational factors (e.g., processing goal, distraction), as well as the readers' stable dispositions, including traits such as "transportability" (Busselle & Bilandzic, 2008; Dal Cin, Zanna, & Fong, 2004) or the need for affect (Appel, Gnambs, & Maio, 2012; Appel & Richter, 2010; Maio & Esses, 2001). A number of experiments demonstrated that higher transportation scores were associated with a stronger persuasive impact of stories (e.g., Appel & Richter, 2010; Green, 2004; Green & Brock, 2000; Vaughn, Hesse, Petkova, & Trudeau, 2009).

More recently, *narrative engagement* was introduced as an alternative concept to describe and explain experiential states when being immersed into a story (Busselle & Bilandzic, 2008, 2009). Narrative engagement consists of four dimensions: *narrative understanding* (the ease of building a mental model of the represented events), *attentional focus* (concentration on the story events, not feeling distracted), *emotional engagement* (arousal and experience of emotions), and *narrative presence* (the experience of having entered the story world). A self-report scale was developed that allows for a separate assessment of the four dimensions and for building an aggregate score (Busselle & Bilandzic, 2009). Like transportation, narrative engagement is supposed to facilitate persuasion.

On the trustworthiness of fictional and nonfictional information
One of the arguably most interesting aspects of the belief change through fictional story content is that authors of fiction may or may not report events and information that correspond with real-world issues and information. Unlike authors of nonfiction for whom "truth is the guiding principle" (APME, 2011), there is no principle of correspondence truth for fiction. Authors of fiction may, for the sake of their plot or lack of inquiry, diverge from information widely considered true in the real world. Thus, one may suspect that the ascribed trustworthiness of fictional sources is lower than that of nonfictional sources. In the classic persuasion literature, source trustworthiness is considered one out of two aspects of the more general concept of source credibility (cf. Hovland, Janis, & Kelley, 1953); the second aspect is expertise (cf. Hornikx & Hoeken, 2007). Whereas trustworthiness "refers to the degree to which an audience perceives the assertions made by the communicator to be ones that the speaker considers valid," expertise "refers to the extent to which a speaker is perceived to be capable of making correct assertions" (Pornpitakpan, 2004, p. 244).

The assumption that fiction is considered a less-than-perfectly trustworthy source matches the widespread norm in everyday conversation *not* to build a line of argumentation on evidence from fiction.[2] In a recent study participants rated information from nonfiction (news stories) to be more useful for their everyday life than information from fictional stories (short stories or novels), and they ascribed lower trustworthiness to fiction (Appel & Malečkar, 2012, Study 1). However, trustworthiness and usefulness-ratings were higher for fiction than for a lie story (untrue and meant to deceive the recipient) and fiction was expected to be particularly entertaining and absorbing.

The reduced trustworthiness ascribed by recipients to fiction as compared to nonfiction does not translate to less persuasion from fictional sources: In several experimental studies the same story was introduced to be fictional in one condition and nonfictional in a second condition. A comparison of the persuasive effects of such story labels yielded equal persuasion for fictional and nonfictional stories (e.g., Green & Brock, 2000; Strange & Leung, 1999; Wheeler et al. 1999). Thus, in contrast to the differences in source evaluations of usefulness and trustworthiness

(Appel & Malečkar, 2012), introducing the story to be fiction did not reduce the persuasive effect. This result is remarkable, as higher source trustworthiness has been associated with higher persuasion in previous research on nonnarrative persuasion (e.g., McGinnies & Ward, 1980; see Pornpitakpan, 2004, for an overview). Appel and Malečkar (2012) suggest that the persuasion parity of nonfiction and fiction is due to the subordinate role of information that accompanies a story (paratexts, Genette, 1987) as compared to the story itself in narrative persuasion. Unless paratextual cues indicate that the story is a lie, paratextual information on correspondence truth is largely neglected.

Differences in the trustworthiness of fictional characters

Paratextual information that indicates the credibility of information presented in a story can take different forms, such as nonfiction versus fiction labels (see above), notes on an author's expertise on a book cover, or video material showing the diligent research a movie director conducted prior to shooting a film. As described above, paratextual trustworthiness indicators had little effect on story-related attitudes and beliefs about real-world issues in previous studies.

   We assume that trustworthiness indicators within a text, rather than features of the paratext, play a crucial role in narrative persuasion. Per definition, the author is the source of the story content and an author of fiction is quite free to portray the world as he or she pleases. Thus, any considerations regarding the validity of a story's information should focus on the empirical author (e.g., why does she tell that story?). However, information provided in a story often has a more proximate source: a fictional character. In everyday fiction, some characters are introduced to be reliable and someone you can trust (e.g., Bruce Wayne's faithful butler *Alfred* in the *Batman* series), whereas others are portrayed to have low integrity (e.g., supervillains *The Joker* or *The Riddler* in the same series). Often, the trustworthiness of a fictional character is exclusively established in the fictional world—no real-world indicators of the character's trustworthiness are available as the character has no equivalent outside the story world.

   We assume that even if the character trustworthiness (or lack thereof) exists only in the fictional world, it might be relevant with respect to recipients' post expository real-world beliefs, intentions, and behavior. Previous theory and research on the processing of fictional stories found little evidence for an automatic ''mental toggle'' that is thrown one way or the other to separate fictional and nonfictional information (e.g., Gerrig, 1993; Shapiro & Kim, 2012). We expect that this applies to fictional-world trustworthiness indicators as well. Research that is mainly focused on real-world communicators suggests that communicator trustworthiness influences persuasive outcomes. Social cognitive theory (Bandura, 1965) posits that trustworthy models are more influential than nontrustworthy models (cf. Zimmerman & Koussa, 1979). Moreover, evidence from general persuasion research shows that information presented by a trustworthy or otherwise credible source is more persuasive than

information presented by a nontrustworthy or noncredible source (see Wilson & Sherrell, 1993, for meta-analytic results), particularly if recipients do not engage in elaborative processing (elaboration appears to be rather infrequent in narrative processing, cf. Green & Brock, 2002). Thus, if trustworthiness within the story world mattered, the behavior and the assertions of trustworthy characters should have a stronger (story-consistent) influence on the recipients than the behavior and the assertions of characters low in trustworthiness.

The role of narrative presence

Individuals differ with respect to the extent that they feel they have left the real world behind and have entered the story world. This experience of narrative presence is a key component of the transportation concept (Gerrig, 1993; Green & Brock, 2002) and narrative presence is one of four dimensions of narrative engagement (Busselle & Bilandzic, 2009). We suggest that narrative presence influences the effect of character trustworthiness on the persuasive outcome of a story. There are two lines of thought that yield contradicting assumptions on the direction of this influence or, statistically speaking, the direction of this moderator effect.

On the one hand, there is reason to assume that information presented by an unreliable character (vs. a reliable character) is particularly disregarded by those recipients who have left the real-world behind and have a rather vivid mental representation of the story world (high narrative presence). Only for recipients who have a strong feeling of being present in the story world, the trustworthiness of a character within that world matters. In other words, the more the story world becomes the world of reference for the recipient, the smaller the persuasive effects of information transmitted by a character who is portrayed as particularly unreliable.

On the other hand, a contradicting line of argumentation suggests that the influence of a character low in trustworthiness is higher among those who have a strong sense of having entered the story world than among those who experience less narrative presence: Experiencing to be part of the story world should be positively associated with persuasive outcomes. This assumption is based on previous theory and research suggesting that the likelihood of any evaluation of incoming story information along the lines of truth vs. falsehood decreases with higher scores in transportation and narrative engagement (Dal Cin et al., 2004; Green & Brock, 2002). Based on the one-step model of comprehension and believing (Gilbert, 1991; Gilbert, Tafarodi, & Malone, 1993), one may argue that recipients automatically accept information they comprehend. An additional step is necessary to reject information that is flawed or invalid. In the state of being exclusively present in the story world, recipients are particularly unlikely to engage in the second step (Gerrig, 1993; Green & Brock, 2000), which is necessary to discount information put forward by an unreliable source within the story world. Thus, the influence of information expressed by an untrustworthy protagonist will increase with the recipients' narrative presence.

Study overview and predictions

Despite the difference in ascribed usefulness and trustworthiness (Appel & Malečkar, 2012), stories introduced to be fictional were as persuasive as stories introduced to be nonfictional in previous studies (e.g., Green & Brock, 2000). Our main aim was to extend previous findings on paratextual indicators of story trustworthiness to textual indicators of trustworthiness within the story world. Second, our goal was to examine whether the persuasive effects, given low character trustworthiness, increased or decreased with the experience of narrative presence. Third, this study was meant to extend the literature on narrative persuasion to a hitherto largely neglected but highly relevant applied domain: climate change. Fourth, we focused on behavioral intentions and recipients' post expository behavior. This is a worthwhile addition to previous studies, which almost exclusively focused on attitudes, beliefs, and knowledge (narrative persuasion tradition) or often lacked a strict experimental design (field studies in the entertainment–education tradition).

An experimental study was conducted to investigate the impact of a fictional story on fuel-efficient driving. The story treatment involved a trustworthiness manipulation of the character that delivered the information on fuel-efficient driving; behavioral intentions were assessed briefly after exposure to the story, whereas self-reported behavior was assessed three weeks after exposure. Recipients' self-reported narrative presence (Busselle & Bilandzic, 2009) served as a moderator variable. Potential effects of the story on car driving behavior and related intentions were particularly likely for participants who owned a car themselves (we assumed that participants without their own car had fewer opportunities to engage in green driving), thus, the hypotheses outlined below were addressed at car owners in particular.

The story was situated around a job interview at an environmental organization and a male job applicant was the main character. Fuel efficient driving-information was mainly transmitted by a second character, the manager of the environmental organization. We expected that car owners who read a story version in which the character that is associated with the key information is portrayed as trustworthy indicated higher intentions to engage in fuel-efficient driving than participants who read a control story without fuel-efficient driving information (H1). We further hypothesized that a fictional character's trustworthiness has an influence on narrative persuasion; therefore, we expected that a story in which the same character was portrayed as less trustworthy would yield lower intentions to engage in fuel-efficient driving than the story with the highly trustworthy character (H2). Furthermore, the story with the trustworthy character was expected to induce more fuel-efficient driving behavior in the weeks after exposure than the control story (H3) or the story with the untrustworthy character (H4). Two lines of argumentation predicted that the amount of narrative presence moderated the effects of trustworthiness on the story influence. However, these lines of argumentation yield diverging predictions on the direction of this influence. As a consequence, the moderation effect of narrative presence was addressed as a research question for both behavioral intentions and actual behavior (RQ1 and RQ2).

Method

Participants and procedure

Ninety-six participants (61 male, 35 female) were recruited at the campus of an Austrian university. Their mean age was 24.85 years ($SD = 4.38$). For compensation, the participants could take part in a lottery of five 20€ gift certificates for a local bookstore. Each participant received a booklet which contained the study material. On the first page of the booklet, the study was introduced and the participants were informed about a follow-up survey. To match data of both assessments but preserve anonymity, participants were requested to provide a personal code based on private information (number of your mother's month of birth [e.g., 06 for June]; second letter of your mother's given name; last letter of your place of birth; second letter of your own given name). Next, one out of three stories was presented by random assignment. The story was followed by questions on behavioral intentions and the readers' narrative engagement. The subsequent items addressed the participants' car ownership and the perceived character credibility. The booklet finished with questions on demographics.[3] To contact the participants for the follow-up questions, they were asked to note their e-mail-address on a separate sheet of paper. Three weeks later, the participants were invited to a brief follow-up survey which was administered over the Internet. This survey consisted of items about their actual car driving behavior in the past 3 weeks. Complete questionnaires and a valid connection to the data provided earlier were obtained for 62 participants (35 male, 27 female) with an average age of 25.13 years ($SD = 4.85$).

Study material

Stories

Three short stories were used, two different versions of the experimental story plus one control story. Each story was about four pages long and was introduced to be fictional (''The following text is a piece of fiction'').

The protagonists of the experimental story, titled ''Even Goethe . . . '' in both versions, were a young university graduate called *Philip*, and the director of the (fictitious) environmental organization *Green Cloud*, introduced as *Mr. Muringer*. Philip wants to work at Green Cloud and the plot of the narrative is based on a face-to-face job interview he has with Muringer. In the course of their conversation, Muringer talks about passenger car traffic as one of the main causes for CO_2 emissions in industrial countries and mentions several ways of saving fuel and reducing emissions through environmentally conscious driving, for example, using smaller and fuel-efficient car models, turning off the engine and doing without the air conditioning whenever possible, quickly shifting to a higher gear (most cars in Austria are stick shift cars). In Story 1 (high trustworthiness), Mr. Muringer is described as a person in his mid-50s with high integrity, renowned as an environmental expert in academia, and publicly known for his authentic engagement. Philip would be pleased to work at *Green Cloud*. In Story 2 (low trustworthiness), Mr. Muringer tells exactly the same things about green driving as in condition 1. The story differs with respect to the indicators of Muringer's

trustworthiness (see Appendix A). In the second version Muringer is interested in image rather than substance, he drives a huge sport utility vehicle with massive fuel consumption and says that he wouldn't be interested in Philip's personal driving habits at all as long as the public perception of the organization is not harmed. Philip notices Muringer's untrustworthiness and his interest in the job declines. Both versions of the experimental story are constructed in a way which lets readers experience the storyline through the eyes of protagonist Philip, who is the one you first get to know in the introductory part and thus likely take on his perspective. As a control story, an equally long narrative titled "The Accident" was used. In this story, the main protagonist has a dream of driving in his car on the way to his office, seeing a beautiful woman standing on the street and finally knocking her down. The next day, his dream comes true, but he brakes in time and falls in love with the woman. No statements associated with green driving or low/high trustworthiness of any described person were part of this story.

Behavioral intentions
Four items asked for behavioral intentions regarding green driving ("I intend to drive with low rpm"; "In the future, I will take care of fuel-efficient driving"; "I intend to check my own and others' behavior regarding cars under an environmental perspective"; "In the future I will introduce others to the possibilities of fuel-efficient driving"). The items were rated on a 7-point scale ranging from −3 (*strongly disagree*) to +3 (strongly agree). The reliability of this scale was good, as indicated by Cronbach's $\alpha = .80$.[4]

Narrative presence
The presence subcomponent of narrative engagement was assessed with the help of the German version of the Narrative Engagement Scale which was applied in full (Busselle & Bilandzic, 2009). The presence scale consists of three items (e.g., "During reading, my body was in the room, but my mind was inside the world created by the story," 7-point scale from −3 to +3, Cronbach's $\alpha = .58$).[5]

Character trustworthiness
Participants who read the story about green driving answered two questions on the credibility of Muringer, the protagonist whose trustworthiness was manipulated ("Muringer is reliable"; "Muringer is somebody you can trust," 7-point scale from −3 to +3, Cronbach's $\alpha = .94$).

Car ownership
All participants indicated whether or not they had their own car (i.e., a car they legally owned or a car that was at their disposal). Half of the participants ($n = 48$) had a car of their own.

Behavior
Being part of the follow-up survey, nine items asked for behaviors related to green driving in the preceding 3 weeks (e.g., "I drove with low rpm"; "I took care of

fuel-efficient driving"; "I approached traffic lights without accelerating", 7-point scale ranging from −3 to +3, Cronbach's α = .88).[6]

Design

The study involved the experimental factor "story read" (high trustworthiness character, low trustworthiness character, control story). Moreover, the quasi-experimental variable "car ownership," and "narrative presence" (continuous) were the main predictor variables. Behavioral intentions and self-reported behavior with respect to fuel-efficient driving served as the main dependent variables. Other predictor variables that were measured but that are not reported here included the individual's need for cognition and need for affect.

Results

Treatment check

We first inspected whether the textual trustworthiness manipulation resulted in corresponding trustworthiness ratings among the recipients. As expected, after reading the version created to portray the key character Muringer to be untrustworthy, credibility ratings were lower ($M = -1.85$, $SD = 1.31$) than after reading the version with the trustworthy character Muringer ($M = 1.27$, $SD = 1.22$, $t[64] = 10.02$, $p < .001$, $d = 2.51$). There was no significant difference between both story versions in engagement-presence (high trustworthiness: $M = -0.55$, $SD = 1.00$; low trustworthiness: $M = -0.97$, $SD = 1.26$, $t[64] = 1.50$, $p = .14$; for car owners only: $M = -0.57$, $SD = 0.87$ and $M = -0.82$, $SD = 1.17$, $t[31] = 0.70$, $p = .49$).

Behavioral intentions

We expected that among those participants who owned a car, the trustworthy character story yielded stronger intentions to engage in green driving than an unrelated control story (H1) and stronger intentions than the untrustworthy character story (H2). In line with our assumptions, average green driving intentions were higher in the trustworthy story group ($M = 0.93$, $SD = 1.08$) than in the control group ($M = 0.17$, $SD = 1.19$, $t[31] = 1.93$, $p = .03$ [one-tailed], $d = 0.69$). Moreover, average green driving intentions were higher in the trustworthy story group than in the untrustworthy story group ($M = 0.05$, $SD = 1.69$, $t[31] = 1.81$, $p = .04$ [one-tailed], $d = 0.65$). There was no significant difference between the control group and the untrustworthy story group.

We were further interested in the influence narrative presence had on the main effects of character trustworthiness on behavioral in tentions (RQ1). Thus, we examined the influence of the different stories within a model that involved the experimental treatment, whether recipients had a car on their own, and narrative presence as predictors. To this end, an ANOVA was conducted that included all interactions between the predictors (narrative presence was z-standardized).[7]

The results are shown in the left columns of Table 1. A three-way-interaction between the story read, car ownership, and narrative presence was obtained.

Table 1 Summary of Two Multifactorial ANOVAs With Higher-Order Interactions (Behavioral Intentions and Behavior as Criteria)

	Behavioral Intentions				Behavior			
	df	F	p	η_p^2	df	F	p	η_p^2
Story	2	0.35	.70	.01	2	1.59	.21	.06
Car Owner	1	1.93	.17	.02	1	0.87	.35	.02
Narrative Presence	1	6.35	.01	.07	1	14.4	<.001	.22
Story × Car Owner	2	2.27	.11	.05	2	0.16	.85	.01
Story × Narrative Presence	2	0.42	.66	.01	2	2.52	.09	.09
Car Owner × Narrative Presence	1	0.14	.72	.00	1	0.03	.86	.00
Story × Car Owner × Narrative Presence	2	4.64	.01	.10	2	3.39	.04	.12
Error	84				50			

Subsequently, the simple slopes of narrative presence for the six different groups were inspected (Figure 1a and 1b). Among all experimental groups, the largest relationship between narrative presence and behavioral intentions was observed for car owners who had read the story with the untrustworthy character. Whereas the relationship between narrative presence and behavioral intentions for this group was significant, $B = 0.79$, $SE_B = 0.26$, $p < .01$ (simple slope analysis), all other relationships were not (simple slope analysis: the next steepest slope was observed for control group participants without a car, $B = 0.43$, $SE_B = 0.27$, $p = .11$). This analysis points at a particularly strong and positive relationship between feeling present in the narrative world and story-consistent behavioral intentions under the low trustworthiness condition. The trustworthiness of a fictional character has the greatest influence on persuasive success when recipients feel less present in the story world. This result is in line with the assumption that for any aspect of the story that may initiate resistance to persuasion—such as low character trustworthiness—the likelihood of being processed decreases with the amount of being part of the story world.

Behavior
In the follow-up questionnaire, participants reported on their behavior during the 3 weeks after they were exposed to one out of the three stories. We expected that the story with the trustworthy character would elicit more green driving behavior than the control story or the story with the untrustworthy character. In the subsample of car owners, those who read the story with the trustworthy character reported on more green driving behavior ($M = -0.20$, $SD = 1.09$) than participants who read the story with the untrustworthy character ($M = -0.48$, $SD = 1.86$), but this difference was not statistically significant from zero ($t[21] = 0.46$, $p = .65$). The lowest green driving behavior was found in the control condition ($M = -0.74$, $SD = 1.35$), but again,
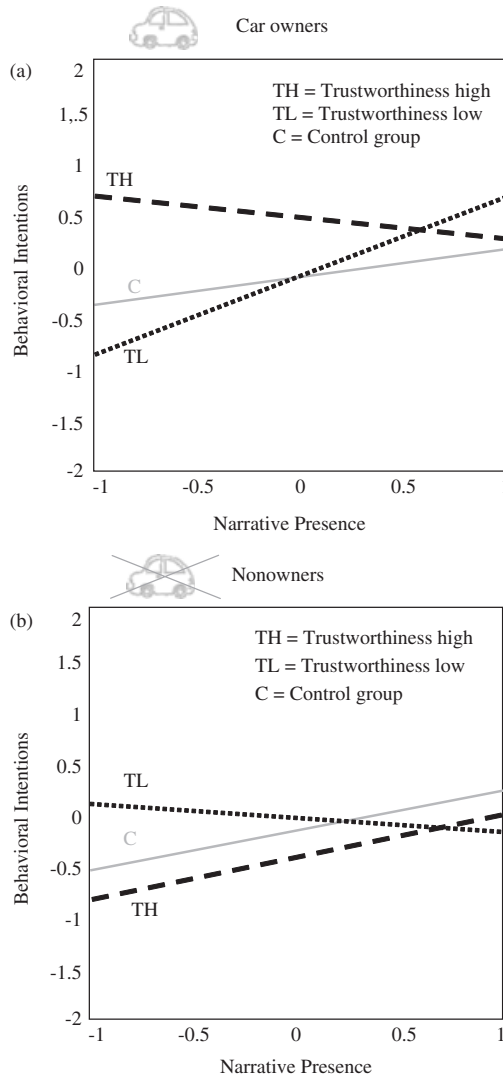
Car owners

(a)

TH = Trustworthiness high
TL = Trustworthiness low
C = Control group

Nonowners

(b)

TH = Trustworthiness high
TL = Trustworthiness low
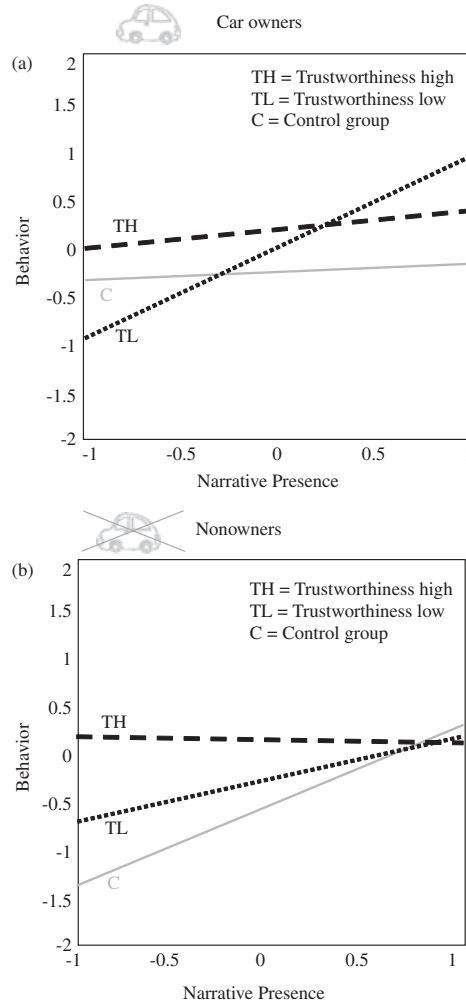C = Control group

Figure 1 Behavioral intentions regressed on story, car ownership, and narrative presence. (a) Car owners, (b) Nonowners. TH = Trustworthiness high, TL = Trustworthiness low, C = Control group.

this group mean did not significantly differ from the mean behavior score of the high trustworthiness condition ($t[20] = 1.04$, $p = .31$). Thus, the mean differences observed for behavioral intentions assessed immediately after reading the story did not translate to actual behavior (H3 and H4)—at least this is what we can conclude on the basis of the reduced number of informants that participated in the follow-up study.

To examine the interactive influence of story condition and narrative presence (our second research question), higher-order interactions were analyzed with the

Figure 2 Self-reported behavior regressed on story, car ownership, and narrative presence. (a) Car owners, (b) Nonowners. TH = Trustworthiness high, TL = Trustworthiness low, C = Control group.

story treatment, car ownership, and self-reported narrative presence (z-standardized) as well as all higher-order interactions as predictors; behavior served as the criterion variable. The results are shown in the right columns of Table 1. Again, a three-way interaction between the story read, car ownership, and narrative presence was observed. The simple slope analysis (Figure 2a and 2b) shows that there is a large and significant relationship between narrative presence and behavioral intentions among car owners who had read the story with the untrustworthy character, simple slope: $B = 0.89$, $SE_B = 0.24$, $p < .001$. No such relationship was found for car owners who read the trustworthy story or car owners who read the control story ($ps > .48$).[8]

This three-way-interaction on reported behavior is almost identical to the findings obtained for behavioral intentions: Under conditions of an untrustworthy character, feelings of having entered the story world are positively related to story consistent behavior. This is in line with the assumption that recipients who are present in the story world tend to ignore aspects that may initiate counterarguing—even if such aspects are part of the story world.

Discussion

People spend a substantial part of their waking hours with fictional stories (e.g., TV series, feature films, or novels). In recent years, narrative persuasion has become a vibrant topic in communication science and media psychology (e.g., Appel & Richter, 2010; Dahlstrom, 2012; Dahlstrom & Ho, 2012; Green & Donahue, 2011; Igartua & Barrios, 2012; Moyer-Gusé, Chung, & Jain, 2011). After showing that fictional stories shape recipients' knowledge and beliefs about real-world issues, much of the current research aims at understanding the processes (mediators) and boundary conditions (moderators) of narrative persuasion. The present experiment extends previous approaches as it tested the influence of a potentially relevant but yet unexplored textual variable: character trustworthiness. Results from several previous studies suggested that a story introduced to be fictional is as persuasive as a story introduced to be nonfictional. In other words, trustworthiness indicators that accompanied the story—but were not part of the story itself (paratexts)—had limited effects. Extending previous approaches, we highlighted the importance of trustworthiness indicators within the fictional story world. The present experiment is the first to show that the trustworthiness of a fictional character matters with respect to persuasive outcomes.

We further demonstrated that the disadvantage of a low-trustworthy character with respect to persuasive outcomes disappears among recipients with a strong experience to be part of the story world (high narrative engagement-presence). This finding is in line with previous findings that recipients who are highly transported into the story world tend to accept persuasive information irrespective of cues that might otherwise lead to persuasive resistance (e.g., Dal Cin et al., 2004). We suggest that on a more general information processing level, experiencing narrative presence is associated with the activation of the associative system rather than the propositional system in terms of two-system models of information processing, such as the associative-propositional evaluation model (Gawronski & Bodenhausen, 2006). Associative processes are characterized by spreading activation, independent of subjective truth or falsity. Thus, when recipients have entered the story world, they unlikely process information that is critical of the story's main message (see also Appel & Richter, 2010; Green & Donahue, 2009, for a connection between narrative persuasion and two-system models of information processing). This reasoning further reflects Bruner's (1986) distinction of two modes of thinking. According to Bruner, the paradigmatic mode is characterized by logic and arguments and involves truth as an important standard. The alternative mode is called the narrative mode, which

does not include truth values; rather, it is based on the construction of relationships and story worlds that adhere to standards of verisimilitude.

Recipients who experience strong narrative presence are equally persuaded by both trustworthiness versions (descriptive intention scores are even a bit higher for the low-trustworthiness condition than for the high-trustworthiness condition at high narrative presence scores). We interpret this finding as a lack of any critical evaluation of the story's main message under high narrative presence. Moreover, an untrustworthy story-world message source, like the manager who pays lip service to green driving and ecology, might make the message itself appear even more attractive—but only among recipients who experience strong narrative presence. This can be due to the latter recipients' tendency to respond more strongly to the story's main message and their tendency to refrain from thought processes that contradict the message.

With the present study, we addressed a topic that is relevant for applied persuasion research and persuasion practice: climate change and related behavior. Climate change and its potential impact on humankind's future life is a major global issue of our time. As Ehrlich (2011) put it, ''no challenge faced by humanity is more critical than generating an environmentally literate public. Otherwise the present 'business as usual' course of human affairs will lead inevitably to a collapse of civilization'' (p. 6). In addition to actions taken by governments and the industry, small changes in consumer behavior can help reduce emissions that are widely made responsible for climate change. We could demonstrate that a fictional story increases the behavioral intentions to engage in fuel-efficient driving as compared to an issue-irrelevant control story, and that character trustworthiness is a factor that can increase narrative influence. This adds to our knowledge on the practical use of stories to change the thoughts and behavior of the recipients (often referred to as entertainment-education, particularly in case of broader communication programs, cf. Singhal, Cody, Rogers, & Sabido, 2004).

Limitations and outlook

Despite the contributions of the present work, its limitations need to be noted. First, we found a main effect of character trustworthiness on behavioral intentions but we could not demonstrate a main effect of character trustworthiness on self-reported behavior. One reason of this null-finding was a substantial drop-out of participants from the first to the second measurement occasion. Moreover, according to the theory of planned behavior (e.g., Ajzen, 2011), intentions are predictive of behavior, but not all variance in behavior can be explained by intentions. In our case, the skills and resources needed to engage in fuel-efficient driving (actual behavior control) might have weakened the influence of character trustworthiness on the behavioral outcome.

Second, acting in an environmentally responsible way is part of the self-concept of many people in Austria and worldwide, and it is highly socially desirable. Thus, self-reported behavioral intentions as well as self-reported behavior can be prone to ceiling effects (everyone wants to save energy) and might be biased due to the social desirability aspect. In order to preserve the validity of our findings, we addressed

one specific behavioral aspect which is not very popular in Austria—fuel-efficient driving. But even if our results are not particularly contaminated by error variance associated with self-reports, alternative methods appear to be feasible in future studies. Driving behavior could be observed in a car simulator, and assessing the actual gas consumption of participants in a certain period of time might be an approach of high external and internal validity (in a similar vein, household energy consumption could be assessed with the help of household smart meters).

Third, our focus was on the treatment effect, more specifically the difference in persuasive outcomes between a story in which the green driving information is expressed by a trustworthy character (the boss of an environmental organization) on the one hand and a control story and a low trustworthy character story on the other. We also considered the *moderating* effect of being immersed into the story world (narrative presence). Our trustworthiness manipulation did not change the depiction of the main character, the job applicant from whose perspective the story was told. We did not expect narrative presence to function as a *mediator*—that is, we did not expect that the manipulation affected narrative presence, and there was indeed no effect found. We think that a direct effect of character trustworthiness on narrative presence and narrative engagement generally might be more likely when the trustworthiness manipulation refers to the central character (e.g., the first-person narrator, cf., de Graaf, Hoeken, Sanders, & Beentjes, 2012). For example, a sequence in which the hero turns out to be dishonest can likely reduce narrative engagement (e.g., because this contradicts the established character model, cf., Busselle & Bilandzic, 2008). Possibly, the untrustworthiness of the main character may as well enhance narrative engagement (e.g., because the untrustworthiness makes the character more complex). These predictions point at promising future research on the interplay of story characteristics and recipients' experiences in the field of narrative persuasion. Future research on the processes of narrative persuasion is encouraged that involves measures obtained during exposure (instead of post hoc measures) to examine basic cognitive and/or emotional activities such as epistemic monitoring (Richter, Schroeder, & Wöhrmann, 2009).

Acknowledgments

Notes

1 Even the commercially most successful movie in history, *Avatar* (Cameron, 2009), was interpreted as delivering a climate change message (e.g., ''Avatar is every militant global warming supporter's dream,'' www.newsbusters.com).
2 Consider a controversial discussion on global climate change—no one would seriously and explicitly refer to information from a fictional story (e.g., *Avatar*, *The Day After Tomorrow*) to support his or her argument.

3   Additionally, participants were further instructed to list the thoughts and feelings they had when reading the story. As the comments were typically few and very brief, we were unable to analyze the listed thoughts and feelings productively.

4   Originally, the questionnaire included 11 questions on green driving, including both behavioral intentions and attitudes. A principal component analysis (eigenvalues of the first five factors were 3.39, 1.80, 1.21, .94, .83) yielded only one factor with items that loaded substantially and comprised a reliable scale. Results for this factor are reported.

5   On exploratory grounds, we analyzed the results for the other subscales of the narrative engagement scale. All scales were independent of the trustworthiness manipulation and only the dimension of focal interest—the presence scale—revealed significant three-way interactions (see ''Results'' section).

6   A principal component analysis (eigenvalues of the first five factors were 5.08, 1.10, .99, .73, .53) yielded a one-factor solution. All items loaded substantially on this factor and all items were combined to make up the scale.

7   Please note that an ANOVA with categorical and continuous predictors and related interactions is equivalent to a regression analysis with categorical and continuous predictors and related interactions (effect-coding). Some would call an ANOVA with a continuous predictor an ANCOVA; however, a standard ANCOVA does not involve interactions of the continuous variable with the categorical variables, so ANOVA appears to be more appropriate. The simple slopes were analyzed with the help of the software *interaction!* (Soper, 2012).

8   The simple slope analyses yielded one other significant effect: For participants without an own car who were in the control condition, a significantly positive relationship between transportation-presence and behavior was obtained, $B = .87$, $SE_B = .28$, $p < .01$.

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Appendix A

Summary and Excerpts From the Two Story Conditions (Translated From the German Original)

Storyline with untrustworthy character	Storyline with trustworthy character

Protagonist Philip, freshly graduated from university, sits in his car, on the way to a job interview with Anton Muringer (the character for which trustworthiness was manipulated), director of the environmental organization "Green Cloud." After arriving, he notices a huge sport utility vehicle, parking in front of the organization's entrance. Philip thinks of a newspaper article that he has recently read, referring to SUVs as air polluters with massive CO_2 emissions.

Philip observes Muringer getting out of the SUV.	*Philip observes a stranger getting out of the SUV.*

Philip has Googled Anton Muringer in advance, a man in his mid-50s who has been known to Philip from radio and TV interviews.

He reminds content-related arguments between Muringer and environmental experts from academia, who blamed Muringer for his imprecise handling of study results while shaking their heads.	*He reminds that Anton Muringer worked now also as a political consultant and external lecturer at various universities, a fact that increases Philip's wish to become part of the team.*

Inside the building, Philip is asked to enter Muringer's office room. The job interview goes well. Suddenly, Muringer asks Philip how he has traveled here today. Philip honestly answers that he has come by car.

Muringer reacts as follows:	*Muringer reacts as follows*:
"*Don't worry, next time you simply claim that you have traveled here by a horse-drawn carriage. But I want to tell you something: "Green Cloud's" official position says that passenger car traffic is one of the main causes for CO_2 emissions in industrial countries. And those, in turn, are slowly eating up the earth's atmosphere.*"	"*Don't worry; I am glad that you are honest. After all, you could have claimed that you would have traveled here by a horse-drawn carriage. But I want to tell you something: Passenger car traffic is one of the main causes for CO_2 emissions in industrial countries. And those, in turn, are slowly eating up the earth's atmosphere.*"

In both storylines, Muringer then explains the arguments and strategies of fuel-efficient driving the same way:

" (. . .) after all, fuel-efficient driving doesn't only save carbon dioxide but also a quarter of the money used for petrol. Trick number one is to turn off the engine when you know that you will stand still longer than 10 seconds. And to refrain from the gas when you take off again. Trick number two is to shift to a higher gear as quickly as possible. (. . .) Trick number three is almost always underrated: an air condition consumes another 2 liters of petrol per 100 kilometers of driving distance. Did you know that? (. . .) And I have got one more trick—it is called 'driving with foresight': If you can see the red traffic lights or the closed railway crossing, you should not approach it with full speed but let the car roll without stepping on the gas. Through all these measures, drivers can save up to 40% of fuel."

The conversation then focuses on other topics, before Muringer has to leave for his next meeting. Back in his car, Philip takes a deep breath and his eyes again remain on the huge SUV.

Philip is disappointed about Muringer's low credibility. His interest in the job decreases.	*Philip is excited about Muringer's engagement. He is pleased to get the job.*