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Narrative Health Communication and Behavior Change: The Influence of Exemplars in the News on Intention to Quit Smoking

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Abstract

This study investigated psychological mechanisms underlying the effect of narrative health communication on behavioral intention. Specifically, the study examined how exemplification in news about successful smoking cessation affects recipients' narrative engagement, thereby changing their intention to quit smoking. Nationally representative samples of U.S. adult smokers participated in 2 experiments. The results from the 2 experiments consistently showed that smokers reading a news article with an exemplar experienced greater narrative engagement compared to those reading an article without an exemplar. Those who reported more engagement were in turn more likely to report greater smoking cessation intentions.

The role of narrative, testimonials, and personal cases has received considerable attention as a persuasive delivery vehicle for conveying information that promotes health behaviors (Green, 2006; Kreuter, et al., 2007). Narrative persuasion theory suggests that one's experience of being absorbed into a story is a key mechanism whereby the story can influence one's real-world beliefs and behaviors (Green & Brock, 2000, 2002; Moyer-Gusé, 2008; Slater & Rouner, 2002). Once individuals become immersed in the story, perceive it as realistic, and identify with story characters, there is a greater probability that narrative-based belief change will occur (Green & Brock, 2000, 2002).

Although past research has identified a positive association between narrative engagement and persuasive outcomes, research examining which message features lead audiences to become more engaged with narratives has been sparse. The present study attempts to begin to fill this gap by proposing and testing the idea that exemplification can serve as an intrinsic message property that facilitates narrative engagement and thereby alters health behaviors in the context of news exposure. There is growing evidence that tobacco-related news coverage is related to population trends in smoking cessation (Niederdeppe, Farrelly, Thomas, Wenter, & Weitzenkamp, 2007; Pierce & Gilpin, 2001). News coverage of cancer or smoking sometimes uses exemplars when delivering core information (Jensen, Moriarty, Hurley, & Stryker, 2010). The *New York Times* article titled "From Smoking Boom, a Major Killer of Women" (Grady, 2007), for example, illustrates the notion of

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exemplification in the news. The article conveys core information about chronic obstructive pulmonary disease (C.O.P.D.), a smoking-related lung disease and discusses statistics, causes, associated illnesses, and treatments. The article also introduces Jean Rommes, a former smoker diagnosed with C.O.P.D., as an exemplar. The article describes her personal story in parallel with the associated core information about C.O.P.D. It could have delivered the same core information without an exemplar by just using statistics, factual statements, study results, and expert comments. However, this study posits that the presence of an exemplar can make a news article more engaging, which then increases persuasiveness.

More specifically, the present study examines how the use of an exemplar in news stories as a delivery vehicle for health information about successful smoking cessation influences the extent to which adult smokers become engaged with the stories. The study further tests how narrative engagement in turn is linked to intention to quit smoking. Results from two experiments with nationally representative samples of adult smokers in the United States are presented. Both experiments manipulate whether an exemplar is used to convey two types of information related to smoking cessation: threat and efficacy information.

Narrative Engagement and the Role of Exemplars

Narrative engagement is a complex concept tapping specific psychological subcomponents under a broad umbrella (Busselle & Bilandzic, 2009). Researchers generally agree that engagement with a narrative encompasses individuals' involvement with both storylines and story characters (Busselle & Bilandzic, 2008; Green, 2006; Moyer-Gusé, 2008; Slater & Rouner, 2002; Tal-Or & Cohen, 2010). In the context of reading news stories, this study posits that the notion of narrative engagement essentially includes transportation into the narrative, perceived similarity to story characters, and empathetic feeling toward the characters.

Transportation taps into one's engagement with a storyline. The originators of the concept define transportation as "a convergent process, where all the person's mental systems and capacities become focused on the events occurring in the narrative" (Green & Brock, 2000, p. 701). By becoming involved with storylines in cognitive, affective, and image-based ways, the transportation experience may accompany an individual's perception of loss of or psychological distance from real-world beliefs and/or knowledge (Green & Brock, 2002). Both perceived similarity and empathy toward story characters are closely tied to the notion of identification. Identification means "an imaginative process through which an audience member assumes the identity, goals, and perspective of a character" (Cohen, 2001, p. 261). At the heart of identification with a story character is adopting or sharing the character's point of view and experience in cognitive and emotional ways (Cohen, 2001; Green, 2006; Moyer-Gusé, 2008). Therefore, identification concerns perceived similarity (cognitive) and empathic responses (emotional) regarding the character (Green, 2006; Moyer-Gusé, 2008; Slater & Rouner, 2002).

Transportation, perceived similarity and empathy may not exhaust the elements of narrative engagement in general, nor are they necessarily mutually exclusive (see Busselle & Bilandzic, 2009). However, both the prior literature and face validity suggest that they tap into essential aspects of narrative engagement with print news stories. Therefore, while this study considers them to be indicative of the broader notion of narrative engagement, it does not make *a priori* theoretical assumptions about their interrelationship.[1]

The Role of Exemplification in the News as a Delivery Vehicle

While prior research provides evidence that psychological engagement with a story affects persuasive outcomes consistent with the story's interpretive direction, little is known about

which intrinsic message features of the story shape narrative engagement. Most research has manipulated pre-exposure information about messages, such as genre, reading instructions, and introductory descriptions, while holding the messages constant (e.g., Green & Brock, 2000; Tal-Or & Cohen, 2010). These manipulations assist in understanding how messages are processed under different cognitive orientations by the audience, but in the end the messages themselves must be manipulated in ways that can be shown to enhance narrative engagement.

Engagement with a message can be enhanced in a variety of ways. The present study focuses on news as a source of information and motivation examining exemplification as an intrinsic message feature which can affect narrative engagement with news stories (Zillmann & Brosius, 2000). Exemplars in news reports refer to "personal descriptions by people who are concerned or interested in an issue" (Brosius, 1999, p. 214). Research has consistently shown that exemplars and how they are deployed significantly affect recipients' perceptions and judgments about the issue described in news articles (Zillmann & Brosius, 2000).

News may include or exclude exemplars without necessarily changing kernel information about the issue. Exemplars themselves need not necessarily convey core information. However, they can be one of the ways to convey a core message (Cappella, 2006). As delivery vehicles, exemplars in news articles may increase narrative engagement with the stories. First, exemplars communicate information with concrete characters, their goals, and lived experiences, all of which are crucial components of narrative text that can potentially aid comprehension (Wyer, 2004). Thus, exemplars may enhance overall narrativity of news articles, which in turn facilitates audience engagement. Second, as exemplification theory suggests, news articles with exemplars may draw more attention, be more easily comprehended and recalled, and evoke greater emotional responses such as empathic feelings (Zillmann, 2006; Zillmann & Brosius, 2000), thereby increasing audience engagement.

This study aims to examine how the presence or absence of an exemplar in the same narrative genre (i.e., news) can affect narrative engagement, rather than focusing on the distinction between narrative and nonnarrative messages. News reports without exemplars are not free of narrative qualities. Rather, as news is a highly stylized form of narrative (van Dijk, 1988), most news stories can induce at least some degree of narrative engagement. The role of exemplification in news articles is to elicit further audience engagement by providing main story characters in addition to the baseline news narrative, compared to news stories containing disembodied or pallid characters. Therefore, this study expects the following:

> H1: Individuals who read news articles with an exemplar will experience greater narrative engagement than those who read news articles without an exemplar.[2]

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[1]Prior theoretical works on narrative persuasion models specify different relationships among narrative engagement-related constructs. It seems that some suggest storyline involvement leads to perceived (or experienced) similarity and empathetic responses to story characters (e.g., Green, 2006; Slater & Rouner, 2002), others assume the opposite direction (e.g., Cohen, 2001), while still others consider them relatively independent and parallel paths (e.g., Busselle & Bilandzic, 2008; Moyer-Gusé, 2008). Furthermore, little empirical research has explored the underlying structure of narrative engagement by measuring a wide array of related constructs. Although a few recent studies addressed this issue in contexts other than news narratives (Busselle & Bilandzic, 2009; Tal-Or & Cohen, 2010), they yielded mixed findings. Moreover, to our best knowledge, available research was largely in the context of college samples, rather than representative samples of adults. Taken altogether, it seems reasonable to conclude that the structure of narrative engagement, especially with regard to the context of news stories, remains an open question.

[2]At first blush, H1 may seem to conflict with recent studies yielding mixed evidence on the comparative effects of testimonial and informational messages on transportation (Braverman, 2008; Dunlop, Wakefield, & Kashima, 2010). Yet, it is important to note that (a) the studies side-stepped character-related components of narrative engagement; (b) they contrasted narratives with nonnarratives. Inclusion of character-related elements and/or the comparison within narrative texts might have led to results consistent with H1.

Effects of Narrative Engagement on Behavioral Intention

Narrative engagement evoked by exemplars in news articles can alter behavioral intention, one of the most effective predictors of behavior (Fishbein & Ajzen, 2010). Green (2006) suggested that transportation and identification in response to narratives delivering cancer information can change behavioral beliefs and intentions. Empirical evidence is also robust. Individuals who are more engrossed in a narrative tend to form stronger narrative-consistent beliefs, attitudes, and intentions (e.g., Green & Brock, 2000). Thus, our second hypothesis (H2) is formulated as follows.

> H2: Narrative engagement will be positively associated with intention to quit smoking.

Combining H1 and H2, this study predicts an indirect effect of exemplification on behavioral intention through a mediating role of narrative engagement.

Exemplars are delivery vehicles for information that is directed at attitude, intention, and behavior change. In the case of news stories about successful smoking cessation, exemplars are not themselves arguments, reasons, evidence or data for smokers. Instead, they offer a means through which core health information can be presented. This study focuses on two sets of core information: smoking-related threats (threat information) and the means to deal with the threats through quitting smoking (efficacy information). More specifically, the threat information includes general (or typical health) and genetic threats. The former presents ordinary addiction and health risks associated with smoking. The latter presents claims and evidence of genetic influences in addition to the general threat information. The efficacy information in this study consists of the following methods for smoking cessation: unaided quitting (quitting "cold turkey"); counseling; untailored quit aids (e.g., nicotine replacement therapy); and tailored quit aids (e.g., treatments tailored to the smokers' genetic patterns).[3]

Study 1

Method

Participants—Participants were 1,219 U.S. adult smokers (a) who smoked cigarettes currently, (b) who had smoked five or more cigarettes on a typical day in the past 7 days, and (c) who had smoked more than 100 cigarettes in their lifetime. They were recruited from a nationally representative online research panel hosted by Knowledge Networks. Of the random sample of 12,293 adults, 8,151 responded to the screener questions (cooperation rate = 66.3%). A total of 1,312 adults qualified on all the criteria (incidence rate = 16.1%), and were asked to keep participating in Study 1. Of these, a randomly selected 1,219 were exposed to experimental stimuli before answering key outcome measures, while the remaining 93 read the stimuli at a later time point.[4] Responses from the 1,219, aged 18 to 91 ($M = 47.96$ years, $SD = 13.54$) were analyzed to test the hypotheses. Participants were 48.1% male. About 16.5% had completed less than high school, 38.6% high school, 32.2% some college, and 12.7% had a bachelor's degree or higher-level education. The sample was 8.6% African American, 76.5% White, 6.2% Hispanic, and 8.7% other.

Procedures—An experiment was conducted with a 2 (threat: genetic vs. general) × 3 (efficacy: unaided quitting, untailored, genetically tailored) × 2 (exemplification: exemplar vs. no exemplar) factorial design. A total of 12 different newspaper articles about successful smoking cessation were created as experimental stimuli.[5] Participants were randomly

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[3]All the experimental designs and the associated analyses reported below involve the threat and efficacy information as randomized treatments. However, they did not have significant effects on narrative engagement or intention to quit smoking. Thus, for brevity, the experimental stimuli and results for these factors are not reported, except when they are necessary.

[4]This process was used to test other research questions than those addressed in this study.

assigned to one of the 12 story conditions. Before reading news articles, participants answered questions about their stage of change for smoking cessation (Biener & Abrams, 1991). After reading the articles, they were asked about narrative engagement and intention to quit smoking.[6] At the end of the study, they were debriefed with an explanation of the nature and purpose of the study.

The specific content of newspaper articles systematically varied across the experimental conditions, while their titles, global contexts, and core materials were held almost identical. All articles were titled *Hospital Patients Beat the Butts* and reported successful smoking cessation practices at Long Island College Hospital. The combinations of threat and efficacy information served as core messages in the news stories (i.e., two forms of threat and three smoking cessation methods = six core sets of information).

News articles differed in whether they presented an exemplar as a delivery vehicle for the threat and efficacy information. Participants in the exemplar condition read news articles containing an exemplar. Specifically, the articles presented a successful smoking cessation story that featured Joanne Bedford, a 62-year-old woman and included her own testimony about quitting. Joanne was introduced as a former smoker who had smoked as many as 2½ packs a day during her 45 years as a smoker. The articles described that she decided to quit smoking after she was diagnosed with lung cancer. In contrast, characters in the no-exemplar condition were described as "people" or "residents" of the hospital. Thus, the key comparison was made between news stories with embodied (exemplar condition) and disembodied (no-exemplar condition) delivery vehicles. All the news stories were crafted to contain a basic storyline and characters so that participants in both conditions could become engaged with them.

Message lengths measured using word count varied among the 12 news stories ($M = 611.25$, $SD = 234.11$). Stories were constructed so that they had the same information, but added manipulated elements modularly. For example, other things being equal, the genetic-threat news article was necessarily longer and had more words than its general-threat counterpart. This was because the former had genetic threat information in addition to the general threat information ($M = 656.33$, $SD = 238.57$, $M = 566.17$, $SD = 242.45$, respectively). The efficacy and exemplification manipulations followed a similar pattern: efficacy ($M = 428.75$, $SD = 140.80$ for *unaided*, $M = 677.75$, $SD = 194.29$ for *untailored*, $M = 727.25$, $SD = 274.13$ for *tailored*); exemplification ($M = 442.50$, $SD = 106.68$ for *no-exemplar*, $M = 780.00$, $SD = 202.12$ for *exemplar*). Related methodological considerations are addressed in the discussion section.

Measures—A total of 12 items were used to measure narrative engagement: six from transportation, three from perceived similarity, and three from empathy. The 12 items were measured with a 5-point scale, ranging from *strongly disagree* (= 1) to *strongly agree* (= 5). Six transportation items were obtained by abridging and revising the original instrument (Green & Brock, 2000) for the purpose of this study: "I could picture myself in the scene of the events in the story," "I was mentally involved in the story while reading it," "After I finished reading the story, I found it easy to put it out of my mind" (*reverse scored*), "The events in the story are relevant to my everyday life," "The story was so clear to me that I knew its smell, touch, and feel," and "I had trouble visualizing the persons and places

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[5]An entire set of news stories used in Study 1 and 2 are available upon request from the authors.
[6]Other variables were also measured (e.g., family smoking history and perceived vulnerability to smoking-related health consequences as pre-exposure measures; emotional responses, attitudes, self-efficacy as postexposure measures) in both Study 1 and 2. However, they are not discussed here. All the major findings remained virtually unchanged when these variables are included in our statistical model. We also tested whether background characteristics (gender, age, family smoking history, stage of change) interact with the exemplification treatment to predict narrative engagement, and found no significant interaction effects.

described in the story" (*reverse scored*). Three perceived similarity items, adapted from Rimal & Morrison (2006), asked how similar the person in a news story is to participants in terms of the way the character thinks, the character's life experiences, and the character's overall outlook on life. Three empathy items were based on a component of the Interpersonal Reactivity Index (Davis, 1980): "I felt concerned for the people in the story," "I felt the people in the story were interesting," and "I was touched by the story I just read." A principal component analysis with direct oblimin rotation of the 12 items identified two components with eigenvalues (EVs) greater than one, between-components correlation = .24, total variance explained = 55.5%. All the items loaded on the first component (EV = 5.45), except two negatively worded transportation items which loaded on the second (EV = 1.20). Sampling error-adjusted EVs using parallel analysis (Horn, 1965) were 5.32 and 1.09, respectively[7]. The second component only consisted of the two negatively worded items that were weakly correlated with each other ($r = .28$), which makes its interpretation difficult. Moreover, the second component explained much less variance than the first component (10.0% vs. 45.4%), and only slightly more than a single item. In sum, the results suggest that the set of negatively worded items may be an artifact of the reverse coding or a nonmeaningful component. Thus, we dropped the two items and created a narrative engagement scale by averaging the remaining 10 items ($\alpha = .90$, $M = 3.11$, $SD = .62$).[8]

To measure smoking cessation intention, participants indicated how likely it is that they (a) *will quit* or (b) *will try to quit* smoking completely and permanently in the next 3 months on a 5-point scale (*I definitely will not* = 1 to *I denifinitely will* = 5). The two items were highly correlated ($r = .84$, $p < .001$), and were averaged to create a scale ($M = 2.82$, $SD = 1.02$).

Stage of change toward smoking cessation, a proximal indicator of prior intention to quit smoking (Prochaska & DiClemente, 1983), was included as a covariate. The Contemplation Ladder instrument (Biener & Abrams, 1991) was used: Participants indicated their readiness to consider smoking cessation on an 11-point item ranging from *I have no thoughts about quitting smoking* (= 0) to *I am taking action to quit smoking* (= 10). The mean score was 5.55 ($SD = 2.85$).

Analysis—Hypotheses were examined with analyses of covariance (ANCOVAs) with 2 (threat) × 3 (efficacy) × 2 (exemplification) factors and covariate(s). Joint significance tests were used to identify the presence of indirect effects (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). For example, one can reject the null hypothesis that the indirect effect of exemplification (X) on intention to quit smoking (Y) through narrative engagement (M) is zero, when the effect of X on M (*a*) and that of M on Y while controlling for X (*b*) are statistically significant. In addition to this causal-steps approach, the present study also employed a product-of-coefficients approach, a bootstrap re-sampling method, to assess the indirect effect (*a*b*) and its 95% confidence interval (Hayes, 2009). Ordinary least squares multiple regression analyses, equivalent to ANCOVAs, were conducted to estimate coefficients for bootstrap indirect effects. Unstandardized coefficients are reported for the covariates and indirect effects.

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[7]Parallel analysis produces EVs that are adjusted for sampling error by generating random datasets each having the same number of variables and observations as the observed dataset (Horn, 1965). The reported sampling error-adjusted EVs were obtained using 5,000 random datasets and their 95th-percentile random EVs.

[8]One might be concerned that the PCA may not be appropriate here, and might argue that a confirmatory factor analysis (CFA) would be a better choice, especially because we obtained items from extant scales (i.e., transportation, similarity, and empathy). Yet, we used only a subset of each scale, and, as mentioned earlier, the previous literature offers little theoretical or empirical ground to assume a particular relationship between the scales, both of which led us to favor the PCA. Nevertheless, it might be reasonable to establish if both PCA and CFA yield the same conclusion on the measurement property of the narrative engagement items. CFA results were consistent with those from the PCA, suggesting evidence in favor of unidimensionaltiy of narrative engagement, with a single secondary-order factor underlying first order factors. The results were replicated in Study 2. Full CFA results are available upon request from the authors.

Results[9]

Table 1 presents the results of ANCOVAs for narrative engagement and for intention to quit smoking. Consistent with H1, results showed a significant main effect of exemplification on narrative engagement, $\eta^2 = .01$. Participants reported greater narrative engagement when they read a news article containing an exemplar (adjusted $M = 3.19$, $SE = .02$) than when they read an article with no exemplar (adjusted $M = 3.03$, $SE = .02$). A significant effect was found for stage of change, such that the more participants were ready to consider smoking cessation, the more they became engaged with the news narrative, $b = .06$, 95% CI [.05, .07], $\eta^2 = .08$. Other sources of variance were not significant. In line with H2, narrative engagement was significantly positively associated with intention to quit smoking, $b = .33$, 95% CI [.26, .41], $\eta^2 = .04$. Stage of change was also positively related to intention, $b = .20$, 95% CI [.19, .22], $\eta^2 = .29$. Joint significance tests indicated that the presence of an exemplar in a news article increased participants' narrative engagement, which in turn was associated with elevated intention to quit. Bootstrap resampling procedures, using 5,000 samples, also revealed a significant indirect effect of exemplification on intention through the engagement path, $b = .05$, bias-corrected 95% CI [.03, .08][10].

Ancillary analysis—As reported above, the association between narrative engagement and intention to quit smoking was significant while controlling for prior stage of change for quitting (SOC) measured before the manipulation. However, the association cannot be said to be causal on the basis of the current data, because we did not manipulate narrative engagement with accompanying random assignment, but instead measured it as a mediator of the manipulated exemplification factor (Green, Ha, & Bullock, 2010). Nevertheless, the two sets of results offer circumstantial evidence that argues against the alternative explanation that intention was causally prior to engagement. First, results showed that the relationship between engagement and quitting intention did not depend on SOC either in a linear (i.e., engagement × SOC; $b = -.02$, *n.s.*) or a quadratic (i.e., engagement × SOC^2; $b = .0004$, *n.s.*) fashion. The absence of this interaction suggests that the association between engagement and intention is the same regardless of the *initial* quitting predisposition or intention of the smoker. Those having no smoking cessation intention before exposure are just as likely to exhibit a positive association between engagement and intention at the end as those with an initial intention to quit. The fact that the association is not stronger for those who were more ready to quit introduces doubt that prior disposition toward quitting caused engagement, which would have been a serious threat to the internal validity of our main findings. Second, we also tested an alternative mediation model specifying an indirect effect path from exemplification to engagement via smoking cessation intention rather than through engagement to intention. The indirect effect, based on 5,000 bootstrap samples, was not significantly different from zero, $b = .005$, bias-corrected 95% CI [−.01, .02].

Study 2

The results from Study 1 suggest that exemplification in the news as a delivery vehicle for information about successful smoking cessation can elevate smokers' intentions to quit by making them more engaged with the news narrative. However, the validity of results drawn from a single experiment with a single message case can be threatened by case-category confounding (Jackson, 1992). Most notably, it might be hasty to conclude that the observed findings in Study 1 truly reflect the effect of exemplification (message category), because what Study 1 actually tested was the effect of Joanne's story (a particular case of the

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[9]In accordance with O'Keefe (2003), this study did not conduct manipulation checks for the three sets of message variations. Since they are intrinsic message features that are independent of perceptions of participants, manipulation checks are not necessary or relevant (for a more extensive discussion, see O'Keefe, 2003). For the same reason, manipulation checks were not conducted in Study 2 either.

message category). It is possible that we were able to find the significant indirect effect just because Joanne's smoking cessation story was much more engaging than that of average exemplars (Jackson, 1992). For the findings to be more generalizable to the category-level message property (i.e., exemplification), they should be replicated across different studies employing different story characters and participants. Study 2 provides a replication that can substantiate our Study 1 findings and thereby increase their generalizability, using a broader array of messages and exemplars with a repeated exposure design.

Method

Participants—A total of 659 U.S. adult smokers participated in Study 2. As with Study 1, participants were recruited from Knowledge Networks (KN), using the same screening criteria for identifying current regular smokers. Of the 7,038 randomly sampled adults, 4,338 answered the three screening questions (cooperation rate = 61.6%), resulting in a total of 761 participants who met all the three criteria (incidence rate = 17.5%). Of the 761 cases, 102 were excluded from the current analysis because they had invalid data due to an unexpected technical error in the KN experimental protocol. The final sample consisted of 659 adult smokers, aged 18 to 82 ($M = 46.75$ years, $SD = 14.19$). Participants were 49.9% male, 7.9% African American, 78.1% White, 7.3% Hispanic and 6.7% other. Among participants,18.7% had completed less than high school, 39.0% high school, 30.0% some college, and 12.3% had a bachelor's degree or higher.

Procedures—The overall design of Study 2 was similar to that of Study 1. Threat, Efficacy, and Exemplification were manipulated as in Study 1. Stage of change toward quitting was measured before exposure to the first news article. Narrative engagement and intention measures were assessed after each exposure. Participants were debriefed with the same message.

However, Study 2 did differ in several ways. It included counseling as a fourth smoking cessation treatment in the efficacy manipulation. As with Study 1, all news articles dealt with successful smoking cessation stories. However, Study 2 used four distinct core news stories each of which also had its own main story character in the exemplar condition and disembodied counterpart in the no-exemplar condition. The four exemplar characters varied substantially in their gender, age, family environment, and smoking-related health and life experiences. One of the core articles was Joanne Bedford's story that was used in Study 1. Brief descriptions of the story characters in the remaining three core articles are as follows: (a) Charles Noland is a 68-year-old man with a smoking history of over 50 years. Charles had deteriorating health problems such as a constant cough, emphysema, and chronic shortness of breath before quitting smoking; (b) Deborah Johnson is a 28-year-old woman who quit after eight years of smoking more than a pack a day. It was her youngest son's asthma diagnosis that motivated Deborah to stop smoking; (c) Chris Jones, a 35-year-old man, was already smoking about 20 cigarettes a day while he was still in his teens. As an ambulance driver, Chris kept seeing the health effects of smoking in the patients he was transporting.

The study employed a repeated exposure design in which each participant read two different core news articles. A total of 64 news article were used as experimental stimuli: 2 (threat) × 4 (efficacy) × 2 (exemplification) × 4 (core article; story character). Between-subject factors were not fixed across the two exposures. For the first exposure, participants were randomly assigned to one of four efficacy conditions (unaided quitting, counseling, untailored, and genetically tailored). Within that assigned condition, they were randomly placed in one of the 2 (threat: genetic vs. general) × 2 (exemplification: exemplar vs. no exemplar) conditions, and to one of the four core articles (i.e., story characters). The first core article

that participants read was excluded from the second randomization so that no one read news articles with the same character twice. Participants remained in the same efficacy condition for the second exposure[10], but within that condition, they were randomly assigned to one of the four Threat × Exemplification conditions and to one randomly chosen remaining core article.

As with Study 1, word counts varied across the 64 news stories (M = 753.48, SD = 239.36). Means and standard deviations of the word counts by experimental factors were as follows: Threat (M = 694.37, SD = 236.71 for *general* ; M = 812.59, SD = 230.64 for *genetic*); Efficacy (M = 573.25, SD = 175.41 for *unaided*; M = 848.19, SD = 233.25 for *counseling*; M = 751.38, SD = 207.17 for *untailored*; M = 841.13, SD = 245.22 for *tailored*); Exemplification (M = 578.22, SD = 128.88 for *no-exemplar*; M = 928.75, SD = 190.82 for *exemplar*); Story Character (M = 684.50, SD = 183.80 for *Charles*; M = 787.13, SD = 225.57 for *Deborah*; M = 692.56, SD = 239.32 for *Joanne*; M = 849.75, SD = 280.31 for *Chris*).

Measures—Items for narrative engagement, intention to quit smoking, and stage of change toward quitting were identical to those in Study 1. Results regarding measurement properties of narrative engagement and intention scales did not vary across two story sessions. Therefore, we pooled data from the two sessions. As with Study 1, a principal component analysis of the 12 narrative engagement items with direct oblimin rotation revealed two components whose eigenvalues (EVs) were greater than one. The same set of two negatively worded transportation items loaded on the smaller component (EV = 1.15), while all the other items loaded on the larger component (EV = 6.38). Together they explained 62.8% of the total variance (between-components correlation = .29). Sampling error-adjusted EVs, based on parallel analysis using 5,000 random datasets with their 95th percentile random EVs, were 1.06 and 6.26, respectively. Again, the small component explained much less variance than the larger one (9.6% vs. 53.2%), its EV was only marginally larger than a single item, and the two negatively worded items were weakly correlated (r = .32). Consequently, for the same reasons as in Study 1, the two items were dropped and the remaining 10 items were averaged to create a single scale of narrative engagement (α = .93, M = 3.06, SD = .70). The two items for quitting intention were highly correlated and were averaged to form a scale (r = .86, p < .001, M = 2.76, SD = 1.07). The mean of stage of change for smoking cessation was 5.24 (SD = 2.89).

Analysis—ANCOVAs with 2 (threat) × 4 (efficacy) × 2 (exemplification) × 4 (core article; story character) factors and covariate(s) were conducted using pooled data from two story sessions. Major findings remained virtually unchanged when analyzing the pooled data with the story session as an additional factor (i.e., Threat × Efficacy × Exemplification × Story Character × Story Session) or when analyzing each story session dataset separately.

Results

The findings from Study 1 were replicated in Study 2 (see Table 2). Consistent with H1, exemplification had a significant main effect on narrative engagement, such that participants in the exemplar condition (adjusted M = 3.13, SE = .03) reported greater engagement than those in the no-exemplar condition (adjusted M = 2.97, SE = .03), η^2 = .01. Story character also exerted a significant main effect on narrative engagement, η^2 = .01. A post-hoc multiple comparison test using the Holm-Bonferroni method revealed that Deborah's story (adjusted

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[10]The aim of this randomization procedure was twofold. First, we found no significant effects for the efficacy treatment, thus we considered it efficient to fix the unimportant factor. Second, at the same time, we wanted to explore whether the efficacy information might possibly exert significant effects after repeated exposure to the same type of information.

$M = 2.93$, $SE = .04$) elicited significantly less engagement than other core stories (adjusted $M = 3.08$, $SE = .04$ for Charles; $M = 3.08$, $SE = .04$ for Joanne; and $M = 3.11$, $SE = .04$ for Chris). However, the interaction between Exemplification and Story Character was not statistically significant. Other main and interaction effects involving message manipulation factors were not significant either. As with Study 1, there was a significant effect of stage of change on narrative engagement. Participants at a later stage of change were more likely to become engaged with the news stories, $b = .07$, 95% CI [.06, .08], $\eta^2 = .08$. H2 was also supported. Narrative engagement was associated with increases in smoking cessation intention, $b = .35$, 95% CI [.28, .42], $\eta^2 = .05$. In addition, the relationship between stage of change and intention was positive and significant, $b = .20$, 95% CI [.18, .22], $\eta^2 = .26$. Joint significance tests indicated a significant positive indirect effect of exemplification on intention to quit smoking by elevating narrative engagement. Bootstrapping results, based on 5,000 bootstrap samples, also showed that the indirect effect is statistically significant, $b = .06$, bias-corrected 95% CI [.03, .09].

As with Study 1, two ancillary analyses were conducted to reduce uncertainty regarding the causal order between engagement and intention. The association between engagement and intention was not moderated by stage of change either in a linear ($b = .004$, *n.s.*) or a quadratic ($b = -.004$, *n.s.*) way. Bootstrap estimation of the indirect effect of exemplification on engagement via intention (5,000 re-sampling) was not significant, $b = .01$, bias-corrected 95% CI [−.01, .04].

Discussion

The results from two experiments consistently indicated that smokers who read a news article in which an exemplar served as a delivery vehicle for health information about successful smoking cessation experienced a greater degree of engagement with the story and its characters, which in turn was associated with elevated quit intentions, compared to those exposed to an article with no exemplar. Our results are in the context of print news and a single (or double) exposure to an article with an exemplar presenting the threat and efficacy information.

The present study enhances our understanding of which particular intrinsic message features influence narrative engagement and behavioral intention. Messages that illustrate their content with concrete and realistic characters produced greater engagement with message content and an indirect effect on behavioral intention through engagement. The absence of interaction effects with other message factors indicates that readers were more engaged with the exemplar versions across the board regardless of particular story characters and the types of threat or efficacy information the exemplars conveyed. All message factors operated more effectively when accompanied by exemplars. The relationship between engagement and intention was robust. It was independent of stage of change for smoking cessation (i.e., a proximal indicator of prior intention). The alternative model that conceptualizes intention as a mediator of exemplification effects on engagement was not consistent with the data. Both findings provide additional evidence that engagement is more likely to be causally prior to quitting rather than the reverse.

Admittedly, the causal relationship between engagement and intention is still not definitive, because both are observed, not randomly assigned, variables (Green et al., 2010). Nonetheless, the consistent evidence for the indirect exemplification effects on intention via narrative engagement across two large samples and multiple stories is provocative. Overall, the significant and consistent effects for exemplars hold real promise for their effectiveness as delivery vehicles for various types of health information necessary to alter risky or

unhealthy behavior even though the current study is focused exclusively on smoking cessation.

However, before discussing future research directions and practical implication of the findings, there are some methodological and/or statistical issues that need to be addressed in detail. As noted earlier, the length of news stories was not held constant in either Study 1 or 2. On the one hand, it could be argued that the observed exemplification effect on narrative engagement stems from the fact that news stories with exemplars tend to be longer than those without exemplars. On the other hand, the lengthier articles could also be said to provide more information that is either irrelevant to smoking threat and quitting efficacy or redundant with information provided in the story's core, largely illustrating the information in the case of each character. The lengthier articles might actually produce more distraction than engagement as fatigue sets in and the reader's attention wanes. However, because all news stories are fairly long, we speculate the additional words in the exemplar condition had little impact on the outcome variables. Although we cannot conclusively rule out the possibility that the message length impacted engagement instead of exemplification, we believe it is unlikely. A post hoc examination of the findings provides suggestive evidence in line with our interpretation. Even though we cannot conduct formal statistical analyses due to the nature of the message length variable (i.e., it is a function of other message factors, not an independent random variable), recall that other message factors – threat, efficacy, and story character – also showed appreciable word-count differences within their subconditions. Thus, if message length produced the difference in narrative engagement, there should be significant main and/or interaction effects for those factors as well. However, as reported above, no such significant effects were found except the main effect for story character in Study 2. In fact, the findings for story character provide evidence that is inconsistent with the length-as-confounder explanation. Deborah's story induced significantly less narrative engagement than the others, but it was longer than the stories that featured Charles and Joanne by about 100 words. Moreover, although the Chris versions of the story contained about 260 more words than the Charles and Joanne versions, those three characters did not elicit significantly different engagement. Examination of other factors also suggests that the length-as-confounder explanation is unlikely.[11]

It should also be noted that the indirect exemplification effect is small in its magnitude. We acknowledge that the relatively large sample sizes in both Study 1 and 2 provide sufficient statistical power to detect even small differences in our outcome measures, and thus we might have focused attention on the small effects. Yet, at the same time, obtaining an adequate sample size and the associated statistical power is essential to this study, because both Study 1 and 2 have a complex experimental design with multiple factors, and the final outcome variable of interest is a serious behavioral intention – intention to quit smoking – that is very difficult to change. To be sure, there is substantial concern about "practical significance" of the results from null hypothesis significance tests (Kirk, 1996). Nonetheless, even small effects in social scientific research can be of cumulative consequence (Abelson, 1985), and they can have important implications especially when they concern risky behaviors such as cigarette smoking. These small effects from exemplars to engagement and intention also result from a single exposure to one or two news articles, not accumulated exposure to multiple articles. So while the effects are small, the outcome is consequential and the exposure quite limited.

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[11]For example, for the efficacy information factor in Study 1, there was an approximately 299-word difference (similar to that for the exemplification factor) between the control and tailored treatment conditions. However, they did not differ in terms of narrative engagement (adjusted $M_{\text{taiored}} - M_{\text{control}} = .04$, n.s. by the Holm-Bonferroni method). In Study 2, the control condition for the efficacy information factor contained about 270 fewer words than the counseling and tailored treatment conditions, but no significant differences were found with regard to their adjusted means of engagement ($M_{\text{counseling}} - M_{\text{control}} = -.04$, $M_{\text{taiored}} - M_{\text{control}} = .02$, all n.s. by the Holm-Bonferroni method).

This study has focused on how the *presence* of an exemplar in news stories affects narrative engagement and subsequently intention to quit smoking. Future studies can advance this line of research by examining which *types* of exemplars are more engaging and thereby more likely to increase smoking cessation intention. Most notably, social cognitive theory of mass communication (SCT) posits that the behaviors of exemplars or characters in media content can influence audience members through vicarious learning (Bandura, 2009). SCT suggests that media portrayals of the exemplars' behaviors resulting in positive consequences should encourage audience members to perform the behaviors, whereas those associated with negative outcomes should discourage it (cf. Nabi & Clark, 2008). More research is also warranted that tests how the typicality/atypicality of media exemplars shape the way in which they influence audience perceptions and behaviors (see Bodenhausen, Schwarz, Bless, & Wänke, 1995).

As public health agencies consider ways to present information to reduce risky behaviors, the use of exemplars is recommended as a way to increase engagement with the content. Past research suggests that belief change can result when audiences are engaged by the texts they consume (Green & Brock, 2000). Our data indicate that one way to enhance engagement is through the use of exemplars. A recent study on audio-visual antismoking ads highlights the importance of narrative structure in promoting smoking cessation, showing that overall potential ad exposure increases the likelihood of quitting by follow-up, and this effect is mainly driven by personal testimonial or emotionally evocative ads (Durkin, Biener, & Wakefield, 2009). Our results suggest that written texts are made more engaging through the use of exemplars and that this increased level of engagement is a strong (and possibly causal) link to intentions to quit. One final point about exemplars should be made. Much research on narrative engagement makes clear the difficulty of crafting good, engaging stories and the concern that these stories need to be lengthy rather than brief. To the extent that exemplars are less problematic to craft than a good short story, they could be easier to employ in the domain of public health initiatives.

The results should be interpreted in light of a few other limitations. First, participants of this study are adult smokers. Therefore, our findings may not be generalizable to younger smokers. Second, we did not measure actual smoking cessation. Although intention is a strong predictor of actual behavior (Fishbein & Ajzen, 2010), we cannot say for certain from our data whether and to what extent the heightened cessation intention leads to actual quitting (but see Cappella, 2007, for some support on this link). Third, various processes might explain the mediation between exemplified news and intention including cognitive attention, depth of processing, increased retention, and so on. These mechanisms await further study but our results lead to the implication that exemplars are an important component of message design to enhance engagement and subsequent message-consistent behavioral effects.

Despite these limitations, this study may serve as a stepping stone for the burgeoning line of research into narrative health communication by demonstrating the indirect effect of exemplification in the news on recipients' behavioral intention through narrative engagement. Future research will need to examine how different types of exemplars as well as other intrinsic message features affect narrative engagement, and identify the processes accompanying such engagement. Without attention to message features linked to engagement, the application of theories about narrative persuasion is likely to remain underutilized because the specific implications for message design will remain underexplored.

Acknowledgments

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Table 1

ANCOVAs for narrative engagement and intention to quit smoking (Study 1)

Source	Narrative Engagement			Intention to Quit Smoking		
	F	df	p	F	df	p
Exemplification	19.20	1	.000	.30	1	.586
Stage of Change	97.20	1	.000	591.95	1	.000
Narrative Engagement				74.80	1	.000
Error	(.35)	1156		(.60)	1153	
Model (F)	10.45	12	.000	67.10	13	.000
R^2	.10			.43		
N	1169			1167		

Note. Results are based on ANCOVAs with 2 (threat) × 3 (efficacy) × 2 (exemplification) factors and covariate(s). Other sources of variance are not shown here for brevity. Full tables are available upon request from the authors. Missing data were handled with listwise deletion. Values enclosed in parentheses represent mean square errors.

Table 2

ANCOVAs for narrative engagement and intention to quit smoking (Study 2)

Source	Narrative Engagement			Intention to Quit Smoking		
	F	*df*	*p*	*F*	*df*	*p*
Exemplification	16.38	1	.000	.08	1	.779
Story Character	4.37	3	.005	.60	3	.614
Exemplification × Story Character	.65	3	.586	.86	3	.459
Stage of Change	109.94	1	.000	548.90	1	.000
Narrative Engagement				98.28	1	.000
Error	(.45)	1202		(.68)	1197	
Model (F)	3.03	64	.000	14.64	65	.000
R^2	.14			.44		
N	1267			1263		

Note. Results are based on ANCOVAs with 2 (threat) × 4 (efficacy) × 2 (exemplification) × 4 (core article; story character) factors and covariate(s). Other sources of variance are not shown here for brevity. Full tables are available upon request from the authors. Missing data were handled with listwise deletion. Values enclosed in parentheses represent mean square errors.