An Investigation of First- versus Third-Person Risk Narrative Processing Through the Lens of the Heuristic-Systematic Model

Samantha Nazione

Published online: 13 Apr 2016.

Submit your article to this journal ⬚

Article views: 43

View related articles ⬚

View Crossmark data ⬚

An Investigation of First- versus Third-Person Risk Narrative Processing Through the Lens of the Heuristic-Systematic Model

Samantha Nazione

This online experiment analyzed the effect of first- versus third-person risk narratives on 235 female college students' affect, attitudes, risk perceptions and thoughts regarding tanning beds through the lens of the heuristic-systematic model. Participants receiving a third-person narrative reported a greater number of systematic thoughts as compared to those receiving a first-person narrative. Regardless of condition, participants reported significantly more systematic thoughts as compared to heuristic thoughts. Narrative researchers should take note that not all narratives may be processed in a heuristic manner as largely proposed by past research. Future research should delve further into the reasons why third-person messages may be processed higher along the heuristic-systematic continuum.

Keywords: Heuristic-Systematic Model; Narrative; Risk

Skin cancer is the most common cancer in America (American Cancer Society [ACS], 2015), and indoor tanning while in high school and college greatly increases a woman's skin cancer risk (Zhang et al., 2012). Past communication efforts to deter women from tanning bed use have found narrative evidence to be more effective compared to statistical evidence at increasing young women's perceived susceptibility to melanoma (Greene & Brinn, 2003). Furthermore, first-person narratives have been found to be more persuasive in terms of both attitude change (De Graaf, Hoeken, Sanders, & Beentjes, 2012) and behavioral intention change (Nan,

Samantha Nazione (PhD, Michigan State University, 2013) is an assistant professor in the Department of Communication at Berry College. *Correspondence*: Samantha Nazione, Department of Communication, Berry College, 2277 Martha Berry, Box 299, Mount Berry, GA 30149. E-mail: snazione@berry.edu

Dahlstrom, Richards, & Rangarajan, 2015), as well as leading to higher risk percep-
tion in a health context (Nan et al., 2015), when compared to third-person narra-
tives. These findings, demonstrating that first-person narratives may be more
persuasive than third-person narratives, led to testing the following hypotheses in
the new context of tanning among female college undergraduates:

> H1: Participants who receive a first-person message will report higher levels of risk
> perception regarding tanning beds, as compared to those who receive a third-
> person message.
> H2: Participants who receive a first-person message will report more negative
> attitudes regarding tanning beds, as compared to those who receive a third-
> person message.

Information processing theories, such as the Heuristic Systematic Model (HSM),
have been used in the past to study narratives (Kopfman, Smith, Ah Yun, & Hodges,
1998; Slater & Rouner, 2002). However, the HSM has yet to be used to understand
how narrative perspective may influence processing.

The HSM outlines a continuum of information processing, two different methods
of processing information, with systematic processing at the higher end and heuristic
processing at the lower end (Chaiken, Liberman, & Eagly, 1989). Heuristic processing
is a quick, superficial thought process that requires little cognitive effort. Conversely,
the systematic method is an analytical decision-making process that takes a high
amount of cognitive effort and results in well-thought-out decisions.

Literature to date indicates that narrative information is processed in a more
heuristic than systematic manner (Kopfman et al., 1998). Risk information also
tends to be viewed in a heuristic manner, specifically with a negative affect heuristic,
when information presents a risk to be high (Slovic, Finucane, Peters, & MacGregor,
2007). For these reasons, hypotheses 3 through 6 were posed.

> H3: Participants who receive a first-person message will rate their negative affect as
> greater after reading the message in comparison to those who receive a third-
> person message.
> H4: Participants who receive a first-person message will have more heuristic
> thoughts as compared to those who receive a third-person message.
> H5: Across first- and third-person narratives, participants will report greater nega-
> tive affect as compared to positive affect.
> H6: Across first- and third-person narratives, participants will report a higher ratio
> of heuristic thoughts as compared to systematic thoughts.

Methods

Participants

This study included 235 female college undergraduates with a mean age of 19.49
(SD = 1.72). The majority of participants were Caucasian (82.1%); additionally, 3.8%
were African American, 5.1% were Asian, 2.1% were Latino, 5.5% were multiracial,
and 1.3% were of a different racial background. Additionally, 80.3% of participants

reported having previously used a tanning bed, and 29.5% indicated they used a tanning bed at least once a month.

Procedures

This research took place through an online survey. Female college students at a large Midwestern university participated in this research in return for class credit. Participants were first randomly assigned to receive either a first-person narrative or third-person narrative and then answered questions pertaining to thoughts, affect, attitudes, perceived susceptibility, and perceived severity. A total of 122 participants (51.9%) read a first-person narrative, and 113 (48.1%) read a third-person narrative. Missing data were replaced with data means for dependent variables, as missing values represented less than 5% of data.

Measures

Message manipulation
Participants read a first- or third-person message about a 21-year-old woman named Kristen who used a tanning bed a couple of times a week and eventually is diagnosed with skin cancer as a result. Effort was made to portray tanning bed use in the narrative as a low-benefit activity in order to trigger negative affect. These two messages were identical with the exception of being first- versus third-person narratives.

Manipulation check
Participants answered four dichotomous questions regarding whether they perceived they had read a first- or third-person message. This manipulation was successful.

Affect
Participants filled out the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegan, 1988). This 20-item scale (10 for positive affect and 10 for negative affect) asked participants how much they felt like a given word at the moment, such as "guilty," or "excited." Affect questions were asked on 7-point Likert scales from 1 (*strong disagreement*) with feeling like a given word to 7 (*strong agreement*) with feeling like a given word. For means, standard deviations, reliability coefficients, and correlations of all study scales see Table 1.

Thought listing
Participants responded to a thought-listing question designed to measure heuristic and systematic processing of the message by participants (Cacioppo, Von Hippel, & Ernst, 1997). Participants' thoughts regarding the message were measured on the screen after the message rather than on the same screen with the message because

Table 1 Dependent Variable Means and Standard Deviations by Condition, *t*-Test Results, Scale Reliabilities, and Correlations

Variable	First Person		Third Person					α	Correlations							
	M	SD	M	SD	t	p	η^2		1	2	3	4	5	6	7	8
1. Attitudes	3.67	0.82	3.7	1.01	−0.24	>.05	<.01	0.84	—							
2. Negative affect	3.75	1.00	3.50	1.02	1.82	>.05	<.01	.84	.073	—						
3. Positive affect	4.03	0.81	4.09	0.77	−.055	>.05	.01	.73	−0.068	.201*	—					
4. Severity	5.72	0.89	5.69	0.95	0.29	>.05	<.01	.74	−.570*	.032	.120	—				
5. Susceptibility	4.25	1.14	4.15	1.01	0.67	>.05	<.01	.73	.034	.294*	.041	.197*	—			
6. Total thoughts	5.61	2.29	6.13	2.94	−1.51	>.05	.01	.027	.055	−.002	−.027	−.069	—			
7. Heuristic thoughts	1.55	1.87	1.27	1.43	1.26	>.05	.01	−.078	.059	.076	.090	−.065	.316*	—		
8. Systematic thoughts	4.02	2.19	4.82	2.99	−2.35	<.0	.03	.071	.006	−.060	−.079	−.025	.793*	−.313*	—	

Means and standard deviations for attitudes, affect, and risk perceptions are from 7-point Likert scales from 1 (*low level of the construct*) to 7 (*high level of the construct*).

*p < .01.

Slater and Rouner (2002) have recommended that when researchers are seeking outcomes of narratives, thoughts should be measured after receipt of the message rather than concurrently with it. Participants were given 15 boxes in which to list their thoughts.

Coding

A total of 1,377 thoughts were collected and coded for analysis. The unit of analysis was a boxed thought. Ten percent of collected thoughts were coded for reliability purposes using independently trained, blind coders to put the thoughts into the two categories of heuristic or systematic. A coding scheme was developed using definitions from Meyers-Levy and Maheswaran (2004). Heuristic thoughts were emotional or simple evaluative thoughts, whereas systematic thoughts were those that were analytical, comparative, reported facts, or posed questions; a κ of .89 was obtained for reliability purposes. After reliability was obtained, research assistants split the remaining data and coded independently. All data were coded within a week. Participants listed between one and 15 thoughts, with an average of 5.86 ($SD = 2.63$) thoughts reported per a participant.

Attitudes

Eight attitude items were borrowed from a previous study (Marcila, Bergerona, & Audet, 2001). Questions asked on 7-point semantic differential scales if tanning beds were bad or good, comfortable or uncomfortable, and other characteristics.

Risk perception

Risk perception questions were adapted from past work (Greene & Brinn, 2003; Witte, Cameron, McKeon, & Berkowitz, 1996). One measure of severity was deleted from analysis, as it contributed to low scale reliability ("Skin cancer is almost always curable" [reverse coded]). Measures of severity included, "Using a tanning bed is dangerous to my health," and "The consequences of using tanning beds, like skin cancer, are severe." Measures of susceptibility included, "It is likely that the risks associated with using a tanning bed will happen to me," and "If I use a tanning bed I will most likely get skin cancer." Susceptibility and severity questions were asked on 7-point Likert scales from 1 (*strong disagreement*) with the statement to 7 (*strong agreement*) with the statement.

Results

H1 to H5 proposed that those participants reading a first-person message would report greater negative affect, perceived severity, perceived susceptibility, negative attitudes, and heuristic thoughts. Independent *t*-tests were performed to address these hypotheses. H1 to H5 were not supported (see Table 1).

H6 proposed that a higher ratio of heuristic thoughts would be reported by participants, regardless of the message received, compared to systematic thoughts. A one-sample *t*-test was performed; H6 was not supported. Results were significant in the *opposite* direction predicted, $t(234) = 17.41$, $p < .001$, $\eta^2 = .56$. Participants listed significantly more systematic thoughts ($M = 4.41$, $SD = 2.63$) as compared to heuristic thoughts ($M = 1.42$, $SD = 1.67$).

Post Hoc Analysis

Post hoc differences regarding systematic thoughts were tested using independent *t*-tests. Participants were found to differ in regards to the number of systematic thoughts they reported based on condition, $t(234) = -2.35$, $p < .05$, $\eta^2 = .03$. Participants who read a first-person message reported significantly fewer systematic thoughts ($M = 4.02$, $SD = 2.19$) as compared to participants who read a third-person message ($M = 4.82$, $SD = 2.99$).

How participants processed the messages (systematically, heuristically, or coprocessed) was also evaluated post hoc. Most participants coprocessed the message, having both heuristic and systematic thoughts (60%). Additionally, 34% of participants solely processed the message systematically, and 6% solely processed heuristically.

Discussion

This research contradicts past research, which found that first-person narratives lead to elevated risk perceptions, as well as increased attitude change, as compared to third-person narratives (De Gaaf et al., 2012; Nan et al., 2015). It is especially surprising that this work did not find differences in risk perceptions, as this work used nearly identical items to measure perceived risk as those used by Nan et al. (2015). This may be seen as a demonstration of the importance *context* holds. Nan et al.'s study was encouraging individuals to adopt a behavior (the HPV vaccine); whereas this project encouraged women to *stop* a behavior (tanning). Additionally, the narratives under study likely did not present the risks of tanning as high enough, as would be prescribed by Slovic et al. (2007), to solicit negative affect within this specific population. Participants were higher in positive affect than they were in negative affect. Future HSM research examining narrative processing should craft stronger risk narratives and be tested with non-college-student populations.

This research is also inconsistent with past evidence that found narratives to be processed in a primarily heuristic manner (Kopfman et al., 1998). Most participants did dually process the information, reporting both heuristic and systematic thoughts. However, participants, regardless of condition, were found to report a greater number of systematic thoughts as compared to heuristic thoughts. It should be noted that the effect size for this test was large ($\eta^2 = .56$). Furthermore, participants reading the third-person message were found to report a greater number of systematic thoughts as

compared to those reading a first-person message. This difference may be attributed to measurement. Kopfman et al. (1998) coded participants' processing of third-person narratives as heuristic due to higher participant perception of anxiety and a higher number of emotional thoughts. Heuristic processing in the current study was coded using a broader definition inclusive of emotional and simple evaluative thoughts. When deciding how narrative information is processed in future research, it will be necessary for scholars to debate the true parameters of heuristic versus systematic processing in the HSM.

References

American Cancer Society (ACS). (2015). *Skin cancer.* Retrieved from http://www.cancer.org/cancer/skincancer/index

Cacioppo, J. T., Von Hippel, V. W., & Ernst, J. M. (1997). Mapping cognitive structures and processes through verbal content: The thought-listing technique. *Journal of Consulting and Clinical Psychology, 65*, 928–940. doi:10.1037/0022-006X.65.6.928

Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman, & J. A. Bargh (Eds.), *Unintended thought* (pp. 212–253). New York, NY: The Guilford Press.

De Graaf, A., Hoeken, H., Sanders, J., & Beentjes, J. W. J. (2012). Identification as a mechanism of narrative persuasion. *Communication Research, 39*, 802–823. doi:10.1177/0093650211408594

Greene, K., & Brinn, L. (2003). Messages influencing college women's tanning bed use: Statistical versus narrative evidence format and a self-assessment to increase perceived susceptibility. *Journal of Health Communication, 8*, 443–461. doi:10.1080/713852118

Kopfman, J. E., Smith, S. W., Ah Yun, J. K., & Hodges, A. (1998). Affective and cognitive reactions to narrative versus statistical evidence organ donation messages. *Journal of Applied Communication Research, 26*, 279–300. doi:10.1080/00909889809365508

Marcila, I., Bergerona, J., & Audet, T. (2001). Motivational factors underlying the intention to drink and drive in young male drivers. *Journal of Safety Research, 32*, 363–376. doi:10.1016/S0022-4375(01)00062-7

Meyers-Levy, J., & Maheswaran, D. (2004). Exploring message framing outcomes when systematic, heuristic, or both types of processing occur. *Journal of Consumer Psychology, 14*, 159–167.

Nan, X., Dahlstrom, M. F., Richards, A., & Rangarajan, S. (2015). Influence of evidence type and narrative type on HPV risk perception and intention to obtain the HPV vaccine. *Health Communication, 30*, 301–308. doi:10.1080/10410236.2014.888629

Slater, M. D., & Rouner, D. (2002). Entertainment-education and elaboration likelihood: Understanding the processing of narrative persuasion. *Communication Theory, 12*, 173–191.

Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2007). The affect heuristic. *European Journal of Operational Research, 177*, 1333–1352. doi:10.1016/j.ejor.2005.04.006

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070. doi:10.1037/0022-3514.54.6.1063

Witte, K., Cameron, K., McKeon, J., & Berkowitz, J. (1996). Predicting risk behaviors: Development and validation of a diagnostic scale. *Journal of Health Communication, 1*, 317–342. doi:10.1080/108107396127988

Zhang, M., Qureshi, A. A., Geller, A. C., Frazier, L., Hunter, D. J., & Han, J. (2012). Use of tanning beds and incidence of skin cancer. *Journal of Clinical Oncology, 30*, 1588–1593. doi:10.1200/JCO.2011.39.3652